

Facilitating research utilisation: a cross sector review of research evidence

Abstract

For many management researchers, it is important that the knowledge they create is utilised and has some impact on managerial practice. Sustainable competitive advantage depends less on who has the information and increasingly on those able to make the best use of that information. This paper focuses on two key questions: what are the barriers to research utilisation and what are the most effective strategies for facilitating the use of research by managers in the public sector, based on research evidence? The approach entailed extensive searches of on-line databases in the fields of management, education and medicine, from the UK United States (US), Canada, Australia and Europe. Key themes to emerge from this review were the accessibility and relevance of research, trust and credibility; the gap between researchers and users, and organisational factors. Research use can be facilitated through: support and training; collaboration and partnership; dissemination strategies; networks; and strong, visible leadership.

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Introduction

The speed of environmental and technological change has considerably reduced the usefulness of experience, and managers in the public sector need increasingly to turn to findings from research to reduce uncertainty and supplement experience-based practices. In all organisations managers constantly make decisions, often of considerable importance with substantial consequences and they are increasingly urged to seek out more information in order to reduce decision-making uncertainty (Hanjoon and Chankon, 1994). Managers frequently claim that their personal experience is more meaningful than the results of research (Shkedi, 1998), but personal experience can be misleading (Davies and Nutley, 1999) and sustainable competitive advantage depends less on who has the information and increasingly on who is able to make the best use of that information (Moorman *et al.*, 1992). In addition, for many management researchers, it is important that the knowledge they create is utilised and has some impact on managerial practice (Tranfield & Starkey, 1998). One of the goals of research is to generate new knowledge and establish an evidence-base within the profession. Research may not solve problems or make decisions, but research can provide information for managers to use to reduce risk in the decision-making process (Oulton, 1995).

In a review of the literature Kelemen and Bansal, (2002) suggest that: management research fails to communicate with practitioners and may not reach sufficiently wide audiences. Others have claimed that actions by decision-makers are insufficiently informed by research, and dissemination is viewed as problematic (Hillage *et al.* 1998). It has also been suggested that insufficient value is placed on research evidence owing to

concerns about the relevance, accessibility and the timeliness of research outputs (Hemsley-Brown and Sharp, 2003) and that frequently organisational settings fail to support a culture which values and supports the use of research (Funk *et al.*, 1991; 1995; Louis, 1996). However, some have argued that there is no simple, direct line between knowledge production and utilization (Louis, 1992; 1996) and highlighted “the inadequacies of conceiving the relationship between research and practice as a linear relationship” and presented the relationships as a “multi-layered, unpredictable, interacting process of engagement” (DETYA, 2000 p.10) between the researcher and the user.

Background and context of research in management

Understanding the factors affecting the utilisation of research by managers and decision-makers in industry and the business sector has been the focus of considerable research: pioneer studies in the 1970s concluded that potential users of research were unable to evaluate the key features affecting research quality (Hanjoon and Chankon, 1994). Early research identified a range of factors affecting the use of research for managerial decision-making (Weiss and Bucuvalas, 1980; Deshpande and Saltman, 1982; Moorman *et al.*, 1992), and argued that research was used more often when the findings matched managers' expectations (Deshpande and Zaltman, 1982; 1984; 1987). Research use was found to be influenced by organisational factors such as the relationship between researchers and managers (Zaltman and Moorman, 1988; Moorman *et al.*, 1992) and the structure of the organisation (Deshpande and Zaltman, 1982; 1984; 1987).

More recently, Tranfield, *et al.*, (2003 p.212) have argued that 'management research is a relatively young field, far less well developed in terms of agenda and question formulation than much of medical science'. In view of this, many researchers have sought to identify the most effective strategies for facilitating research utilisation by conducting cross-sector reviews and comparative studies, with the intention of learning from other professions where research utilisation is more well established (e.g. Hemsley-Brown and Sharp, 2002; 2003; Walter *et al.*, 2003a; 2003b). For example, Davies and Nutley (1999 p.15) found that "evidence on effectiveness is more to the fore in healthcare than in any other public sector service" and they concluded that by sharing experience across diverse sectors important insights and advances in research utilisation could be made.

This paper examines issues that emerged from a cross-sector review of the literature which focused on two key questions: what are the barriers to research utilisation and what recommendations have been made by researchers to indicate the ways these barriers could be addressed? Secondly, what were the most effective strategies for facilitating the use of research by managers, based on research evidence? Barriers to research use are categorised under the following themes: the accessibility and relevance of research, trust and credibility; the gap between researchers and users, and organisational factors. Facilitating the use of research by managers through dissemination strategies is discussed in the context of: collaboration, partnerships and links; communication networks, communities of practice and leadership.

The focus and design of the study

To ensure that the focus of the literature review was clear, the author defined the terms used in the research questions. In the broadest sense, 'research' was defined as "an original investigation undertaken in order to gain knowledge and understanding" (HEFCE, 1999 p.261), or as "systematic enquiry made public" (Stenhouse, 1987 p.74). The idea that research can make a major contribution to improving the practice of management is based on the assumption that research is "systematic and rigorous, and provides explicit evidence, which can be assessed objectively" (Hammersley, 2001 p.2). In the context of this study, the focus of the literature searches was on examining issues related to research use by managers i.e. those who are involved in strategic decision-making and/or a role as a team leader in: education, healthcare or the business sector. The review also included findings from studies of practitioners (teachers, healthcare professionals or administrators) when the findings were specifically pertinent to the review's research questions for example, a focus on the role of managers in facilitating research use by practitioners.

The approach entailed extensive searches of management, education and medical on-line databases, namely: AEI; Business Source Premier; BEI; BOPCAS; CERUK database; ERIC; Ingenta; PSYCINFO; MedLine; and Web of Science. The reviewer included published journal papers and conference papers from the UK and other countries, including the United States (US), Canada, Australia and Europe, written in English.

Theses and unpublished papers were excluded. 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. Criteria used to determine the selection of research included: the pertinence of the research to the review; the appropriateness of the study design to address 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. The searches resulted in 150 papers (empirical, theoretical and opinion papers) being selected for further scrutiny from over 5,000 citations.

Addressing the barriers to research utilisation

The notion of "barriers" to research use is well established in all sectors. The "Barriers Scale" (Funk *et al.*, 1991; 1995) consisting of 29 factors affecting the utilisation of research evidence in healthcare, has been used with a wide range of managers, practitioners and administrators from several countries (Funk *et al.*, 1991; 1995; Dunn *et al.*, 1998; Parahoo, 2000; Retsas, 2000). Analysis of the literature and categorisation of the barriers to research utilisation resulted in the emergence of a number of key themes, which are explored the following sections.

The inaccessibility of research

Kelemen and Bansal (2002) speculated that because in their view management research is written in a style that is alienating to most practitioners, and is published only in academic, rather than practitioner journals, this has had a serious impact on research use

by managers in the business sector. Walter *et al.*, (2003a; 2003b) also recommended that to address the issue of inaccessibility research should to be translated for users. However, they acknowledged that “simply presenting findings in different formats appears unlikely to change behaviour” (Walter *et al.*, 2003b p.13).

A number of research studies, both in health care and education, have concluded that lack of access was a key factor in research use (Champion and Leach, 1989; Elliott and Sarland, 1995; Moore, 1995; Haug, 1997; Davies, 1999; Goldstein and Woodhouse, 2000). In the health care sector, for example evidence from a meta-analysis (Haug, 1997) indicated that physicians appeared to choose the sources of information that were most easily accessible and most applicable to the problem, and they frequently relied on indirect sources of information about research findings, such as discussions with colleagues, described by Wenger (1998) as ‘communities of practice’ (Wenger *et al.*, 2002 p.4). The volume, applicability and ambiguity of research material have also been identified as key barriers to research use by those in education (Castle, 1988; Cousins and Leithwood, 1993; Shkedi, 1998), where the inaccessibility to journals is both physical and intellectual; and practitioners claimed there was a lack of time and support to help potential users to access research.

The relevance of the research

Tranfield and Starkey (1998) argued that a key goal of management research is to improve the relationship between theory and practice, but they highlighted a numbers of concerns including the issue of the relevance and the application of findings from

management research. Once information had become available to the manager, it was likely to be assessed on the basis of prior experience for its relevance and consistency with expectations (Deshpande and Zaltman, 1987; Hemsley-Brown and Sharp, 2003). Authors from all sectors highlighted the importance of the "relevance" of research (Deshpande and Zaltman, 1984; Castle, 1988; Zaltman, and Moorman, 1989; Beard and Williams, 1992; Cousins and Leithwood, 1993; Saha *et al.*, 1995; McArthur, 1996; Ordonez and Maclean, 1997; Tranfield and Starkey 1998; Brooker, and Macpherson, 1999; Bryant, 2000; Edwards, 2000; Parahoo, 2000) and suggested that researchers should: ensure that topics are of interest to decision-makers; specify the implications; and be precise and realistic about claims (Ordonez and Maclean, 1997). Research impact in the business sector seemed to be affected by how finely tuned it was to meeting managers' needs and inconsistent or counterintuitive information was less likely to be used (Deshpande and Zaltman, 1987).

Trust and mistrust of the research design

Academic papers in the education and the business sectors, have raised concern about the quality and design of research studies (Deshpande and Zaltman, 1987; Bracey, 1989; Reed and Franks, 1989; Dobby, 1999; Davies, 2000; Davies and Nutley, 2002). The usefulness of research in management was thought to be strongly influenced by features of research design (Hanjoon and Chankon, 1994). Empirical studies have also shown that trust and perceived quality of interaction contributed to research utilisation, with trust having indirect effects (Moorman *et al.*, 1992). For example, Hanjoon and Chankon, (1994) explored marketing managers' and researchers' perceptions regarding the

evaluation of research quality. They suggested that effective understanding of marketing research could be enhanced by mutual understanding between managers and researchers and by an increase in managers' trust of the research provider (Hanjoon and Chankon, 1994).

In the education sector authors have suggested that lack of trust between researchers and users can be a barrier to research utilisation (Slavin, 1990; Boostrom *et al.*, 1993) and findings from empirical research confirmed that users often lacked the statistical skills to understand the findings (Shkedi, 1998). Slavin (1990) recommended that a more rigorous evaluation of research was needed and a wider range of research approaches should be supported.

A cross sector review of literature by Walter *et al.*, (2003b) included papers which studied research impact on populations of: practitioners, service managers, policy-makers (at any level), and clients or service users. They concluded that 'credibility' is important, and impact is enhanced where there is: strong evidence; endorsement from opinion leaders; and a high level of commitment from researchers and potential users. For example, evidence from the review suggests that provision of targeted materials can raise awareness of research findings, and that seminars and workshops involving researchers and users can encourage more direct use of research evidence, and increase credibility and trust in the findings.

Organisational factors

In the private and public sector research evidence suggested that organisational factors affected research utilisation (Deshpande and Zaltman, 1982; Macguire, 1990; Hammersley and Scarth, 1993; Latham, 1993; Cowan, 1994; Lacey, 1994; Rodgers, 1994; Le May *et al.*, 1998; Tooley, and Darby, 1998; Hundley, *et al.*, 2000; Rodgers, 2000; Sebba, 2000; Hemsley-Brown and Sharp, 2003). Factors identified as important were organisational structure, actionability, and researcher-manager interaction (Deshpande and Zaltman, 1982); autonomy, empowerment, and organisational culture (Rogers, 1994).

The most important variables affecting the use of research in the business sector were identified by Deshpande and Zaltman (1982) as organisational structure (which they defined as formalisation and centralisation); the technical quality of the research, the element of "surprise", actionability and the interaction between researchers and managers. They argued that the degree of centralisation and formalisation within the organisation – or lack of these, seemed to be more important than other factors. They claimed that the more decentralised and less formalised firms were the more like they were to make use of research findings (Deshpande and Zaltman, 1982 p.24). Thus, a highly centralised organisation "may have difficulty in implementing results from research, and may wish to decentralise decision-making at least during the implementation phase" (Deshpande and Zaltman, 1982 p.26). Senge, (1990, cited by Louis, 1996) found that organizations that were more effective in using knowledge tended to have denser internal communication networks, and more individuals served in

boundary spanning roles where they legitimately brought in new ideas from the outside. Conversely, he claimed that organizations that failed to learn, even from information that they requested, were characterized by internal boundaries, competition, excessive individual entrepreneurship and lack of continuity in personnel.

In the healthcare sector, both in the UK and the US (Dunn *et al.*, 1998), the major barriers which emerged from empirical research were those associated with the organisational setting: insufficient time to implement new ideas; lack of co-operation from senior colleagues; inadequate facilities to support implementation; and lack of time to read research (Dunn *et al.*, 1998) – the latter was also identified as a barrier to research use in education (Hemsley-Brown and Sharp, 2002; Wilson *et al.*, 2003). Findings based on case studies of eight local authorities in England and Wales, indicated that “the primary barrier” for managers in education “was lack of time” (Wilson, *et al.*, 2003 p.vi). This finding supports work by Latham (1993), who compared the reading habits of 20 professionals from each of four disciplines: education, engineering, law and medicine. Results suggested that educators made little use of professional literature compared with other professionals. Educators claimed that there was too little time, the language of research was too technical, and literature in education is not regarded as potentially helpful

Findings from a cross sector review (Walter *et al.*, 2003b p.30) suggested that in order to support and maintain research impact “activities need to be integrated within organisational systems and activities. All key stakeholders need to be involved”.

Managers needed information at the top and in the absence of good research information at the top of the hierarchy, organizations lacked departmental integration and were likely to be pursuing incongruent goals (Cowan, 1994). Evidence from a number of authors suggested that organisations therefore needed to: first, value research, in order to sustain a culture of evidence-based practice (Davies *et al.*, 2002; Nutley *et al.*, 2002a; Davies and Nutley, 2002); second, increase the critical mass of research-aware staff (Hundley *et al.*, 2000; Wilson *et al.*, 2003) and finally, learn to recognise research use as part of the organisation's knowledge creation process (Mahajan and Wind, 1999).

The gap between researchers and practitioners

Managers and researchers in the private sector tended to differ widely on the factors they believed to be most important in making research "useful" (Deshpande, and Zaltman, 1984) and Kelemen and Bansal (2002) argued that the interests of management-researchers often differed from those of management-practioners. Le May *et al.*, (1998) concluded that managers and researchers in healthcare held differing perceptions regarding the nature of research, its role, and the opportunities and constraints affecting dissemination. In education too there seemed to be a tension between users of research and researchers, which has been attributed to differences in their professional goals (DETYA, 2000). Users were identified as seeking new solutions to operational matters whilst researchers were characterised as seeking new knowledge (DETYA, 2000). Deshpande and Zaltman, (1982 p.15) concluded that "researchers were from a basically different culture or community than the consumers or users of knowledge". Managers in the private sector seemed to be concerned with the usefulness of research findings for

their organisations, while researchers seemed be more concerned with methodological issues of research (Burrell and Morgan, 1979; Shrivastava and Mitroff, 1984). This difference in orientation may “create differences in the way managers and researchers evaluate the quality of research” (Hanjoon and Chankon, 1994 p.273). Research in the business sector (Deshpande and Zaltman, 1982) also suggested that the gap between researchers and user-managers could also be widened when the findings come as a surprise to users – that is, the results did not match their experience or expectations.

More recently cross sector reviews (Hemsley-Brown and Sharp, 2003; Walter *et al.*, 2003b) and research in education have focused on the gap between researchers and users (Boostrom *et al.*, 1993; Mitchell and Boyd 1998; Shkedi, 1998; Kirst, 2000; Staller and Kirk, 1998; Huberman, 1990; 1993). For example, Huberman's (1990) *Education et Vie Active* (EVA) research programme with the Swiss National Research Council, studied the interaction between researchers and users on a national vocational education research programme to establish, how and whether this interaction impacted on the effective dissemination of research findings.

Huberman (1990) used maps and charts to explain that good links, in type and amount, prior to a research study, and during a study, had contributed towards more energetic approaches to dissemination of the findings. He focused on the role of reciprocally influential relationships in the process of knowledge utilization and identified five levels of linkage, which he defined as (from the weakest to the strongest): “hello-goodbye”, “two planets”, “stand-off”, “reciprocal engagement”, and “synergy”. He claimed that the

weakest linkage was characterised by there being no contact with target publics before the study is completed, brief contact during the research and no contact after the research. The strongest linkage (synergy), he claimed, was characterised by well-established processes such as discussion, interim reports, presentations by researchers, meetings to discuss ultimate findings and plans for dissemination. Huberman's research, therefore, provided some empirical evidence to support the notion that the impact of research can be increased through the strengthening of links between researchers and users at every stage of the research process.

Facilitating research utilisation

The need to develop management strategies to facilitate research use has been put forward by a number of authors (Louis, *et al.*, 1985; Hemsley-Brown, *et al.*, 2002; Walter, *et al.*, 2003a 2003b; Wilson *et al.*, 2003). However, there was little empirical research evidence to indicate which strategies were effective in increasing research use by managers, or practitioners. The conclusions from a cross sector review indicated that "current knowledge on what makes for effective research impact is imperfect in nature and extent" (Walter, *et al.*, 2003b p.29). The key themes to emerge from the current review were that research use seems to be facilitated through: provision of support and training; collaboration, partnership and links; dissemination strategies; communication networks; and leadership. Each of these factors is examined more closely in the following sub-sections.

The provision of support and training

Walter *et al.*, (2003b p.17) concluded that support for managers and practitioners to “try out” research findings and to conduct their own research especially with the support of “both peer and expert opinion leaders”, had improved research impact. Wilson *et al.*, (2003 p.15) on the other hand, found that successful strategies for facilitating access to research findings for managers and practitioners in education included: “organising conferences, inviting national speakers”; providing training; and creating opportunities for sharing research.

Research in the healthcare sector particularly, had focused on the need for practitioners to gain support and encouragement from managers (Armitage, 1990; Funk *et al.*, 1991; 1995; Camiah, 1997; Dunn *et al.*, 1998; Kajermo *et al.*, 2000; Parahoo, 2000). For example, Dunn *et al.*, 1998 claimed that bringing about change through greater research use was most effective when it was collaborative, and required management support to develop self-confidence.

Authors of discussion papers and researchers in education and healthcare have argued that continuing professional development can change attitudes, develop skills, and increase self-confidence in research use, as well as change practice (Anders and Richardson, 1991; Vulliamy and Webb, 1992; Adams, 1993; Duncan, 1993; Barta, 1995; Lacey, 1996; Turner and Whitfield, 1997; Kajermo, *et al.*, 1998; Parahoo, 2000; Parahoo, *et al.*, 2000; Tsai, 2000; Meerah, *et al.*, 2001;). Empirical evidence has indicated that the impact of research depends on users valuing research, and on their ability to critique and

apply research evidence (DETYA, 2000). Research from the education sector confirms that users of research may also need more sustained opportunities to link their understanding of research to their experience (Zeuli, 1994).

In the healthcare sector researchers have speculated on the benefits of development and training as a key approach to facilitating research use (Barta, 1995; Michel and Sneed, 1995; Lacey, 1996; Turner and Whitfield, 1997; Kajermo, *et al.*, 1998; Parahoo, *et al.*, 2000; Tsai, 2000; Parahoo, 2000). For example, Parahoo (2000) argued for greater empowerment and the need to promote a culture in which users (nurses) recognised the need for improved knowledge and skills.

Research findings have shown that those using research literature were frequently doing so in the context of academic study. For example, a study of managers in the US and Australian education sector [principals] by Saha *et al.* (1995) and Biddle and Saha (2000) concluded that post-graduate training had contributed towards raising a principal's regard for research knowledge. Further evidence from a UK case study by Wilson *et al.*, (2003) described how managers in the public sector had developed their positive attitudes and their skills through clearly targeted professional development activities, such as a university masters programme. The authors provided an example of a Masters programme jointly developed by a Higher Education Institution (HEI) and the Local Authority (LA). The aim was for the LA to work in partnership with a HEI to focus on specific teaching and learning issues which were on the national agenda. The programme attracted increasingly large numbers of principals and teachers who: engaged

in their own research; viewed research as a benefit rather than a threat; and created a critical mass of senior and middle managers in education who engaged with and used research. For many managers, this engagement with research as part of a Masters programme enabled them to cross the divide from practitioner, to user-researcher.

Collaboration, partnerships and links

Authors in the education field have frequently speculated that collaborative approaches, partnerships or links, and involving users in research are the keys to greater research utilisation in the public sector (Cousins and Simon, 1991; Turnbull, 1992; Bostrum and Suter, 1993; Zeuli and Tiezzi, 1993; Closs and Cheater, 1994; Kershner *et al.*, 1998; Wenger, 1998; Hagger and McIntyre, 2000; Hannan, *et al.*, 2000; Mortimore, 2000; Percy-Smith *et al* 2002; Wenger, *et al.*, 2002). Evidence from the public sector also suggested that “the development of communication networks, and links between researchers and practitioners, and greater involvement of practitioners in the research process, have emerged as strategies for improving research impact” (Hemsley-Brown and Sharp, 2003 p.461). Based on the results of an empirical study Wilson *et al.*, (2003 p.29) also recommended that “partnership working” such as “seeking opportunities for professional researchers to work with users”, was one approach that could be adopted successfully. Mechanisms such as collaborative approaches, the greater involvement of users, and strong links between managers and researchers tended to facilitate mutual trust. Mutual trust allowed researchers to develop personal rapport with users and to feel a greater stake in the manager’s performance in the business sector (Zaltman, and Moorman, 1988; Hanjoon, and Chankon, 1994).

Louis (1996) has challenged some of the traditional theories of knowledge-use and argued that knowledge was not usable until it had been socially processed through collective discussion and agreement on its validity and applicability. Her paper argued that current models are inadequate as a way of explaining dissemination and knowledge utilisation in education, despite the call for greater involvement of users and demands for researchers to disseminate their findings more effectively.

Louis noted the recent move to involve practitioners in setting some research agendas, however, she contradicted Huberman (1990) by claiming that research evidence showed that involving users did not necessarily make the research more useable – except among those who had been directly involved. She argued that extensive involvement of practitioners as researchers should occur for its own direct benefits, and not because it improved the possibility of wider dissemination and utilization. The main barriers to knowledge use in the public sector, she concluded were not at the level of individual resistance but lay in an institutionalised organisational culture that did not facilitate learning through the use of research. In common with Walter *et al.*, (2003b) she suggested that effective dissemination of ideas can be facilitated through the identification and use of opinion leaders, who were accepted as such by their peers.

Dissemination strategies

Poor dissemination was often cited as the reason why management research was not consumed by practitioners (Willmott, 1994). There has been much discussion about approaches to the dissemination of research findings in management and other fields

(Louis, *et al.*, 1988; Winter, 1990; Bassett, 1992; Leimu, 1992; Louis, 1992; Boostrom *et al.*, 1993; Huberman, 1993; Klein, 1993a 1993b; Maccoll and White, 1996; Hillage, *et al.*, 1998; Le May *et al.*, 1998; Rumsey, 1998; Schmitt, 1999; NCDDR, 2000; Nutley and Davies, 2000; Tierney, 2000; Pinkowitz, 2002). Kelemen and Bansal (2002) speculated that management researchers needed to not only develop theories, but disseminate management knowledge more successfully by targeting both academics and practitioners.

Probably one of the most important developments in defining a theory of dissemination is the increased focus on the social processes related to dissemination (Louis and Jones, 2001). Rogers (1995) presented a comprehensive analysis of the way new ideas are disseminated and adopted by users, based on research carried out in the US. Rogers's diffusion of innovations model has been widely acknowledged as making a significant contribution to understanding of the dissemination of new ideas and has attracted considerable interest recently in the context of research utilisation (see for example Kanefsky, 2001; Nutley and Davies, 2000). Based on the findings from a number of longitudinal studies of agriculture, manufacturing, health education and technology, the author made the following recommendation for effective 'diffusion' of innovations: identify opinion leaders and concentrate change agents' contacts on them to activate their peer networks. Rogers also discussed the notion of social marketing which he claimed, aims 'to change behaviour in directions desired by the individuals who are impeded by inertia or other resistances' (Rogers, 1995 p 83).

Nutley *et al.*, (2002b), however, examined Roger's (1995) diffusion of innovations model and concluded that there was a paucity of research recent evidence on effectiveness of diffusion strategies in the context of dissemination of research knowledge. They also cited a literature review by Bero *et al.*, (1998) who found that passive dissemination of information such as articles in professional journals or the mailing of materials were generally ineffective and only resulted only in small changes in practice. Nutley *et al.*, (2002a) also commented that many of the activities surrounding evidence-based practice were not in themselves evidence-based.

In a review of international research evidence on dissemination practices across several countries, Louis (1992) argued that although there was much criticism of research on the basis of its relevance to the interests of practitioners and users, she concluded, that good practice in dissemination of research evidence should be driven by researchers, rather than users. She found that systems driven by users tended to be based on delivering a single message to a mass audience – a “one-size-fits-all” approach whereas research evidence suggests that this approach was unlikely to be successful. Strategies are needed that take into account the needs of a variety of users, and target specific groups, as opposed to targeting a mass audience with a single message. Increased networking has been recommended as a way of improving dissemination, especially during periods of rapid change because sharing of information was facilitated, research knowledge could be interpreted to meet unique settings, and research impact was increased (Rogers, 1995; Louis, 1992; Kershner, *et al.*, 1998; Wilson *et al.*, 2003). Strategies for more effective dissemination, therefore, are frequently discussed in the context of social marketing

(Rogers, 1995). This has been advocated by the authors on the basis that dissemination should meet the needs of the users and there is a need to create a demand for information (Cousins and Leithwood, 1993; Hemsley-Brown and Sharp, 2003).

Communication networks

A number of studies in the use of research in education and healthcare, concluded that networks to increase communication between researchers and users was an effective approach to facilitating research use (Kershner, *et al.*, 1998; Wenger, 1998; Wenger, *et al.*, 2002; Hemsley-Brown and Sharp, 2003; Wilson *et al.*, 2003). An empirical study of “good practice” in research use by managers in education conducted in the UK (Wilson *et al.*, 2003) found that “there was a great deal of networking and sharing of expertise” and a number of successful projects were based on encouraging the sharing of information. They recommended strategies for “building a critical mass of managers” who had experience of using research (Wilson *et al.*, 2003 pp.19-20).

These findings support Wenger *et al.*, (2002) who also argued that the building of networks led to communities of practice – that is “groups of people who shared a concern, a set of problems, and who share their knowledge” (Wenger *et al.*, 2002 p.4). They indicated that communities of practice cannot be cultivated in the same way as developing traditional organizational structures and claimed that design and development was more about “fostering collaboration and participation, than about planning, directing and organizing activities” (Wenger *et al.*, 2002 p.13). They argued that managers needed to understand and promote the kind of social structure within the organisation that can

take responsibility for fostering learning, developing competencies and managing knowledge. This suggests the need for strong leadership which also emerged as a key facilitator in the use of research.

Leadership

Leadership emerged as a key factor in facilitating research use by managers from three reviews of literature (Heller and Arozullah, 2000; Walter, *et al.*, 2003b Wilson *et al.*, 2003). Heller and Arozullah's (2000) review (cited by Walter, *et al.*, 2003b) highlighted the importance of four key features to successful organisational strategies: strong and committed organisational leadership; appropriately defined goals; a facilitative infrastructure; and the means to integrate changes into everyday practice. Leadership support needed to be provided at a sufficiently high level – “strong and visible leadership”, helped provide motivation, authority and organisational integration (Walter, *et al.*, 2003b p.30)

In the management of education further support for the importance of leadership in facilitating the use of research was provided by Wilson *et al.*, (2003 p.viii) who claimed that it was important to “ensure that someone took on a leadership role in encouraging the use of research”, especially in the early stages of the change process. They also highlighted the need to establish an evidence-informed culture that encouraged reflection and criticism of existing practices together with opportunities to share experiences and outcomes. Managers surveyed (Wilson *et al.*, 2003 p.18) argued that “leadership was

important and inspirational and had won the hearts and minds” of many of those involved in projects to increase research use.

Discussion and conclusion

Critical analysis of the findings from this cross-sector literature review, suggests that there are a number of barriers to research use that are common to managers in both the private and public sectors: access to research; the relevance of research; organisational settings, and the gap between research and practice.

Access to research, and the problems associated with gaining easy access to relevant research findings was identified as a barrier in education, health and the business sector. Authors have frequently recommended that research findings should be more accessible but for ideas to be accessible researchers may need to “market their knowledge” to the practitioner community “as well as the research community” (Hemsley-Brown and Sharp, 2003).

Criticism of the relevance of research was a key factor which emerged from cross sector reviews, and was perceived to be a barrier to research use by managers in both the public sector (healthcare and education) and in the business sector. However, criticism of ‘relevance’ and ‘access’ are too complex to address in this paper. There has been considerable debate about purpose and scope of management research, which broadly revolve around its fragmentation and its applied nature (Tranfield and Starkey, 1998). Therefore, to make recommendations about the best ways to ensure that management

research is “relevant” would reduce the discussion to a naively simplistic level. Nonetheless, there were examples of ways that practitioners and managers had been able to “use” management research and find it “relevant”, for example by studying for a Masters level degree and by building collaborative networks.

Third, the notion of a gap (e.g. Deshpande and Zaltman, 1982; Huberman, 1990; 1993) between the aims of researchers and the needs of users of research was also clear across all sectors, and in education particularly, evidence from research which has indicated that there is also tension between users and researchers (e.g. DETYA, 2000), which was attributed to differences in their goals. User-managers for example, tended to focus on solving problems and were more likely to be seeking solutions to operational matters (Hemsley-Brown and Sharp, 2003). Researchers, on the other hand, are characterised as seeking new knowledge for its own sake, and are frequently driven by a different agenda from users. There has been much debate concerning the best strategies for addressing the researcher-user gap and the evidence appears to suggest that when researchers and users collaborate, develop networks for communication, and there is greater involvement of users in the design and conduct of the research, the impact of research and utilisation of research can be increased. Across all sectors the factors associated with the organisational setting were also consistently identified as strong barriers to the development of a culture of research use, where managers might value research as a way of reducing risk in decision-making. Based on this approach, the notion of a collaborative community of researchers and user-managers has also been suggested and discussed at length by Wenger, *et al.*, 2002 through the notion of ‘communities of

practice'. There is evidence that the gap can be reduced through education and training, and a change of culture can be encouraged, whereby, managers themselves become researchers (researcher-managers) and, therefore, cross the researcher user divide.

One key barrier – insufficient time to access research – emerged as a strong barrier to research use in the public sector (Wilson, *et al.*, 2003). Those in education often challenge the validity of the research, and claimed that their unique situations invalidated the application of its findings (Hemsley-Brown and Sharp, 2002). In the public sector, there was also some empirical evidence of successful strategies to overcome these barriers. Support and training was identified as a key facilitator for greater research utilisation and evidence indicates that greater use of research by managers had frequently been prompted by opportunities to cross the “gap” and become a user through involvement as a researcher. Findings also indicated that one of the keys to facilitating greater use of research is the involvement of users through networking and collaborative activities, whereby the research can become more “relevant” to the individual and they found the time to focus on accessing and sharing research within a more collaborative environment. Such initiatives which often involved collaborative learning and sharing of ideas appeared to have increased research use among managers and practitioners. A collaborative approach might also help to address the mistrust in research findings, identified as a key barrier to research use in the business sector.

To facilitate research use in the public sector, there is also need to provide “strong and visible leadership” (Walter *et al.*, 2003b p.30) to create and develop an organisational

culture that values learning and values the insight that research provides. A learning culture can be developed through advanced education and training; colleague support networks; and employing a critical mass of people with research skills to act as role models (Wilson *et al.*, 2003). The challenge is to bring about a cultural change which supports and facilitates the development of professional expertise (Hammersley and Scarth, 1993).

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