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The growing (but still limited) importance of evidence in education policy and practice

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Abstract The last decade of education change has been characterized by the rise of evidence-based policy and practice agendas. Internationally, we are witnessing efforts to increase and incorporate research use in public services. This article examines efforts in education to address the research–practice gap through an emerging field we term knowledge mobilization (KM). We explore some of the controversy surrounding the use of 'evidence', outline national and international KM initiatives and consider some of the issues and challenges that arise from the increased interest in evidence and research use in education. We also assess the current state and desirable future directions of efforts to strengthen the role of research and evidence in education.

Keywords Education · Evidence · Evidence-based decision making · Knowledge mobilization · Research use · Research impact

Introduction

One feature that distinguishes education change in the last decade from previous waves of reform has been a growing interest in the ways that research evidence is incorporated into policy and practice. In this paper we discuss the growth of interest

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and activity in this area—which we call 'knowledge mobilization' (KM). We outline some of the controversies around the role of evidence, discuss recent developments to increase KM work, and assess the current state and desirable future directions of efforts to strengthen the role of research and evidence in education.

Growing interest in research and evidence

Around the world we are witnessing increasing efforts to have public policy and practice guided by evidence derived from research. This development is true not only in education but other public services as well such as health and criminal justice where the pressure for 'evidence-based decision making' (EBDM)[1] and evidence-based or evidence-informed policy and practice have become primary concerns (Davies et al. 2000; Nutley et al. 2007). Health care has probably been the leading area in which the relationship between evidence and practice has been both advocated and studied (Lavis et al. 2003a; Lemieux-Charles and Champagne 2004) but many efforts have also been made in education, as described more fully a little later.

The push for greater use of evidence in public affairs has many roots (Levin 2004). Davies et al. (2000) maintain:

> This rise in the role of evidence in policy and practice is the result of a number of factors, which include: the growth of an increasingly well-educated and well-informed public; the explosion in the availability of data of all types, fuelled by developments in information technology (IT); the growth in size and capabilities of the research community; an increasing emphasis on productivity and international competitiveness, and an increasing emphasis on scrutiny and accountability in the government (p. 2).

The rationale for the use of evidence is obvious. Using research evidence should lead to more informed policy, higher-quality decisions, more effective practices, and, in turn, improved outcomes. As has been demonstrated many times in various areas of social policy, when practices based on custom or ideology are replaced with practices based on evidence, better results follow. The examples are so many as to be almost unnecessary, and go back centuries to the use of citrus fruits to prevent scurvy, the importance of washing hands in preventing infection in medical care, the influence of clean drinking water on public health, the ability of disabled children to benefit from public education, and so on.

Still, not everyone agrees that the movement towards greater use of research and evidence is desirable. The EBDM approach has been criticized as "technocratic, seeking to deny or downplay the realities of politics" (Boaz et al. 2008, p. 238). Critics raise a variety of issues. A main issue concerns the criteria used to judge evidence; some are concerned that proponents of evidence have a very narrow view of what is to 'count', and consequently that some kinds of evidence will be used to

[1] We will utilize EBDM, Evidence-based policy and Evidence-based practice interchangeably for the rest of this paper.

replace professional judgment and experience. A similar concern is the appropriate balance between large-scale evidence and local contexts, diversity and complexities. Others lament that evidence and the language of research are often political strategies that give the illusion of authority, objectivity and legitimacy to policy choices (Neylan 2008). All of these concerns are around limitations in moving from research findings to practical applications, in part because of limited capacity for genuine engagement and interaction between research, policy and practice. In this regard, some critics highlight the paradoxical lack of evidence showing that the use of evidence improves outcomes (Lemieux-Charles and Champagne 2004)!

In our view, most of the critics are confusing means and ends. It is virtually impossible for a reasonable person to disagree with the idea that policy and practice should be based on the best available evidence. Indeed, the critics themselves are advancing evidence in support of their own positions, and are also advocating the use of evidence to inform policy and practice in other areas of importance to them. The critics' real objections are not to the use of evidence itself, but to particular ways in which evidence is being defined or used, especially to what is seen as the rhetorical use of evidence to justify positions that are felt to be based on ideology. For example, many of the objections to the science-based provisions of the No Child Left Behind legislation in the US were because the definition of evidence was quite narrow and excluded many kinds of evidence that critics thought were reasonable and ought to be included. Other critics fear that the use of test scores or evaluations of particular interventions will override the professional knowledge and judgment of educators.

These are all legitimate concerns. It's easy to cite examples of the disingenuous use of research to support pre-existing positions, or of a narrow-minded application of research yielding proposals that cannot work or should not be implemented in practice. Evidence and values are inextricably connected, so the idea that 'research' will unambiguously reveal the truth or right course of action in all circumstances clearly involves an unwarranted optimism. But to admit that research is not objective in some kind of final sense, or that truth is not a once-and-for-all state does not mean descending into a relativism that accords all views the same warrant. Indeed, it is impossible to live as a strict relativist, since if one view is as good as another there is no basis for preferring one idea or course of action over another, and one would be reduced to total paralysis in a world that constantly requires decisions and actions. As Stone (2002) reminds us "to call for a measurement or survey of something is to take the first step in promoting change" (p. 168). Evidence can be inclusive of a range of perspectives, methods and forms of information, including integrating evidence and professional knowledge. Accepting that evidence is given meaning through larger social and political processes should not diminish its potential value then to inform decisions about policy and practice.

The entire process of knowledge development, whether in science or any other field, involves a necessary contradiction in which one believes that current knowledge is a sound basis for action while simultaneously being skeptical about it and always looking for new evidence that might either confirm or deny one's beliefs. Indeed, a commitment to continuous improvement necessitates drawing on existing evidence and developing an 'inquiry habit of mind' (Earl and Katz 2006) to

support new learning and improved practices. There is no doubt that things we firmly believe today will turn out to be quite wrong. Yet we are still required to act today on the best available grounds, and research, for all its imperfections, seems preferable to tradition or intuition as the basis for public policy and practice, and we seem to have many instances where more use of evidence would be to our benefit (Pfeffer and Sutton 2000). So the effective use of evidence will remain an important issue.

Growing efforts to share and use research

There have been numerous developments internationally which reflect the increasing interest in evidence-based policy and practice. These developments have been in academia and in the world of education policy and practice. They include the rise of a new field of inquiry that we call Knowledge Mobilization, the creation of new institutions, support for changes in policy processes, and the establishment of international networks and partnerships.

In the academy, as interest has grown in the last decade in strengthening the relationships between research evidence, policy and practice, the amount of academic inquiry on the topic has mushroomed. This area of study is not entirely new; one can trace work back at least thirty years to Carol Weiss's seven models of research use (1979) and to the related literature on knowledge dissemination (Seashore Louis 1992) and the spread of innovation (Roger 1995). However KM has exploded in the last decade. New journals have been created, new degree programs are being offered, the literature in terms of articles and books has increased dramatically, and many conferences are held all around themes of research–practice connections. Researchers working on related issues are increasingly connected, both within and across home disciplines. A Google search today using 'research practice schools' will turn up more than 20 million hits!

Universities, as the single largest producers of research in education, are slowly recognizing the need to do more to promote understanding and use of their research. Some universities are increasing their efforts in the social sciences to be somewhat more akin to technology transfer work in the sciences. They are renewing their websites with more research information including audio and video and trying to build more bridges with the larger education sector. Many universities are producing research newsletters of various kinds—print and electronic—or making more effort to include research results in other communications. However, as noted later, these efforts are still too few and too unsystematic.

One of the most important realizations about knowledge mobilization is the powerful role played by third parties of various kinds. Most people, including most professionals, get their knowledge of research not from reading the original studies, but through various mediating processes. These include professional development events, the work and publications of professional associations, materials provided by lobby groups of various kinds, the transmission of research through people's places of employment and, significantly, the mass and trade media. The role of these organizations has been changing, and new ones are coming onto the scene with specific mandates around connecting research to practice and policy.

National and international initiatives

Governments in many countries have been main players in the development of this work, both rhetorically and in terms of resource allocation and infrastructure for knowledge mobilization. Government policy documents in many countries now make explicit mention of the importance of research in formulating policy. Governments have also created and supported third party organizations dedicated to knowledge mobilization and many of these also support networks of different kinds.

The United Kingdom

In many ways, the UK has been a front runner in the field of knowledge mobilization, especially in the early years of the Blair government. In 1999, a white paper entitled *Modernizing Government* (Cabinet Office 1999) explicitly stated the government's commitment to evidence-based decision making.

There have been considerable changes in funding and resource allocations that illustrate this governmental priority. The National Education Research Forum was set up and did considerable work to increase awareness and activity around research–practice links. Three new research centers were created with governmental funding in 1999–2000: Center for the Economics of Education, Centre for the Wider Benefits of Learning, and the Evidence for Policy and Practice Information and Co-ordinating Centre (EPPI Centre). The Teacher Learning Research Program supported substantial work on how teachers use research in their practice.

Solesbury, in (2001), thought evidence based policy was *a particularly British* affair stating that "the underlying generic issue of how research and policy can better relate is debated in other countries but the concept of evidence-based policy and practice has not entered into political discourse in other European and North American states" (pp. 6–7). That is certainly not the case eight years later, if it was even then, as many evidence-based policy and practice initiatives can be seen in North America and Europe. Still, UK writers such as Nutley and colleagues (2007), Davies (2004), Oakley (2004), Sebba (2004, 2007) and Cordingley (www.curree.co.uk) remain among the most prominent international scholars on these issues.

The United States and Canada

The United States has also been focusing on linking research evidence and policy and practice, but with considerable controversy around how to do so. Seashore Louis (2005) advocates a reconnection between knowledge utilization and school improvement research. Some US evidence illustrates how school districts are struggling with the complexity and implications of EBDM (Honig and Coburn 2008). The US has a long history of funding of what were originally called regional 'research and development labs', which were supposed to connect research with practitioners. These centres have been changed in a variety of ways over the years, but several, such as Mid-Continent Research for Education and Learning (MCREL), WestEd, or SEDL (formerly the SouthWest Regional Education Development Lab)

continue to operate as interesting mixtures of research, dissemination and implementation. A number of US universities also operate what might be called 'knowledge mobilization' services of one kind or another, in which they make efforts to connect research to policy and practice. Many of these national or regional centres are linked through Knowledge Alliance (www.knowledgeall.com).

The US also has a rich tradition of third party organizations deeply involved in research and policy. Some of these are avowedly partisan while others strive to be non-partisan, but all of them conduct or support research in some way, and all of them are actively engaged in trying to make their research visible, valuable, and useful. Advocacy organizations have often been pioneers in establishing new ways of sharing research as, unlike universities, they see this as their primary purpose.

>In 2002, the US federal government established the Institute of Education Sciences (IES) as part of the US Department of Education with the explicit purpose of supporting a more evidence-based approach to education, in accordance with the No Child Left Behind legislation. IES is the latest iteration of many years of US federal policy around research dissemination, but probably the most controversial, because the IES has had a relatively narrow definition of what would count as evidence. IES operates several important KM tools such as its "What Works Clearinghouse", which provides educators, policymakers, researchers, and the public with access to databases, research reports and reviews of effectiveness of interventions including programs, products, practices, and policies (http://ies.ed.gov/ncee/wwc).

Canadian governments have also increased support for evidence-based policy and practice in the last decade. In education this is made more difficult because the federal government plays little or no role in regard to schools (although it does in regard to higher education and research), meaning that there is little national effort or infrastructure. The national research funding councils have all increased their emphasis on research impact, with the Canadian Institutes for Health Research having established an entire 'institute' focused specifically on this issue (http://www.cihr-irsc.gc.ca/).

Several third party organizations have also been created in Canada to address the gap between evidence, policy and practice in education. Some, such as the Canadian Education Association, are venerable while others, including several think tanks with explicit political positions, are much newer. In 2004, the Canadian Council on Learning (CCL) was created to promote and support research to improve all aspects of learning by: "Informing Canadians about the state of learning in Canada; Fostering quality research on learning; Facilitating evidence-based decisions about learning through knowledge exchange to ensure that success stories are shared and repeated; and Becoming Canada's authoritative resource on learning issues" (http://www.ccl-cca.ca/ccl).

Provincial government support for evidence-based policy and practice in education has been more limited, partly because most Canadian provinces are quite small entities. Manitoba has set up the Manitoba Education Research Network (MERN; http://www.mern.ca/) to foster increased sharing and use of research within the province. The Ontario government has a multi-stranded education research strategy with components relating to building research capacity, communication and

collaboration. Examples include the establishment of the Ontario Education Research Panel—OERP/CORE—with about a dozen people from education research, policy and practice perspectives to foster collaboration amongst education stakeholders on research issues. OERP also advises various parties on education research priorities for Ontario and recommends opportunities for increasing the value and use of research. An annual Ontario Research Symposium is held to further foster networking among researchers, policy makers and practitioners on priority topics related to student achievement goals. These initiatives are predicated on a strong belief that partnerships are necessary to improve connections between research, policy and practice in education.

International efforts

Knowledge mobilization is a problem that crosses national boundaries. Obviously, contextual differences across countries exist; however, there are also lessons to be learned. As a result, in addition to national efforts, there has also been increased interest in building international research partnerships. One example is the Campbell Collaboration, set up to provide a social science equivalent to the influential Cochrane Collaboration that has been synthesizing research in medicine for many years. The Campbell Collaboration is focused on three fundamental questions about research evidence (in education, social welfare, and criminal justice): What helps? What harms? Based on what Evidence? (http://www.campbellcollaboration.org). However the Campbell Collaboration has been quite slow to establish itself, in part because of differences among member countries as to what constitutes appropriate evidence for review and synthesis. Whether Campbell will become an important source of good evidence is still an open question.

The European community is also prioritizing evidence based policy and practice. The European Commission has developed a number of programs to build partnerships internationally on research use. The NORFACE (New Opportunities for Research Funding Co-operation in Europe) network is comprised of research councils for the social sciences from about a dozen countries and has organized an international seminar series aimed at utilizing research and evidence in the policy process (http://www.crfr.ac.uk/norface/index.html). The European Network of Education Councils (EUNEC), established in 1999, allows European education councils (which act as advisors to governments) to collaborate on educational policy and practice. EUNEC also seeks to determine common standpoints on education policy of the European Union (http://www.eunec.eu).

Several international organizations, such as the Organisation for Economic Co-operation and Development (OECD) and the World Bank have also given considerable attention to research mobilization issues. Both organizations have produced analyses and reports on the importance of linking research to policy and practice (e.g. OECD 2007).

Many more instances could be cited, but this discussion should make it evident just how much work is being done to try to strengthen research–policy–practice links in education around the world.

What impact is this work having?

Given all the efforts to improve research communication and use, what do we know about the results? The short answer is, not much yet. Many researchers and research institutions still have no organized approach to making their work readily available. Most universities, for example, do not even have anything resembling a workable directory of current or recent research that is publicly available. The more impressive efforts to share work have occurred among organizations with an explicit KM mandate, such as think tanks and lobby groups. There is some evidence that awareness of and interest in research has increased among professionals (Nutley et al. 2007) and in the public (e.g., Landry et al. 2001). Many KM type websites, for example, get huge numbers of hits—though many others get almost no attention at all. Certainly access to what used to be called 'fugitive literature', such as the reports of governments or non-governmental organizations (NGOs), has been improved enormously through electronic communications. However, when one looks across education, it is hard to feel that research, practice and policy are connected nearly as well as they might be. Furthermore, building KM capacity to apply research involves going beyond simply disseminating research reports to fostering sustained interaction and collaboration.

Issues and challenges

The hum of activity around KM is not without problems and challenges. The next section of this paper describes some of the main challenges. First, the field of knowledge mobilization is inadequately conceptualized. This is largely because there is very little empirical evidence on most of the issues; the discussion of evidence-based policy is itself not based on good evidence! It is especially noteworthy that very little is known about how practice organizations, whether governments or schools and school systems, find, share and use research. The lack of good research tools for this purpose is a particular problem. Many studies contend that changing practice is often a result of the interactions of informal teacher networks (NCSL 2005a, b). Finally, although a great deal of activity is taking place, as just outlined, little assessment of these efforts is occurring, so we do not know which of them are having a good effect. Conceptualizations of the relationship between research and practice remain under developed. The most complete current discussion of the range of issues involved in thinking about research–practice relationships is in Nutley et al. 2007.

As is typical in a newly emerging field of study, many different terms are being used, including the old word dissemination, and newer competitors such as knowledge translation (Graham et al. 2006), knowledge transfer (Lavis et al. 2003b), knowledge management (Syed-Ihksan and Rowland 2004), knowledge exchange (Levesque et al. 2007), and knowledge brokering (CHSRF n.d.), or, most recently, 'knowledge interaction' (Davies et al. 2008).

We prefer to use the term 'knowledge mobilization', because it best embodies the idea that the use of knowledge is a social process, not just an intellectual task, and as such is multidirectional, not just a matter of moving information from those that

know to those that do not. At the same time, 'mobilization' implies effort and direction, not just random interaction. There are multiple, iterative phases including the generation of new research when needed, the communication and application of established research knowledge, and the contextualization of research to suit particular environments.

One can quibble forever about terminology, but it is not just terms that vary, but also the conceptualizations that underlie them. Quite a few different frameworks have been proposed to explain the relationships, or lack of them, between research and practice. A number of these culled from various sources are available at www.oise.utoronto.rspe/resources/, and others are discussed in Nutley et al. (2007) and in Susawad (2007). Most models have some common features; almost all recognize that the relationship involves the production of research, largely done in academic institutions, the application of research, which largely takes place in service organizations, and a variety of links or moderators that lie between these two quite different contexts. Most discussions recognize that all three of these elements are important—that is, characteristics of the research, characteristics of the sites where research use is wanted, and characteristics of the linkages (or absence of the same) between the two. However within this frame the various models differ significantly in the factors they include and the weights they give them. This is partly the nature of theoretical discourse, in which competing models are put forward (as they should be) by various scholars. However in the field of KM the challenge is also in part because the models are developed in different fields of study (education, health, development) and the links across disciplines are inadequate. Despite growing interdisciplinary work, it is still the case that many scholars are unaware of quite relevant work in other countries or disciplines.

All the key terms in the discussion—'knowledge,' 'research,' 'use'—are also problematic. What is to count as knowledge or research, and what is to count as use or application? Does knowledge of findings constitute 'use' even if this knowledge is not put into practice? Nutley et al. (2007), for example, indicate a continuum of use stretching from conceptual 'use', such as awareness raising, through to instrumental uses for adaptations to practice. And it seems that moving ideas into practice requires a rather different kind of knowledge, and a different way of using it. The knowledge of what to do is different from the knowledge of how to get it done, but both are critical to stronger research-practice connections.

It is no surprise to learn that the literature, mostly written by academics, tends to pay more attention to the creation of knowledge than to the way it is actually used in organizations. Much more has been written about how research practices might be improved through such means as better dissemination vehicles, use of new media, or partnerships with schools. Much less work has been done on the ways in which educators find, share and use research (for some exceptions see Biddle and Saha 2002; DETYA 2000). So we still understand very little about the ways in which knowledge penetrates organizational thinking and practice. We do know that very few organizations in education, whether schools, districts, or state agencies, have much if any dedicated capacity for supporting research use or knowledge mobilization (Honig and Coburn 2008). It tends to be something people do on top of everything else—which usually means that it gets less priority than it needs.

The empirical research base on the work of third party agencies or mediators is also thin (e.g. Greenhalgh et al. 2004). Studies (e.g., Datnow and Honig 2008; Sin 2008) are just beginning to explore what kinds of intermediary agencies exist, what they do, how they do it and to what effect. This role is often referred to as knowledge brokering. Knowledge brokers "can be individuals or organizations that bridge the evidence and policy/practice divide" (Sin 2008, p. 86). Knowledge brokers often connect educational stakeholders, such as researchers, policy-makers and practitioners. While distinctions between 'research', 'policy' and 'practice' can be useful conceptually, individuals often combine these roles and many organizations span these boundaries.

Nutley et al. (2007) list a variety of knowledge brokers including "charitable foundations, different kinds of research centres, government agencies, bridging organizations, professional organizations and individual researchers" (p. 63). Diverse types of intermediaries can have very different roles depending on their mandate. Sin (2008) has suggested that consultancy approaches from the private sector may be another important avenue with resources and ideas that could aid in mediating processes. Like everything else, the benefits of using third party organizations should be considered alongside the pitfalls. Honig (2004) emphasizes the unique challenges intermediary organizations face due to their inherent dependency on other parties to fulfill their central functions. More research on this interesting and largely untapped area is needed.

When the empirical literature related to knowledge mobilization is examined, the problem of research tools and approaches emerges. Much of the empirical evidence on research use is based on surveys or interviews. Yet there is good reason to think that these tools cannot give the full picture needed of how people's thinking and practice change in the face of new evidence, since people are often not themselves aware of these processes. Moreover, organizational practice is social—that is, deeply shaped by colleagues and contexts—so inquiry that focuses on individuals will tend to miss the powerful influence of norms and cultures on what people believe and so, the question of how to improve research methods in this area is an important one, though space here does not permit more discussion of it.

One further barrier to knowing more about the effects of research is the lack of evaluation of all the current efforts described earlier in this paper. As noted, our tools for assessing the impact of all our efforts to share research or have it influence practice are primitive, so little is known about what happens when research is reported in various forms on websites, when it is presented at professional development events, or when it is discussed by learning groups. All of these areas need more research, using more sophisticated methods than simply asking people.

Conclusion: What next?

All signs suggest that research will play an increasingly important role in education. One has to be reasonable in assessing what that might mean (Levin 2008). Policy choices will continue to be driven in large part by factors other than research, such as political pressures and feasibility constraints. Practices will continue to be based

to a large extent on history, tradition and convenience. Those are necessary features of human organizations, and history also tells us that current research is not always the best guide to action. Nonetheless, the importance of research evidence is growing in education and is likely to continue to do so, particularly given increasing public expectations for high quality public education alongside resource constraints that promote identification and implementation of effective practices.

That development suggests three important areas of action:

First, strengthen research efforts related to knowledge mobilization in line with the suggestions above. More research is needed, but it also has to be better organized and coordinated, in programs of research across countries and disciplines. Better research tools are required, and research should pay attention to the take-up of ideas and practices, not just to their generation.

Second, research producing organizations, especially universities, should do more active KM work. Institutional capacity and infrastructure to support the effective sharing of research would benefit universities as well as the education system more broadly, and would also provide more fertile ground for the research efforts already mentioned.

Third, the organizations that actually deliver education require more capacity to find, share, understand, and use research. Until schools and school systems have more capacity in these areas, even the best research will have little impact. Universities, too, generally lack the capacity to apply research to their own practice. Intermediary organizations have a critical role to play in mediating these KM processes in the future.

This is an ambitious, but also an exciting agenda. There are grounds for thinking that the requisite efforts can be made. Interest exists at all levels, more people are working on these issues, and policy-makers are increasingly interested in the contribution research can make. While much remains to be learned about effective education policy and practice, it is also likely that important gains in effectiveness could be made simply by better and more consistent use of what is already known. The last 10 years of work on research in education have been quite exciting; the next ten should be even more so.

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