

Adoption by policy makers of knowledge from educational research: An alternative perspective

Chris Brown

Institute of Education, University of London

The phrase knowledge adoption refers to the ways in which policymakers take up and use evidence. Whilst frameworks and models have been put forward to explain knowledge adoption activity, this paper argues that current approaches are flawed and do not address the complexities affecting the successful realisation of knowledge-adoption efforts. Within the paper, existing models are engaged with and critiqued, and an alternative perspective presented. It is argued that this new take on knowledge adoption provides a more effective account of the process. The paper also illustrates how this model has been tested and what its implications are for educational policy development.

Introduction

The process of 'evidence-informed policy making' has been defined by Davies (2004, p.5) as "an approach that helps people make well informed decisions about policies, programmes and projects by putting the best available evidence from research at the heart of policy development and implementation". It has been suggested that there are a number of key points at which research can assist the policy-making process; for instance, by aiding the identification of a problem, by helping to create, form or steer the public agenda, or by aiding (or inspiring) policy directorates in the development of their initiatives (Nutley, Walter & Davies, 2007; Perry, Amadeo, Fletcher & Walker, 2010; Brown, 2011). The means through which policy makers encounter and engage with evidence has also been conceptualised in a variety of ways. For example, via the notion of 'knowledge exchange', defined by the Canadian Health Services Research Foundation as 'a collaborative problem-solving between researchers and decision makers', or Cooper and Levin's (2010) concept of 'knowledge mobilisation', described as a process of strengthening the connections that exist between research, policy and practice. I use the phrase 'knowledge adoption' (KA) to depict the process, in all its complexity, of policy makers digesting, accepting, and then 'taking on board' research findings, noting their relevance, benefits or future potential (see below and Brown, 2011). I also suggest that researchers' greatest chance of influencing policy is by facilitating a process of KA at those points in the policy process where policy makers will be most receptive to evidence or new ideas.

Extant thinking as to how the KA process might be expressed or most effectively undertaken are set out in a number of frameworks or models. This paper argues, however, that these models fail to address a number of issues that are central to any fundamental conceptualisation of KA or to its successful realisation. For example; that, individually, such models fail to capture fully the complexities of the KA process, that there is no satisfactory over-arching theory that accounts effectively for the process of research adoption and how it might be improved, that existing models fail to reflect the

social nature of KA or the motivations of social actors to engage in such activity, that the models proposed to date do not differentiate between the varying contexts that researchers may find themselves in. Extant models also fail to explicitly differentiate between the myriad of analytical levels at which KA operates. Finally, it is argued that current models omit to differentiate between instrumental and conceptual uses of knowledge.

The aims of this paper, therefore, are to; describe existing models of KA and demonstrate how such models have been substantially critiqued, to illustrate how this critique has necessitated the development of a new model of KA and how this model was derived from a configurative systematic review of existing literature, to show how this model was tested empirically, and to illustrate the implications of the model for the notion of evidence-informed policy making more widely. This paper is derived from a project undertaken between 2009 and 2011. Its focus was: i) to review existing conceptualisations of KA and, in particular, to examine explanatory models of how evidence feeds into the policy making process (specifically with regard to the education sector in England and Wales); and ii) to put forward suggestions for how KA processes might be effectively implemented by researchers, with a view to increasing the use of evidence within policy making.

Methodology: The literature review

The first part of this paper comprises a literature review. Literature was initially searched for in two ways: i) A search of four prominent databases (JSTOR; Academic Search Complete; Web of Knowledge; IngentaConnect) using search terms synonymous with that of 'knowledge exchange'. These included, for example, 'knowledge mobilisation', 'knowledge transfer' and 'knowledge brokering', and were taken from the definitive list provided on The University of Toronto's Research Supporting Practice in Education website [1]; and ii) Recommendations on seminal literature were also sought from (and provided by) colleagues, authors identified from the search above, and experts in the fields of evidence informed policy and KA. The references cited by the authors of these studies were then reviewed. Further literature was also obtained where these references detailed papers that had not been picked up in the first two approaches where these seemed pertinent to the research topic area. Overall, these three approaches to sourcing literature, combined with the screening criteria, resulted in a total of 228 studies being reviewed over a one and a half year period. Further detail on the review may be found in Brown (2011).

Description and critique of existing models derived from current literature

From the literature review it was possible to identify a number of models currently in existence which seek to explain the process of KA, with these being described below. The genealogy of these models illustrates how the perceived drivers of adoption have evolved over time; Mitton, Adair, McKenzie, Patten and Waye-Perry (2007), for example, argue that the concept of 'knowledge transfer' dominated during the 1980s and 90s. This led to early explanations of adoption; for instance, the *Demand Pull*

Model (Weiss, 1979; Yin and Moore, 1988; Rich, 1991), to focus on one-way transfers or pushes of knowledge from researchers to policy-makers (who had specifically requested the research). After its initial development, the notion of 'Demand Pull' was augmented by that of *Producer Push* (Lavis, Robertson, Woodside, McLeod & Abelson., 2003), highlighting the growing perception that active efforts on the part of researchers were also required in order to inform decision-making. KA thus also came to be viewed as a function of researcher engagement with potential audiences and how accessible research messages were made to these audiences (i.e. the ways and means through which research is targeted at users).

The notion that pull and push alone could account for the adoption of knowledge was problematised, however, both by the conceptualisation of the *Enlightenment Model* (Weiss, 1998) and through the development of the *Two Communities Model* (Amara, Ouimet & Landry, 2004). Within the *Enlightenment Model*, for example, KA was conceived not as a consequence of the findings of a single study or a body of knowledge but from the percolation of evidence into the policy-making domain, causing policy-makers to think differently about particular issues over a period of time. The *Two Communities Model*, meanwhile, assumed that a cultural gap exists between policy-makers and practitioners on one hand, and academic researchers on the other. As a consequence, the model advanced the notion that a lack of understanding exists between these 'two communities', leading to low levels of communication (and so KA) between them. Mitton *et al.* (2007) observe that, as a result of the issues raised by both the *Enlightenment* and *Two Communities Models*, later conceptualisations of KA were grounded in the idea that the successful adoption of knowledge requires lengthy interaction rather than one-way conversation. Likewise, Nutley *et al.* (2007) posit that the findings of research do not 'speak for themselves'; they are interpreted and that this happens best through dialogue and engagement. As a result, models such as the *Interaction/Communication* and *Feedback Model* (Dunn, 1980; Yin and Moore, 1988; Nyden and Wiewel, 1992; Oh, 1997; Nutley, Davies, & Walter, 2002; Amara, *et al.*, 2004) and the *Linkage and Exchange Model* (Lavis, Lomas, Hamid & Sewankambo, 2006) were developed to explain KA as a dynamic, two-way process.

At the same time other co-dependent or complementary models, developed in parallel, began to focus on individual aspects of the adoption process. For instance, the *Organisational Interests Model* (Amara *et al.*, 2004) frames the argument that the size of organisations, their structures, the nature of their responsibilities and their needs may affect the propensity of professionals working within them to adopt and utilise or under-utilise research. The *Engineering Model* (Amara *et al.*, 2004) suggests that the effective adoption of research depends on the characteristics of the research findings. These include content attributes (such as compatibility, complexity, observability, trialability, validity, reliability applicability, etc.) and the type of research (basic-theoretical/applied, general/abstract, quantitative/qualitative, particular/concrete, and research domains and disciplines). Best and Holmes (2010), meanwhile, argue that four interconnecting factors: evidence and knowledge, leadership, networks, and communications may best account for how knowledge is turned into action, and that these warrant further exploration.

Rickinson, Sebba and Edwards (2011, p.80), reporting on the seminar series they held on user engagement, also outline a model of KA proposed at the seminars by Nutley. This is depicted in Figure 1, and identifies policymakers as politicians, civil servants and political advisors. It also proposes a range of both intermediaries and brokers through which research findings are translated before reaching those policymakers. Such intermediaries, Rickinson *et al.* note, mean that any translation is also filtered through or slanted by the perspectives of those involved and so made sympathetic to their particular viewpoint(s).

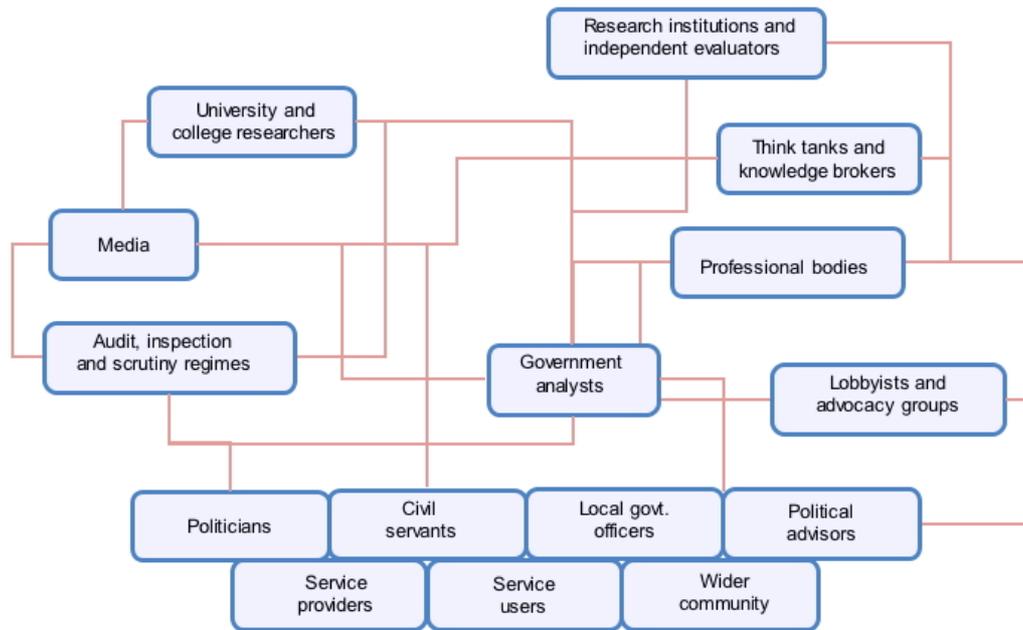


Figure 1: A model of KA proposed by Nutley (cited by Rickinson *et al.*, 2011)

These models have also been subject to substantive critique. For example, the explanatory power of a number of them was tested empirically by Landry, Amara and Lamari (2003) in a survey of 833 Canadian government officials. Landry *et al.* concluded that whilst more interactive factors appear to best explain research adoption [2], overall, the process is far more complex than these existing models might suggest. Estabrooks, Thompson, Lovely, and Hofmeyer too argue that there is currently no satisfactory over-arching theory to explain effective research adoption, with most models tending to focus on "explanation rather than prescription" (2006, p.26). These sentiments echo the work of Wingens (1990) who describes the explanatory power of KA models as 'mediocre' while Cooper, Levin and Campbell (2009) argue that they are conceptually inadequate and fail to reflect the idea that knowledge use is a social process. Finally, Mitton *et al.* (2007, p.756) note that "there is very little evidence that can adequately inform what [KA] strategies work in what contexts".

Further critique of current models

This critique was augmented in Brown (2011) where three additional areas are examined. The first relates to how existing models account for the motivations of social actors to engage in KA activity. One way to consider KA is as being directed towards a goal or purpose (the 'what' of KA); that there will be empirically observable actions geared towards achieving this goal (the 'how' of KA); and specific motivating factors will drive policy makers and researchers to engage in the actions they do (the 'why'). In applying this perspective to existing models, it is clear that they often account for the 'how' and the 'what', but invariably fail to consider the 'why'. For example, the *Demand Pull Model* describes its 'what' as the demand for evidence by policy makers in order to aid in problem solving. No explanation is provided, however, in terms of the reasons why researchers might be motivated to engage in this type of problem-solving behaviour (and conversely, why some are not). The *Interaction/Communication and Feedback Model*, on the other hand, posits that interaction encourages KA. Interaction can be considered a 'how'; i.e., it is something that can be observed and is geared towards a goal. What is missing from the model is an explanation of why policy makers or researchers may wish to interact with each other and so what drives the interactive process. In failing to consider the motivations of policy makers and researchers, these models also fail to account for the sociological nature and so the complexity of the KA process. As such, they also omit to consider a range of potential actions which might enhance the efficacy of its operation; for instance, how participation in KA activity might be better incentivised.

A second point of critique is that current models do not explicitly differentiate between the myriad of analytical levels at which KA operates at or is affected. These include that of the individual policy maker/researcher, of groups or organisations, or at the level of society more broadly. For example, in Nutley's conceptualisation of knowledge transfer (Figure 1, above), it is not clear whether references are made to individual policy makers, government departments, or to both. The same is also true for the other constituent parts of the model. Are references made to individual researchers or universities? Are intermediaries conceptualised as organisations or individual policy actors? This distinction is important, however, because at these different analytical levels, very different factors of influence are likely to come into play. Such factors will range in nature from the specific actions that might be undertaken by researchers and policy makers (as individual communicators of, or audiences for research), to issues of power relations which operate at more macro levels (Foucault, 1980).

Finally, current models of KA fail to differentiate between instrumental and conceptual uses of knowledge. That is, they fail to differentiate between the factors that concern whether policy makers will digest and consider knowledge (their conceptual use of evidence) and those factors which will impact on the actual creation of policy (the instrumental use of evidence). This differential is important since, in a complex, policy-making environment, solely considering conceptual uses of knowledge is likely to lead to researchers developing fundamentally different strategies for KA than those that might affect instrumental (or actual) use. For example, researchers seeking to further conceptual knowledge use might concentrate their efforts on how their research

outputs are communicated. Enhancing instrumental use, on the other hand, may involve researchers spelling out to policy makers how given research can be used to improve a particular policy area.

Factors affecting the success of approaches to KA

As a result of this critique, it is argued that existing models do not provide an effective basis for recommendations as to how researchers might better facilitate KA. Consequently, this lack of pertinent underpinning theory necessitates the development of an alternative perspective on how KA operates and how it might be facilitated. The development of this alternative perspective was subsequently addressed via a thematic analysis of the literature searched for and described above. The thematic analysis was focussed on identifying and grouping together the myriad of factors that affect the KA process. As a result of this approach, two overarching themes were derived. The first encapsulates those factors that directly relate to the research to be adopted and to attempts to communicate research outputs by researchers. The second theme comprises those factors which impact upon how the findings from any given study are likely to be received by its audience. These initial themes are defined as internal and external factors, respectively. The principal implication of this distinction is that: i) Researchers who are interested in informing policy are responsible, not only for managing their research approach and the interpretation of data, but also for (the internal) components which affect how they attempt to communicate their findings to policy makers; and ii) Policy makers, as audiences, meanwhile, are responsible for how evidence is received. The factors that affect reception are external to any given study but will still impact upon whether research messages will be taken on board.

Set out below is a brief summary of these *internal* and *external* factors. More detail about each may be found in Brown (2011). To begin with, the *internal* factors affecting KA are as follows.

1. *The nature of what is communicated:* Lavis *et al.* (2003) argue that, in terms of content, policy makers prefer to be presented with 'ideas' rather than pure data since "decision makers rarely use a regression coefficient to help them solve a particular problem" (2003, p.223). Likewise, it is suggested (Lindblom & Cohen, 1979; Kirst, 2000; Davies 2006; Campbell, Benita, Coates, Davies & Penn, 2007; Moore, Redman, Haines & Todd, 2011) that policy makers are keen to receive 'straightforward' narratives or stories coupled with advice they can understand, with Court and Young maintaining that policy makers can be convinced about a new approach if the story is simple and convincing enough.
2. *Clarity of presentation:* Nutley *et al.* (2007, p.71) argue that "presentation is key: research must be attractive... and visually appealing". In Brown (2009), a number of policy makers I interviewed highlighted *How the world's best performing school systems come out on top*, produced by Barber and Mourshed (and published by McKinsey & Co.) in 2007, as an excellent example of effective presentation [3]. *How the world's best...* is extremely 'stylised' in design and, as a result, it was suggested that the notion of 'clarity in presentation' (the look and feel

of a piece of research), is key to the effective and efficient communication of its findings (ibid). Reports do not necessarily have to take the 'Barber and Mourshed' approach, but there is a requirement for rigorous information that is also easy on the eye (and so, also on the brain).

3. *The efficacy of the communication type*: Early studies such as that of Paisley (1993), suggest that new and emerging methods of communication will only be effective when used in conjunction with face-to-face interaction. This corresponds with the findings of a review by Lavis *et al.* (2003), the views of Levin (2008), Cohn (2006) and with the work of Davies (2006); all of which indicate that passive communication processes (for example, making research findings available via websites) are ineffective, while interactive face-to-face engagements between policy makers and researchers are more likely to lead to research findings being acted upon (Innvaer, Vist, Trommald & Oxman, 2002; Campbell *et al.*, 2007; Moore *et al.*, 2011).
4. *The level of proactivity, contextualisation and tailoring*: Levin (2004) argues that policy makers should be provided with the full range of evidence-informed options for policies. As a result, research findings should therefore be contextualised by and shown to relate to other evidence within the field. In Brown (2009) it is suggested that research contextualisation occurs as part of a wider suite of proactive interactions between government researchers and policy makers. For instance, the majority of government researchers interviewed in that study provided examples of proactively engaging policy makers in order to interest them in the findings of research; for example, through attempts to anticipate or understand the needs of policy makers in a timely way and then tailor and/or position findings so that they had more relevance to a given policy setting or context. Lavis *et al.* (2003) also links contextualisation to the tailoring of content. They conclude that all audiences for a particular piece of evidence, as well as the environments in which they operate and the decisions for which they are responsible, must be well defined and understood in advance of any communication. Any findings to be delivered to that audience should then be suitably tailored.

The *external* factors derived from the literature review are:

1. *Inherent factors that comprise the policy maker's knowledge 'mould'*: (Huberman, 1990; Levin, 2004): Here it is assumed that, ultimately, it is in the gift of policy makers as to which information they digest, or whether they choose to re-examine long-standing viewpoints. The adoption of evidence will thus necessarily depend upon whether those potentially acquiring new knowledge have specific reasons to take on board more information. For example, whether there exists uncertainty amongst policy makers about an issue, whether they feel challenged about certain aspects of a particular problem, or whether they have insufficient existing information in a given subject.

2. *The perceived credibility of the source by the policy maker:* Policy makers' receptiveness to sources of evidence will also be a function of the reputations of those providing the research (Campbell *et al.*, 2007; Court & Young, 2003; Kirst, 2000; Landry *et al.*, 2003; Nutley *et al.*, 2007). The credibility or trustworthiness of the source of any evidence is therefore paramount, with Campbell *et al.* (2007) contending that credibility is a function of a number of factors, including the perceived bias of the researchers. Kirst (2000) also suggests that credibility is a direct result of whether knowledge transmitters are seen to have acknowledged expertise, which might include any previous experience they may have had in working within, or for, government.
3. *The perceived quality of the evidence by the policy maker:* Both Campbell *et al.* (2007) and Nutley *et al.* (2007) suggest that policy makers' perceptions as to the quality of a study will also affect any demand for evidence. The notion that 'quality' can exist as a tightly defined concept that might be easily applied to research has been contested, however, (e.g., see Ball, 1995; Nutley *et al.*, 2007) and it has been argued by some (e.g., Brown, 2011) that more use should be made of Oancea and Furlong's (2007) model of quality. This considers a number of quality assessment criteria, including; methodological and theoretical robustness, use value and timeliness, the reaction to the research by policy makers and practitioners, and the cost effectiveness of the study.
4. *General involvement by policy makers in research studies:* Council for Science and Technology (2008), Moore *et al.* (2011) and Rickinson *et al.*, (2011) suggest that user engagement is crucial to maintaining dialogue and the continuous flow of ideas, ensuring that projects remain relevant and at the forefront of policy makers' thinking. Networks of policy makers, practitioners and researchers are also regarded as an effective way of increasing the demand for research (Gilchrist, 2000; Kirst, 2000; Watson, Townsley & Abbott, 2002; Cooper & Levin, 2010). This is because networks create ongoing social contact and dialogue, which help persuade policy makers of the relevance of the evidence or issues and so increase the chances that research might be used (Nutley *et al.*, 2007).
5. *Access to policy makers:* In the absence of the active involvement of policy makers in research projects, researcher access to them is vital. One example of researchers successfully accessing policy makers is provided by the *Effective Pre-School and Primary Education* (EPPE) project undertaken by Sylva, Taggart, Melhuish, Sammons and Siraj-Blatchford (2007). Here, researchers involved with the study report that supportive organisational structures were established within the (as was) Department for Children Schools and Families (the study's commissioners), and that these structures enabled the study's findings to be communicated to them directly. Davies, Nutley and Smith (2000) note that, in the absence of similar structures, gaining access to policy makers may be problematic, especially if relative differences in status exist between such researchers and those they wish to influence. In addition, Levin (2004) contends that access may be driven by chance and one commonly experienced problem is that researchers are often frustrated in their efforts by not knowing who to attempt to influence.

In addition to the internal and external factors set out above, an additional thematic division of the literature emerged, highlighting two factors which are contextualising; that is, two factors that appear to provide a framework within which the internal and external factors operate. The first contextualising factor is whether the research relates to an idea currently favoured by policy makers (Gladwell, 2000; Kirst, 2000; Landry *et al.*, 2003; Cohn, 2006; Levin, 2008). This is because if a study is situated within, or contributes towards, a concept which policy makers are interested in enshrining as policy, then there is more chance that it will be adopted by policy makers than if it does not (for example, if the study relates to a subject that is lacking in social relevance).

The term 'privileged' researcher was introduced in Brown (2011) to describe any knowledge producer who can quickly and easily access policy makers (either because they work with or are favoured by them) and so encompasses a range of policy actors; for example, government or 'insider' researchers (Brown, 2009), or (previously privileged before 2010) those identified by Ball (2008, p.104) as the "intellectuals of new labour". As a result, it is argued that a second contextualising factor is the strength and nature of the relationship between researchers and policy makers, recognising that this changes over time (Stronach & MacLure, 1997; Rich, 2005; Cohn, 2006; Davies, 2006; Ball, 2008; Exley, 2008; Ball & Exley, 2010). Thus, researchers with strong, possibly ideologically-related ties to policy makers may have certain perceived organisational or sector level salience and so more chance of gaining access to, and having their research considered by, policy makers than those who do not. Whilst related to a number of the external factors above, this contextualising factor can be, and is, differentiated from them. In part this is due to the different relationships it is possible for researchers to have with policy makers; for instance, a researcher may simply be a provider of a contracted piece of research, won via tender process. Alternatively, they may be a trusted advisor and ideological advocate, or openly sympathetic to the government. They may even be the friend of the policy maker concerned. Thus, a researcher may be credible and respected (a vital external factor) but may not have a 'carte blanche' to discuss all and any policy ideas with policy makers. Likewise, there may be in place project related structures which enable researchers to access policy makers with regard to specific findings, but on other topics or areas of research, these same researchers may not have recourse to approach policy makers directly or have their findings treated in the same way.

A third conceptualising factor also emerged but does not explicitly form part of the model detailed in Figure 2 below. This third factor considers the nature of the relationship that is required between policy makers and researchers in order that KA activity might flourish. The main gist of this factor is that successful KA is dependent upon positive actions/strategies being employed by both narrators of, and audiences for, research outputs. In other words, the successful adoption of knowledge requires partnership working between researchers and policy makers, with each being required to play their part in negotiating the internal/external factors set out above. This factor is typified, for example, by the work of Dowling (2005; 2007; 2008; 2008a) who argues that the key phenomena of interest in the social world are the relationships between social actors. In particular, Dowling argues that the strategies employed by social

actors will be invariably geared towards developing partnerships with others or towards preventing their occurrence. This third factor then provides the motivating sociological driver of KA. Building on the work of Dowling, KA is only likely to occur when both researcher and policy maker are actively seeking to engage with one another. This requirement for a combined positive effort, however, also removes the need to further consider this contextualising factor. KA occurs as the result of attempts to establish relationships, as such, any model or conceptualisation of KA can only be based upon the consideration of positive rather than negative actions (where, in the case of the latter, KA cannot be realised).

A new model of research adoption

Having identified these themes and their component factors, they then needed to be combined in a way that successfully explains KA; i.e., in a way that encapsulated the process whilst also accounting for the main critiques of previous models. Because of the nature of the two contextualising factors; i.e., that they provide a framework for the internal and external factors, their role in the process was considered first. From the descriptions provided above, it is posited that each contextualising factor is binary in nature; i.e., either the idea to which the research pertains is favoured or it isn't, and the researcher either has strong ties with policy makers or they don't. Given their context-providing role, viewing these two binary statements as axes provides four possible scenarios for KA. The nature of these scenarios therefore depends on who is communicating the research, and their ties to policy makers, and whether a study does or doesn't relate to an idea currently in favour with policy makers.

It is argued that the complexity of the KA process will vary with each of these four scenarios. This complexity is expressed by differentiating, within each scenario, between those internal and external factors that may be considered crucial to the process and those which are less important. For example, it has been shown that policy makers are most likely to be receptive to research where the underpinning idea is in favour. The crucial factors for a researcher with strong relationships with policy makers to consider in disseminating such research, therefore, are those internal factors associated with its effective communication. The other KA factors detailed above, whilst relevant, are less important because they have been pre-negotiated or dealt with by dint of the researcher/research's position *viz-a-viz* the contextualising factors (this set out in Figure 2 as Scenario 1). The diametrically opposite position (Scenario 4) is considered to be where a researcher with a weak relationship with policy makers is attempting to disseminate knowledge to policy makers where the underpinning research does not relate to ideas currently in favour. Here, as well as the internal factors associated with effective communication, the researcher also has to consider relevant external factors controlled by policy makers; how to situate evidence in order to create a demand for it, how the perceived credibility of the source can be maximised, whether the audience has been engaged in policy networks or other forms of user engagement, how to demonstrate or account for the quality of the evidence, and how to gain access to policy makers. As a result, it is argued that the process of researchers with strong ties to policy makers and disseminating favoured research to them may be considered far less difficult than processes associated with a weakly

connected researcher attempting to inject unfavoured ideas into the policy-making process. In addition, intermediate positions also exist. These scenarios and strategies are set out in full in Figure 2 below:

	Idea currently favoured by UK policy makers	Idea not in favour with UK policy makers
Communicated by those with strong relationships with policy makers	<p>Scenario 1</p> <p>4 crucial factors (i Most effective media; ii Nature of the message; iii Clarity of presentation; iv Proactivity, context and tailoring)</p> <p>5 less important ones: (i Creating demand for research; ii Credibility of the source; iii User engagement?; iv Quality of evidence; v Access to policy makers)</p>	<p>Scenario 2</p> <p>7 crucial factors: (i Most effective media; ii Nature of the message; iii Clarity of presentation; iv Proactivity, context and tailoring; v Creating demand for research; vi User engagement?; vii Quality of evidence)</p> <p>2 less important ones: (i Credibility of the source; ii Access to policy makers)</p>
Communicated by those with weak relationships with policy makers	<p>Scenario 3</p> <p>8 crucial factors: (i Most effective media; ii Nature of the message; iii Clarity of presentation; iv Proactivity, context and tailoring; v User engagement? vi Quality of evidence; vii Credibility of the source; viii Access to policy makers)</p> <p>1 less important one: (Creating demand for research)</p>	<p>Scenario 4</p> <p>9 crucial factors (i Most effective media; ii Nature of the message; iii Clarity of presentation; iv Proactivity, context and tailoring; v Creating demand for research; vi Credibility of the source; vii User engagement?; viii Quality of evidence; ix Access to policy makers)</p>

Figure 2: Factors that affect the adoption of research

It is argued that the model set out in Figure 2 significantly improves upon the way in which the KA process is currently conceived. For example, combining the notion that KA is dependent upon researchers and policy seeking to form partnerships, with the idea that the effective adoption of research is a function of factors which are internal, external and contextualising, provides the 'why' which, up until now, has been missing. Whereas, existing models, such as *Demand pull* or that presented by Nutley in Figure 1, represent knowledge as something adopted/transferred/exchanged through chains or flows; and via mechanics, it can be claimed that this type of representation is concerned solely with process. The model illustrated in Figure 2, on the other hand, represents a different conceptualisation; that knowledge flows can only come into being if policy makers and researchers are motivated to form a relationship with one another and, simultaneously, that their actions must be directed towards achieving KA/overcoming barriers to achieving the adoption of knowledge as an end goal.

The 'how' of KA is also further developed. In representing KA as a function of both internal and external factors, the model illustrates the hurdles that researchers will need to develop successful strategies to negotiate if they are to communicate effectively or disseminate evidence to policy makers, and vice versa for policy makers attempting to act as effective audiences. At the same time, Figure 2 illustrates, should they wish to develop policy without being encumbered with what might be viewed as inconvenient research messages, the ways through which policy makers can seek to undermine any value research evidence might provide. For example, interview data in Brown (2011) revealed that policy makers often promote a 'deficit' model of research; that is, the view that it is researchers alone who are responsible to the failure of any actualisation of evidence-informed policy (Perry *et al.*, 2010). This then means that policy makers can target factors such as the 'quality of the evidence', the 'clarity of presentation', the 'nature of the message', etc., as specific reasons for not taking on board the findings of a given study.

In utilising the first two contextualising factors, Figure 2 also illustrates how the actual communicator of the research and, correspondingly, their position with regard to policy makers has as much a role to play in determining whether KA will occur, as the nature of the research (i.e., whether it relates to an idea currently favoured by policy makers). As such, unlike past models of KA, the model highlights the differences in complexity that accrue depending upon the situation at hand, rather than assuming equality in all situations. Accordingly, it is suggested that KA becomes easier when power is afforded to researchers (i.e., they are privileged and so have strong ties with policy makers) or power is afforded to the idea to which their research pertains. That four scenarios are presented also suggests that the situations researchers and policy makers will find themselves in can change. This reflects comments by Rickinson *et al.* (2011) who note that it may be considered simplistic to see the policy community as homogenous in terms of its likelihood to value or embrace evidence. Similarly, it can also be regarded as simplistic to assume that individual policy makers will treat all research as equally valid and so will adopt all findings, whether or not such research sits within the paradigms of the epistemologies and ideologies which are acceptable to policy makers.

Finally, the model is based on the premise that KA is relationship dependent and, as such, occurs at the level of the individual project/researcher/policy maker (i.e., it is individuals not organisations who adopt or produce research findings). At the same time, however, the complexity of the situation(s) affecting the KA process are determined by more macro factors, such as those existing at an organisational level or by factors which affect the nature of power relations between researchers and policy makers. As a result, this new model sets out the myriad of KA scenarios that researchers and policy makers will encounter, along with the specific issues that need to be considered and negotiated by them in order that KA can be successfully realised.

Methodology: Use of in-depth, semi-structured interviews to further develop the KA model

Because the model was developed through reviewing literature, rather than any empirical engagement, there has also been a requirement to establish its validity with

those involved in KA activity. In order to test and further develop the model, 24 in-depth, semi-structured interviews were subsequently undertaken with policy makers and researchers. In particular, these were designed to establish the face validity of the model (i.e., did it appear to successfully explain the KA process) and to establish the model's conceptual gaps (i.e., how could the model be improved). Those classed as policy makers were either politicians (current or ex-Ministers) or civil servants in central government. Researcher respondents comprised those working for HEIs or think tanks. Whilst a purposeful sample of what Brown and Dowling (1998) term 'critical cases' was selected (i.e., a sample of individuals whose characteristics meant that they corresponded directly to the analytical requirements of the project), care was taken to include both advocates (those who believe that evidence can and should be used to inform policy/those responsible for KA activity) and critics (those who regard the concept of evidence-based policy as undesirable/unfeasible). This provided a wide range of views and opinions from which to draw upon and assess. It also provided a rigorous critique of the study and its resultant conceptual/theoretical development. The distribution of the final participants is presented below (note the number adds to more than the total interviewed as these groups are not mutually exclusive).

Table 1: Distribution of interview participants

Group/view point	Number
Politicians based in England and Wales	2
Civil servants based in England and Wales	4
Researchers considered from the literature, or self identified, as favoured by politicians or civil servants	9
Researchers considered from the literature, or self identified, as less favoured by politicians or civil servants	6
Academic researchers critical of the concept of evidence-informed policy	4
Academic researchers in favour of evidence-informed policy	11
Respondents belonging to think tanks, political advisors or those operating at the higher levels of Davies' (2006) policy-making 'food chain'	3
Total	24

Following the interviews, abductive thematic analysis was employed to identify incipient thought relating to the model and its operation. Mason (2002, p.180) defines 'abductive' analysis as a process through which "theory, data generation and data analysis are developed simultaneously in a dialectical [fashion]". Mason's (2002) approach thus accounts for the way in which themes and codes were derived from the interview data and how they enabled the augmentation of extant literature. Simultaneously, the validity of the findings was established. In particular, Lincoln and Gubba's (1985) technique of 'member-checking' was adopted; this ensured that the study's interpretations and conclusions were thoroughly tested with those who participated. In addition, interpretive rigour was also achieved through the use of

verbatim quotations; an approach which accords with the request made by Fereday and Muir-Cochrane (2006) for transparent 'illustration'. It is argued that both the positive responses received from respondents after assessing the study's findings, combined with the direct reflections of the participants in the reporting of the analysis, add a further level of face validity to the analysis presented below.

Analysis of the interview data

Analysing the interview data enabled the face validity of Figure 2 to be assessed in a number of ways. Firstly, this occurred through respondent's comments; for example, it was agreed that the adoption of knowledge is a two-way interaction and, as one academic researcher noted, "...everybody should take responsibility for their part in the process" (Academic #11). The pivotal importance of each contextualising factor was also confirmed. In discussing the importance of the contextualising factors, one policy maker noted, "...you want people of prestige and reputation" (Civil Servant #6). One think tank interviewee also argued that:

You're judged by the quality of your previous work. If you've had the good ideas in the past, then people are going to come to you in the future.
(Consultancy/think tank #1)

Academics, too, affirmed that the reputation of a knowledge provider and the regard in which they are held, positively affect how policy makers receive their work. As a result, if one is considered reputable, the process of KA becomes simpler. For instance:

People are interested in hearing what I've got to say for two reasons; one – over a period of time I've generated a reputation for knowing a lot and being at the forefront of thinking about education... and two – I think this is important for policy makers-I've actually been there and done it... So those two things, plus my writing knowledge, do mean that Education Ministers or Prime Ministers are interested to speak to me. So, yes, absolutely! (Academic #2)

All respondents also intimated, as suggested by the model, that the factors which need to be negotiated by researchers with strong ties to policy makers are fewer and less complex than those which need to be overcome by those who do not:

I suppose it's the same in any walk of life... you find somebody that you feel is aligned with you and you trust them, and therefore you don't need chapter and verse. (Academic #3)

Again, these comments reflect findings from the initial literature review that 'privileged' or strongly tied researchers have more chance of influencing (or have less barriers to overcome in their attempts at influencing) policy makers than those who are not. Interview data also lent weight to the notion that the level of favour afforded to the evidence in question is vital to such knowledge being adopted. As one academic noted:

The topic has got to be pertinent... something that's very esoteric is unlikely to engage policy makers unless they are very, very unusual. (Academic #10)

In addition, in Brown (2011) the existence of strategies designed to negotiate the contextualising, internal and external factors which form Figure 2 are also identified. As a result, it is contended that KA can be facilitated by the employment of one, all, or any combination of four approaches. These have been described as; academics providing outputs which attempt to meet policy makers' and politicians' specific requirements from research ('policy-ready' strategies), researchers seeking to effectively communicate and/or use effective techniques or channels to promote their research ('promotional' strategies), academics engaging in 'traditional' academic behaviour ('traditional' strategies), academics attempting to shift their relative position with regard to the how 'privileged' they are by policy makers (which affects the ease with which they can access or influence them), or how policy makers perceive the policy context to which their research pertains ('contextual' strategies).

What's more, the use of different combinations of these strategies by respondents also indicates that KA can be regarded as a contextually specific social process. Respondents suggested and also behaved in ways to indicate that different approaches to KA are required in different circumstances. For example, this is illustrated in Brown (2011) by comparing the KA strategies employed by Barber and Mourshed in the production of their 2007 study, *How the world's best...*, to those used by Sylva *et al.* (2007) in promoting the *Effective Pre-School and Primary Education 3-11 longitudinal study*. Overall, then, not only did Figure 2 ring true with interviewees (i.e., it had face validity), but respondents also behaved in ways which suggest that its description of how KA might operate is representative of the social world more generally.

Conclusions

The process of KA and its efficacy should be considered essential precursors to the development of evidence-informed policy. Understanding adoption as a process; how it operates and how efforts in this area can be improved, is vital, both for researchers wishing to influence policy, and for policy makers seeking to improve the efficacy, effectiveness and equitability of their policies (Oxman, Lavis, Lewin & Fretheim, 2009). Within this paper it is argued that existing models of KA fail to fully capture the complexities and social nature of the KA process. This has led to the design of a new way of thinking about KA (through engaging with relevant and recent literature) and testing this new model amongst educational policy makers and researchers in England and Wales.

It is argued that the resulting model represents a clear and distinctive perspective from that provided by existing frameworks. In doing so, it can be argued that the model meets the requirements set out by Cooper and Levin (2010, p.15) who request that conceptualisations of research use "move past formulations such as 'research use is complex and multifaceted', to describe that complexity and its component elements so that these can be analysed and assessed". As a result, Figure 1 may be seen to move current understandings of research adoption to a point where "we can design and

implement more effective interventions that target the areas that have the greatest potential to improve systems" (2010, p.15).

Further directions

Whilst the empirical aspect of the work indicates that respondents both agreed that the model represents their experiences of KA, they also behaved in ways to suggest that this was indeed the case; specifically, by developing strategies designed to negotiate the internal, external and contextualising factors which come together to form Figure 2. As a result, it is argued that the interview data indicates that the approach is valid and has explanatory power. At the same time, however, further research is needed to ascertain the model's predictive power; for example, by employing a similar approach to that of Landry *et al.* (2003), who surveyed some 833 Canadian government officials about their research adoption behaviours. Landry *et al.* (2003) used regression analysis to ascertain corresponding determinants of research adoption and then sought to match these to those predicted by current theoretical models.

Finally, while the analysis and conclusions from this study relate directly to the sphere of educational research and to educational policy making, it may be possible to further generalise and to argue that my findings might also have implications for other policy sectors within England and Wales (such as health, justice, social care, etc.) or even for other policy jurisdictions. Given the lack of data to support any such assertions, I suggest that they may only stand as theoretical arguments, heavily laden with assumption and are therefore prime subject for future research effort.

Endnotes

- [1] See: http://www.oise.utoronto.ca/rspe/KM_Products/Terminology/index.html
- [2] Empirical analysis by Landry *et al.* (2003) indicates that the drivers of research adoption put forward by the Two Communities Model do seem to provide effective indicators as to whether knowledge will be adopted by policymakers. Likewise the Interaction/Communication and Feedback Model successfully explain some of the key drivers involved in research adoption. Landry *et al.* suggest, however, that the determinants of research adoption, as postulated by The Organisational Interests Model, are mixed in terms of how well they predict whether research will successfully be adopted by policy makers and that factors postulated by the Engineering Model fail to effectively explain the processes involved in the successful adoption of research.
- [3] The report's presentation style maybe quickly ascertained via:
<http://mckinseysociety.com/how-the-worlds-best-performing-schools-come-out-on-top/> [accessed 1 Nov 2011].

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Dr Chris Brown Chris completed his DPhil in 2011 (University of Sussex) and now works as a Researcher at the Institute of Education. Previous to this, Chris was Head of Research at the Training and Development Agency for Schools. Chris' research interests include evidence informed policy-making and the broader subject of knowledge adoption.
Email: christopher.brown@mac.com