Measuring Teachers' Research Engagement: Findings from a pilot study

Report and Executive Summary

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The Education Endowment Foundation (EEF)

The Education Endowment Foundation (EEF) is an independent grant-making charity dedicated to breaking the link between family income and educational achievement, ensuring that children from all backgrounds can fulfil their potential and make the most of their talents.

The EEF aims to raise the attainment of children facing disadvantage by:

- Identifying promising educational innovations that address the needs of disadvantaged children in primary and secondary schools in England;

- Evaluating these innovations to extend and secure the evidence on what works and can be made to work at scale;

Encouraging schools, government, charities, and others to apply evidence and adopt innovations found to be effective.

The EEF was established in 2011 by the Sutton Trust, as lead charity in partnership with Impetus Trust (now part of Impetus-The Private Equity Foundation) and received a founding £125m grant from the Department for Education.

Together, the EEF and Sutton Trust are the government-designated What Works Centre for improving education outcomes for school-aged children.

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Executive summary

This report presents findings from a survey that aims to capture teachers' engagement with academic research evidence. The survey was developed to provide a measure of research engagement across a series of projects, funded by the Education Endowment Foundation (EEF), which aim to increase schools' awareness, and use, of research evidence[1]. It is designed to be used alongside focused, qualitative research (interviews, case studies etc), which can capture wider uses of research evidence and contextual issues that are outside the scope of the survey.

The survey adopts a number of novel approaches to investigating teachers' use of research. These include exploring teacher's objective knowledge of research evidence (as well as self-reported perceptions of research engagement), and the use of factor analysis to quantify, and identify trends in, the data.

While schools in the achieved pilot sample were broadly representative of all school types across England, it is important to be aware that the sample was not constructed to be representative of all *teachers*[2]. The sample must therefore be considered non-random and the report, sample specific.

Key findings

1. Research has a relatively small impact on teachers' decision making

The survey began by asking teachers a variety of questions about the *relative* influence of different sources of information when making decisions about their approaches to teaching and learning. The questions were framed so that they were not biased towards answers that referred to research. Analysis of the pilot data showed that:

- Information based on academic research had only a small to moderate influence (typically under one quarter of teachers identified these sources).

- Teacher-generated ideas, both from within and outside of the school, had a much greater influence (between around one half and three quarters of teachers identified these sources through various questions).

- Training and Continuing Professional Development (CPD) were also identified as major influences (around half of respondents), although this was more likely to be based on teacher-generated ideas and the expertise of external consultants than academic research.

- The sources of information that teachers found easiest to understand were: colleagues in their own schools; pupil performance data; CPD information; and colleagues in other schools. Information based on academic research was reported as less easy to understand.

Collectively, this suggests that research evidence is not playing a major role in teachers' decision-making when developing their classroom practice, relative to other sources.

2. Teachers have positive dispositions towards research, and generally see themselves as being research engaged

The survey went on to ask teachers a series of questions about their views on research evidence and how they felt it influenced their practice. This time we enquired only about academic research (rather than research as one of a number of influences) and also defined what we meant by 'research evidence'. When asked explicitly about research in this way, teachers were much more likely to identify themselves as valuing research, engaging with research evidence, and using it to change classroom practice (typically around two thirds of teachers).

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[1] When this report was written, these projects were still under evaluation. Publication was therefore delayed until 2017 to allow all data collection to be completed before the results were made public.
[2] The survey was designed to support factor analysis rather than to achieve a sample that was representative of teachers. However, the pilot yielded some interesting results and thus the findings were explored in detail. 509 teachers from 256 schools completed the survey.

3. Teachers have a weak, but variable, knowledge of academic research evidence

The final section of the survey contained two quiz questions that intended to capture an objective measure of teachers' knowledge of research. The questions were designed to be as unambiguous and research-based as possible, with correct/false answers. The results from the pilot suggest:

- A weak, but variable, understanding of the evidence-base relating to teaching and learning strategies.
- A weak, but variable, understanding of different research methods and their relative strengths.
- A particularly poor understanding of the evidence-base that requires scientific or specialist research knowledge (e.g. the validity of 'neuromyths').

Factor analysis identified trends in the data

In order to summarise information from all the survey questions into a smaller set of reliable measures, we ran factor analysis on the pilot data. Factor analysis is a statistical technique that is used to explain variability among responses and identify trends in the data. Any answers that are correlated across the survey are grouped together into single 'factors', which have greater reliability than individual answers.

Five such groupings emerged through the analysis, plus an additional measure that captured teachers' scores on the research knowledge questions. These factors were then used to explore differences in responses between different groups of teachers and schools (e.g. teacher seniority, school phase, OfSTED category). This analysis suggested that:

4. Teachers in secondary schools were more likely to be 'research engaged' than primary school teachers (on some factors)

5. Senior and middle leaders were more likely to be 'research engaged' than classroom teachers (on all factors and across all school phases)

6. Teachers in schools in lower OfSTED categories were more likely to use online evidence platforms (eg EEF Teaching and Learning Toolkit)

Teachers in schools judged by Ofsted to be 'inadequate' or 'requiring improvement' were more likely to actively engage with online evidence platforms than teachers in Ofsted-rated 'good' or 'outstanding' schools, across all school phases.

7. A teacher's understanding of the term 'evidence-based teaching' appears to be a good indicator of wider research engagement and knowledge

The survey contained a question that explored what the phrase 'evidence-based teaching' meant to teachers.

Those teachers that selected answers that contained a reference to academic research evidence scored more highly on almost all measures of research engagement than teachers who did not.

Summary

This report provides some interesting findings that provide a useful indication of current levels of teacher research engagement and research knowledge across English schools. It suggests that academic research has only a small to moderate influence on decision making relative to other sources, despite teachers generally reporting a positive disposition towards research.

Additionally, it suggests this positive disposition towards research, and perceptions of research engagement, are not necessarily transferring into an increased conceptual understanding of research knowledge. The survey presents some novel ideas about how we can investigate, analyse and quantify knowledge mobilisation in education.

1 Introduction

1.1 Introduction

In 2014, the Education Endowment Foundation (EEF) announced a major funding round into schools' uses of research evidence. This funding round saw the commissioning of a number of evaluations of a range of different methods of communicating research findings to teachers and schools.[3] Simultaneously, NFER was commissioned by EEF to develop a baseline and outcomes survey to measure research engagement across the research use round.

Each of the research use round projects (and associated evaluation teams) focuses on a primary and secondary objective. The baseline and outcomes surveys were developed specifically to support the secondary objective (for full details see Poet *et al.*, 2015).

- **Primary objective** – to determine the impact of different research communication and engagement strategies on **pupil attainment**.

- **Secondary objective** – to determine the impact of different research communication and engagement strategies on **teachers' research engagement**.

1.2 Survey design, piloting and sampling

1.2.1 Survey design

Between May and November 2014 we developed baseline and outcomes surveys, working closely with colleagues at EEF, academic experts[4], research use round evaluation teams[5] and teachers. The finalised baseline survey was ready for administration by the research use round evaluators in September 2014 and the draft outcomes survey was ready for pilot by November 2014. Following the pilot, we refined the outcomes survey and finalised it by March 2015 ready for use across the research use round and by evaluators into the future.

The finalised outcomes survey aims to quantitatively capture research engagement within and across a sizeable number of schools. It is designed to be used alongside focused, qualitative research (interviews, case studies etc), which can capture wider uses of research evidence and contextual issues that are outside the scope of the survey (see points D) and E) below).

While other surveys have achieved similar goals, we adopt a number of novel approaches to exploring, analysing and reporting the use of research evidence in schools in our survey. We have aimed to produce an instrument and set of related outcome measures and that can be used in different contexts in the future. Three key features of the survey are described below:

A) Avoidance of 'priming'

When we designed the surveys we were aware that other research commissioned by EEF asking teachers directly about their attitudes to research had generated very high levels of apparent research engagement. We learned from this experience. Our surveys asked teachers to identify a specific teaching and learning approach that they had adopted, and then asked questions about the degree to which a *variety of factors* influenced this approach. By 'anchoring' our survey questions around a specific activity or teaching approach in this way, we were able to gain a more realistic insight into the role of research in informing decision making, alongside a variety of other factors. We did not introduce any questions that were explicitly about research use until later in the survey.

B) Measuring knowledge

A number of our survey questions help us explore whether or not teachers use research evidence to inform their decision making, how influential the research evidence has been, and how easy they find it to understand. However, attitudinal questions alone cannot deduce the extent to which teachers *know* what the evidence tells them about teaching and learning and whole-school practices.

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3 Details of programmes funded and evaluated through EEF's research use round can be found at:
http://educationendowmentfoundation.org.uk/projects/projects-a-z/research-use-in-schools/
4 Professor Sandra Nutley of the University of St Andrews and Professor Carol Campbell of the University of Toronto.
5 Institute of Education, NatCen, NFER and the University of Bristol.

For this reason, we developed two brief 'quiz' questions towards the end of the survey in order to provide an objective measure of teachers' research knowledge. As far as we are aware, this marks a departure for research into the issue of research engagement. The first question focuses on teaching and learning or whole-school approaches that have a strong, and relatively uncontroversial, evidence-base about best practice. The second question aims to achieve a measure of teachers' research literacy – that is, their knowledge of different research methods, and the relative reliability of these in answering key research questions.

C) Generating outcome measures using factor analysis

We used a statistical technique called factor analysis to analyse our pilot survey data in order to construct a number of *research engagement outcome measures*. Factor analysis is a statistical technique that summarises information from a number of survey items into a smaller set of reliable measures. Measures derived in this way are more robust than individual question items (See Section 3).

The factor analysis resulted in five distinct research engagement outcome measures (See Table 3.1), which we have used to further explore the ways in which teachers responded to our survey. As far as we are aware, this is the first time that factor analysis has been used to investigate and quantify how research informs decision making in teachers' practice.

While our surveys have a number of unique features, it is worth noting that they also have a number of caveats and limitations:

D) Defining research engagement

Research engagement is a term that means different things to different people. It captures a range of activities including, for example, the use and application of academic/professional research, as well as schools undertaking their own research and enquiry activities. Our surveys contain a number of response options that we have 'scored' as 'research engaged'. We recognise that we have adopted a narrow definition of research engagement in order to undertake this scoring. This is not to suggest that other forms of research engagement and use are not important. However, we have created a definition that is measurable. Findings arising through use of the survey are likely to benefit from further exploration via qualitative means. Our definition of teacher research engagement is based on:

- Teachers' uses of externally-produced academic/professional research (rather than teacher-led research or enquiry).

- Teachers' explicit awareness of their use of research (rather than implicit means by which research can be communicated to teachers through conversations, social media and so on).

E) Determining the degree/nature of research engagement

Research engagement is a complex process with a variety of overlapping elements. In designing the surveys, we found it helpful to think through a number of key constructs that, when combined, created a picture of research engagement. These were developed in liaison with Professor Sandra Nutley of the University of St Andrews and colleagues at EEF. The constructs acted as a useful 'sense check' in ensuring that the surveys had the capacity to measure research engagement broadly. They also helped us to identify key survey items to be included in factor analysis (See Section 3). The constructs were:

- **access and awareness** – believing in the value of research evidence; knowing about research evidence; knowing how to locate it; and physically accessing research evidence

- **understanding and persuasion** – understanding what the research evidence says; knowing how to critique it; believing in the findings (if reliable); and understanding the implications for classroom practice

- **translation and action** – knowing how to apply research evidence in practical situations; changing behaviour or approach on the basis of research evidence; and using research evidence to make a difference in the school

- **knowledge** – knowing what the research evidence says on key topics related to effective teaching and learning and whole-school practice.

There is a difference between having a keen interest in research (access and awareness) and actively using it to support change or decision making at whole-school or classroom level (translation and action). It is considerably easier to measure the former than the latter. We have attempted to address both of these aspects within the surveys, however, we have not been able to explore in great detail the mechanisms by which schools translate research findings for their specific setting, implement evidence-based approaches, or use research to support change. This is also an area that may benefit from further exploration.

When interpreting the findings from the surveys, it is important to be aware of the design challenges faced, the decisions made, and the approach adopted. The surveys can tell a great deal about teachers' views of, and use of, academic research in support of their practice; but deeper exploration is required to establish some of the change mechanisms at play in local settings such as: approaches to implementation; interactions with school-level processes and systems; the role of trust and relationships; the filtering of evidence through a variety of channels; and the blending of research evidence with additional sources of information, for example.

It is worth reiterating that the survey should be used alongside more focused, qualitative research (interviews, case studies etc), in order to investigate some of these important factors and interactions.

1.2.2 Piloting

In November 2014, the outcomes survey was piloted. The main aims of the pilot were to:

- check the functioning of the survey items
- create reliable measures of research engagement within schools through factor analysis (See Section 3)
- ascertain where amendments were needed to the design of the survey.

The pilot was not specifically designed to achieve a sample that was *representative* of any particular group of teachers. It was primarily undertaken to support factor analysis and to create a number of reliable measurement scales.

However, on analysis of the frequency data that was produced to support the factor analysis, we realised that the pilot had yielded some very interesting results. For this reason, EEF commissioned us to explore the findings from the pilot study through this report in order to provide a flavour of the extent of current teacher research engagement. A copy of the pilot survey is provided in Appendix B of this report. Please note that after piloting, the survey was adapted and a final version created. The final version of the survey is appended to our technical report (Poet *et al*, 2015). The versions are slightly different and the question numbers do not correspond.

1.2.3 Sample description

We sent the pilot survey to a sample of 1,200 secondary and 900 primary schools, some 2,100 schools in total. Each school was provided with five copies of the questionnaire to be completed by up to five members of staff. This equates to samples of 4,500 primary and 6,000 secondary teachers respectively (10,500 teachers in total). We offered an incentive of £5 (either an online store voucher, or a charity donation) to the first 350 responding teachers (300 of which were required in order to enable reliable factor analysis).

Very quickly, we achieved 509 responses across 256 schools (an average response of two teachers per school and an achieved response rate of just under five per cent of sampled teachers). We did not have the budget to support additional incentive payment so we interrupted the return of surveys at the first available opportunity, asking teachers not to complete or return any further questionnaires to us. It is likely that without this interruption, the pilot response rate would have been considerably higher.

1.2.4 Sample representativeness

The main aim of piloting the outcomes survey was to check the functioning of the survey items and to create reliable measures of research engagement through factor analysis. For these purposes, it was appropriate to draw a random sample of schools from the population of schools in England. It was sufficient to have 300 responses at respondent (teacher) level in order to reliably carry out the above

analyses. We did not need to achieve a representative sample of teachers; just a sample that covered the range of responses required to develop the research engagement scales.

Overall, schools in the achieved sample were representative of all school types across England. Our achieved sample of schools (n=256) was similar to schools in the wider population when school type was taken into consideration. However, both the *school* and *teacher* response rates were low. It is likely that the teachers who responded to this survey were not representative of the entire teaching workforce. Teachers who responded were likely to share certain characteristics making them different to those who did not respond. These characteristics might have manifested themselves in the survey measures, leading to bias. In an ideal scenario, teacher representativeness could have been achieved by administering the survey to another sample of teachers accompanied by a large incentive. In the absence of such an exercise, we refer to the analysis that follows as 'sample specific', although we do also consider the degree to which generalisations can be made on the basis of our findings.

In order to ascribe uncertainty to our population estimates, whilst taking account of the hierarchical nature of the data (teachers clustered within schools), we calculated confidence intervals alongside the descriptive statistics. The highest standard error was found in the responses to Question 3c at three percentage points (Question 3c asked teachers about the information on which any CPD they had received was based). On average, 58 per cent of teachers responded that their training/CPD was based on 'ideas from my school'. Assuming no bias in the sampling, if we were to collect responses from all teachers in England, the range would be between 52 and 64 per cent for this question. Given that this question had the highest standard error of all survey questions, we can state that the precision of all our survey results will be precise to within (at worst) plus or minus six percentage points. This means that, with no sampling bias, we can be 95 per cent confident that if we were to collect results from all teachers in England, the results would be within six percentage points of the results presented in this report[6].

It is important to note that this measure of uncertainty applies to a random sample of schools; and of teachers within schools. With bias in the sampling, the true population percentage could easily lie outside this range.

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[6] This is a simplification of the strict statistical definition of a confidence interval.

2.   Headline survey findings

In this section we provide analysis of the frequency data gathered through analysis of completed questionnaires from the pilot. Below are some key points relating to layout and presentation:

- The results of all survey findings are presented graphically, but are also provided in table format in Appendix A.

- To aid accessibility, the wordings of individual survey questions and items have been shortened in the graphs that follow, but are reported in full in Appendix A.

- To improve visual appeal, we have removed the very small percentages of respondents answering 'not relevant' or 'don't know' from most of the graphs that follow, but these are reported in full in Appendix A.

2.1   School and teacher characteristics

We asked teachers some initial questions about their roles and careers. The breakdown of responses was as follows:

- **School phase** – just under two thirds of responding teachers were based in secondary schools (62 per cent) and just over one third in primary schools (38 per cent). This broadly reflects the original sample structure, where 57 per cent of sampled schools were secondaries, and 43 per cent primaries. Secondary teachers were proportionately more likely to respond than primary teachers.

- **Job role** – responding teachers were divided fairly evenly by seniority, with approximately equal thirds falling into the categories of: senior leader (33 per cent); middle leader (30 per cent) and classroom teacher (33 per cent)[7].

- **Length of time in role** – the graph below shows that the largest single group of teachers (34 per cent) had been in the profession for between 10 and 19 years, followed by those who had been teaching between five and nine years (21 per cent) and those who had been teaching between 20 and 29 years (18 per cent). As one would expect, teachers who had been in the profession for 30 years or more, or for a short time only, were much smaller in number.

Graph 1 - How long have you been in the teaching profession?

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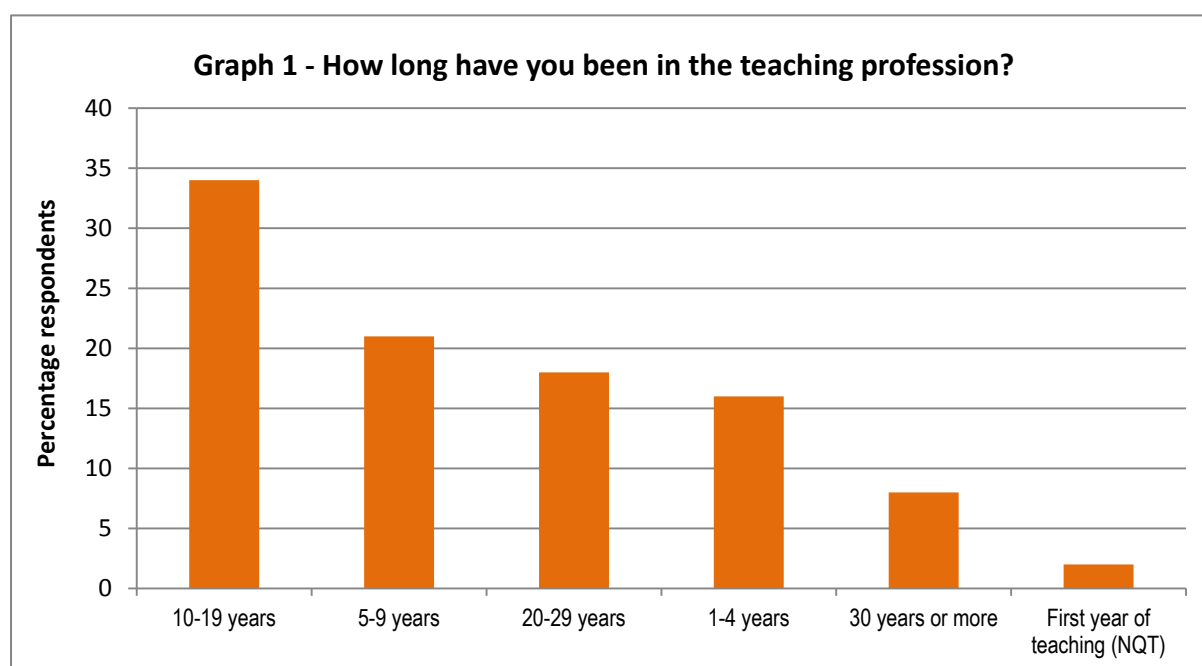
[7] Two per cent of respondents did not provide a job description and a further two per cent identified themselves as having 'other' roles including: technician; teaching assistant; cover teacher; and teacher/researcher.

## 2.2 Influences on specific teaching approaches

As explained in Section 1.1.1, we developed the survey with a view to avoiding 'priming' teachers about the fact that our primary interest was their uses and views of research evidence. An opening question in the survey therefore asked them to identify a specific approach used within their school to support pupils' progress. Respondents were free to name any teaching method, resource, product or initiative that they wished. As anticipated, they identified many different approaches and strategies in response to this question. We coded these into three broad categories:

- General teaching and learning approaches (e.g. peer tutoring, 44 per cent).
- Named/branded teaching and learning interventions (23 per cent).
- Teacher-developed approaches or initiatives (21 per cent)[8].

Once they had named their approach, respondents were asked a series of questions about the criteria that had proven important when deciding upon it.

2.2.1 Most important criteria in identifying approach
Respondents were provided with a list of potential influences on the identification of their named approach and were asked to name the three that they thought had been most influential from this list[9]. The results are presented in the graph below.
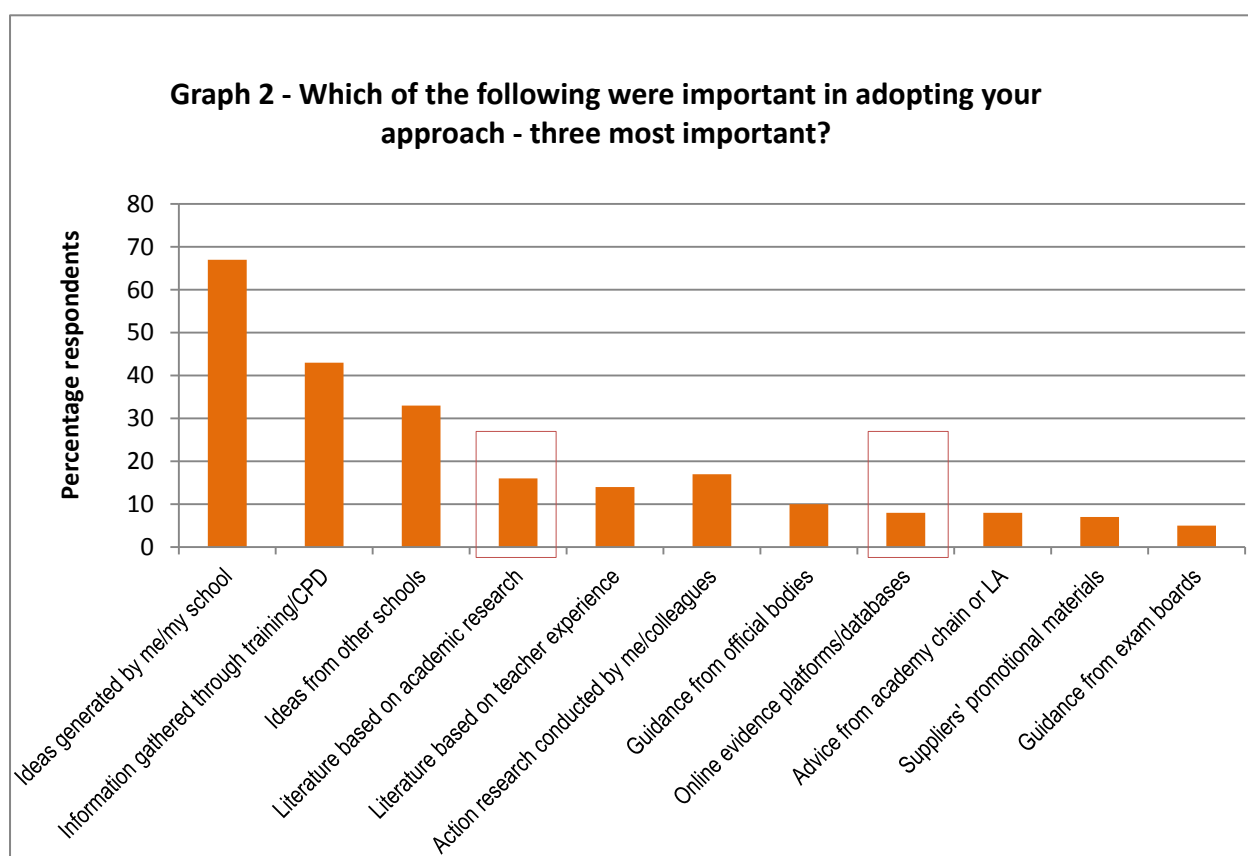
Graph 2 - Which of the following were important in adopting your approach - three most important?

This graph suggests that information from academic or externally-produced professional research tends not to be a major influence when schools are making decisions about whether or not to adopt a specific approach to supporting pupil progress, relative to other factors. That said, research evidence does have a place in decision making, alongside a range of other criteria. It is known that teachers trust the judgement of their colleagues and themselves above many other sources of information (see for example Judkins *et al*, 2014). These survey findings bear out this view.

Broadly speaking, teachers in our pilot cited key influences on their decision making as:

- **Teacher/school generated – large influence:** Own ideas (67 per cent); ideas from other schools (33 per cent); and action research conducted by themselves or colleagues (17 per cent).

- **Externally professionally generated – large influence**: Information gathered through training/CPD (43 per cent); literature based on teacher experience (14 per cent).

- **Academically generated – moderate influence**: literature based on academic research (16 per cent); online evidence platforms, such as the EEF Teaching and Learning Toolkit (eight per cent).

- **Policy generated – small influence**: guidance from official bodies such as the DfE or Ofsted (10 per cent); advice from academy chain or local authority (LA) (eight per cent); guidance from examination boards (five per cent).

Only seven per cent of respondents said that the promotional materials of a supplier were a key influence in identifying their approach to supporting pupil progress.

The findings above require some interpretation.

A) Training/CPD

It is clear that teachers' 'own ideas' and 'ideas from other schools' have a strong influence on pedagogical decision making. 'Information gathered through training/CPD' is also reported as a major influence, although without further investigation the extent to which such CPD was based on research evidence is not immediately clear. The same issue applies to a whole range of other 'transmission mechanisms' – social media being a good example.

We were not able to explore the content of all these mechanisms within a brief survey, but we did explore the basis of any CPD received. The graph below presents the range of resources that teachers reported their training/CPD to be based upon. It shows that 18 per cent of the 213 respondents who cited CPD as an influence on their teaching and learning approach reported that it was based on academic research. Teacher generated ideas and the expertise of external consultants were reported as more influential.

An interesting angle for future research would be to explore, and better understand, the variety of mechanisms by which research evidence is transmitted to teachers and the relative influence of these mechanisms on their research engagement.

Graph 3 - The training/CPD was based on...
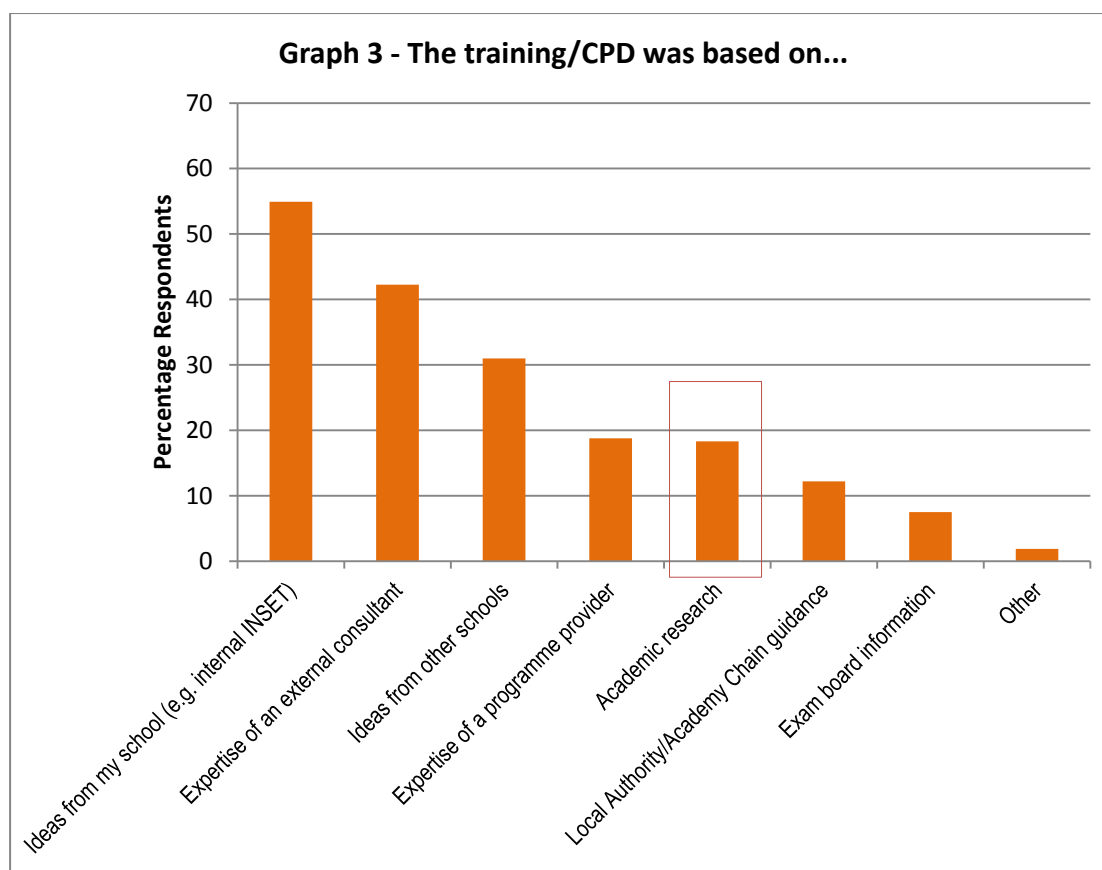
B) The role of research evidence

Although we have presented the influences on teachers' decision making under the categories: 'teacher generated'; 'externally professionally generated'; 'academically generated'; and 'policy generated', if we look at the results in a different way, we can see that different forms of 'research evidence' potentially have wider influence.

The definition of research engagement used within the survey is based around schools' accessing and using *externally-produced academic or professional research* to support their practice. However, we recognise that teacher action research and academic/professional research are not always mutually exclusive activities. There can be interaction between teachers' use of external evidence and the conduct of their own research or enquiry, and also between teachers and researchers, for example (CUREE 2011; Nelson and O'Beirne, 2014; Nelson, 2015). It is important to bear these points in mind when interpreting these results. If we were to incorporate 'action research' into our model of research engagement, for example, we see that 'research evidence' has an apparently greater influence on teachers' decision making ('Action research conducted by me or my colleagues' (17 per cent); 'Literature based on academic research' (16 per cent); 'Online evidence platforms, such as the EEF Teaching and Learning Toolkit' (eight per cent)).

2.2.2   Influence of different criteria on decision to adopt specific approach

We asked teachers a slightly different question about the level of influence of different criteria on their decision to adopt their named approach to supporting pupil progress. Here we were attempting to identify their *motivations* and the extent to which these might, or might not, have been influenced by research evidence. The graph below provides the results.

Graph 4 - Level of influence of different criteria on decision to adopt approach. The approach was likely to be...
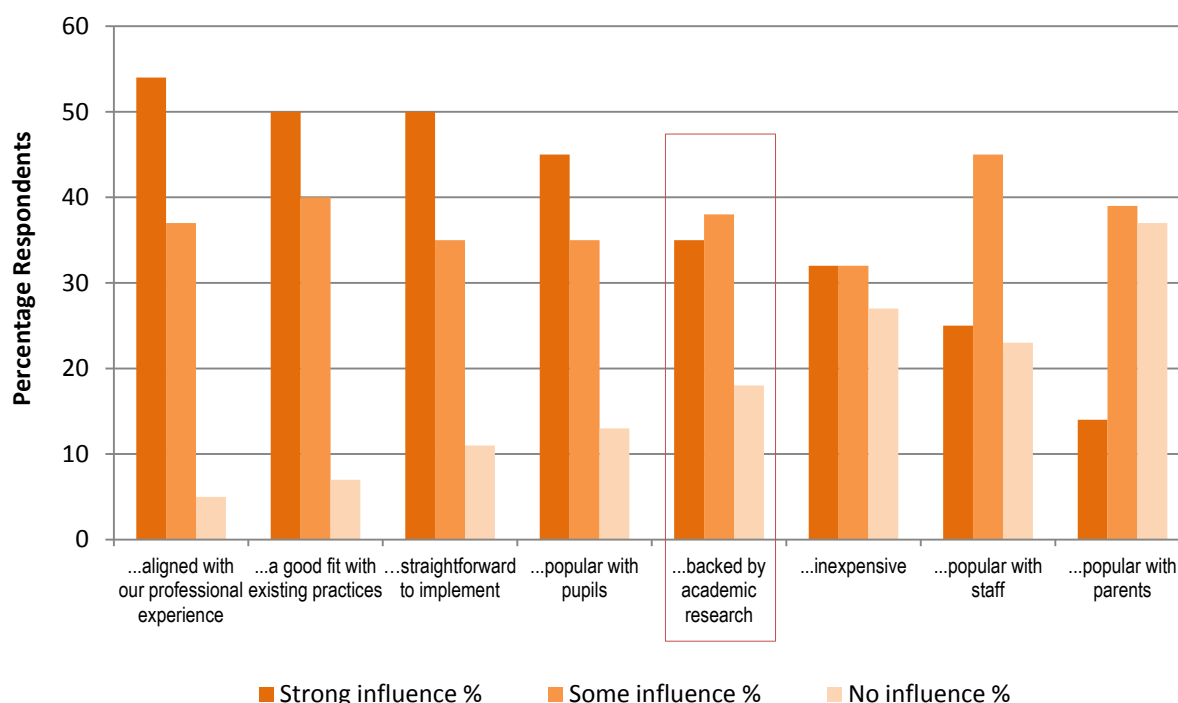
The results indicate a similar pattern of decision making to those illustrated in Graph 2. Teachers identified key motivations as follows (percentages reflect the proportion of respondents saying that each motivation was a 'strong influence'):

- **Professional/practical considerations:** Alignment with professional experience (54 per cent); good fit with existing practices (50 per cent); straightforward to implement (50 per cent); inexpensive (32 per cent).

- **Key stakeholder considerations**: Popular with pupils (45 per cent); popular with staff (25 per cent); popular with parents (14 per cent).

- **Research-based considerations**: Backed by academic research (35 per cent).

While a strong research base was by no means the greatest motivation for schools' decisions to adopt their chosen approach, it was cited as an important influence nonetheless. It ranked more highly than the views of staff and parents, and cost considerations, for example. However, it was of lesser importance to teachers than a range of professional and practical considerations.

2.3 Influences on general teaching approaches

The second section of the survey asked teachers to turn from thinking about their specific identified approach in order to focus on their *general* approaches to supporting pupil progress.

We asked a question about the extent to which respondents consulted a variety of sources when deciding on their approaches to supporting pupils' progress. The results are presented in Graph 5. The item options were slightly different to those presented in Graph 2, so we are unable to make direct comparisons between these two sets of results, although we see a similar pattern of response. The key conclusion is that research evidence does not appear to have played a particularly large role in teachers' decision-making processes regarding support for pupil progress, relative to other sources of information.

Graph 5 - consultation of different sources when deciding on approaches to support pupils' progress
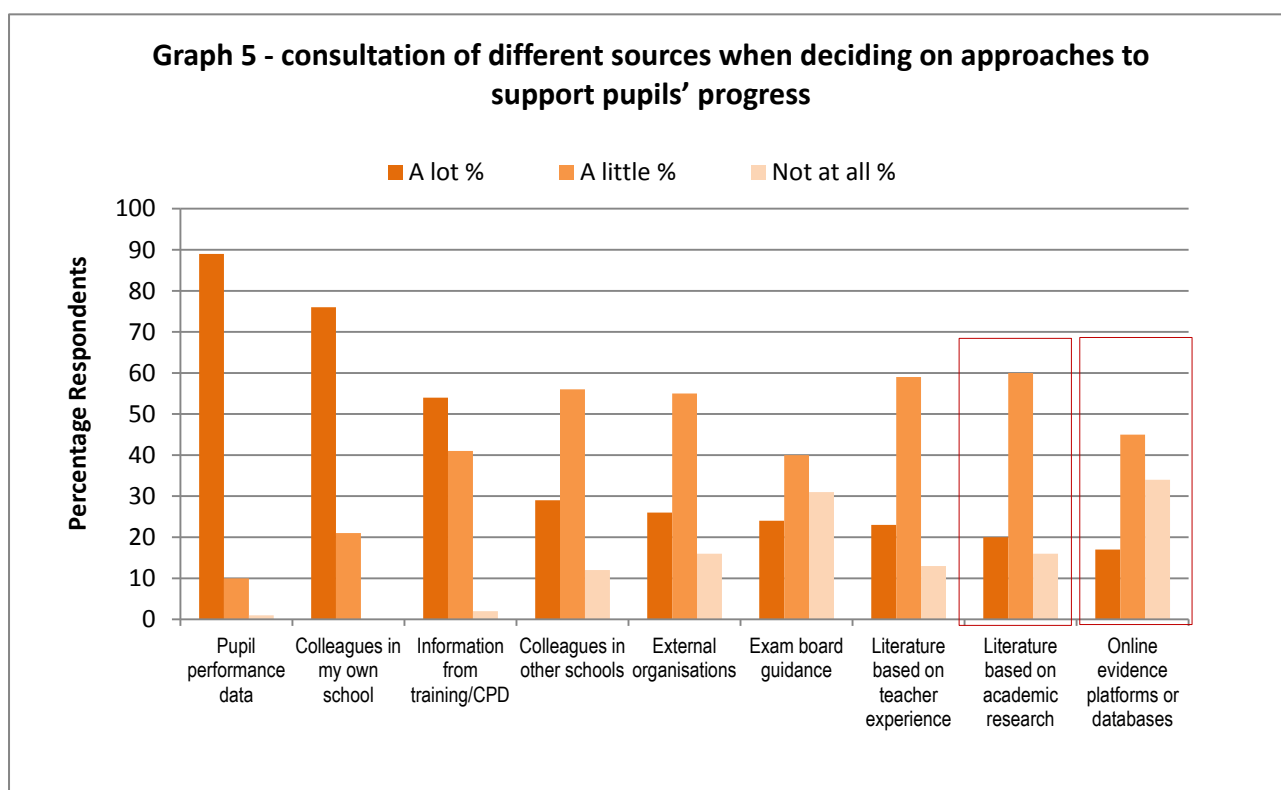
Recent surveys attempting to measure research engagement in schools have shown higher levels of teacher research use and application than the findings reported here. Our approach avoided explicit reference to research as the focal point of investigation, rather placing it on a level with a range of other potential influences. When presented to teachers in this way, it appears that research evidence played only a moderate to small influence in most teachers' decision-making processes.

The proportions of teachers saying that they had consulted the following sources 'a lot' were as follows:

- **Pupil performance data – very large influence** (89 per cent)

- **Teacher/school generated – large influence:** Colleagues in own school (76 per cent); colleagues in other schools (29 per cent).

- **Externally professionally generated – large influence:** Information from training/CPD (54 per cent); literature based on teacher experience (23 per cent).

- **Policy generated – moderate influence:** external organisations (26 per cent); examination board guidance (24 per cent).

- **Academically generated – small influence**: literature based on academic research (20 per cent); online evidence platforms, such as the EEF Teaching and Learning Toolkit (17 per cent).

Similarly, Graph 6 below shows that the sources of information that teachers reported finding easiest to understand (based on the proportions saying that each source was 'very easy') were:

- Colleagues in my own school (68 per cent)

- Pupil performance data (44 per cent)[10]

- Information from training/CPD (43 per cent)

- Colleagues in other schools (40 per cent).

By contrast, respondents found online evidence platforms (19 per cent) and information based on academic research (12 per cent) considerably less easy to understand. It is important to note that the information provided in Graph 6 presents data only for those respondents who reported *using* each of these sources (and excludes those who ticked the box 'I do not use this source'). This means that the findings provide a good representation of the perceived ease of accessibility of each source respectively[11].

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10 Note that teachers were not directed towards Raise Online or other sources of official performance data here. The term pupil performance data potentially includes a range of data sources, including schools' internal monitoring and tracking processes.

11 As a result, the number of respondents for each source is fewer than 509. The lowest number of respondents (365) was against online evidence platforms or databases.

Graph 6 - Ease of understanding of sources (percentage of those who used these sources)

Legend: ■ Very easy % ■ Quite easy % ■ Not very easy % ■ Not at all easy %
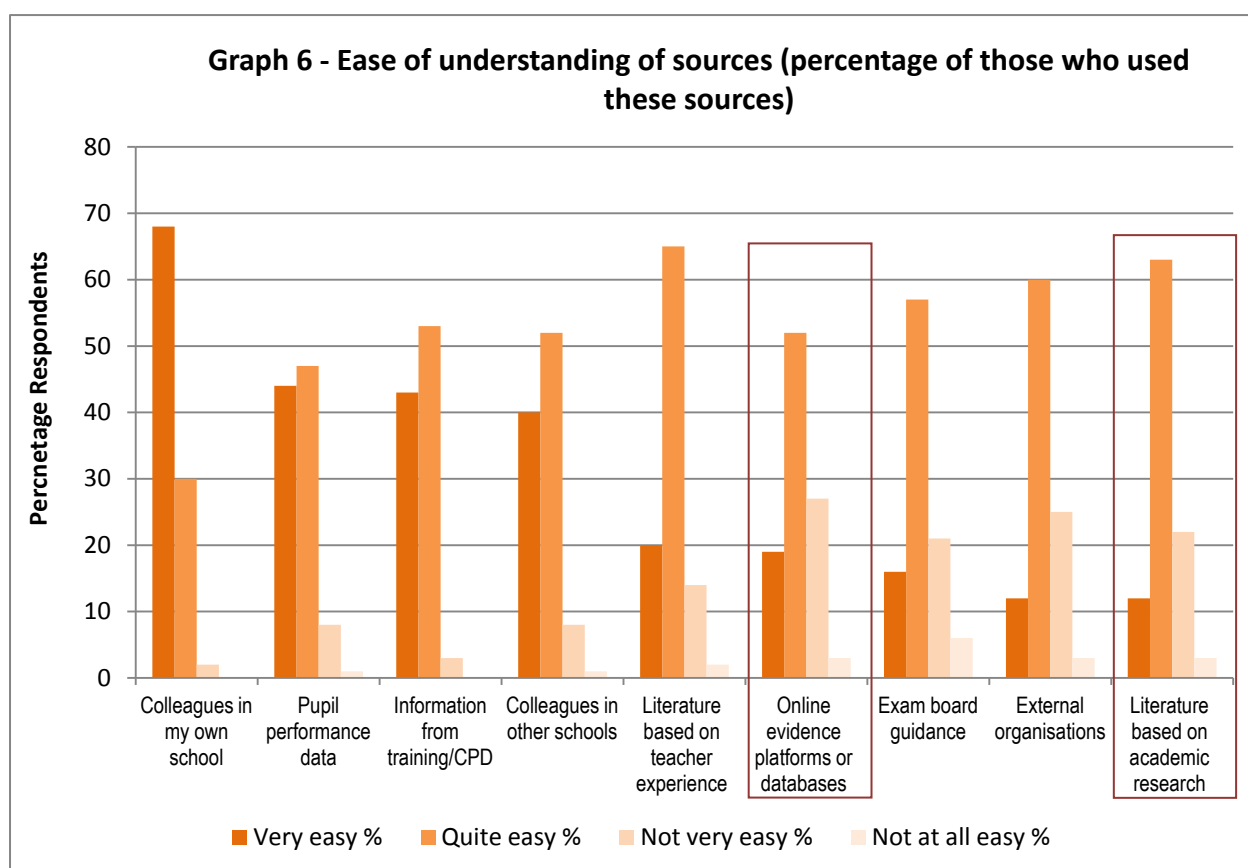
2.4 Definitions of 'evidence-based teaching' and attitudes towards research

The third section of the survey adopted a different approach. Up to this point, we avoided any explicit references to research evidence in order to encourage teachers to answer honestly about the factors that influenced their decisions about supporting pupil progress. However, from this point onwards, we began to introduce specific questions about their attitudes towards and uses of research evidence, in order to investigate:

- the value placed on research evidence when it was the sole topic of investigation as against one of many topics

- teachers' *attitudes* towards research evidence (it was only possible to investigate this well by asking questions that ask explicitly about research).

2.4.1 Definitions of evidence-based teaching

As an introduction to our questions on research evidence, we asked respondents to provide their own definition of 'evidence-based teaching' (EBT). This question did not contribute to the construction of research engagement outcome measures (See Section 3), but it helped us to gain an appreciation of teachers' understandings of the term EBT in order to interpret some of their responses further (See Section 4). As this survey focuses on the use of externally generated research, only the following items were coded as representing EBT: 'access and apply academic research evidence'; 'use and apply the evidence from online evidence platforms'; or 'combine academic research with their professional expertise'. The use of other forms of evidence, such as pupil performance data or teacher-generated action research are not included, as outlined in the introduction. This is shown in the highlighted bars in Graph 7.

Graph 7 - What does the term 'evidence-based teaching' mean to you?
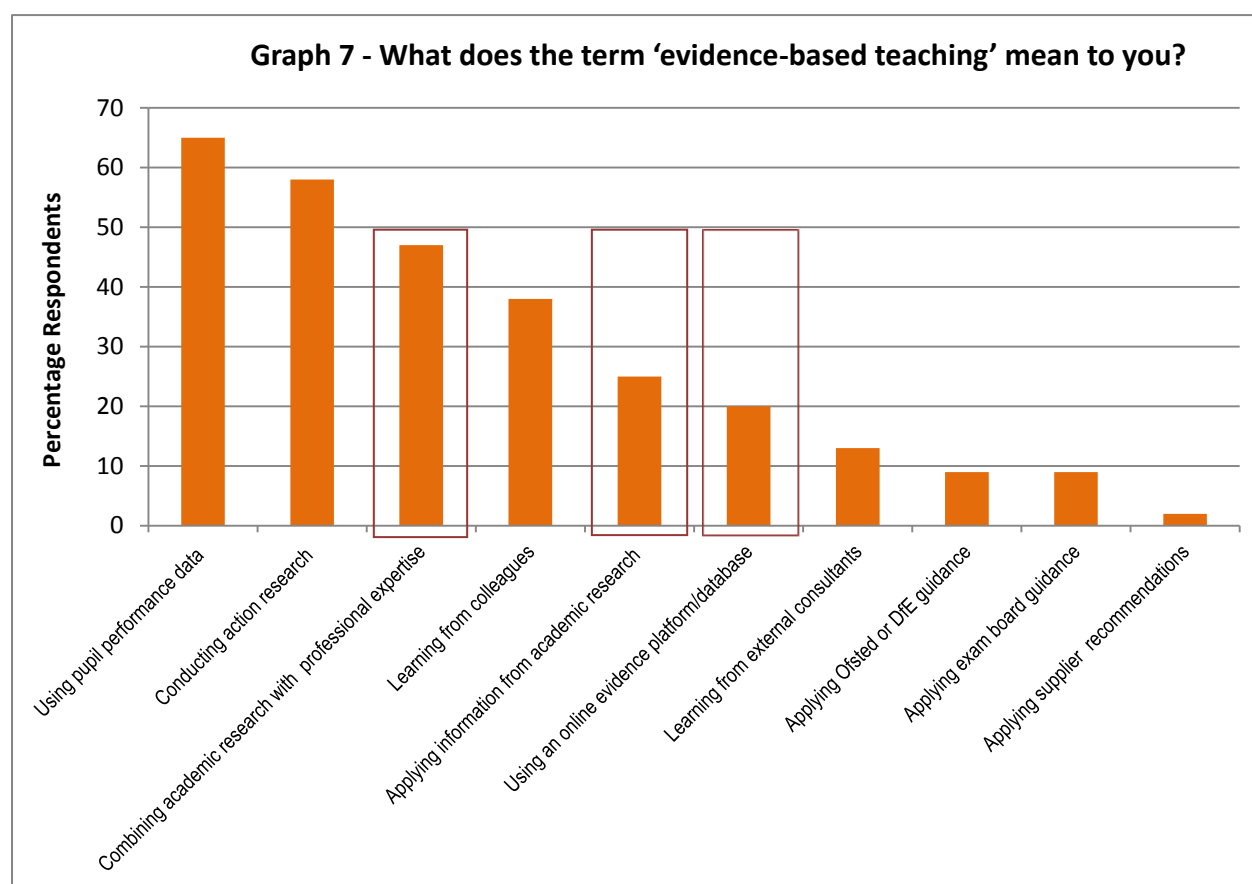
Given that we introduced the term 'evidence' into this survey question, we expected that respondents would be likely to choose options that related to research in some way. Interestingly, while this was the case to a certain extent, the category gaining the largest response was 'using pupil performance data' (65 per cent). Additionally, teachers were more likely to select 'conducting action research' as a definition of EBT (58 per cent) than they were to select any of our three definitions (combining academic research and professional expertise (47 per cent), applying information from academic research (25 per cent) or using an online evidence platform (20 per cent). This indicates that teachers have a specific understanding and view of what constitutes 'evidence'. It is important to be mindful of this when interpreting the findings from the pilot of the survey.

In total, approximately two-thirds of teachers (66 per cent) ticked one or more of our three identified EBT items, while approximately one-third (34 per cent) selected none of these. Differences in the ways in which these two groups responded to the survey questions are explored further in Section 4.

2.4.2 Attitudes towards research

In this section of the survey, and for the first time, we provided respondents with a definition of research evidence, before asking questions that focused explicitly on teachers' views about and uses of these. Our definition was as follows:

> *By 'research' we mean information from books, reports, articles, summaries, training or events*
>
> *that is <u>based on academic studies</u>.*

The use of underlining was a deliberate attempt to encourage respondents to think about specific forms of research-based information (externally produced academic research as distinct from teacher-led enquiry). The reason for this was that qualitative research commissioned by EEF around the time that this survey was being developed showed that:

a) teachers inevitably adopted a broad definition of research when answering questions about their uses of research in their practice (Graph 7 above provides a good indication of this)

b) even when teachers were asked to comment on the uses of academic or professionally-produced research in their practice, in reality they spoke about a wide range of information sources, including the views and experiences of other schools and colleagues.

It is possible that teachers may still have interpreted our survey questions quite loosely, but the wording outlined above provided an attempt to encourage them to think first and foremost about externally-produced academically-based sources when answering.

We provided respondents with a number of attitudinal likert-scale items, the results of which are provided in the following graphs. Positively-worded options are reported in Graph 8 and negatively-worded options are reported in Graph 9.

Graph 8 - How (if at all) do you use research information in your work? - positively-worded options
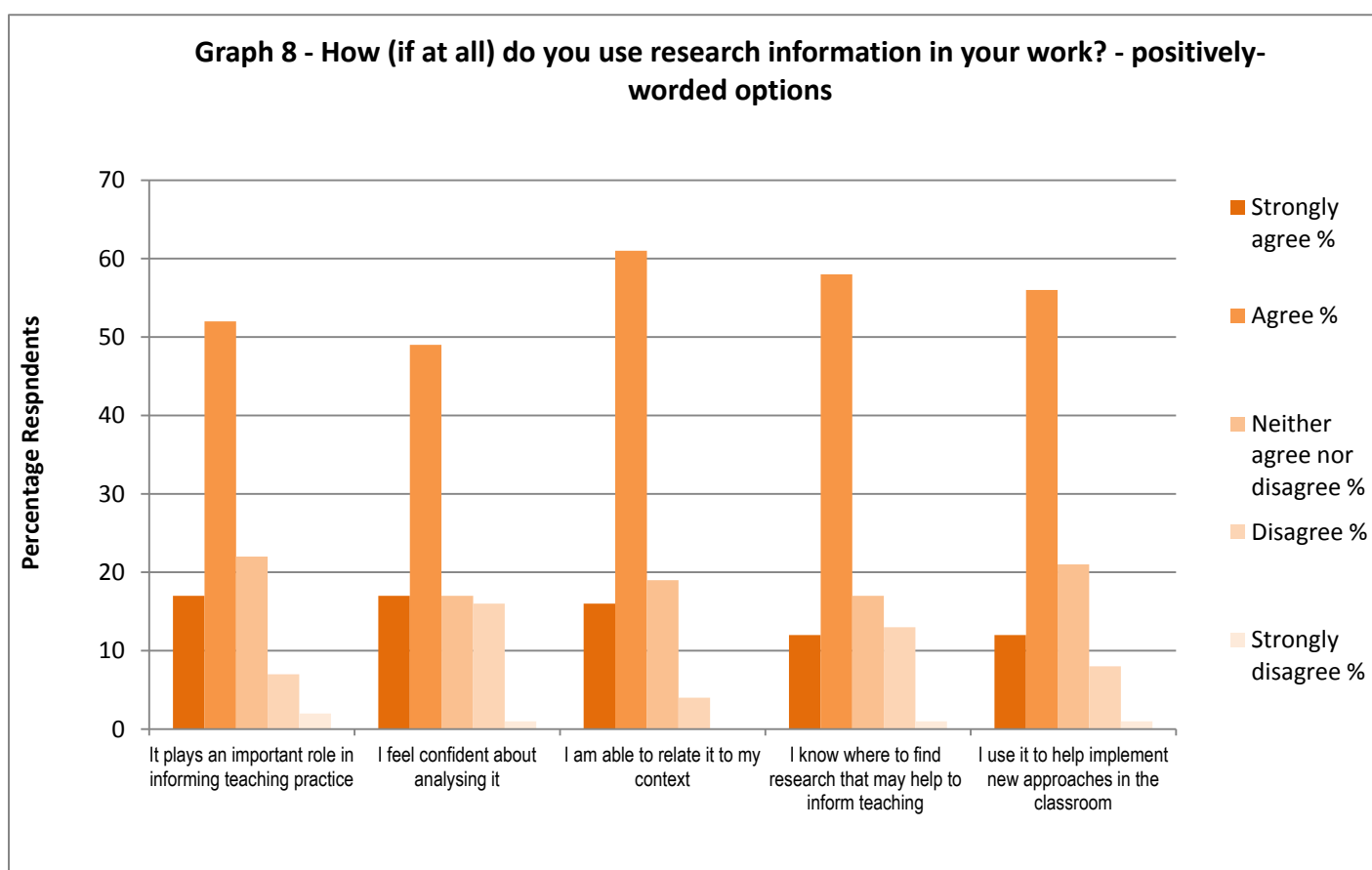
In this graph we see that while it was relatively rare for teachers to 'strongly agree' with any of the statements, it was common for them to 'agree'. Taken in combination, much larger proportions of respondents 'strongly agreed/agreed' with the statements than 'disagreed/strongly disagreed' with them. When asked explicitly about their attitudes towards research information, teachers were overwhelmingly positive. For example the following proportions of teachers 'agreed' or 'strongly agreed' that:

- I am able to relate information from research to my context (77 per cent).

- I know where to find relevant research that may help to inform teaching methods/practice (70 per cent).

- Information from research plays an important role in informing my/our teaching practice (69 per cent).

- I use information from research to help me decide how to implement new approaches in the classroom (68 per cent).

- I feel confident about analysing information from research (66 per cent).

There is an apparent difference in teachers' views that seems to relate to whether or not they are asked explicitly about their uses of research. Graph 8 shows that many teachers know how to go about finding research evidence and relating it to their context, and that relatively high proportions agree that they have used it to inform decision making and classroom practice. However, when research is presented alongside a series of alternative influences (see Graphs 2, 4 and 5) it has noticeably less reported importance.

A similar pattern emerges when we look at the attitudinal items that were negatively worded (see Graph 9 below) although the spread of responses is wider here. The following proportions of teachers 'disagreed' or 'strongly disagreed' that:

- I do not believe that using information from research will help to improve pupil outcomes (81 per cent).

- Information from research conducted elsewhere is of limited value to our school (66 per cent).

- My school leaders/governors do not encourage me to use information from research to improve my practice (63 per cent)

- Other staff in my school rarely use information from research to inform their teaching practice (35 per cent).

In the last example, a much higher proportion of teachers said that they 'neither agreed nor disagreed' than was the case for other questions (43 per cent). This is not an unusual response to a question asking respondents to comment on the actions of others, rather than themselves.

Graph 9 - How (if at all) do you use research information in your work? - negatively-worded options
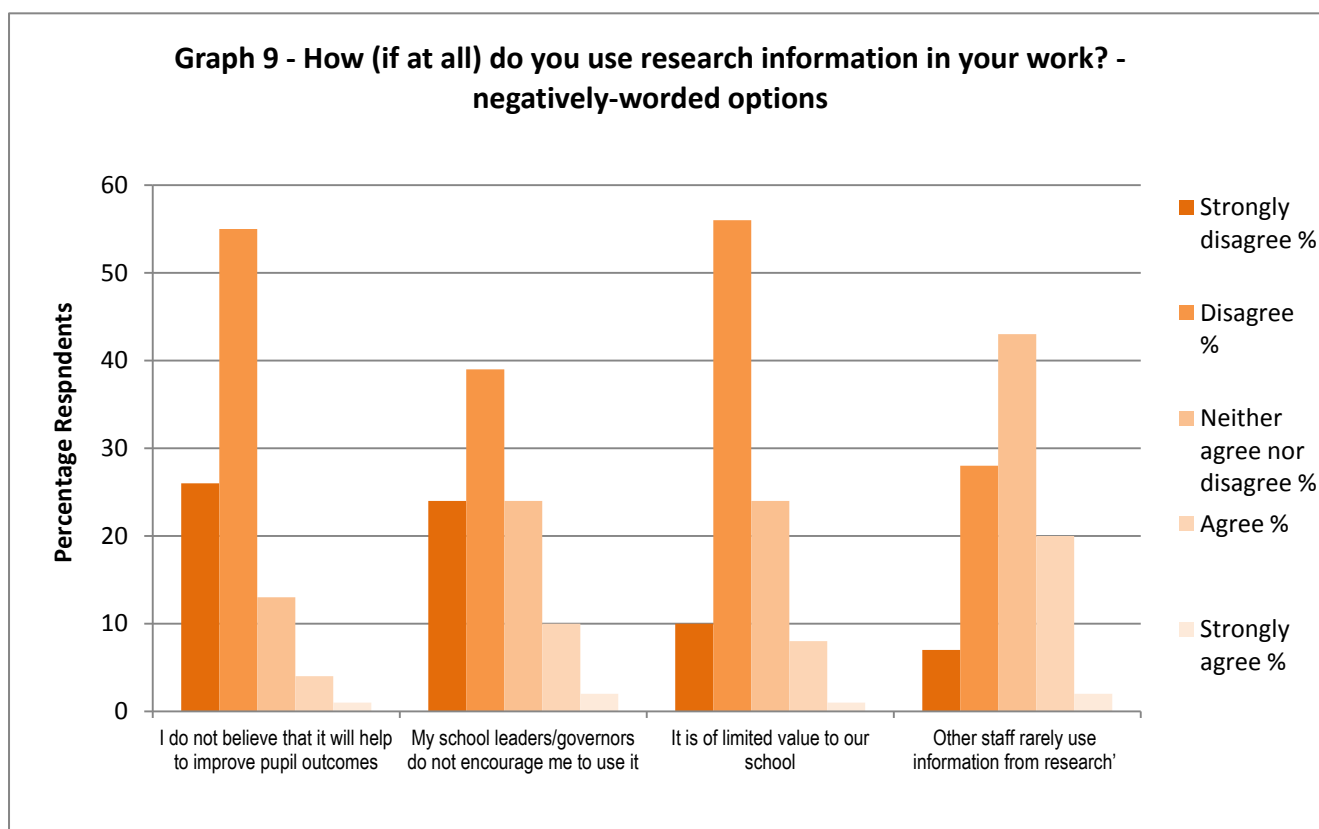
The final two graphs of this section show how teachers reported using information from research to inform their practice. It is important to remember that teachers were still working with our given definition of research at this point in the survey. They were also responding to questions that were explicitly about their uses of research.

Graph 10 shows that quite high percentages of teachers believed research information to have made a practical difference to a variety of personal actions (ranging from 70 per cent saying that it had encouraged 'reflection on my own practice' to 26 per cent saying that it had 'contributed to my own research or enquiry'). Less than one fifth (18 per cent) of teachers said that they had not used information from academic research at all. This provides an interesting comparison to some of the earlier survey results.

We know that teachers more commonly cited teacher-led action research than academic research as a component of EBT (see Graph 7). This suggests that action research holds an important place in teachers' practice. It is notable in the results below that only around one quarter of teachers (26 per cent) believed that the information from academic research contributed to their own research or enquiry. This suggests (but does not prove) that teacher action research and engagement with academic research are perceived as relatively separate activities.

Graph 10 - In the last year, how have you used information from academic research to inform your practice?
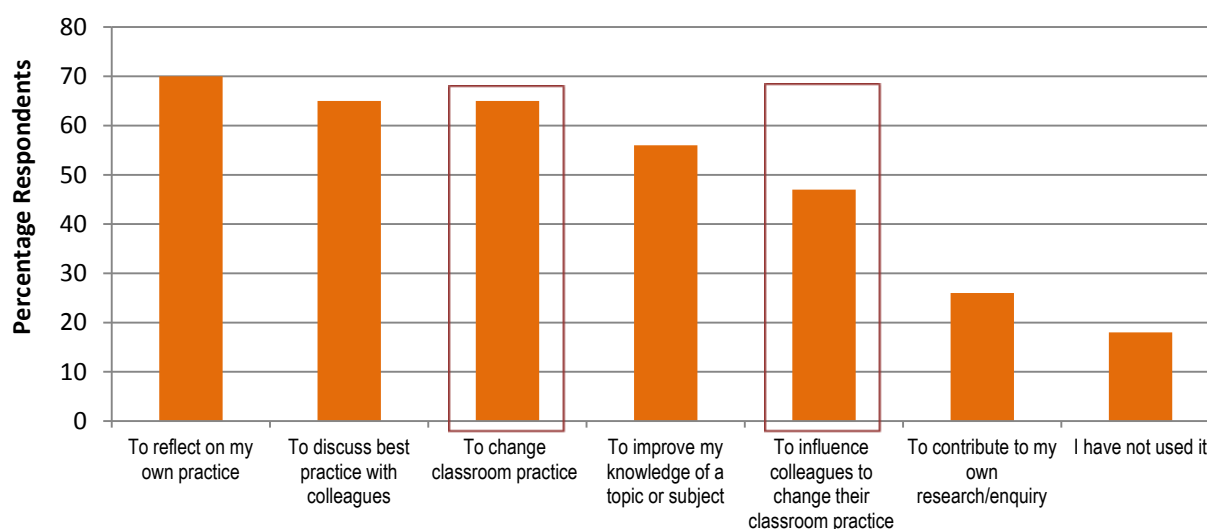
When analysing the results shown in Graph 10, we were particularly interested in the extent to which research information had been used to inform *changes*[12] to classroom practice. There is a difference between having an *interest* in research, and actively using research to support change or decision making.

The two options that we were interested in are outlined in Graph 10. We can see that approximately two thirds (65 per cent) of teachers said that they had used academic research to change classroom practice and almost one half (47 per cent) said that they had used it to influence colleagues to change their classroom practice. These findings are encouraging, however they need to be contextualised. Firstly, the survey did not permit us to explore in great detail the mechanisms by which schools translated research findings for their specific settings, implemented evidence-based approaches, or used research to support change. These features could be explored further using qualitative methods. Secondly, academic research seems only to have a small to moderate influence in decision making when presented alongside other sources of information (see Graphs 2, 4 and 5).

The final graph in this section enables us to explore a little further what it was about the research information that supported change among responding teachers.

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[12] We told teachers that our definition of 'change' included the following features: starting, developing or discontinuing an approach.

Graph 11 - What was it about the research information that enabled you to change classroom practice?
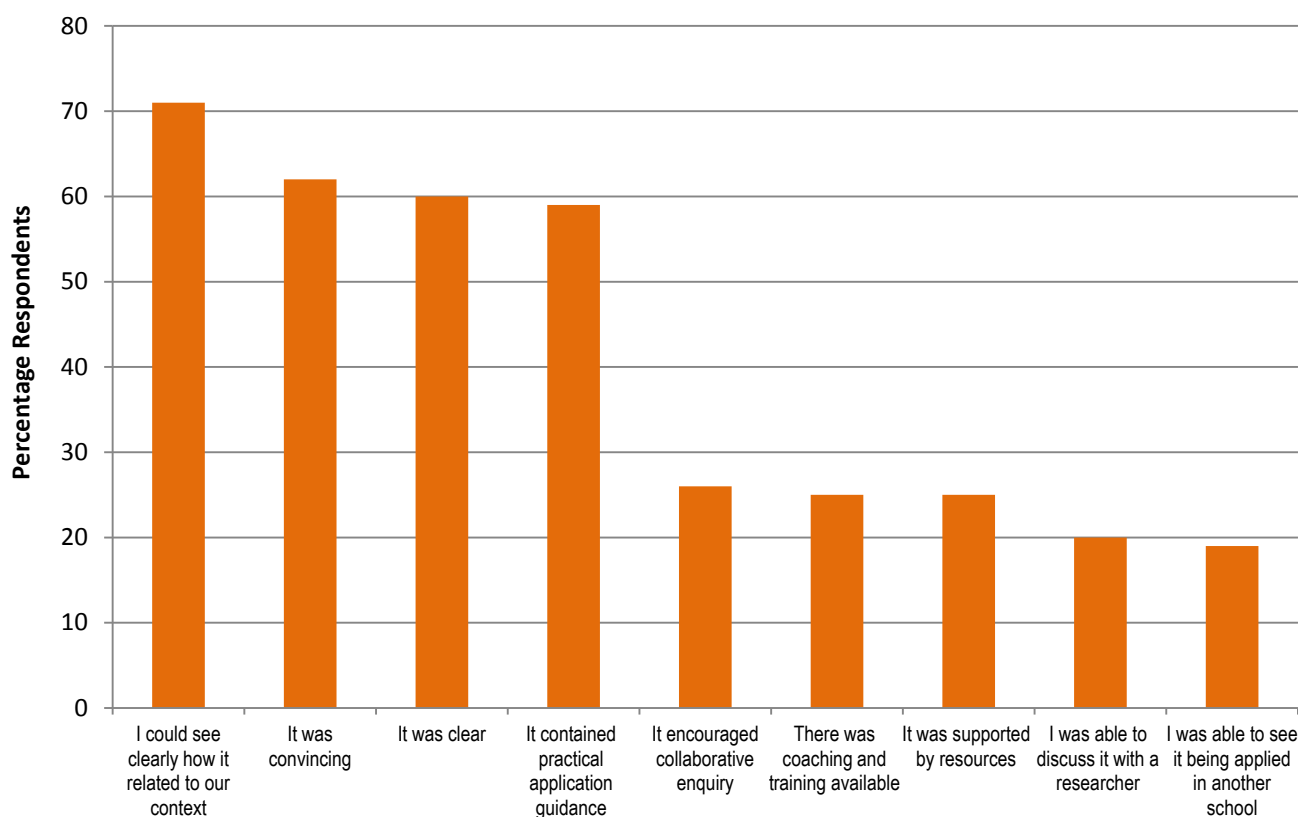
When interpreting this graph, it is important to be aware that it presents information about what teachers reported finding useful about the information *they had used* when changing their practice. It does not provide information about what teachers believed research information *should* contain.

We can see that the results are clustered into two broad groups. Some of the features of the second cluster are quite specific (for example, 'there was coaching and training available'), and one would not necessarily expect these to be components of all sources of research information. The smaller proportions of teachers identifying these features may indicate that they simply were not present in, or alongside, the research information that they used:

- **Most useful features** – good application to context (70 per cent); convincing (62 per cent); clear (60 per cent); contained practical application guidance (59 per cent).

- **Least useful/less commonly occurring features** – encouraged collaborative enquiry (26 per cent); included coaching and training (25 per cent); supported by resources (25 per cent); able to discuss the research (20 per cent); able to see application in another school (19 per cent).

A key finding from these results is that teachers find research information particularly useful when they are able to make sense of it within their own context or setting and feel persuaded or convinced by it. It also helps if the research information is easily accessible (in terms of language, style and presentation) and if it contains practical guidance about how to apply the findings in the classroom. These findings support much existing research about the barriers and enablers to evidence-informed teaching (see for example Campbell and Levin, 2012; CUREE, 2011; Gough, 2013; Haslam, 2011; Levin, 2013; Nutley, 2013 and Sharples, 2013).

2.5   Research knowledge

As we outlined in Section 1.2.1, the final section of the survey contained two brief 'quiz' questions that aimed to capture an objective measure of teachers' research knowledge. The first question posed a series of 'true/false' sub-questions focused on assessing teachers' knowledge of teaching and learning or whole-school approaches with a strong, and relatively uncontroversial, evidence base about best practice according to the evidence base on which the EEF Teaching and Learning Toolkit is based. The percentage of teachers who answered each of these sub-questions *correctly* is presented in Graph 12. The sub-questions themselves and the correct response for each are provided in the grid below.

Sub-question number	Sub-question	Correct answer
1	Drinking six to eight glasses of water per day improves pupil learning outcomes	False
2	Reducing class size is one of the most cost-effective ways to improve pupil learning outcomes	False
3	Extending the school day is more likely to improve learning outcomes for pupils on Free School Meals than pupils not on free school meals	True
4	Interventions that focus solely on raising pupil aspirations have little impact on learning outcomes	True
5	Setting pupils by ability improves learning outcomes for all pupils	False
6	Individual pupils learn best when they receive information in their preferred learning style (e.g. auditory, visual, kinaesthetic)	False
7	Peer tutoring (students supporting other students with their learning) usually benefits the pupil being tutored more than the pupil doing the tutoring	False
8	Homework has a greater impact on pupils' learning outcomes at secondary school than at primary school	True

Graph 12 shows a highly variable range, by sub-question, in the proportions of teachers answering correctly, and overall, a weak conceptual understanding of current research knowledge. No teachers successfully answered all eight sub-questions correctly. The mean number of correct answers was just under three (2.9018). The sub-questions that were most likely to be answered correctly were:

- Setting pupils by ability improves learning outcomes for all pupils (67 per cent).

- Peer tutoring (students supporting other students with their learning) usually benefits the pupil being tutored more than the pupil doing the tutoring (55 per cent).

- Reducing class size is one of the most cost-effective ways to improve pupil learning outcomes (53 per cent).

Conversely, only very small proportions of teachers answered the following questions correctly:

- Drinking six to eight glasses of water per day improves pupil learning outcomes (13 per cent).

- Interventions that focus solely on raising pupil aspirations have little impact on learning outcomes (17 per cent).

- Individual pupils learn best when they receive information in their preferred learning style (e.g. auditory, visual, kinaesthetic) (25 per cent).

It appears that teachers found questions that required them to have specific research or scientific knowledge most difficult (questions 1 and 6, for example, are common 'neuromyths'). It may be that questions such as 2, 5 and 7 were easier for teachers to answer on the basis of judgement and experience, as well as, potentially, some explicit research knowledge.

Graph 12 - Percentage of respondents correctly answering quiz questions about the evidence on improving pupil learning outcomes
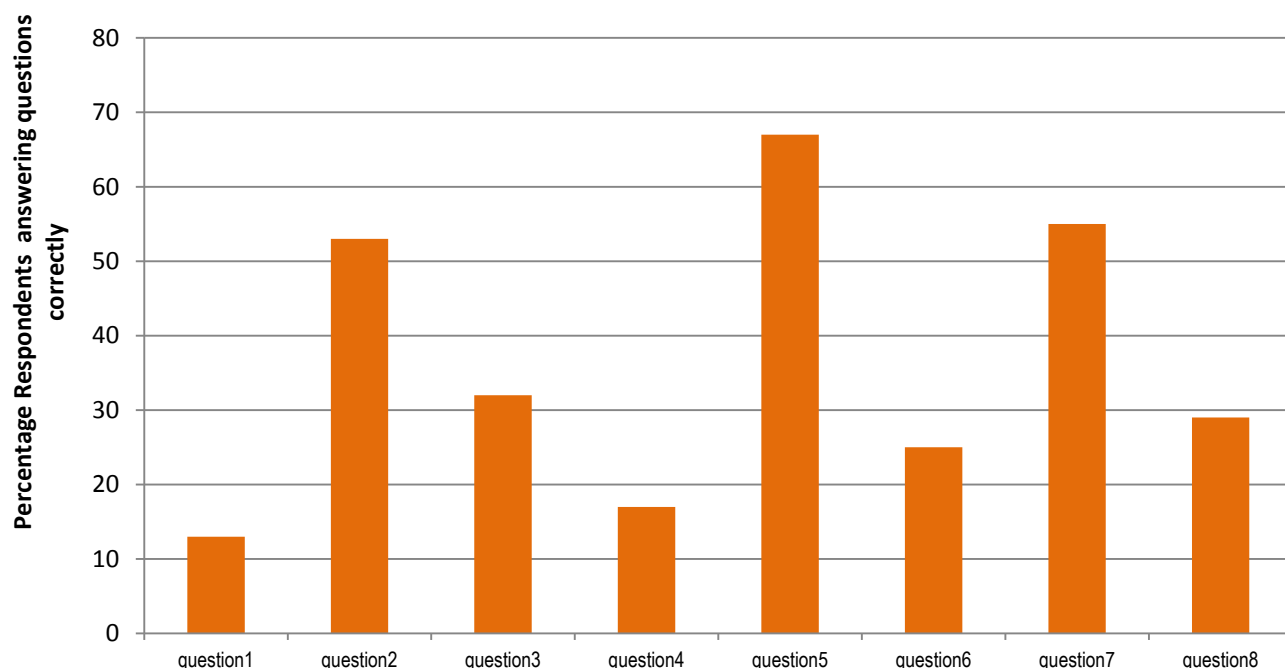
The second 'quiz' question aimed to achieve a measure of teachers' current levels of research literacy – that is, their knowledge of different research methods, and the relative reliability of these in answering key research questions. We provided respondents with three research 'purposes' as follows:

- Purpose 1 - To provide an **overview** of the evidence base.
- Purpose 2 - To determine **whether** an intervention or approach has a direct impact on pupil learning outcomes.
- Purpose 3 - To understand **how** an intervention or approach works in practice.
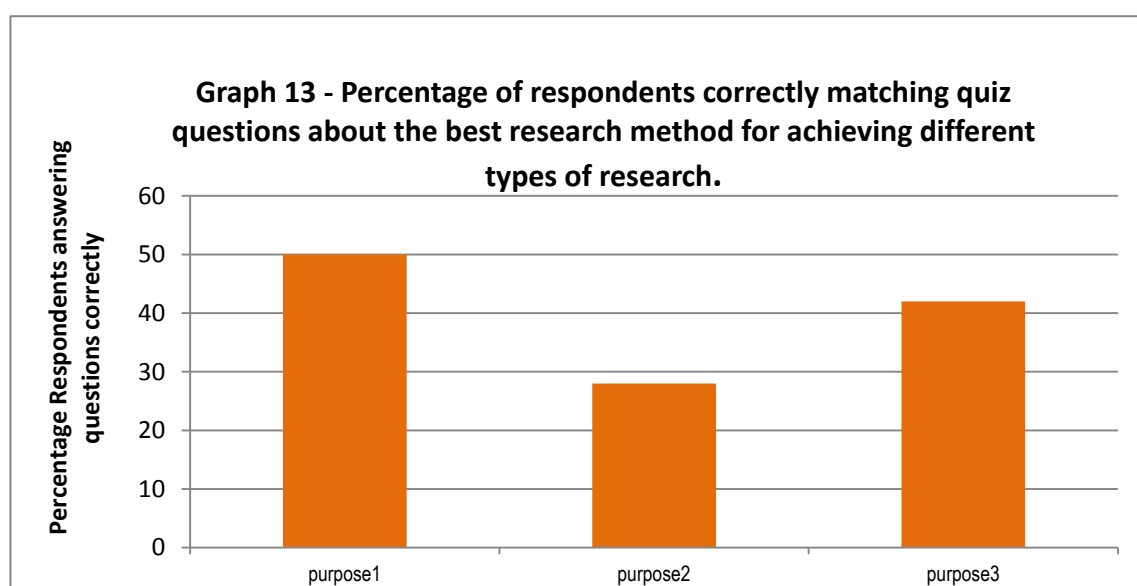
We then provided them with five possible research methods and asked them to 'match' each purpose with its most appropriate method. Teachers could make only three matches:

- Randomised Controlled Trial (RCT).
- Longitudinal Study.
- Interviews and/or questionnaires.
- Literature review.
- Correlational study.

The correct answers for each question are provided in the grid below.

Purpose number	Purpose	Correct answer
1	To provide an **overview** of the evidence base	Literature review
2	To determine **whether** an intervention or approach has a direct impact on pupil learning outcomes	Randomised Controlled Trial
3	To understand **how** an intervention or approach works in practice	Interviews and/or questionnaires

Graph 13 shows the proportions of respondents who correctly answered each question.

Graph 13 - Percentage of respondents correctly matching quiz questions about the best research method for achieving different types of research.

We can see that teachers were most confident about judging the best methods for 'providing an overview of the evidence base' (50 per cent answered correctly) and 'understanding how an intervention works in practice' (42 per cent answered correctly). However, less than one third (28 per cent) knew the best method for determining 'whether an intervention or approach has a direct impact on pupil learning outcomes'. Given the growing emphasis on RCTs in education, supported by the work of EEF and promoted by advocates such as Ben Goldacre (2013), this is an interesting finding.

Overall, the findings suggest that teachers' current levels of research literacy are low. This is not altogether surprising given that teachers' key priority is teaching and that little training is provided for teachers on understanding and interpreting research. Nevertheless, it raises important questions for organisations like the EEF when considering how to present their findings to schools.

2.6   Summary

We have unearthed some interesting findings from the pilot of our outcomes survey with 509 teachers and 256 schools. These findings are not necessarily generalisable, but they do provide a good indication of one sample of teachers' current views about, practical uses of, and knowledge about, research evidence. They also illustrate how views and actions related to the use of research evidence can apparently vary according to the ways in which teachers are questioned.

3. Factor analysis and the creation of measures of research engagement

In this section we explain how we used factor analysis to construct a number of research engagement outcome measures, derived from questions within the survey. This was the primary purpose for piloting the survey in November 2014. We use these outcome measures to undertake some more detailed sub-group analyses in Section 4.

3.1 Definition of factor analysis

Factor analysis is a statistical technique that summarises information from a number of survey items into a smaller set of reliable measures. The technique combines survey items that are correlated and assesses the same underlying latent construct or unobserved trait (Field, 2000). So, for example, while the frequency data reported in Section 2 of this report cannot provide us with a measure of teachers' overall disposition towards academic research, when we combine a number of correlated items from across the survey, through factor analysis, it *is* possible to create such a measure. Measures derived in this way are more robust than individual question items.

3.2 Statistical technique adopted

The type of factor analysis that we undertook is known as *principal axis factoring* (PAF) and the method used was 'varimax' rotation. Further details on these approaches can be found in our technical report (Poet *et al.*, 2015).

The 'varimax' solution is designed to create distinct outcome measures that are *uncorrelated* with each other (Abdi, 2003). In the early stages of factor analysis, each survey item may be associated with more than one factor (outcome measure). To overcome this problem of collinearity (the inter-connectedness of correlated items), 'varimax' rotation aims to align each survey item with the *single* factor where it has the largest loading[13].

3.3 Outcome measures derived

Our factor analysis resulted in five distinct measures of research engagement, each containing a small number of items. These items each appear in one factor (outcome measure) only – the factor in which they have the largest loading. Table 3.1 provides the names/labels for these five measures, plus an *additional measure*, not created through factor analysis, which is a score for respondents' *knowledge* of research.

There are a number of benefits to creating a small number of measures of research engagement. These include:

- We can gain a *succinct overview* of teachers' dispositions towards and uses of research evidence, without the need to report every response to every survey item.

- We can *compare* the views or actions of, for example, different groups of teachers by seeing how their responses vary by outcome measure. This reduces the need for multiple cross tabulations comparing the responses of different groups on an item-by-item basis.

- Measurement scales have greater *reliability* when compared to original items. This, in turn, leads to a reduction in measurement error and greater sensitivity when used as an outcome measure in evaluation work.

In Section 4, we use the outcome measures derived through the factor analysis as the basis for reporting differences in the views, actions and knowledge of different groups of teachers. These measures provide a very useful means of ascertaining where there are, and are not, key differences in the experiences of different groups of teachers.

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[13] 'Factor loadings' measure the strength of the relationship between the item and each measure.

Table 3.1 Research engagement outcome measures and constituent survey items

1. Positive disposition to academic research in informing teaching practice (Cronbach's Alpha* = 0.82)	• How easy they find it to understand academic research (Q6 item 3) • Information from research plays an important role in informing my/our teaching practice (Q8 item 1) • I know where to find relevant research that may help to inform teaching methods/practice (Q8 item 3) • I am able to relate information from research to my context (Q8 item 5) • I feel confident about analysing information from research (Q8 item 7) • I use information from research to help me to decide how to implement new approaches in the classroom (Q8 item 9)
2. Use of academic research to inform selection of teaching approaches (Cronbach's Alpha = 0.64)	• Academic research was important in identifying a specific approach and they used CPD based on academic research (Q3score) • The extent to which the decision to adopt an approach was due to it being based on academic research (Q4 item 6) • The extent to which they consult academic research (generally) (Q5 item 3)
3. Perception that academic research is not useful to teaching (Cronbach's Alpha = 0.57)	• I do not believe that using information from research will help to improve pupil outcomes (Q8 item 2) • Information from research conducted elsewhere is of limited value to our school (Q8 item 8)
4. Perception that own school does not encourage use of academic research (Cronbach's Alpha = 0.59)	• My school leaders/governors do not encourage me to use information from research to improve my practice (Q8 item 4) • Other staff in my school rarely use information from research to inform their teaching practice (Q8 item 6)
5. Active engagement with online evidence platforms (Cronbach's Alpha = 0.70)	• The extent to which they consult online platforms (generally) (Q5 item 6) • How easy they find it to understand online platforms (Q6 item 6)
6. Research knowledge (Cronbach's Alpha = 0.5)	• Score on research findings question (Q11) • Score on research methods question (Q12)

*Cronbach's alpha provides a measure of internal consistency, or reliability, of the measure by comparing how each item performs individually with how all the items perform together. The value of alpha increases when the correlations between the items increase, so a Cronbach's alpha closer to 1 indicates a more reliable measure. The more reliable the measure, the less random error will be present and the more likely we are to detect differences when used as an outcome in an evaluation.

4. Analysis of different teachers' research engagement

In this section, we explore the extent to which there is variability in different groups of teachers' research engagement or knowledge. Research engagement is calculated from teachers' scores on each of the six outcome measures outlined in Table 3.1. The four teacher sub groups that EEF colleagues were interested in exploring were:

1. School phase.
2. School Ofsted category.
3. The role/seniority of the teacher.
4. The view of the teacher about the meaning of EBT.

In order to explore differences between these groups, we used t-tests and analysis of variance, aggregating data to the school-level where appropriate to avoid underestimating the standard error. These techniques enabled us to compare means for two or more groups of respondents. Within the scope of this report, $p < 0.05$ is set to represent 'statistical significance', which means there is a less than five per cent possibility that a difference (as reported below) could have arisen by chance if there was really no true difference. Please note that only statistically significant differences are reported in this section of the report. The research team made this decision for pragmatic reasons. We wished to ensure that only a manageable number of differences were presented, in order to aid the interpretation of findings. These differences are presented with the assumption that there was no sampling bias in teacher responses, as discussed in Section 2.

4.1 School phase

The majority of teachers responding to our survey worked in secondary schools (61 per cent), with 39 per cent working in primary schools. As this analysis required information at school level, measures were aggregated at school level and mean scores for primary schools were compared against those of secondary schools. There was variability in the degree of research engagement across a number of outcome measures according to the phase in which these teachers worked.

Although teachers in secondary schools demonstrated higher levels of research engagement on average than teachers in primary schools across most measures, most of the findings were not significant and therefore could have arisen by chance. However, on two of the six measures, the findings were significant (See Table 4.1 below). The quasi-effect size (the difference between the mean scores of two groups divided by the pooled standard deviation)[14] for both of these measures suggest that the differences are medium in magnitude although statistically significant[15]. For example, on average, secondary school teachers' mean score was 0.4 higher than primary school teachers' on the knowledge measure. This difference between mean scores translates to about 40 per cent of teachers from secondary schools answering any one item correctly when compared to primary school teachers.

Table 4.1 – Differences between primary and secondary schools

Outcome measures (and possible score range)	Mean scores		Quasi-effect size
	Primary	**Secondary**	
Outcome 2 – Use of academic research to inform selection of teaching approaches (2-9)	4.5	4.8	0.3
Outcome 6 - Research knowledge (0-11)	3.9	4.3	0.3

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[14] To emphasise that these are not causal effects, we use the prefix 'quasi'.
[15] In many cases in Section 4 of this report, the pooled standard deviation is close to one. Therefore the quasi-effect size is often close to the difference between the mean scores of the two groups.

Commentary:

These results show that there is some difference in the levels of teacher research engagement and teacher research knowledge between primary and secondary schools. The results raise some questions and considerations:

- Why are teachers in primary schools less likely than teachers in secondary schools to use research to inform their selection of teaching approaches, and why do they have lower knowledge about the research base, on average, than secondary teachers?

- What support and/or training and development can be put in place to raise awareness and understanding among teachers in primary schools?

- Are current sources and resources supporting the use of research evidence in practice suitably tailored for the primary phase?

4.2 School Ofsted category

As would be expected, the majority of schools in our sample had received an Ofsted 'good' rating (55 per cent), with smaller proportions judged 'outstanding' (19 per cent) and 'requiring improvement' (RI) (17 per cent). Only one per cent of schools were deemed to be 'inadequate'[16]. For the purposes of this analysis, we grouped schools into two broad categories: outstanding/good; and RI/inadequate. As this analysis required information at school level, measures were aggregated at school level and mean scores for outstanding/good schools were contrasted against RI/inadequate schools.

We found that teachers in *RI/inadequate schools* demonstrated higher levels of research engagement on average than teachers in outstanding/good schools on most measures, although they fared less well on research knowledge questions. We should note, however, that most of these findings were not significant and therefore could have arisen by chance. The one exception was outcome measure 5 – active engagement with online evidence platforms, as illustrated in Table 4.2.

Table 4.2 – Differences between schools in different Ofsted categories

Outcome measure (and possible score range)	Mean scores		Quasi-effect size
	Outstanding/ good	RI/ inadequate	
Outcome 5 – Active engagement with online evidence platforms (2-7)	4.5	4.9	0.4

The difference between the mean scores of each group was 0.4. This means that nearly 40 per cent of teachers from RI/inadequate schools ticked one more positive response category than those from outstanding/good schools on one of the items that created the measure for outcome 5. A quasi-effect size of 0.4 suggests that this difference was medium in magnitude.

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[16] We were unable to identify an Ofsted rating for eight per cent of schools.

Commentary:

These results suggest that there is some difference in the levels of teacher research engagement and knowledge according to Ofsted category. The results raise some questions and considerations:

- Why are teachers in RI/inadequate schools more likely to engage with online evidence platforms such as the EEF Toolkit? Is this to do with high levels of intervention, support and signposting for teachers in such schools, or might there be other explanations?

- How can resources such as the EEF Toolkit be promoted so that they are used equally by teachers in all schools, including those that are outstanding/good?

4.3   The role/seniority of the teacher

The proportions of teachers at different levels of seniority were fairly evenly distributed in the sample. There were approximately equal thirds of: school senior leaders (33 per cent); middle leaders (30 per cent); and classroom teachers (33 per cent)[17].

Our analysis shows a fairly clear and consistent pattern of response. We found that levels of research engagement and research knowledge were highest among senior leaders, followed by middle leaders, followed by classroom teachers in almost all cases.

Table 4.3 – Differences between teachers with different levels of seniority

Outcome measures (and possible score range)	Mean score by teacher seniority			Quasi-effect sizes for two way comparison[18]		
	Classroom teacher	Middle leader	Senior leader	Classroom teacher vs. middle leader	middle leader vs. senior leader	senior leader vs. classroom teacher
Outcome 1- Positive disposition to academic research in informing teaching practice (6-29)	20	21.1	23.3	0.3	0.7	1.0
Outcome 2 - Use of academic research to inform selection of teaching approaches (2-9)	4.2	4.5	5	*Not significant*	0.3	0.6
Outcome 3 - Perception that academic research is not useful to teaching (2-10)	4.6	4.4	4	*Not significant*	0.3	0.5
Outcome 4 - Perception that own school does not encourage use of academic research (2-10)	5.2	5.3	4.8	*Not significant*	0.3	*Not significant*
Outcome 5 - Active engagement with online evidence platforms (2-7)	4.1	4.5	5.1	0.4	0.5	0.9
Outcome 6 - Research knowledge (0-11)	3.6	3.8	4.9	*Not significant*	0.5	0.7

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[17] Two per cent of respondents classified themselves as 'other' and a further two per cent did not provide a response.

[18] Please note that quasi-effect sizes are presented for comparisons where the difference was statistically significant

If we take Outcome 1 as an example, we see that the greatest difference is between the mean scores of school senior leaders and classroom teachers (3.3). This difference suggests that, on average, senior leaders rated three sub-items from this outcome measure more positively than classroom teachers and were therefore significantly more likely to have a positive disposition to academic research in informing teaching practice. Quasi-effect sizes for all of the senior leader/classroom teacher differences suggest a similar pattern and show that these differences were medium to large in magnitude.

Quasi-effect sizes for the middle/senior leader differences were smaller, although still significant, generally being medium in magnitude. So, on average, middle leaders were less likely than senior leaders to score highly on each 'positively worded' measure and on the knowledge measure (outcomes 1, 2 5 and 6), and more likely than senior leaders to score highly on each 'negatively worded measure' (outcomes 3 and 4).

Differences between classroom teachers and middle leaders were generally not significant, with the exceptions of Outcome 1 and Outcome 5 (which were both moderate in magnitude). In both cases, middle leaders were significantly more likely than classroom teachers to either: have a positive disposition to academic research in informing teaching practice or: to actively engage with online evidence platforms.

Commentary:

These findings indicate that research engagement and knowledge are positively related to the degree of seniority of the teacher on average. They reflect a pattern of research engagement related to seniority that we would expect to see, and they raise some questions:

- How can research engagement be encouraged and supported among the middle leader population in schools? How can school senior leaders better model their own enthusiasm in order to support and encourage their wider leadership teams to take an evidence-informed approach and, in turn, support their colleagues to do the same?

- How can classroom teachers be more actively engaged in the uses and application of research evidence? What are the challenges and enablers (cultural and practical) and how might these be overcome?

4.4　The view of the teacher about the meaning of EBT

In Section 3.4 (Graph 7), we discussed the results of a survey question that asked teachers to provide their own definition of EBT. Our analysis shows that approximately two thirds (66 per cent) of teachers ticked between one and three of the three options that indicated a view of EBT that included a reference to external research (Group 1), while approximately one third (33 per cent) ticked none of these options (Group 2).

We analysed outcomes for these two sub-groups and found a very clear set of results across all the outcome measures. Specifically, teachers in Group 1 were significantly more likely than teachers in Group 2 to:

- have a positive disposition to academic research in improving teaching (outcome 1)

- have a positive disposition to academic research when selecting specific teaching approaches (outcome 2)

- actively engage with online evidence platforms (outcome 5)

- have a higher knowledge score (outcome 6).

They were also significantly less likely than teachers in Group 2 to hold the perception that academic research is not useful to teaching (outcome 3).

Table 4.4 – Differences between teachers according to view of the meaning of EBT

Outcome measures (and possible score range)	Mean score		Quasi-effect size
	Group1	Group2	
Outcome 1 - Positive disposition to academic research in informing teaching practice (6-29)	22.0	20.3	0.5
Outcome 2 - Use of academic research to inform selection of teaching approaches (2-9)	4.9	4.0	0.6
Outcome 3 - Perception that academic research is not useful to teaching (2-10)	4.2	4.6	0.3
Outcome 5 - Active engagement with online evidence platforms (2-7)	4.7	4.3	0.4
Outcome 6 - Research knowledge (0-11)	4.4	3.4	0.5

A closer look at Outcome 2 – the use of academic research to inform the selection of teaching approaches, provides an illustration of this difference. Here Group 1 had a mean score that was 0.9 higher than group 2. This means that nearly all (90 per cent) of respondents from Group 1 responded to any one item more positively than respondents from Group 2. The quasi-effect size of 0.6 suggests that the difference was medium in magnitude.

Commentary:

Of all our sub-group analyses, teachers' views and understandings of EBT appear to have the greatest association with their levels of research engagement and knowledge. This is an important finding that raises some considerations:

- Although many teachers demonstrate an understanding of EBT that includes the use of external research, it is clear that others do not share this understanding. This appears to impact on their levels of research engagement and knowledge. Conversely it may be that their levels of research engagement and knowledge affect their understanding of EBT. Either way, a teachers' definition of EBT appears to be a reliable indicator of their wider research engagement.

- This suggests that an approach aiming to educate and support teachers in gaining an understanding of (and interest in) EBT may yield positive outcomes for teachers and schools. We can infer that the principles need to be understood and endorsed in order for research to be used in practice, and for knowledge to increase.

- There are many efforts currently underway to achieve this end, but what more needs to be done? Is sufficient effort being put into supporting an understanding of the core principles of EBT and evidence engagement?

Our sub-group analyses have shown some interesting patterns. The picture is one in which the highest levels of research engagement and knowledge seem to be among secondary school teachers (on some measures) and among school senior and, to a lesser extent, middle leaders across all school phases. Teachers in schools judged by Ofsted to be 'inadequate' or 'requiring improvement' are more likely to engage with online evidence platforms than teachers in Ofsted-rated 'good' or 'outstanding' schools. Finally there is an interesting relationship between teachers' self definitions of the term 'evidence-based teaching' (EBT) and their research engagement and knowledge scores.

5.   Conclusion

This report provides some interesting illustrations of teacher research engagement and research knowledge across a number of schools. It shows that when teachers are not explicitly aware that they are being asked to comment on their uses of research evidence, but rather are free to identify research as one of a number of potential influences on their teaching practice, research has only a small to moderate influence on their practice.

5.1 Summary of findings

When we asked teachers questions about the influence of different sources of information on their decision-making processes, we found that academic research and online evidence platforms (such as the EEF Teaching and Learning Toolkit) had only a moderate to small influence. Teacher-generated ideas, and ideas gathered through continuing professional development (CPD) had a much greater influence. Similarly, the sources of information that teachers found easiest to understand included: colleagues in their own schools; pupil performance data; CPD information; and colleagues in other schools. Conversely, information based on academic research, or available through online evidence platforms, was reportedly far less easy to understand.

In contrast, when we asked teachers explicit questions about their views on, and uses of, academic research evidence, we found a high percentages of teachers reporting that they valued research and used it to support their practice.

Commentary:

Although the questions asked in different sections of our survey were not directly comparable, these findings provide an interesting illustration of the different impressions we can form about teacher research engagement according to whether or not teachers are 'primed' to answer questions about research.

We also explored teachers' current levels of research knowledge and research literacy through two sets of 'quiz' questions. The results showed a highly variable range of knowledge according to the question asked, but overall a relatively low level of knowledge of the evidence-base related to effective strategies for teaching and learning, and to the value of different forms of research evidence in different contexts.

Commentary:

It appears that teachers found questions requiring scientific or specialist research knowledge more difficult to answer correctly than questions that could perhaps intuitively be answered on the basis of judgement and experience. There is no evidence that this was the case. This is a topic that it would be interesting to explore further, perhaps through qualitative means.

Finally, we explored differences in research engagement and knowledge outcomes for different groups of teachers. In summary, we found that the highest levels of research engagement and knowledge were among *secondary* school teachers (on some measures) and among school *senior* and *middle* leaders across all school phases. We also found that teachers in schools judged by Ofsted to be 'inadequate' or 'requiring improvement' were more likely to actively engage with online evidence platforms than teachers in Ofsted-graded 'good' or 'outstanding' schools, across all school phases.

We also found an interesting relationship between teachers' self definitions of the term 'evidence-based teaching' (EBT) and their research engagement and knowledge scores. Teachers that aligned closely with an EEF-NFER internally 'agreed' definition of EBT (see Section 2.4.1) scored more highly on almost all measures than teachers who had an alternative definition of EBT.

> **Commentary**:
>
> Given the apparent relationship between a teacher's understanding of what it means to be an evidence-based teacher and their research engagement and knowledge scores, there may be a case for focusing efforts on approaches that aim to educate and support teachers to develop an understanding of the core principles of EBT.

5.2   Implications

The findings from this analysis have a number of implications and some opportunities. These are discussed below.

A) Avoidance of priming

Our survey was carefully designed to avoid 'priming' from the outset – therefore providing an indication of the relative importance of research evidence alongside other influences. It is important that the learning from this approach is considered and applied in other studies that seek to understand teacher research engagement in the future.

B) Avoidance of 'over claiming'

The results presented in this report are interesting, but we need to remember not to 'over claim' on the basis of them. This is both for methodological reasons (our pilot sample was not designed to be representative of all teachers, although it is broadly representative of all school types) and because of the inherent limitations in attempting to measure a concept such as research engagement through a closed-response survey. We have learned a lot about teachers' attitudes towards, use of, and knowledge about research, but our research instrument has not enabled us to explore some of the broader issues around teacher research engagement in greater depth.

C) Scope for complementary investigation

This report has answered a number of questions, but has inevitably raised others. Teacher research engagement is an area that is ripe for further investigation, some of which will emerge through the various evaluations being undertaken as part of EEF's Research Use in Schools round of projects. The types of issues that are touched on in this report, but which could be explored in greater depth include:

- Understanding the relationship between teacher-led research and enquiry and academic research. To what extent is there a relationship between the two and how do, and can, they interact effectively?

- Investigating the processes and mechanisms by which teachers become research engaged and research literate. Our survey enabled us to focus on explicit dissemination channels and teachers' explicit awareness of research sources, but there are many other, often implicit, ways in which research-based information can become embedded in teachers' professional practice.

- Exploration of the ways in which research is used in practice. While we were able to ascertain whether or not teachers reported having used research evidence to inform or change classroom practice, we were unable to explore the mechanisms by which such evidence was implemented, adapted and evaluated in different school settings, or any challenges related to implementation.

- Investigating the ways in which teachers 'blend' research evidence with other sources of information to create an evidence-informed approach. Inevitably, in reporting our survey findings we have looked at how teachers' uses of research evidence *compare* with their uses of other sources (such as pupil performance data or their own professional judgement). In an evidence-informed context we would expect these sources of information to complement and support each other, so understanding the interplay between different forms of evidence is an important next step.

By developing a research use outcomes survey, EEF and NFER have made a serious attempt to define and measure research engagement within schools. Our survey and ensuing factor analysis have achieved a series of reliable measurement scales and an instrument that hopefully can be used across different contexts. Although this particular report must be considered sample-specific, it has

provided a good illustration of current levels of teacher research engagement and research knowledge across a relatively large number of schools. The survey could potentially be administered with a representative sample of teachers at some point in the future, and supplemented by in-depth qualitative analysis in order to develop a more robust picture of teacher research engagement, generalisable at the level of the whole teacher population in England.

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Appendix A – Basic frequency tables

Table 1: How long have you been in the teaching profession?	N	%
30 years or more	40	8
20-29 years	94	18
10-19 years	175	34
5-9 years	109	21
1-4 years	79	16
First year of teaching (NQT)	10	2
No response	2	0
Total	509	100

Due to rounding, percentages may not sum to 100.

Source: NFER Pilot of the Draft Outcomes Survey 2014.

Table 2: Which of the following were important in adopting your approach?	N	%
Ideas generated by me or my school	342	67
Ideas from other schools	166	33
Advice from my academy chain or local authority	41	8
Articles, reports, books or summaries based on academic research (paper or web based)	83	16
Articles, reports, books or summaries based on teacher experience (paper or web based)	69	14
The promotional materials of an external supplier	34	7
Action research conducted by me or my colleagues	87	17
Information gathered through training/CPD	219	43
Online evidence platforms or databases (e.g. the Sutton Trust Teaching and Learning Toolkit)	42	8
Guidance from official bodies such as DfE and Ofsted	50	10
Guidance from exam boards	25	5
Don't know	1	0
Other	12	2
No response	42	8
Total =	509	100

More than one answer could be given so percentages may sum to more than 100.

A total of 467 respondents answered at least one item in this question.

Source: NFER Pilot of the Draft Outcomes Survey 2014.

Table 3 The training/CPD was based on...		
	N	%
Exam board information	16	7.5
Academic research	39	18.3
Ideas from my school (e.g. internal INSET)	117	54.9
Ideas from other schools	66	31.0
Expertise of an external consultant	90	42.3
Expertise of a programme provider	40	18.8
Local Authority/Academy Chain guidance	26	12.2
Other	4	1.9
Total =	213	100.0

More than one answer could be given so percentages may sum to more than 100.

A filter question: all those who responded that training/CPD was one of the three most important in adopting their approach

A total of 219 respondents could have answered this question.

Source: NFER Pilot of the Draft Outcomes Survey 2014.

Table 4 Level of influence of different criteria on decision to adopt approach.						
	Strong influence	Some influence	No influence	Not applicable	No response	Total
	%	%	%	%	%	%
We thought the approach would be straightforward to implement	50	35	11	1	3	100
We thought the approach was likely to be popular with staff	25	45	23	4	4	100
We thought the approach was likely to be popular with parents	14	39	37	6	4	100
We thought the approach was likely to be popular with pupils	45	35	13	3	4	100
We thought the approach was inexpensive	32	32	27	6	3	100
We thought the approach was backed by academic research	35	38	18	4	5	100
We thought the approach was a good fit with existing practices	50	40	7	1	3	100
We thought the approach aligned with our professional experience	54	37	5	1	3	100
N = 509						

A series of single response questions.

Due to rounding percentages may not sum to 100.

A total of 501 respondents gave at least one response to these questions.

Source: NFER Pilot of the Draft Outcomes Survey 2014.

Table 5 Consultation of different sources when deciding on approaches to support pupils' progress					
	A lot	A little	Not at all	No response	Total
	%	%	%	%	%
Pupil performance data	89	10	1	0	100
External organisations (e.g. academy chain, local authority, DfE or Ofsted)	26	55	16	4	100
Articles, reports, books or summaries based on academic research (paper or web based)	20	60	16	4	100
Articles, reports, books or summaries based on teacher experience (paper or web based)	23	59	13	5	100
Information gathered through training/CPD	54	41	2	3	100
Online evidence platforms or databases (e.g. the Sutton Trust Teaching and Learning Toolkit)	17	45	34	5	100
Guidance from exam boards	24	40	31	5	100
Colleagues within my own school	76	21	0	2	100
Colleagues in other schools	29	56	12	3	100
N = 509					

A series of single response questions.

Due to rounding percentages may not sum to 100.

A total of 509 respondents gave at least one response to these questions.

Source: NFER Pilot of the Draft Outcomes Survey 2014.

Table 6 Ease of understanding of sources (percentage of those who used these sources)						
	Very easy	Quite easy	Not very easy	Not at all easy	Total	N
	%	%	%	%	%	
Pupil performance data	44	47	8	1	100	507
External organisations (e.g. academy chain, local authority, DfE or Ofsted)	12	60	25	3	100	465
Articles, reports, books or summaries based on academic research (paper or web based)	12	63	22	3	100	458
Articles, reports, books or summaries based on teacher experience (paper or web based)	20	65	14	2	100	466
Information gathered through training/CPD	43	53	3	0	100	498
Online evidence platforms or databases (e.g. the Sutton Trust Teaching and Learning Toolkit)	19	52	27	3	100	365
Guidance from exam boards	16	57	21	6	100	386
Colleagues within my own school	68	30	2	0	100	502
Colleagues in other schools	40	52	8	1	100	458

A series of single response questions.

Due to rounding percentages may not sum to 100.

A total of 509 respondents could have answered these questions.

A total of 508 respondents gave at least one response to these questions.

Source: NFER Pilot of the Draft Outcomes Survey 2014.

Table 7 What does the term 'evidence-based teaching' mean to you?		
	N	%
Conducting action research and applying the learning	294	58
Learning from colleagues and applying the learning	191	38
Applying Ofsted or DfE guidance	45	9
Using an online evidence platform/database (e.g. Sutton Trust Toolkit) and applying the learning	102	20
Applying exam board guidance	45	9
Combining academic research evidence with my professional expertise	241	47
Using pupil performance data to track pupil progress and plan ahead	333	65
Applying the recommendations of an external supplier	8	2
Reading and applying information from academic research or from working with researchers	128	25
Learning from external consultants, trainers or advisors	64	13
I don't know	8	2
No response	1	0
Total =	509	100

More than one answer could be given so percentages may sum to more than 100.

A total of 508 respondents answered at least one item in this question.

Source: NFER Pilot of the Draft Outcomes Survey 2014.

Table 8	**How (if at all) you use research information in your work? – positively-worded options**						
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	No response	Total
	%	%	%	%	%	%	%
Information from research plays an important role in informing my/our teaching practice	17	52	22	7	2	0	100
I know where to find relevant research that may help to inform teaching methods/practice	12	58	17	13	1	0	100
I am able to relate information from research to my context	16	61	19	4	0	0	100
I feel confident about analysing information from research	17	49	17	16	1	0	100
I use information from research to help me to decide how to implement new approaches in the classroom	12	56	21	8	1	1	100
N = 509							

A series of single response questions.

Due to rounding percentages may not sum to 100.

A total of 509 respondents gave at least one response to these questions.

Source: NFER Pilot of the Draft Outcomes Survey 2014.

Table 9 How (if at all) do you use research information in your work? - negatively-worded options							
	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree	No response	Total
	%	%	%	%	%	%	%
I do not believe that using information from research will help to improve pupil outcomes	1	4	13	55	26	1	100
My school leaders/governors do not encourage me to use information from research to improve my practice	2	10	24	39	24	0	100
Other staff in my school rarely use information from research to inform their teaching practice	2	20	43	28	7	1	100
Information from research conducted elsewhere is of limited value to our school	1	8	24	56	10	0	100
N = 509							

A series of single response questions.

Due to rounding percentages may not sum to 100.

A total of 509 respondents gave at least one response to these questions.

Source: NFER Pilot of the Draft Outcomes Survey 2014.

Table 10 In the last year, how have you used information from academic research to inform your practice?		
	N	%
I have not used information from academic research in the last year	92	18
I have used information from academic research to discuss best practice with colleagues	331	65
I have used information from academic research to reflect on my own practice	357	70
I have used information from academic research to change classroom practice (this could be starting, developing or discontinuing an approach)	332	65
I have used information from academic research to contribute to my own research/enquiry	131	26
I have used information from academic research to influence colleagues to change their classroom practice (this could be starting, developing	239	47
I have used information from academic research to improve my knowledge of a topic or subject	284	56
No response	0	0
Total =	509	100

More than one answer could be given so percentages may sum to more than 100.

A total of 509 respondents answered at least one item in this question.

Source: NFER Pilot of the Draft Outcomes Survey 2014.

Table 11 What was it about the research information that enabled you to change classroom practice?		
	N	%
It was clear (e.g. language, style, presentation)	223	60
It was convincing	229	62
I was able to discuss the research with a researcher or someone else who understood it	73	20
I could see clearly how the research related to our context	261	71
There was coaching and training available based on the research	92	25
It contained practical guidance about how to apply the research in the classroom	217	59
I was able to see the research being applied in another school	71	19
It encouraged collaborative enquiry	96	26
It was supported by resources (e.g. funding, materials)	91	25
Other	9	2
No response	0	0
Total =	370	100

More than one answer could be given so percentages may sum to more than 100.

A filter question: all those who answered that they have used information from academic research to change classroom practice or to influence colleagues to change their classroom practice.

A total of 370 respondents answered at least one item in this question.

Source: NFER Pilot of the Draft Outcomes Survey 2014.

Appendix B – Pilot survey

Introduction

Thank you very much for taking part in this survey. Your responses will contribute to a study conducted by the National Foundation for Educational Research (NFER) on behalf of the Education Endowment Foundation. It is exploring different approaches to improve pupil progress. The survey includes questions on how you/your school have decided to introduce new approaches and the types of information you use to inform decisions on teaching and learning. It also contains some questions that assess your knowledge about the evidence relating to teaching and learning and what makes a difference to pupil outcomes.

The survey should take no more than 25 minutes to complete.
Your answers will be treated confidentially, which means that you and your school will not be identified in any reports produced from this research. Your personal details and responses will not be shared with anyone outside NFER and no one within your school will be able to see your answers.

Please complete the survey either on paper or online at www.nfer.ac.uk/EEFO/survey by 28th November. If completing the **paper** survey, please use black ink and return the survey in the pre-paid envelope provided. If completing **online**, when prompted, please simply enter this survey password number to log in to the survey: **10001**
Instructions for completing the questionnaire will then appear online. We would like 350 teachers to participate in this study, so once this number has been reached the survey will be closed.

1.   **What is your job role?** *(Please **tick one box** below that best describes your role)*

Classroom teacher ☐ 1

Middle leader (e.g. head of department, subject or curriculum area leader, key stage leader, pastoral services leader) ☐ 2

Senior leader (e.g. headteacher, principal, director, deputy or assistant headteacher) ☐ 3

Other role (please specify) ☐ 4

2.   **How long have you been in the teaching profession?** *(Please tick the box that describes the length of your whole teaching career, including career breaks)*

30 years or more ☐ 1		5-9 years ☐ 4	
20-29 years ☐ 2		1-4 years ☐ 5	
10-19 years ☐ 3		First year of teaching (NQT) ☐ 6	

About a specific approach to supporting pupils' progress

3a. **Please name in the box below a specific approach that you have used within the last two years to <u>support pupils' progress</u>. For example this could be a teaching method, or a resource, product or initiative.**

Activity name/brief description *(please write in the box below)*

3b. **Which, if any, of the following were important in <u>identifying</u> the approach you named above?** *(Please tick all that apply)*

Ideas generated by me or my school	☐ 1
Ideas from other schools	☐ 2
Advice from my academy chain or local authority	☐ 3
Articles, reports, books or summaries based on academic research (paper or web based)	☐ 4
Articles, reports, books or summaries based on teacher experience (paper or web based)	☐ 5
The promotional materials of an external supplier	☐ 6
Action research conducted by me or my colleagues	☐ 7
Information gathered through training/CPD	☐ 8
Online evidence platforms or databases (e.g. the Sutton Trust Teaching and Learning Toolkit)	☐ 9
Guidance from official bodies such as DfE and Ofsted	☐ 10
Guidance from exam boards	☐ 11
Don't know	☐ 12
Other (please specify)	☐ 13

If you ticked 'Information gathered through training/CPD', please go to Q3c.
If you <u>did not </u>tick 'Information gathered through training/CPD', please go to Q3d.

3c. **If you answered 'information gathered through training/CPD' to Q3b, please indicate, from the list below, what the training/CPD was based on.** *(Please tick all that apply)*

Exam board information	☐ 1
Academic research	☐ 2
Ideas from my school (e.g. internal INSET)	☐ 3
Ideas from other schools	☐ 4
Expertise of an external consultant	☐ 5
Expertise of a programme provider	☐ 6
Local Authority/Academy Chain guidance	☐ 7
Other (please specify)	☐ 8

3d. *If you selected 3 or fewer options in Q3b, then please go to Q4.*

Out of the options you selected in question 3b, which were the three most important in identifying the approach you named above?
(please tick up to three boxes only)

Ideas generated by me or my school	☐ 1
Ideas from other schools	☐ 2
Advice from my academy chain or local authority	☐ 3
Articles, reports, books or summaries based on academic research (paper or web based)	☐ 4
Articles, reports, books or summaries based on teacher experience (paper or web based)	☐ 5
The promotional materials of an external supplier	☐ 6
Action research conducted by me or my colleagues	☐ 7
Information gathered through training/CPD	☐ 8
Online evidence platforms or databases (e.g. the Sutton Trust Teaching and Learning Toolkit)	☐ 9
Guidance from official bodies such as DfE and Ofsted	☐ 10
Guidance from exam boards	☐ 11
Don't know	☐ 12
Other (please specify)	☐ 13

4. Please rate the level of influence that each of the following factors had on the decision to adopt your approach. *(Please tick one box in each row)*

We thought the approach…	Strong influence 1	Some influence 2	No influence 3	Not applicable 4
…would be straightforward to implement	☐	☐	☐	☐
…was likely to be popular with staff	☐	☐	☐	☐
…was likely to be popular with parents	☐	☐	☐	☐
…was likely to be popular with pupils	☐	☐	☐	☐
… was inexpensive	☐	☐	☐	☐
…was backed by academic research	☐	☐	☐	☐
…was a good fit with existing practices	☐	☐	☐	☐
…aligned with our professional experience	☐	☐	☐	☐

5a. How effective do you think your approach has been so far in supporting pupil progress? *(Please tick one box only)*

Very effective *(please go to Q5b)* ☐ 1

Quite effective *(please go to Q5b)* ☐ 2

Not very effective *(please go to Q5c)* ☐ 3

Not at all effective *(please go to Q5c)* ☐ 4

Don't know *(please go to Q6)* ☐ 5

It is too early to tell *(please go to Q6)* ☐ 6

5b. How do you know that the approach has been effective?

(Please tick all that apply)

I/my colleagues like it ☐ 1

Pupils seem to like it ☐ 2

Pupils' work shows an improvement ☐ 3

Our pupil performance data shows an improvement ☐ 4

Our own evaluation shows a positive impact on pupil attainment ☐ 5

We've had an independent evaluation which shows a positive impact upon pupil attainment ☐ 6

Please go to Q6.

5c. **How do you know that the approach has not been effective?**
(Please tick all that apply)

I/my colleagues don't like it ☐ 1

Pupils don't seem to like it ☐ 2

Pupils' work does not show an improvement ☐ 3

Our pupil performance data does not show an improvement ☐ 4

Our own evaluation does not show a positive impact on pupil attainment ☐ 5

We've had an independent evaluation which does not show a positive impact upon pupil attainment ☐ 6

Your general approach to teaching and learning to support pupils' progress

We would now like you to think more broadly about how you develop your teaching to support pupils' progress.

6. **To what extent do you consult the following sources when deciding on your approaches to support pupils' progress?** *(Please tick one box in each row)*

	A lot 1	A little 2	Not at all 3
Pupil performance data	☐	☐	☐
External organisations (e.g. academy chain, local authority, DfE or Ofsted)	☐	☐	☐
Articles, reports, books or summaries based on academic research (paper or web based)	☐	☐	☐
Articles, reports, books or summaries based on teacher experience (paper or web based)	☐	☐	☐
Information gathered through training/CPD	☐	☐	☐
Online evidence platforms or databases (e.g. the Sutton Trust Teaching and Learning Toolkit)	☐	☐	☐
Guidance from exam boards	☐	☐	☐
Colleagues within my own school	☐	☐	☐
Colleagues in other schools	☐	☐	☐

7. **How easy do you find it to understand the information that these sources provide about how to support pupils' progress?**
(Please tick one box in each row)

	Very easy 1	Quite easy 2	Not very easy 3	Not at all easy 4	I don't use this source 5
Pupil performance data	☐	☐	☐	☐	☐
External organisations (e.g. academy chain, local authority, DfE or Ofsted)	☐	☐	☐	☐	☐
Articles, reports, books or summaries based on academic research (paper or web based)	☐	☐	☐	☐	☐
Articles, reports, books or summaries based on teacher experience (paper or web based)	☐	☐	☐	☐	☐
Information gathered through training/CPD	☐	☐	☐	☐	☐
Online evidence platforms or databases (e.g. the Sutton Trust Teaching and Learning Toolkit)	☐	☐	☐	☐	☐
Guidance from exam boards	☐	☐	☐	☐	☐
Colleagues within my own school	☐	☐	☐	☐	☐
Colleagues in other schools	☐	☐	☐	☐	☐

Evidence-based teaching and using evidence from research

8. **What does the term 'evidence-based teaching' mean to you?**

   Please <u>select up to three boxes</u> that best describe your understanding of the term.

Conducting action research and applying the learning	☐	1
Learning from colleagues and applying the learning	☐	2
Applying Ofsted or DfE guidance	☐	3
Using an online evidence platform/database (e.g. Sutton Trust Toolkit) and applying the learning	☐	4
Applying exam board guidance	☐	5
Combining academic research evidence with my professional expertise	☐	6
Using pupil performance data to track pupil progress and plan ahead	☐	7
Applying the recommendations of an external supplier	☐	8
Reading and applying information from academic research or from working with researchers	☐	9
Learning from external consultants, trainers or advisors	☐	10
I don't know	☐	11

9. **This question aims to find out how (if at all) you use research information in your work. By 'research' we mean information from books, reports, articles, summaries, training or events that is <u>based on academic studies</u>.**

Please indicate the extent to which you agree or disagree with the following statements. *(Please tick one box in each row).*

	Strongly agree 1	Agree 2	Neither agree nor disagree 3	Disagree 4	Strongly disagree 5
Information from research plays an important role in informing my/our teaching practice	☐	☐	☐	☐	☐
I do not believe that using information from research will help to improve pupil outcomes	☐	☐	☐	☐	☐
I know where to find relevant research that may help to inform teaching methods/practice	☐	☐	☐	☐	☐
My school leaders/governors do not encourage me to use information from research to improve my practice	☐	☐	☐	☐	☐
I am able to relate information from research to my context	☐	☐	☐	☐	☐
Other staff in my school rarely use information from research to inform their teaching practice	☐	☐	☐	☐	☐
I feel confident about analysing information from research	☐	☐	☐	☐	☐
Information from research conducted elsewhere is of limited value to our school	☐	☐	☐	☐	☐
I use information from research to help me to decide how to implement new approaches in the classroom	☐	☐	☐	☐	☐

10. In the last year, how (if at all) have you used information from academic research to inform your practice? *(Please tick all that apply)*

I have not used information from academic research in the last year (please go to Q13)	☐ 1

Or, in the last year I have used information from academic research to:

discuss best practice with colleagues	☐ 2
reflect on my own practice	☐ 3
change classroom practice (this could be starting, developing or discontinuing an approach)	☐ 4
contribute to my own research/enquiry	☐ 5
influence colleagues to change their classroom practice (this could be starting, developing or discontinuing an approach)	☐ 6
improve my knowledge of a topic or subject	☐ 7

If you ticked 'change classroom practice' or 'influence colleagues to change their classroom practice', please go to Q11.
If you did not tick 'change classroom practice' or 'influence colleagues to change their classroom practice' please go to Q12.

11. What was it about the research information that enabled you to change classroom practice? *(Please tick all that apply)*

It was clear (e.g. language, style, presentation)	☐ 1
It was convincing	☐ 2
I was able to discuss the research with a researcher or someone else who understood it	☐ 3
I could see clearly how the research related to our context	☐ 4
There was coaching and training available based on the research	☐ 5
It contained practical guidance about how to apply the research in the classroom	☐ 6
I was able to see the research being applied in another school	☐ 7
It encouraged collaborative enquiry	☐ 8
It was supported by resources (e.g. funding, materials)	☐ 9
Other (please say what)	☐ 10

Please go to Q13.

12. **Which of the following best describe why you have not changed classroom practice based on research information?**

(Please tick all that apply)

The research supports our existing approach	☐ 1
We are still planning changes to practice (either starting, developing or discontinuing an approach)	☐ 2
The information was unclear (e.g. language, style, presentation)	☐ 3
The information was not convincing	☐ 4
It didn't contain practical guidance about how to apply the research in the classroom	☐ 5
There was no information about how the research had been applied in other schools	☐ 6
I was unable to discuss the research with a researcher or someone else who understood it	☐ 7
I was unable to see clearly how the research related to our context	☐ 8
There was no coaching or training available based on the research	☐ 9
We had insufficient resources (e.g. time, staff, budget) to make changes	☐ 10
It was difficult to convince school senior leaders	☐ 11
It was difficult to convince other staff	☐ 12
Other (Please say what)	☐ 13

Your knowledge about research

In this section we would like to gather some information about your knowledge of research. Please answer the questions without referring to other sources.

13. Current understanding from academic research suggests that each of the following statements is 'true' or 'false'. *(Please tick the answer that you know to be correct in each row. If you are not sure, please tick 'don't know').*

The research says that:	True 1	False 2	Don't know 3
Drinking six to eight glasses of water per day improves pupil learning outcomes	☐	☐	☐
Reducing class size is one of the most cost-effective ways to improve pupil learning outcomes	☐	☐	☐
Extending the school day is more likely to improve learning outcomes for pupils on Free School Meals than pupils not on Free School Meals	☐	☐	☐
Interventions that focus solely on raising pupil aspirations have little impact on learning outcomes	☐	☐	☐
Setting pupils by ability improves learning outcomes for all pupils	☐	☐	☐
Individual pupils learn best when they receive information in their preferred learning style (e.g. auditory, visual, kinaesthetic)	☐	☐	☐
Peer tutoring (students supporting other students with their learning) usually benefits the pupil being tutored more than the pupil doing the tutoring	☐	☐	☐
Homework has a greater impact on pupil's learning outcomes at secondary school than at primary school	☐	☐	☐

14. In the left hand column are descriptions of three reasons why someone would want to carry out research. In the right hand column is a list of five research methods.

Please draw a line to match the research purpose (left hand column) with the best research method for achieving it (right hand column). There are only three matches – two methods are incorrect (please do not make multiple matches).

Research purpose	Research method
To provide an **overview** of the evidence base	Randomised Controlled Trial
To determine **whether** an intervention or approach has a direct impact on pupil learning outcomes	Longitudinal study
To understand **how** an intervention or approach works in practice	Interviews and/or questionnaires
	Literature review
	Correlational study

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