



National College for
Teaching & Leadership

Evidence-based teaching: advancing capability and capacity for enquiry in schools

Interim report

Autumn 2015

**Dr Linda Hammersley-Fletcher and
Prof Cathy Lewin with Caroline Davies, Dr
James Duggan, Dr Harriet Rowley and Elaine
Spink**

Manchester Metropolitan University

Contents

List of figures and tables	4
Section one: Executive summary	5
Section two: Introduction and context for the project	7
Section three: EBT-ACCESs literature review	9
3.1 Introduction	9
3.2 Context	9
3.3 Terms and concepts	10
3.4 Models of knowledge mobilisation	11
3.5 Barriers to EBT	13
3.5.1. Inaccessibility of published research	13
3.5.2. Systemic issues	14
3.5.3. Organisational factors	15
3.6 Best practice in knowledge production and transformation	15
3.7 Approaches to EBT	16
3.7.1. Key themes	17
3.7.2. Leadership	17
3.7.3. Continuous Professional Development (CPD)	18
3.7.4. Lesson study	19
3.7.5. Joint practice development (JPD)	20
3.7.6. Research journal club	21
3.7.7. Research café	21
3.7.8. TeachMeet	21
3.8 Conclusion	22
Section four: EBT-ACCESs Survey Analysis	23

4.1	Introduction	23
4.2	Understanding of evidence based teaching	23
4.3	Engaging with research	24
4.4	Engagement in research	29
4.5	Conclusions	31
	Section five: Overall conclusions	33
	Useful Links	34
	Organisations	34
	Reading	34
	References	35

List of figures and tables

Figure 1: Production and use of evidence	12
Figure 2: Evidence cycle	13
Figure 3: The research engaged school	18
Figure 4: The lesson study cycle	20
Figure 5: What does evidence based teaching mean to you?	24
Figure 6: Use of research	25
Figure 7: Extent of use of research in last year	29
Figure 8: Research activities undertaken in last year	30
Table 1: Have you accessed research in the last year?.....	26
Table 2: Ease of access to research by job role	26
Table 3: Use of research by job role	27

Section one: Executive summary

This is the interim report for the Evidence Based Teaching: Advancing Capability and Capacity for Enquiry in Schools Project (EBT-ACCESs). The project is tasked with identifying which approaches to supporting EBT have most impact on teaching school alliances (TSAs) in relation to developing staff capability and capacity, and under what conditions. The academic team at Manchester Metropolitan University (MMU) are supporting 20 EBT-ACCESs leads in different TSAs across the country. These teacher-leaders have taken responsibility for the development and implementation of a range of different initiatives designed to increase EBT capacity and capability. The MMU support package includes workshops, an online community, teacher friendly guides on research methods, and telephone support. MMU will conduct an overarching evaluation of the project, supported by EBT-ACCESs leads' local evaluations of TSA initiatives. This interim report presents a review of literature relating to EBT together with the findings from a baseline survey administered to all TSA teaching staff (including those in supporting roles) in the early stages of the project.

The literature review has demonstrated the tensions within discussions about how best to gather evidence to inform practices in schools. It acknowledges that this is a changing picture with a gathering of momentum around approaches underpinned by randomised controlled trials. Nevertheless, this project concerns EBT and so discussion has focused on how evidence might be gathered and used to inform practices. Moreover, the literature highlights that the learning from EBT is better when carried out amongst a range of staff rather than as a lone activity. The strengths of schools working alongside researchers in order to sharpen knowledge around the research process and the ways in which this might be used to impact upon practice has been discussed together with exemplars of approaches. It is argued that this is an effective and supportive way to develop practices which are led and informed by schools themselves, bringing them an extra level of autonomy to pursue issues and change initiatives that are relevant to their own setting and context. This relevance is what is likely to draw the support of a wide range of school staff and encourage them to take responsibility for, and enjoyment from, their research activity. To date, this project clearly aligns with the literature reviewed.

The TSAs are all clearly focused on developing capability and capacity in EBT. They are undertaking this in a number of ways. First, there are projects aimed to upskill staff by engaging them in research projects and through the use of a particular approach (for example, Trios, lesson study, joint practice development). These are seen as staged approaches, with research training and the use of literature involved in readying staff for engagement. Second, TSAs are discussing, drawing on existing evidence bases and involving staff in this through group activities such as journal clubs or work with higher educational institutions (HEIs). Third, some alliances have recognised the need for a culture shift across their alliance to embed EBT and are supporting this through mechanisms such as developing headteachers, offering teachmeets or establishing

learning forums. They are also focusing on research networks and dissemination events as a means to change staff perceptions and encourage them to engage in EBT.

The results of the baseline survey highlight that evidence based teaching is at an early stage of development in participating TSAs and that there are gaps between staff perceptions and practices. Understanding of EBT is potentially less research focused than might have been expected. Awareness of online evidence databases is limited for example. In relation to accessing and using professional research, respondents were broadly positive. However, some work still needs to be done to encourage senior leaders to support evidence based teaching in school. Respondents were broadly confident about their ability to understand academic research, contradicting current research on this aspect, which perhaps suggests a misunderstanding of what academic research is. Further probing revealed that much of the academic research teachers are accessing is professionally-orientated (eg practice-focused books, practitioner journals, professional organisation magazines). There is also a clear gap between consulting academic research and putting such information to use in practice. Moreover, staff are far less confident about engaging **in** their own research than engaging **with** research. Although many teachers reported sharing findings with colleagues, relatively few had written for academic or practitioner journals. Importantly, schools are more likely to provide internal support and resources for supporting staff to engage in research than external guidance. This could constrain development of evidence based teaching and lead to the replication of practices not making the most effective use of research.

Next steps include working with the teacher leads in the use of evidence so that they can synthesise, evaluate and use research as a practical tool to improve practices around them. We will then look at dissemination techniques and how best they can act in a continuing and sustainable way as advocates of EBT in schools.

Section two: Introduction and context for the project

This project on evidence-based teaching is led by Dr. Linda Hammersley-Fletcher (Reader) and Professor Cathy Lewin at Manchester Metropolitan University (MMU) Faculty of Education. In addition, four experienced tutor / research staff form the project team, Caroline Davies, Dr James Duggan, Dr Harriet Rowley and Elaine Spink. The aim of the EBT-ACCESs (Evidence-based teaching: advancing capability and capacity for enquiry in schools) project is to find out what works well when developing EBT initiatives in teaching school alliances (TSAs) nationally.

The overarching evaluation question is:

Which approaches to supporting EBT have most impact on TSAs in relation to developing staff capability and capacity, and under what conditions?

Therefore, this project focuses on developing the expertise, systems and processes in schools, to:

- engage with the wider evidence base;
- discuss, plan and use the evidence to inform decisions and teaching practice, and;
- robustly evaluate the impact of changes.

NCTL, EBT ACCESs project brief, 2014

In order to address the question of how best to establish and/or grow practice around evidence-based work in schools the EBT-ACCESs project involves a network of EBT-ACCESs leads in different TSAs across the country. These teacher-leaders have taken responsibility for the development and implementation of a range of different initiatives designed to explore how EBT capacity and capability can be increased. The EBT ACCESs leads are also engaged in the co-construction and evaluation of these strategies with their link researchers from MMU. In this way a robust approach has been adopted drawing together both academic and school-based perspectives.

The project includes a review of current approaches to EBT and uses this to inform practice to facilitate thinking within the 20 TSAs. We are working collaboratively to grow a community of creative practice in relation to the use of evidence to inform teaching and learning strategies. Each TSA has identified their own initiative to trial and embed good practice within their alliance and are engaged in evaluating this initiative. The MMU research team are working with them to enhance their research skills and capacity for critical reflection within their own alliances. At the end of the project MMU will produce an evaluation of the approaches and initiatives adopted within each TSA. To support this work MMU are producing resources that support EBT such as teacher-friendly guides on

research methods, ethics, and assessing research evidence. Teachers will then contribute to these resources. Research leads will also be encouraged to publish from their work in schools with support from the MMU team.

The MMU support package offered for the teacher leads in this project has taken the form of centrally delivered student-focused research/project workshops; online support through a dedicated website; telephone and email support. Each TSA has an MMU researcher/tutor (link researcher) allocated to them with whom they can discuss any issues arising. All research leads in the TSAs have uploaded information to the project website which has allowed both each other and the MMU team to keep track of their progress and provided a forum for discussion and questions to be raised.

Section three discusses the literature in the area of evidence-based practice. Section four will report the early baseline survey data against which the final progress can be assessed.

Section three: EBT-ACCESs literature review

3.1 Introduction

This literature review has been written to inform and provide a context for those participating in the EBT ACCESs project. It can be used as a basis for further reading and as a resource when designing new initiatives.

There are numerous definitions of evidence-based teaching. What we mean in headline terms is that decisions and practice are based on evidence so that:

all teaching practice reflects both individual teaching expertise and the best and most up-to-date external evidence from systematic research.

NCTL, EBT ACCESs project brief, 2014

The ultimate test would be whether those making decisions could explain their choices and practice by referring to a robust evidence base and use logical argument and reasoning. Alongside this, there must be an appetite for innovation in order to further develop practice. Moreover, innovation should build on the existing knowledge of what works and why.

3.2 Context

There are a number of elements required for evidence-based teaching to be prevalent, not least a supply of robust, relevant and accessible research evidence.

The role of evidence in education is currently a high-profile issue, both nationally and internationally. In other fields such as medicine and in government more widely there has been a growing engagement with evidence-based policy-making and practice. Concerns about the potential contribution and quality of evidence in education were given emphasis by Hargreaves's (1996) call for 'teaching as a research-based profession.' As Fenwick and Farrell (2012) note, the relationship between research and practice is a long-standing concern within educational research especially with respect to what constitutes robust evidence and in how knowledge is mobilised. Moreover, Goldacre (2013) has been a driver in a shift to draw attention to this agenda through calling for greater use of more quantitative and rigorous methods of gathering evidence including randomised control trials (RCTs) in education.

There are subtleties around the context in which the teacher is working and the research context, that involve the need for careful judgement in relation to what might most productively provide evidence about educational practices. Thus, the evidence base used in education attracts a range of criticism, mainly focusing on the appropriate use of research and the particular types of evidence used to inform teaching practice. It is important to recognise that features of these debates are orientated around the perceived

deficits of educational research and practice in relation to other professions that are considered to be more advanced in this area, in particular medicine (eg, Hargreaves, 1996; Goldacre, 2013). Such authors have expressed concerns that the evidence utilised in the education field is relatively unhelpful and serves to undermine the teaching profession. Alternatively, other researchers in the field of education question the appropriateness of applying methods and approaches seen as successful in one setting, to an alternative setting, stating that different settings require different approaches. For example, questions are raised about the appropriateness of an application of systematic review in schools (MacLure, 2005) or the applicability of RCTs (Hammersley, 2013) to education. Further, Furedi (2013) argues that basing the collection of evidence in education on a medical model imposes a deficit perspective that frames children as sick and requiring treatment. Moreover, Bridges et al. (2009) question the assumption that increasing the quantity of evidence provided will necessarily give teachers formulas for 'what works', as there will always be doubt in educational research. This argument is based on the notion that the education of pupils is not reducible to statistical formulas for improvement as people differ and have different needs at different times. This is why there has traditionally been an emphasis on qualitative data that explores experiences.

Fundamentally, the tensions or contradictions in the relationship between evidence, research and teaching are about how we conceptualise knowledge and educational practice. There are also attempts to reconcile these differences and identify a more productive engagement with evidence. Nutley et al. (2007; 2013) advise against thinking in terms of 'hierarchies of evidence', with RCT studies at the apex and observational studies without controls at the base. Sharples (2013) argues for thinking in terms of a fit between the needs of the teachers and purpose of the research. Winch (2013) presents a complementary relationship between knowledge development and conceptualisations of what it means to be a teacher. They identify three different forms of knowledge comprising situated or tacit knowledge, technical knowledge, and critical reflection. They then relate these forms of knowledge to the teacher as a craft worker or executive technician. Winch concludes by proposing that the teacher is a professional who is able to synthesise the various forms of knowledge and insight, drawing on the benefits and avoiding the limitations of each form of knowledge, to improve his or her practice.

3.3 Terms and concepts

Before looking in more detail at evidence-based teaching it is important to understand that there are a number of interrelated terms used to describe these activities, or the tools and approaches used. The key terms are defined below:

- **Evidence-based teaching:** teaching practice or school-level approaches that are based upon the results of evidence about interventions or strategies that are effective in helping pupils to progress.

- **Evidence-informed practice:** changes the emphasis of evidence-based teaching to focus on how teachers can engage with multiple forms of knowledge, evidence and expertise to make decisions in contexts (Nelson and O’Beirne, 2014).
- **Knowledge mobilisation:** focuses on the process, relationships and interactions through which knowledge is produced, transformed, engaged with and implemented by teachers to improve outcomes (Nelson and O’Beirne, 2014).

In many ways this project seeks to combine all of these definitions to engage teachers in critically reflective and evidence-embedded practices that benefit both staff and students leading to both becoming more enthused and impassioned about what they are doing. Clearly the activity of knowledge mobilisation is the process that underpins this practice as it uncovers the ways in which knowledge is created and utilised. Therefore, it is important to gain a deeper understanding of this process.

3.4 Models of knowledge mobilisation

Utilising evidence to inform practice is not simply a process whereby teachers are asked to read about relevant research and then adapt their practice accordingly. The process is far more complex than the simple translation of the latest research evidence into teaching and learning approaches. It is important to consider what must happen for evidence to make an impact upon practice and how teachers might be supported in this process. Moreover, in terms of this project, it is important to understand how we might develop teachers’ capability and capacity in the use of evidence to improve teaching and learning. Consequently, the process of knowledge mobilisation is of crucial significance. However, as Fenwick and Farrell (2013) have shown, when trying to deconstruct the process of knowledge mobilisation it is still unclear and it offers more questions than answers:

What activities, exactly, enact effective knowledge mobilisation according to different audiences? Who determines what counts as impact and for what purposes? How are ‘results’ of educational research separated from its participants and processes? What are the consequences of distinguishing users from producers in educational research and who benefits from such distinctions?

Fenwick and Farrell, 2012: p1-2

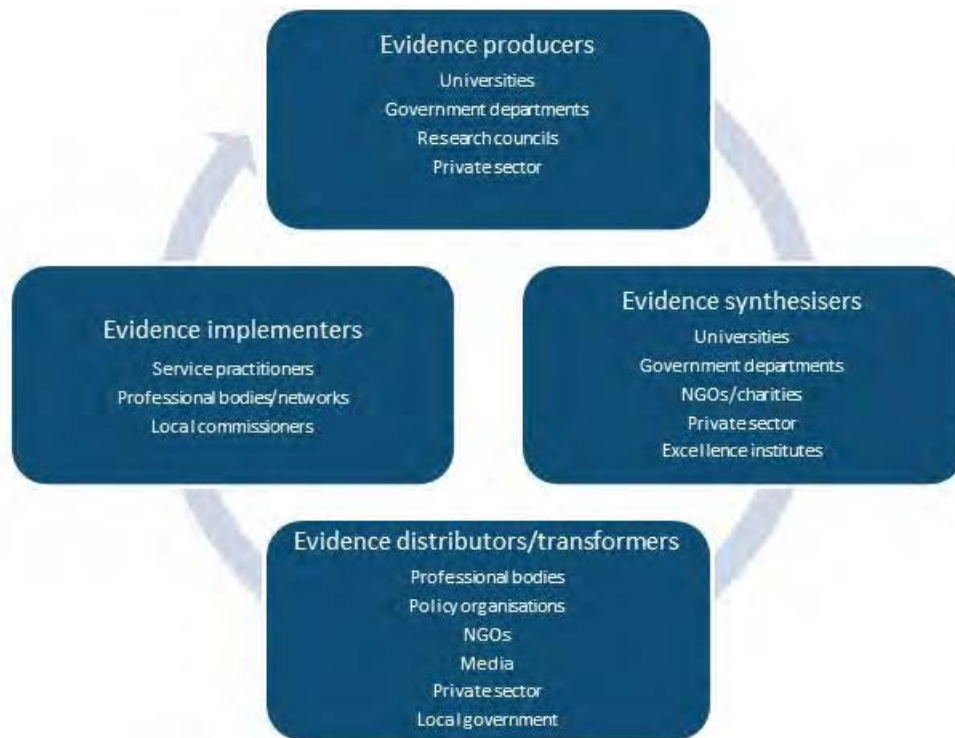
These are key issues that will be explored through this project. It highlights the crucial role that the research leads and teachers have in how the field of evidence-based teaching is being shaped. The role of teachers as researchers can be a dual one where they are:

- **knowledge consumers:** where evidence is used to inform practice

- **knowledge producers:** where evidence is created through primary research and then disseminated to inform practice.

Figure 1 represents how evidence is produced and used in educational settings when schools and teachers are behaving as 'knowledge consumers'. It provides a useful framework to demonstrate where teacher research can contribute to the 'elements of an evidence ecosystem' (Sharples, 2013, p9).

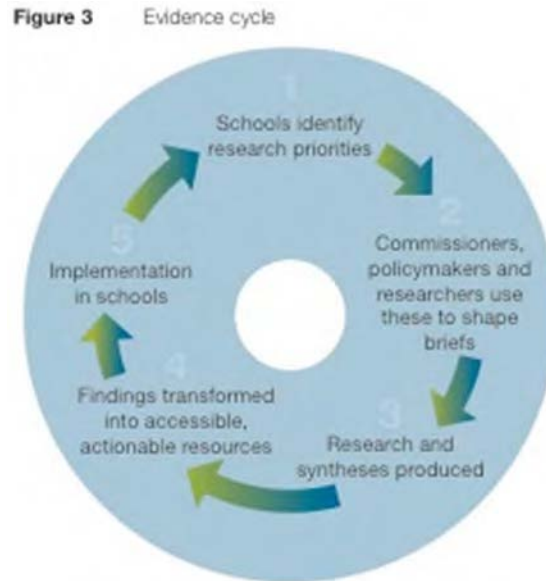
Figure 1: Production and use of evidence



Sharples, 2013: p9

This diagram shows the ways in which evidence is produced and processed through a number of bodies such as government and universities. This then filters into schools through various channels with the media playing an important role in the distribution of information. Schools then act to implement these ideas and initiatives. It is important to recognise that at each step ideas get modified, filtered and mediated so it is extremely difficult for those producing evidence to see exactly how new ideas or initiatives might take place in practice. However, this mediation process is particularly important at the practice level as this allows professionals to adapt and modify ideas to suit their own particular setting and circumstances (Dejours and Deranty, 2010). This level of creativity and imagination is important for success simply because unexpected problems will often interfere with a straight-forward transmission of ideas and creative solutions must be found to make these practicable. In terms of the school-level figure 2 illustrates the cyclical nature of building research initiatives to inform practice in schools (Durbin and Nelson, 2014, p4). In this sense, schools / teachers now become the 'knowledge producers'.

Figure 2: Evidence cycle



Durbin and Nelson, 2014: p4

Here the emphasis is on the need to translate research into practice and in ways which focuses the research goals on informing the priorities identified by schools themselves. Thus, where they operate to become their own researchers, schools are then able to initiate, investigate and inform their own practices, tailoring these activities to their own needs and improvement foci. The research then becomes part of a creative cycle of development that is owned by the school. What is crucial here is to understand how this locally produced evidence is then disseminated and embedded into teaching practice at the macro level.

3.5 Barriers to EBT

Given what is understood about knowledge mobilisation it is then possible to understand that there are a number of barriers that must be overcome in facilitating teachers in adopting an evidence-based approach to their roles. In exploring these it is possible to anticipate some of the issues that the teachers leading research-based initiatives might face.

3.5.1. Inaccessibility of published research

There is a considerable quantity of educational research produced in universities and by a range of other organisations and yet for a number of reasons this is not always useful, accessible or appropriate for teachers. Current assessments demonstrate that teachers do not read much research despite their potential interest in it (Williams and Coles, 2007). A number of reasons have been offered to account for this finding. First, teachers are often too busy or lack the time allocation to engage with research. Second, there can be issues around accessibility. This can be in relation to training necessary to make best

use of research information; related to obtaining access to publications that are often published behind journal 'pay-walls'; or in relation to the format and language of research articles themselves (Hemsley-Brown, 2004; Bransford et al. 2009; Borg, 2010). Third, publications are often produced for academic purposes rather than with a 'teacher-reader' in mind so, for example, the publication of a series of individual papers describing a series of studies using different theories or methods does not help the teacher understand the general picture and what they should do in a particular context (Gough, 2013). Indeed, research tends to focus in depth on a small area of educational practice that inevitably ignores some of the complexities of the lived experience. This can mean that teachers would need to keep abreast of a whole range of literature in order to gain insight into their daily practices in a more informed manner.

Nelson and O'Beirne (2014) note that there is very little evidence gathered in terms of better ways for producing and transforming knowledge for use by teachers, with no evidence on how these processes then improve outcomes for children. The limited impact of the Teaching and Learning Research Programme study to improve the impact of educational research has highlighted the need to go beyond the simple 'push' or dissemination model of educational research (Gough, 2013). Thus, within the literature, there is a recognition of the importance of translating or transforming evidence into tools or practices that are useful for teachers (Sharples, 2013; Nelson and O'Beirne, 2014). It is, moreover, important to recognise that although educational researchers in the UK have an incentive for practitioners to use their research, they can often lack the training, skills, knowledge, practices and relationships to enable them to translate a study into useful materials for teachers. Given these considerable barriers to individual teachers accessing research, it is clearly important that knowledge mobilisation capacity should be developed across systems and within organisations.

3.5.2. Systemic issues

Knowledge mobilisation in education implies bringing together a number of distinct components to work in particular ways, which in turn underscores the importance of a system-wide approach to engaging teachers in evidence-based practice. As is widely acknowledged, the decentralisation and fragmentation of the English educational system does not help in developing coherent knowledge mobilisation systems. Thus Durbin and Nelson (2014) suggest that the way to counter this is to use existing national organisations as the key brokers of knowledge. Therefore, if education is viewed as a system made up of a variety of different organisations (NCTL, Ofsted, teaching unions, continuous professional development (CPD) providers, initial teacher training (ITT) providers, academy chains etc.) then all these different organisations need to be engaged with the EBT agenda as well as individual schools.

3.5.3. Organisational factors

One of the key challenges for improving knowledge mobilisation is the social dimension of learning and the relationship between research and teaching practice. From this perspective research evidence is produced in relation to individual predispositions, reflective processes and the particular cultural backdrop they work within and are gathering data from. These factors all influence the understandings and interpretations made by the researcher. Moreover, the same process happens when research is interpreted for practice as individuals will read and assimilate research differently from each other, again in relation to the culture and setting within which they are operating and their own predispositions. Research evidence should thus be seen as one form of evidence amongst a number of knowledge resources upon which a teacher may draw. The social perspective of research use implicates an organisation-wide engagement with research and knowledge mobilisation. It is important therefore to consider the process of knowledge production and processes of transformation.

3.6 Best practice in knowledge production and transformation

The production of knowledge and its ability to transform practice can be viewed as successful if it operates by gathering and developing knowledge in the following ways:

- A centralised knowledge base providing clear and trusted summaries of effective practice approaches (established through robust and accurate research) to improve teachers' use of, and confidence in, evidence.
- Evidence should be contextualised for practice and presented in clear, accessible formats, using media that is accessible and includes practical guidelines for implementation, rather than simply being produced in its raw form.
- Intermediaries are helpful in translating evidence into tools for implementation in the classroom. Collaboration between teachers and researchers can also lead to a better understanding and use of evidence.

Giving clear evidence of the links between the impact of different approaches and transforming knowledge will strengthen the use of research. We need to understand more about this in order to ensure that evidence of effective educational practices are communicated to, and through, schools in the best ways possible.

adapted from Nelson and O'Beirne, 2014: pvi

To engage in meaningful professional learning to transform professional practice there is a need for recognition that it takes time to develop and is most effective when seen as part of the social engagement of staff. In other words it needs to be the focus of

discussion and reflection amongst colleagues (Carroll, 2009). Moreover Simkins et al (2009) extend this notion to include all members of the workforce including non-teachers. In addition, in order for transformation to take place Pedder et al (2005) emphasise four hypotheses regarding teachers' learning: that it is

1. an embedded feature of teachers' classroom practice and reflection;
2. extended through consulting different sources of knowledge;
3. expanded through collaborative activity; and
4. deepened through talking about and valuing learning.

It is also important to consider the following quotation when thinking about how to develop practice.

Passionate schools might best be described as places where the critical mass of the school community enjoys a shared passion for learning in whatever sphere of activity motivates them plus a determination to excel both against their own previous personal best and be benchmarked against the highest standards of excellence from time to time. Moreover, they live and work in a community where they come together in teams or groups engaged in a shared activity in a passionate quest for collective excellence. Each member of the school community shows evident enjoyment in the prowess of other members and while there is competition among peers, it's a competitive edge that is tempered by the knowledge that they belong to a community which enjoys a magic of achievement shared by almost all.

Davies and Brighouse 2008: p14

In other words best practice means engaging all staff in the enjoyment of learning and professional development drawing on research evidence and shared personal experiences. This often begins with small numbers getting involved initially and, through their excitement, spreading this to others.

3.7 Approaches to EBT

Following the development of understandings around how knowledge might be made more accessible then it is important to consider what approaches might be adopted to get evidence-based practices successfully underway in schools. There are five key themes to guide an approach.

3.7.1. Key themes

1. **A collaborative approach to research.** This is considered to be the most effective way to promote EBT in schools (lesson study, trios, joint practice development).
2. **The development of a research culture/community.** There is a need to develop structures/systems in place to support research/EBT capability and capacity.
3. **Methodological approaches.** Traditionally has been enquiry-led because these approaches are seen as being very practice based. The drive now is for more use of RCTs.
4. **Increasing research capacity and capability.** This can be achieved through a number of mechanisms (CPD, research networks, journal clubs, research cafes, peer review).
5. **Dissemination.** Talking in a variety of ways about your findings, successes and challenges is an extremely effective way of gaining the interest and support of colleagues (for example at a TeachMeet).

3.7.2. Leadership

In order to embed EBT, it is recognised that there is a need for schools to develop a research-engaged culture as this also has the potential to align with a sustainable improvement strategy (Godfrey, 2014, p1). Thus a research engaged school is one in which 'research enquiry is at the heart of the school, its outlook, systems, and activity' (Handscombe and Macbeath, 2003, p3). In order to enact this cultural change, Godfrey suggests the following 'nourishing factors' need to be considered (see figure 3 below).

Figure 3: The research engaged school



Godfrey, 2014: p6

Furthermore, an important factor in the engagement with, and utilisation of, research are teachers' values, beliefs and commitment to research (Nelson and O'Beirne, 2014). Thus leadership is a factor that is associated with influencing organisations to engage with research and evidence (Belkohdja et al., 2007). Certainly leaders who facilitate this approach to teaching and learning rather than obstruct it are essential. Teachers are also much more likely to engage with new initiatives where these are backed and supported by the senior leadership team.

Caldwell (2003) also argues that designating an agent for change who is clearly invested in developing thinking and moving the organisation forward can be very helpful. In this project, the teacher research-leads are clearly adopting this position. Caldwell goes on to point out that this might involve adopting a whole range of approaches. We now look more closely at some approaches that are considered to be beneficial in enhancing EBT activity.

3.7.3. Continuous Professional Development (CPD)

Focusing on CPD practices is a sensible way to integrate an engagement with evidence with individual and organisational development processes. Cordingley (2015) identified eight factors that enable research engagement as part of CPD and in continuous professional development and learning. These are to work at:

1. Engaging with research and expertise;
2. Collaborative, peer support focused on developing new ideas and strategies;

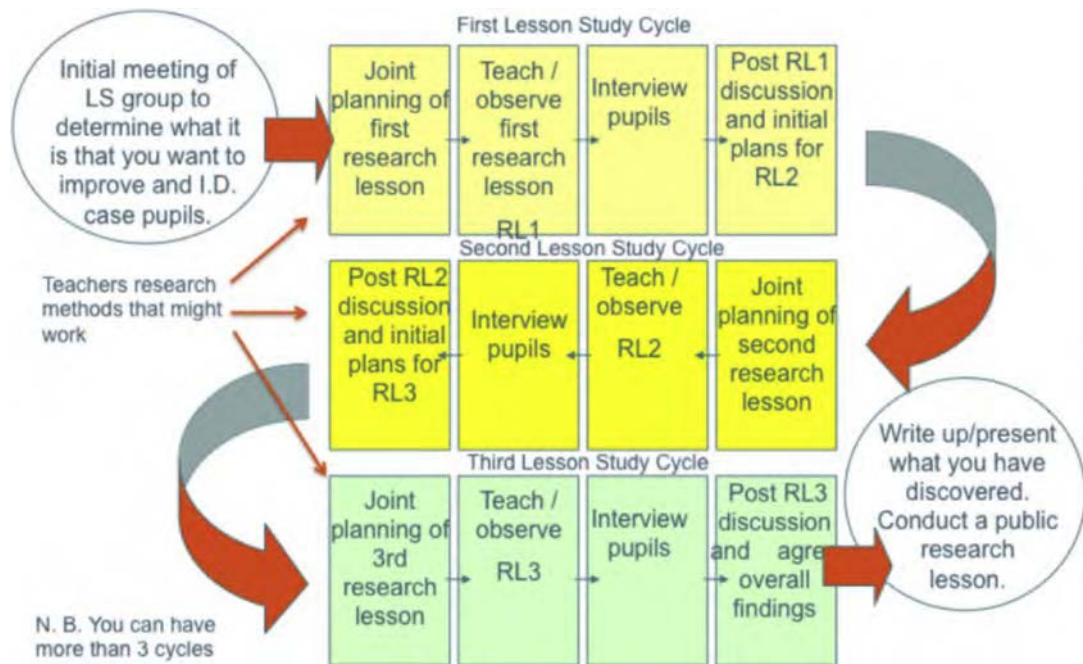
3. A substantive piece of supported practitioner research;
4. 'Learning to learn' how to improve practice from the evidence base in addition to conducting school-based research;
5. Focusing on improving the outcomes of individual pupils;
6. Using theory to explore the success and failure of practices in different contexts;
7. Leadership support by providing the resources and developing the capacity, including through practitioner focused research;
8. Teachers taking personal responsibility for engaging with evidence to improve their practice.

A potential benefit of engaging in CPD, especially formal CPD programmes, is that there is evidence that it encourages teachers and the organisation in general to engage with research. Indeed, Jeanpierre et al. (2005) found that the presence of researchers in a school encouraged other staff to engage with an evidence-based intervention. Moreover, staff engaging in such work influences the school culture to one where the expectation is that teachers are engaging in reflective and forward-looking practices that are based on evidence.

3.7.4. Lesson study

Lesson study is a practitioner-led research approach that aims to improve teaching and learning by exploring lessons from both the teacher and learner perspectives. This approach is Japanese in origin but is becoming increasingly popular in the US and the UK. Using a collaborative approach, teachers look to improve lessons that they feel could be taught more effectively. A 'research lesson' is thus devised, and taught by a teacher while other teachers examine the learning that is taking place. A number of research lesson cycles are carried out and analysed. Learning from the research is then used to inform practice. Figure 4 illustrates the lesson study cycle (Dudley, 2013, p108).

Figure 4: The lesson study cycle



Dudley, 2013: p108

This method has been used to improve pedagogy previously through The National Strategies who produced a handbook for leading teachers in mathematics and English (Department for Children, Schools and Families (DCSF), 2009). The report found that

‘It works because it focuses on the learning and progress made by children as their teachers develop specific pedagogic techniques designed to improve a particular aspect of teaching and learning that they have identified within their school’.

(DCSF, 2009: p3).

3.7.5. Joint practice development (JPD)

JPD is a professional development process that seeks to alleviate the challenge of sharing good practice amongst teachers. It encourages teachers to work collaboratively and to co-construct solutions to issues identified in their practice. Hargreaves explained JPD as follows:

When such peer-to-peer sharing takes place it is not a matter of unilateral practice transfer, important as that can be. Rather, through mutual observation and coaching the donor reflects further on the practice that is being shared and explores ways in which it can be improved further. This is a process to which the recipient can also contribute as an act of reciprocity. In short, what begins as sharing practice ends up as a co-construction of practice that entails incremental innovation.

The term that most accurately describes this process is joint practice development, for it captures a process that is truly collaborative, not one-way; the practice is being improved, not just moved from one person or place to another. JPD gives birth to innovation and grounds it in the routines of what teachers naturally do. Innovation is fused with and grows out of practice, and when the new practice is demonstrably superior, escape from the poorer practice is expedited.

Hargreaves, 2011: p11

The benefits of such practices are apparent in the scope for joint learning and the shared responsibility to enhance what is current practice. This becomes not only non-threatening but enables teachers to become excited by new possibilities and to feel 'ownership' of the initiative, which in turn adds to their engagement in the process.

3.7.6. Research journal club

Research journal clubs are a further method to develop an active research environment and discussion forum. They are established to discuss recent journal articles and can bridge the gap between practice and research. Thus far, health professionals have made use of this approach in order to keep well-informed about research, to 'learn to appraise research' and to encourage 'research utilisation' (Kleinpell, 2002, p412). This is an approach that could be easily adopted in schools and could, for example, be integrated into staff meetings.

3.7.7. Research café

Research cafes are an informal method of developing research networks and are used to disseminate and discuss current research. They are mainly used in universities so that colleagues can learn about other colleagues' areas of interest. They start with a short talk about a particular research topic and are followed by an informal discussion (See, for example, [Café Scientifique](#)). There are many examples of research cafes that can be explored. These are a useful way of sharing information quickly and provoking debate. As time is limited it encourages people to attend and get involved. A follow up method that provides more detail is useful to combine with this approach to gain a greater depth of discussion.

3.7.8. TeachMeet

TeachMeet is a relatively new and undocumented approach (in terms of formal research) being adopted by schools where groups of teachers come together either physically or remotely through an online environment around particular topics. They each have a very limited time period (3 to 5 minutes) to discuss their topic/project and then feedback is given and questions asked by the rest of the group. Meetings last for around two hours often at the end of a school day. See for example those listed on

teachmeet.pbworks.com. This is anecdotally proving highly popular amongst teachers who have engaged in this process as it not only alerts them to work being undertaken in other places but also gives them opportunities to talk through ideas without spending huge amounts of time on this. TeachMeet opportunities are growing and advertised online and through social media platforms such as Twitter and Facebook. The result has been large numbers of area-based meetings being arranged together with TeachMeets being facilitated within conferences in order to encourage teachers to mix with academic colleagues (for example the British Educational Leadership, Management and Administrations Society Annual Conference).

3.8 Conclusion

This literature review has demonstrated the tensions within discussions about how best to gather evidence to inform practices in schools. It acknowledges that this is a changing picture with a gathering of momentum around approaches underpinned by randomised controlled trials. Nevertheless, for this project the focus is on EBT and so discussion has focused on how evidence might be gathered and used to inform practices and made the point that the learning from this is better when carried out amongst a range of staff rather than as a lone activity. The strengths of schools working alongside researchers in order to sharpen knowledge around the research process and the ways in which this might be used to impact upon practice have been discussed as have some of the approaches that might be adopted. What is clear is the manner in which this project aligns with the literature which argues that this is an effective and supportive approach to develop school practices in ways that are led and informed by schools themselves. This brings an extra level of autonomy to schools in pursuing issues and change initiatives that are relevant to their own setting and context. This relevance is what is likely to draw the support of a wide range of school staff and encourage them to take responsibility for, and enjoyment from, their research activity.

Section four: EBT-ACCESs Survey Analysis

4.1 Introduction

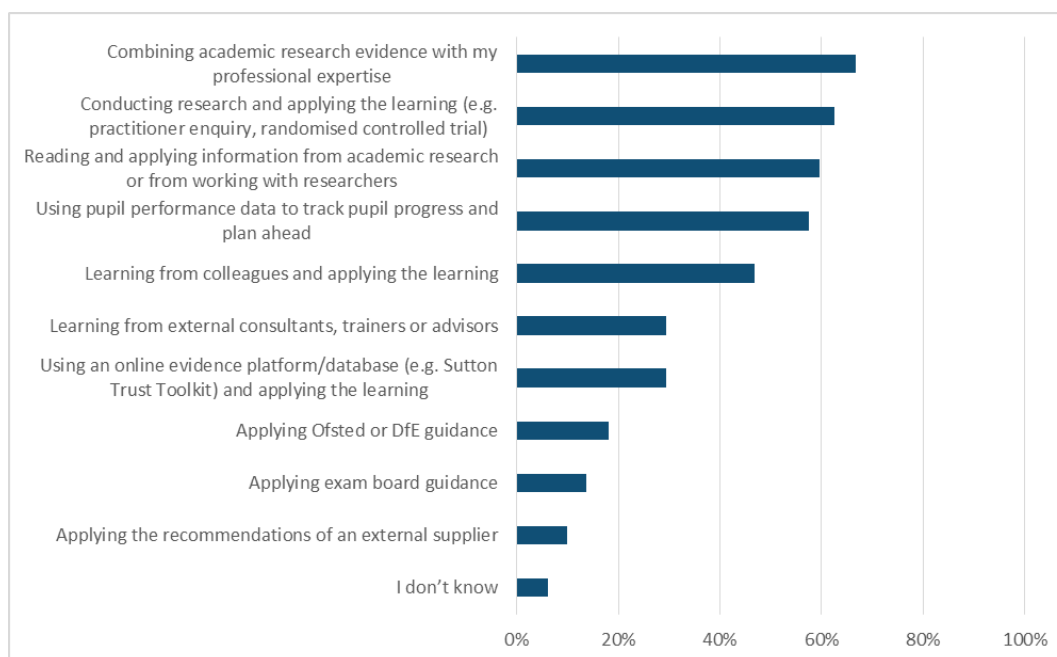
A survey was conducted to establish staff understanding and experiences of EBT within the participating teaching school alliances (TSAs). The design was informed by a baseline survey developed by the National Foundation for Educational Research (NFER) for a project funded by the Education Endowment Fund, 'The Literacy Octopus: Communicating and Engaging with Research'. The EBT-ACCESs survey had a broader remit and sought to assess staff engagement with research evidence (both professional and practitioner generated), use of research evidence to inform practice, and teachers' generation of research evidence through practitioner enquiry. The survey was administered to all staff (including teaching assistants and senior management) across schools in each TSA. In some cases the survey was distributed to all schools and in others to a subset of schools (dependent on TSA size). Surveys were administered in two batches in October and November 2014. The survey was intended to be open for a period of two weeks. However, for a variety of reasons the surveys for individual TSAs in some cases remained open until the end of the autumn term. Due to staff absence, one TSA did not circulate the link to schools and thus did not achieve any responses. Four other TSAs did not achieve the minimum target of 50 responses.

1215 people responded to the questionnaire (although not all of these completed the whole survey), of whom three quarters were female. Half the responses were from secondary schools, whilst 35 per cent came from primary schools, 6 per cent from early years, and 5 per cent from special schools. About a third of responses were from classroom teachers and a further third from middle leaders. 10 per cent of responses were from teaching assistants. 16 per cent of staff responding had a Masters qualification and 2 per cent had a doctorate (PhD or EdDoc).

4.2 Understanding of evidence based teaching

When asked what 'evidence-based teaching' meant, the top four statements which respondents ticked were 'combining academic research with my professional expertise' (67 per cent), 'conducting research and applying the learning' (63 per cent), 'reading and applying information from academic research or working with researchers' (59 per cent) and 'using pupil performance to track pupil progress' (57 per cent) (see figure 5).

Figure 5: What does evidence based teaching mean to you?



Whilst these are valid approaches to finding out more about how pupils are progressing they were potentially less research focused than might have been expected. Much of this type of data collection would have long been part of school activity and what we were seeking to understand was how teachers might be using research to innovate. Surprisingly, only 29 per cent of respondents associated using online evidence databases such as the Education Endowment Foundation (EEF) Teaching and Learning Toolkit alongside evidence-based teaching. Yet clear and trusted summaries of data are one of the most effective approaches for knowledge transformation (Nelson and O’Beirne, 2014). 6 per cent of respondents (n=72) said that they did not know what evidence-based teaching meant. This number seems low considering the experiences already beginning to be noted by the TSAs as they begin engaging in their projects. It seems that there may be a need to get a deeper understanding of what teachers are identifying as knowledge of research.

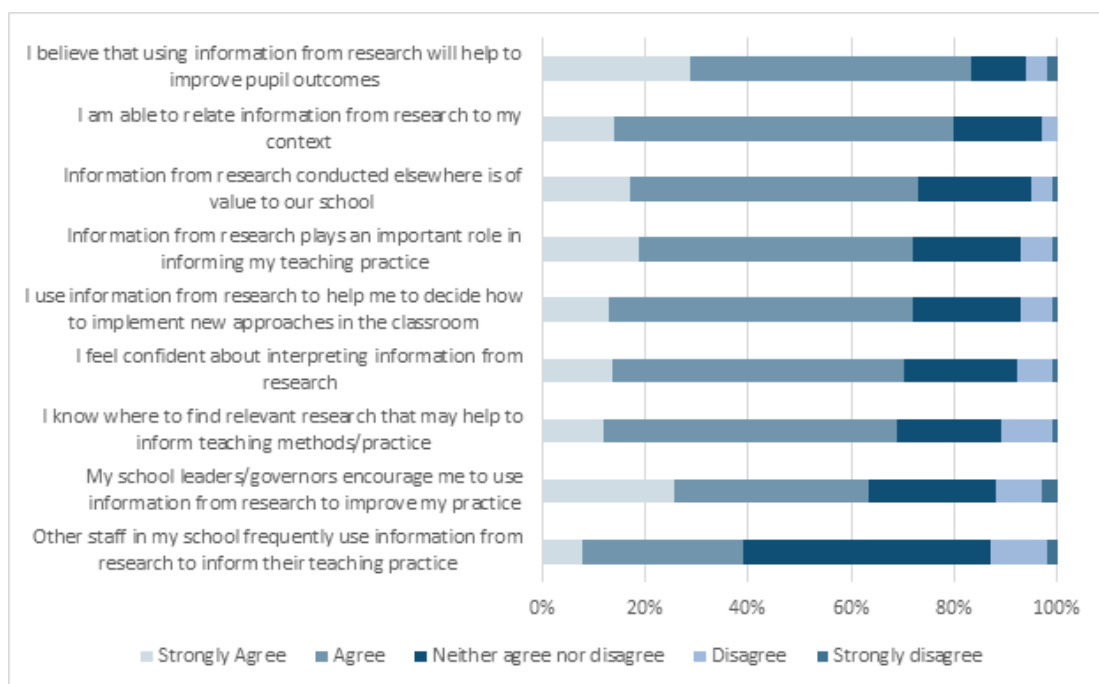
4.3 Engaging with research

Engaging with research refers to accessing and using the research of others. Respondents were asked about their access and use of professional research information in their work¹ (see figure 6). Participants were broadly positive. Four out of five staff (84 per cent) agreed that using research would improve pupil outcomes. Over two thirds of respondents claimed that they understood how to access professional research and that they used it to inform their practice. This contrasts with claims that

¹ We specified that ‘research’ meant information from books, reports, articles, summaries, training or events that are based on academic studies.

teachers do not read much research (Williams and Coles, 2007). Nearly half (48 per cent) of respondents neither agreed nor disagreed with the statement ‘other staff in my school rarely use information from research to inform their teaching practice’ perhaps suggesting there is limited awareness of colleagues’ EBT activity. Yet, collaboration and sharing experiences with colleagues should be encouraged to support knowledge transformation (Carroll, 2009; Pedder et al., 2005). The survey also suggests that 12 per cent of respondents did not feel that they were encouraged to use research by school leaders/governors. The support of leadership is an important factor in developing a research culture (Belkohdja et al, 2007; Cordingley, 2015) and this finding may suggest that some work still needs to be done to convince senior leaders of the benefits of having research-engaged staff.

Figure 6: Use of research



Beyond general use, we specifically asked about recent activity. In the year prior to the survey, 85 per cent of respondents (n=1099) reported accessing professional research whilst 89 per cent of these (n=942) reported using professional research. Of course, staff who are more familiar with research activity are more likely to have completed this survey than those with limited understanding of research.

Regarding the seemingly positive finding that more than four in five respondents had accessed information based on academic research in the last year, further analysis (Table 1) suggests an association between the access of research and job roles ($\chi^2 = 31.536, p > 0.001$). For example, 23 per cent of teaching assistants said they had not accessed research in the last year whereas 96 per cent of senior leaders said that they had. Therefore, it would seem the higher in the hierarchy the member of school staff is the more likely they are to have some familiarity with research texts.

Table 1: Have you accessed research in the last year?

		Job role					Total
		Teaching assistant	Classroom teacher	Middle leader	Senior leader	Other	
	Yes	76	305	295	205	56	937
	No	23	71	52	8	8	162
Total		99	376	347	213	64	1099

Respondents (n=935) were broadly confident in their abilities to understand information from recently accessed academic research (table 2), 14 per cent said they found this ‘very easy’ and 68 per cent said ‘quite easy’. This is an interesting finding given the arguments in the literature about the inaccessibility of academic literature. This might indicate some misconceptions or differences in understandings of what academic literature consists of. It would be useful to gather greater information of teachers’ understandings of research literature and see if this improves over the period of this research activity. In contrast, almost one in five staff reported difficulties understanding academic research with 18 per cent saying it was ‘not very easy’ (equivalent to 166 people) and one respondent said it was ‘not easy at all’. It is important to make sure that research evidence is presented in clear, accessible formats for teachers and other school staff (Nelson and O’Beirne, 2014), as limited availability of research presented for teachers is one of the greatest barriers (NTRP, 2011). Perhaps unsurprisingly, 26 per cent of teaching assistants felt that accessing academic research was not very easy. Researchers need to be aware that if they want to make a difference to practice, then accessible arguments are essential parts of that process. One of the positive aspects of this study is the close links forming between the teacher-leads and the research team. This is enabling both to reach a better understanding of the other and to form bridges for robust discussion of issues.

Table 2: Ease of access to research by job role

		Job role					Total
		Teaching assistant	Classroom teacher	Middle leader	Senior leader	Other	
	Very easy	9	41	48	27	6	131
	Quite easy	47	212	194	150	35	638
	Not very easy	20	50	52	28	15	165
	Not at all easy	0	1	0	0	0	1

Total	76	304	294	205	56	935
-------	----	-----	-----	-----	----	-----

Further analysis of data on whether or not respondents had used research in the previous 12 months to inform their practice (table 3) suggests that there is an association between use of research and job role ($\chi^2 = 56.728$, $p > 0.001$). 34 per cent of teaching assistants said they had not used research in the last year whereas the vast majority of other staff said that they had (classroom teachers: 88 per cent, middle leaders: 91 per cent, senior leaders: 97 per cent). Nevertheless, it is not clear in what ways such information was used and whether teachers had thoroughly researched an area to inform decision-making about practices for example. It could also be that staff seek information to support approaches already adopted. When these data are placed against the experiences of the TSAs in relation to getting activity underway in relation to their projects there is a gap in these apparent results and the realities that are being reported to the University team. It is possible that teachers may feel that they use research and understand it until they are faced with undertaking something that requires thinking about this more coherently where they then discover that they are less expert in this than they first thought. This would certainly seem to be the case with the TSAs who moved from initial confidence to concern that they didn't know what to do and what was expected of them to then building up a new level of confidence. Clearly, it will be interesting to see if the survey results differ by the end of the project. However, deeper knowledge and understanding of research may initially cause a dip in feelings of confidence about its use.

Table 3: Use of research by job role

		Job role					Total
		Teaching assistant	Classroom teacher	Middle leader	Senior leader	Other	
	Yes	50	268	266	199	47	830
	No	26	36	28	6	9	105
Total		76	304	294	205	56	935

Respondents who indicated that they had used research in the last 12 months were asked to provide more detail about the range of sources they found most useful. The most common response was books (n=341), with over a quarter of respondents citing this source. Where people did provide information of a specific book, however, it was common for the book to be practice-focused. Popular authors included John Hattie (21), Shirley Clarke (12), Carol Dweck (12), Ron Berger (5) and Geoff Petty (8).

Newspapers and magazines were the next most popular sources (n=247). In terms of specific titles, the Times Education Supplement was by far the most common (140) whilst the Guardian newspaper was also popular (19). In terms of when the name of the

magazine had been provided, it was generally produced by a professional organisation such as National Union of Teachers or a subject association. Therefore, the most common sources of literature that school staff accessed to inform their practice were professionally-oriented.

Around one sixth of respondents (n=203) specified 'journals/articles' as sources of academic research that had been useful. However, again it was common for respondents to specify that the journal was practice-based (22), whilst some were also focused on leadership (5), special needs (5) or a particular subject (16). Individual respondents also cited academic, broader focused journals, for example the British Educational Research Journal and the British Journal of Education Studies.

Other sources of academic research included the internet (n=119), professional organisations (n=67), training or conferences (n=50) and professional networks (n=15).

Whilst these sources align with expectations of researchers who would resort to similar sources of information to inform practice and directions for research, perhaps unsurprisingly there is a common theme of professional orientation.

These respondents were also asked about the kinds of support structures put in place by the TSA and/or school to facilitate use of research. The most popular response was CPD (n=265), with some staff mentioning specific approaches such as learning sets (8) or lesson study (26). Other respondents noted time allocation for research (55), journal clubs (52) and email support (22). A few staff mentioned support for conference attendance (9), funds for further study (5), staff newsletter information (5) and Twitter (4). However, despite these positive responses, some respondents said they were not currently receiving any support whilst a few noted that they were not confident about how to access research (8) or they were paying for access or materials themselves (5).

Finally, these respondents were asked about the extent to which they had used information from research in the previous year (Figure 7). The majority of respondents (n=837) indicated that they used information from academic research frequently ('a lot') to inform thinking, reflect on their own practice and to improve their knowledge of a topic or subject. It seems that they are less likely to translate this improved knowledge/understanding into action as statements which involved action such as 'discussing best practice with colleagues', 'changing own practice', 'contributing to their own research/enquiry' and 'influence colleagues to change their practice' were undertaken less frequently ('a little') by the majority of respondents. Again, this suggests a gap between consulting sources of evidence and information and putting such information to use in practice. It is important to discover what lies behind this gap as it is clearly something important to overcome to engage schools in developing EBT practices.

Figure 7: Extent of use of research in last year



4.4 Engagement in research

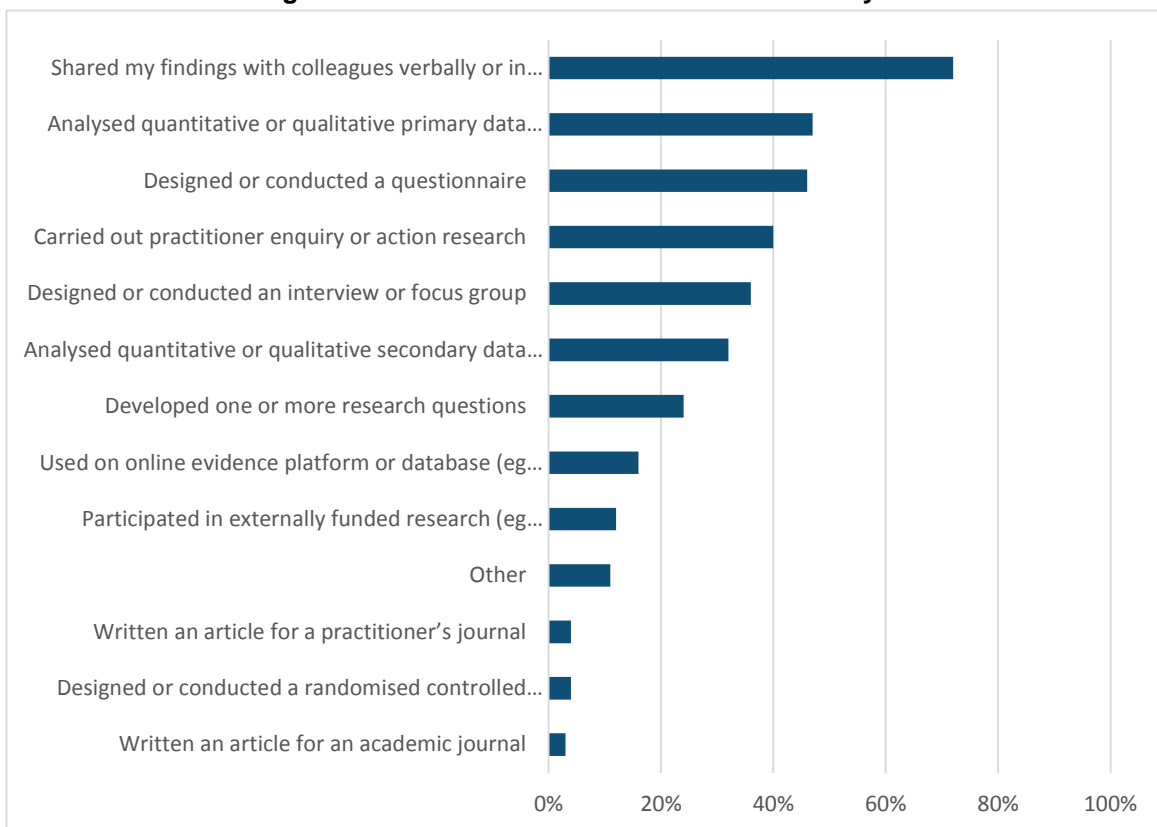
In addition to asking staff about their experience of accessing and using academic research, they were also asked about their experiences of conducting research themselves. Just over half of the respondents (54 per cent, n=1028) felt that they had some experience of doing research oriented CPD in school. However, only 9 per cent felt that they were an experienced teacher researcher and 37 per cent said that they had no experience of doing research or enquiry. This finding is interesting in relation to the earlier suggestion that staff understand what evidence based practice is, and are reasonably confident about accessing and using research.

Further analysis revealed that there was an association between research experience and job role ($\chi^2 = 125.944$, $p > 0.001$). Perhaps unsurprisingly, 76 per cent of teaching assistants reported no experience of engaging in research. In comparison, 45 per cent of classroom teachers reported no experience of engaging in research whilst only 27 per cent of middle leaders and 18 per cent of senior leaders reported this.

These figures, whilst demonstrating similar trends to those reported above, nevertheless indicate far less confidence about engaging **in** research than engaging **with** research. This will be an interesting aspect of the work undertaken by the TSAs to investigate further as they themselves appear to be meeting with pockets of resistance to undertaking or getting involved in research. This may be associated with perceptions around the time available to engage in research, or about perceptions around the skills and knowledge required to undertake research. We suggest that this may be something to follow up more explicitly with the teacher-leads and their school colleagues.

The 646 staff who indicated that they had some or a lot of experience of undertaking their own research were asked to provide more detail; 625 staff responded (Figure 8). Sharing findings with colleagues was the most popular response (72 per cent), supporting the claim that collaboration and sharing is an effective means of developing a research culture (Carroll, 2009; Pedder et al, 2005). The collection of data via questionnaires (46 per cent), the analysis of data (47 per cent) and practitioner enquiry and action research were also popular research activities. Unsurprisingly, very few staff have engaged in RCT's (4 per cent), perhaps reflecting the difficulties of conducting this methodology in school settings and the knowledge and resources required. It should be noted that other national projects underway have either been designed to develop teachers' quantitative research methods skills (eg the NCTL Closing the Gap: Test and Learn project) or have recruited schools to participate in RCTs (eg many projects funded by the Education Endowment Foundation). Relatively few staff had written for practitioner or academic journals (equivalent to 44 people).

Figure 8: Research activities undertaken in last year



These respondents were also asked about training and support they had received for conducting their own research. Approximately half of the respondents (51 per cent) had received internal training from school management teams or colleagues to help them conduct this research. One in five staff (22 per cent) used knowledge gained from completing a postgraduate qualification prior to conducting the research. One in ten staff (9 per cent) were studying for a postgraduate qualification and were using this knowledge to help them to conduct research. Some staff (18 per cent) had received support from a university whilst others (14 per cent) received support from an external consultancy organisation. Support from a university can be an effective means of engaging staff in

evidence based teaching (Jeanpierre et al, 2005). Thus, it seems that schools are more likely to use internal support/resource rather than seek external guidance, perhaps reflecting financial constraints. This does however risk a sense of insularity that may lead to sharing of practices that are not making best use of research. Schools engaged with external agencies may be more likely to take risks and have the confidence to move beyond expected practices. Again, this is an interesting aspect to consider in the work being undertaken for this project.

Respondents were asked what motivated them to conduct research. They were most likely to conduct research in relation to their own interest/personal development (62 per cent) and/or in order to raise student performance (55 per cent). Two out of five staff (42 per cent) also said they had been motivated to conduct the research because of the requirements of a school initiative and a quarter (25 per cent) were aiming to fulfil the requirements of a qualification. Almost one in four staff (23 per cent) were conducting research in response to a request made by school management. Clearly, enthusiasm for undertaking research is an important factor in driving new ideas forward. For schools where this enthusiasm aligns with school priorities they are clearly going to be at an advantage. This leads to the consideration that the more closely schools engage teachers in wider priorities for the school the more likely it is that staff will choose to pursue activities that support school development.

Finally, respondents were asked what the outcomes of their own research activities were. They were most likely to indicate that pupils had responded positively (61 per cent) and/or they or their colleagues had continued to use the approach/apply the findings (56 per cent). They also attributed impact of the research to improvements in pupil attainment on account of performance data (26 per cent) and their own evaluation of attainment (32 per cent). Only 6 per cent of respondents said that an independent evaluation had shown a positive impact upon pupil attainment as a consequence to the research activity. Again, data of this nature indicates why, once involved in research, school staff are likely to see benefits from this engagement.

4.5 Conclusions

The results of the baseline survey highlight that evidence based teaching is at an early stage of development and that there are gaps between staff perceptions and practices. Understanding of evidence based teaching is potentially less research focused than might have been expected. Awareness of online evidence databases is limited for example. Only a small number of staff (6 per cent) said that they did not know what evidence based teaching meant which contradicts the findings reported by TSA leads.

In relation to accessing and using professional research, respondents were broadly positive. However, respondents had limited knowledge of colleagues' EBT activity suggesting that collaboration and sharing is not as developed as it might be. Moreover, some work still needs to be done to encourage senior leaders to support evidence based

teaching in school. Respondents were broadly confident about their ability to understand academic research, contradicting current research on this aspect, perhaps suggesting misunderstanding of what academic research is. Further probing revealed that much of the academic research teachers are accessing is professionally-orientated (eg practice-focused books, practitioner journals, education newspapers, professional organisation magazines). This is an issue that researchers need to address to ensure accessibility is maximised.

There is a clear gap between consulting academic research and putting such information to use in practice. Moreover, staff are far less confident about engaging **in** their own research than engaging **with** research. Although many teachers reported sharing findings with colleagues, relatively few had written for academic or practitioner journals. Importantly, schools are more likely to provide internal support and resources for supporting staff to engage in research than external guidance. This could constrain development of evidence based teaching and lead to the replication of practices not making the most effective use of research.

Section five: Overall conclusions

Our review of the literature supports the approach we have undertaken: to work collaboratively with teachers and provide a variety of support mechanisms which enable them to lead EBT developments across their TSAs. The EBT-ACCESs leads are engaged and enthusiastic. They have adopted and developed approaches which attempt to address the known barriers we have identified through reviewing the literature, accounting for local contexts and individual needs.

The baseline survey confirmed that teachers are still developing an understanding of EBT. Understandably, many teachers associate this term with professionally-oriented literature rather than academic research. They are more confident about engaging with research (ie accessing literature, whether than be professional or academic) than they are about engaging in research (ie conducting research themselves).

Next steps include working with the teacher leads in the use of evidence so that they can synthesise, evaluate and use research as a practical tool to improve practices around them. We will then look at dissemination techniques and how best they can act in a continuing and sustainable way as advocates of EBT in schools. A second survey will be conducted in November 2015. Through the analysis of survey and interview data together with a cross-case analysis of the evaluation reports produced by teacher leads, we will address the overarching evaluation question:

Which approaches to supporting EBT have most impact on TSAs in relation to developing staff capability and capacity, and under what conditions?

The final evaluation report will be published in the summer 2016.

Useful Links

[The Importance of Teaching - The Schools White Paper 2010](#)

[Improving the quality of teaching and leadership 2013](#)

[Research priorities and questions: teachers and teaching 2013](#)

[Background about National teaching schools](#)

[Closing the Gap: Test & Learn programme](#)

[Talk given by Frank Furedi at ResearchED 2013](#)

[NFER Research in Schools](#)

[St Andrews project on mobilising knowledge in health care](#) (drawing on lit from education) - see 1,b (mapping the KM landscape)

Organisations

[Alliance 4 Useful Evidence](#)

[The Evidence Based Teachers Network](#)

[researchED](#)

[National Teacher Research Panel](#)

[Coalition for Evidence-based Education](#)

[Teacher Development Trust: Research Access](#)

Reading

[Geoff Petty: Evidence-based teaching](#)

[The Evidence-based teacher's toolkit](#)

References

- Belkhdja, O., Amara, N., Landry, R. and Ouimet, M. 2007. The extent and organizational determinants of research utilization in Canadian health services organizations. *Science Communication*, 28(3), 377–417.
- Borg, S. 2010. Language teacher research engagement. *Language Teaching*, 43 (4), 391–429.
- Bridges, D. Smeyers, P. and Smith R. 2009. *Evidence–Based Education Policy. What evidence? What basis? Whose Policy?* Sussex: Wiley–Blackwell.
- Bransford, J. Stipek, D., Vye, N., Gomez, L. and Lam, D. 2009. Equity, excellence, elephants, and evidence. In, J Bransford, D. Stipek, N. Vye, L. Gomez & D. Lam (Eds.), *The role of research in educational improvement*. Cambridge MA: Harvard Education Press, 1-17.
- Caldwell, R. 2003. Models of Change Agency: a Fourfold Classification. *British Journal of Management*, 14, 131-142.
- Carroll, M. 2009. Chartered Teachers and the process of professional enquiry: the experience of five Scottish teachers. *Professional Development in Education*, 35 (1), 23-42.
- Cordingley, P. 2015. The contribution of research to teachers' professional learning and development. *Oxford Review of Education*, 41 (2), 234-252.
- Davies, B. and Brighouse, T. 2008. *Passionate Leadership in Education*. London: Sage Publishing.
- Dejours, C. and Deranty, J-P. 2010. The Centrality of Work. *Critical Horizons* 11 (2), 167-180
- Department for Children, Schools and Families (DCSF) 2009. *Improving subject pedagogy through Lesson Study. Handbook for leading teachers in mathematics and English*. Nottingham: DCSF Publications.
- Durbin, B. and Nelson, J. 2014. *Why Effective use of Evidence in the Classroom Needs System-wide Change* (NFER Thinks: What the Evidence Tells Us). Slough: NFER.
- Dudley P. 2013. Teacher learning in Lesson Study: What interaction-level discourse analysis revealed about how teachers utilised imagination, tacit knowledge of teaching and fresh evidence of pupils learning, to develop practice knowledge and so enhance their pupils' learning. *Teaching and Teacher Education*, 34, 107–121.
- Fenwick, T. and Farrell, L. 2012. Introduction: Knowledge mobilization: the new research imperative. In, T. Fenwick and L. Farrell (Eds) 2012. *Knowledge Mobilization and*

Educational Research: Politics, Languages and Responsibilities. London: Routledge, 1-14.

Furedi, F. 2013. Keep the Scourge of Scientism out of schools. [online] http://www.spiked-online.com/newsite/article/dont_import_the_scourge_of_scientism_into_schools/#.VgIDT2RVhBd

Godfrey, D. 2014. Leadership of schools as research-led organisations in the English educational environment: cultivating a research-engaged school culture. *Educational Management, Administration & Leadership*, 1-21.

Goldacre, B. 2013. *Building Evidence into Education* [online]. Available: <http://media.education.gov.uk/assets/files/pdf/b/ben%20goldacre%20paper.pdf> [14 January, 2014].

Gough, D. 2013. Knowledge mobilisation in education in England. In, Levin, B., Qi, J., Edelstein, H. and Sohn, J. (eds) *The Impact of Research in Education. An International perspective*. Bristol: The Policy Press, 65 -84.

Hammersley, M. 2013. *The Myth of Research-based Policy and Practice*. London: Sage.

Handscombe, B. and Macbeath, J. 2003. *The research engaged School*. Essex County Council.

Hargreaves, D. 1996. Teaching as a research-based profession: possibilities and prospects. Paper presented at the Teacher Training Agency Annual Lecture, April [online]. Available: <http://eppi.ioe.ac.uk/cms/Portals/0/PDF%20reviews%20and%20summaries/TTA%20Hargreaves%20lecture.pdf> [14 January, 2014].

Hargreaves, D H. 2011. *Leading a self-improving school system*. Nottingham: National College for School Leadership.

Hemsley-Brown, J. 2004. Facilitating research utilization: A cross-sector review of research evidence, *The International Journal of Public Sector Management*, 17(6), 534–552.

Jeanpierre B., Oberhauser, K. and Freeman, C. 2005. Characteristics of Professional Development that effect Change in Secondary Science Teachers' Classroom Practices. *Journal of Research in Science Teaching*, 42 (6), 668-690.

Kleinpell, R.M. 2002. Rediscovering the value of the journal club. *American Journal of Critical Care*, 11 (5), 412-414.

MacLure, M. 2005. 'Clarity bordering on stupidity': where's the quality in systematic review? *Journal of Education Policy*, 20 (4), 393–416.

National Teacher Research Panel (NTRP) 2011. Habitats for teacher research: teacher perspectives on research as a sustainable environment for CPD. Coventry: CUREE.
http://www.curee.co.uk/files/publication/1313750504/NTRP%20survey%20report%20FINAL_0.pdf

Nelson, J. and O'Beirne, C. 2014. *Using Evidence in the classroom; What works*. Berkshire: NFER.

Nutley, S., Walter, I. and Davies, H. 2007. *Using Evidence: How Research can Inform Public Services*. Bristol: The Policy Press.

Nutley, S. 2013. Reflections on the mobilisation of education research. In, Levin, B., Qi, J., Edelstein, H. and Sohn, J. (Eds) *The Impact of Research in Education: an International Perspective*. Bristol: The Policy Press.

Pedder, D., James, M. and MacBeath, J. 2005. How teachers value and practice professional learning. *Research Papers in Education*, 20, 209–243.

Sharples, J. 2013. *Evidence for the Frontline*. London: Alliance for Useful Evidence [online]. Available: <http://www.alliance4usefulevidence.org/assets/EVIDENCE-FOR-THE-FRONTLINE-FINAL-5-June-2013.pdf> [14 January, 2014].

Simkins, T., Maxwell, B. and Aspinwall, K. 2009. Developing the whole-school workforce in England: building cultures of engagement. *Professional Development in Education*, 35 (3), 433-450.

Williams, D. and Coles, L. 2007. Teachers' approaches to finding and using research evidence: An information literacy perspective, *Educational Research*, 49 (2), 185–206.

Winch, C. 2013. Three Different Conceptions of Know-How and their Relevance to Professional and Vocational Education. *Journal of Philosophy of Education*, 47 (2), 281-298.



National College for
Teaching & Leadership

© Crown Copyright [2015]

Reference: RR-482

ISBN: 978-1-78105-521-2

You may re-use this document/publication (not including logos) free of charge in any format or medium, under the terms of the Open Government Licence v2.0. To view this licence, visit www.nationalarchives.gov.uk/doc/open-government-licence/version/2 or email: psi@nationalarchives.gsi.gov.uk.

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

The views expressed in this report are the authors' and do not necessarily reflect those of the Department for Education.

Any enquiries regarding this publication should be sent to us at:
teaching.schools@education.gsi.gov.uk or www.gov.uk/nctl

This document is available for download at www.gov.uk/government/publications