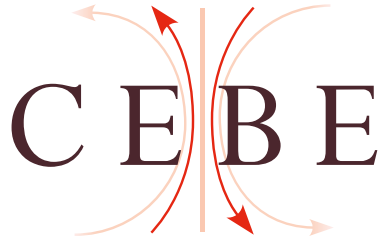
Leading research engagement in education

Guidance for organisational change



CEBE Coalition for Evidence-based Education

CEBE
project team

March 2017

The ***Coalition for Evidence-Based Education*** **(CEBE)** is an alliance of researchers, policy makers and practitioners interested in improving the way research evidence is used, and exchanged, across the sector.

Since its initiation in 2009, CEBE has successfully engaged with leading advocates for evidence-based reform and a wide range of stakeholders across education, including government, policy-makers, teacher trainers, researchers, practitioner groups and teaching professionals.

This project on research engagement is one of several collaborations initiated by CEBE. Others include: The Education Media Centre and Evidence for the Frontline. It involves a group of professionals from diverse parts of education who wish to help education providers make sense of research engagement and to develop greater understanding of the process. They work together, as time allows, on a voluntary basis.

This guide has been developed by the CEBE research engagement group as part of a collaborative project initiated by CEBE in 2016.

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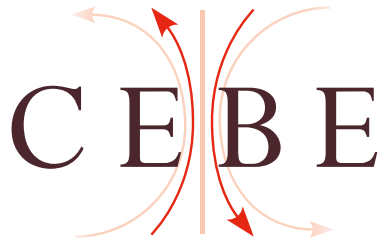
Introduction

Making good use of research has the potential to improve education provision. This publication aims to help teachers, coordinators, support staff and leaders in any education organisation who seek to make more effective use of research evidence. Its purpose is to assist in this by drawing on recent evidence about the process of engaging with research evidence and to signpost some of the resources available to help. Its focus is the organisation as a whole, rather than individuals, and the conditions under which engagement flourishes. Examples from schools and colleges are given at the end. Extracts from them occur throughout the text.

This publication draws on recent evidence about the process of engaging with research evidence and signposts some of the resources available to help.



Key ideas

What do we mean by engagement?

Two main forms of research engagement are distinguished in studies of the subject: responding to public research ('engagement with') and doing one's own research (engagement 'in'). The former involves getting access to, and making sense of, publicly available evidence. The latter means participating *in* some form of enquiry linked to one's own practice. A small but significant number of teachers engage in research themselves, but there is now a developing expectation, for example in the recent Standard for Teachers' Professional Development and accompanying implementation guidance, that teachers should 'seek to understand how and why practices work and how to implement them successfully in different contexts'[1]. In other words, that all teachers will engage with research. Increasing teachers' access to and use of high-quality research evidence will play a major role in helping to achieve this aim. In this document, where we talk about engagement we are referring only to engaging *with* research, except where we say otherwise.

Being research-ready

In some organisations, being involved with research is seen as a personal action for the individual to plan and undertake. In others a more corporate approach is taken and collaboration is encouraged. Some schools and colleges have created a specific leadership responsibility for overseeing research and development whilst in others a more distributed approach is taken. There is some evidence to suggest that engagement with research flourishes where it is integrated by the leadership with professional development and decision-making processes[2].

> Engagement with research flourishes where it is integrated by the leadership with professional development and decision-making processes

UNIVERSITY PARTNERSHIP

A partnership between six primary schools in the Staffordshire/Cheshire area and an academic from a nearby university enabled research to be interpreted, shared and disseminated. Topics which reflected institutional priorities and personal professional targets, such as feedback, peer mentoring and questioning skills were identified for investigation. With support from the university, research projects were undertaken which benefited both the professional development of those involved and school development as a whole.

The variety of purposes

Several kinds of purpose have been identified in studies of research engagement, including:

- Developing practice and knowledge collectively across an organisation, department or wider network
- Increasing conceptual understanding of pedagogic or subject knowledge
- Enabling individuals to update themselves on current evidence
- Exploring options for organisational development
- Developing the professional practice of individuals
- Gathering evidence for decision-making at boardroom or classroom level.

Integrating with the wider system

Education providers differ widely in size, structure and scope, from early years' settings through schools and colleges to training organisations, universities and adult education centres. There can be no single template for all of these that covers each of the various processes of using research evidence: accessing it, assimilating it, applying it. However it is organised – whether in departments, cross-cutting teams, governing bodies or management teams – it is best integrated into whole-organisation systems. Research engagement can also involve links beyond a single organisation: through networks, consortia and alliances. Initiatives to engage in research often involve a partner organisation specialising in research such as a university, institute or agency[3].

Evidence-based or evidence-informed?

The Centre for Evaluation and Monitoring at Durham University explains that 'evidence-*based* education means that educational policy and practice should be guided by the best evidence about the likely effects of different choices on outcomes we value'[4]. Many people prefer the phrase 'evidence-*informed*' because it emphasises the role that professional judgement based on experience plays alongside that of high quality evidence from research.

1 www.gov.uk/government/publications/standard-for-teachers-professional-development
2 See for example: Judkins, M., Stacey, O., McCrone, T. and Inniss, M. (2014). Teachers' Use of Research Evidence: A case study of United Learning schools. Slough: NFER. ISBN 978-1-910008-26-3. Available: www.nfer.ac.uk/publications/IMUL01
3 David Leat, Anna Reid & Rachel Lofthouse (2015) Teachers' experiences of engagement with and in educational research: what can be learned from teachers' views?, Page 277. Oxford Review of Education, 41:2, 270-286, DOI: 10.1080/03054985.2015.1021193
4 See www.cem.org/evidence-based-education

Reasonable expectations

It is often hoped, optimistically, that research will provide a complete solution to a complex problem. Sometimes, more cynically, the opposite can be true: it may be used to knock a tricky problem into the long grass. Neither of these are reasonable expectations and both run the risk of disappointment rather than enlightenment.

Benefits

Studies[5] show that organisations and individuals can expect a variety of positive outcomes from research engagement including:

- evidence-informed changes to teaching practice which contribute to better outcomes for students
- Greater understanding of key principles and processes of evaluation which inform future practice
- More purposeful professional development that adds to staff motivation over the longer term
- Contributions to a constructively critical and supportive school ethos[6].

> **Research engagement can lead to evidence-informed changes to teaching practice which contribute to better outcomes for students**

Costs

It's easy to overlook the costs of research engagement when driven by enthusiasm. Those who control budgets and timetables, however, will be keen to monitor these, so it helps to think ahead. Typical costs include:

- Payment for release from normal duties. Finding, reading and interpreting research evidence or carrying out a personal enquiry is time-consuming and cover may be needed
- Payment for external elements such as mentoring and, if engaging in research, collaboration with experts and dissemination
- Opportunity costs; when evidence-informed changes fail to deliver the expected improvement and effort might have been better directed elsewhere.

Opportunities and limitations

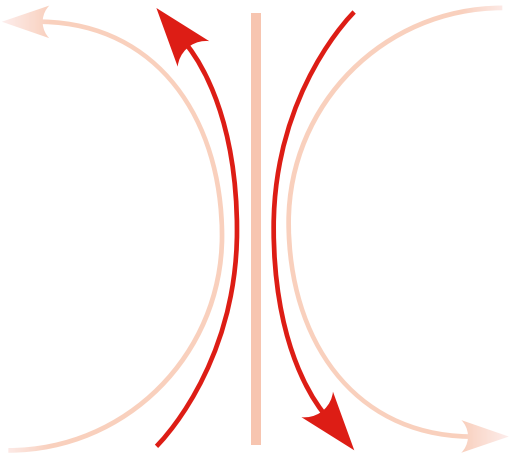
Making use of research evidence can result in significant improvements, particularly by influencing the design of initiatives and by highlighting ineffective strategies. Key decisions by governing boards and leadership teams can be routinely informed by evidence gathered in advance. Individual practice can be improved by reshaping thinking in the light of evidence.

> **Use of research evidence can result in significant improvements, particularly by influencing the design of initiatives and by highlighting ineffective strategies**

Challenges will be met on the way, however. Research findings sometimes seem too broad to be useful. Working out how to apply them in a specific context may not be clear. Sometimes other methods, such as analysis of local data, may produce more useable information more rapidly. In some cases, the conclusions from research evidence may contradict accepted practices within an organisation or influences from the wider context in which it works. It is therefore worth considering these factors in advance, as with any other type of planned change.

5 See for example: Wiliam, D. (2016) Leadership for Teacher Learning, Florida: Learning Sciences International

6 David Leat, Anna Reid & Rachel Lofthouse (2015 op. cit.281 - 282



Preparing for research engagement

As outlined above, research engagement has a variety of forms – from individual action to larger scale corporate processes. As a result, there is no single strategy for successful engagement. However, by reviewing both success stories and initiatives which appear to have had little impact, we suggest that the following themes and questions are important for research engagement to be significant and sustainable. Each appears necessary – though not sufficient in itself – for research engagement to 'work' in a significant and sustainable way.

Theme	Questions to ask	Examples of where this theme has been found to be important
Understanding	• How will staff be helped to understand the key principles and processes, of educational research? • How will they be helped to understand the implications of specific evidence for their practice?	The findings from a recent EEF evaluation found[7] that a plausible approach to improved assessment had limited impact. This was attributed, at least in part, to teachers not understanding the key concepts upon which changes to practice were based.
Volition	• How does research-use help solve a problem which matters to your staff? • What makes engaging with the process important and significant?	As the Alliance for Useful Evidence[8] points out, research engagement in which evidence moves from the page into action requires a clear narrative which 'conveys the thrust of the evidence base in a way that is accessible and engaging to as wide an audience as possible.' (p.16). Whilst for enthusiasts, research engagement may be a valid end in itself, wider engagement is dependent on staff seeing specific forms of engagement as integral to delivering what they see as important outcomes.
Senior Leader Support	• How could research evidence support your strategy for improvement? • How can capacity for research engagement be created and sustained?	As highlighted in a recent EEF report[9] – senior leadership support is 'crucial' for research engagement to have a sustainable significant impact on classroom practice.
Structures	• Do school structures support research engagement? • Do staff have access to resources – including necessary time - to develop new approaches? • Is there sufficient autonomy for developing and evaluating new practice in relation to marking, lesson planning, feedback, homework etc.?	If it is to have an impact on pupil outcomes, research engagement needs to be integral to a school's professional development structures and processes. As outlined in the DfE's recently published Standard for Teachers' Professional Development, engagement needs to be closely tied to a focus on 'improving and evaluating pupil outcomes' within a school or college's context so it is important that new improvement initiatives are underpinned by 'robust evidence'. However, staff need the time and autonomy to identify evidence-backed initiatives and develop them in context.

7 educationendowmentfoundation.org.uk/our-work/projects/anglican-schools-partnership-effective-feedback/
8 www.alliance4usefulevidence.org/assets/Alliance-Policy-Using-evidence-v4.pdf
9 educationendowmentfoundation.org.uk/news/support-from-senior-leaders-crucial-to-getting-teachers-to-engage-with-rese/

Phases of development

You might find it helpful to think of research engagement as a multi-stage process. Rather than view these activities as a linear process, you should revisit them as part of a continual cycle of improvement.

1. Clarify core aims and values
Research can highlight potentially successful approaches to particular ends. However, it doesn't tell you which ends are the most important. An initial conversation about what you want to achieve can often spark enthusiastic discussion and may well highlight important areas where practice could be improved.

2. Explore challenges in relation to these aims
Clarifying the practical improvements which you want to make can help you to then explore specific challenges to success in these areas. This in turn can help you to identify an effective intervention or change in teaching approach. Tying research engagement into the process of identifying a potential intervention or change in approach, and therefore linking it to making improvements in important areas, can help both in relation to potential impact, but also in relation to gaining and retaining the support of teaching staff.

3. Consult with relevant research literature
The research literature might then be able to provide information about successful practice that can inform your own practice. As Wiliam (2016)[10] points out, this is not necessarily a matter of selecting an off-the-peg solution, but in a number of areas there is robust evidence which can inform a best bet for improvement. It is important to have a clear question, to which you are seeking an answer, which is as precise as possible, e.g. 'improving literacy outcomes for boys in KS2'.

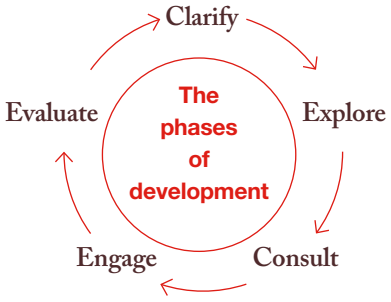
4. Engage in local research/investigation
After consulting the existing evidence base, you might consider embarking on your own enquiry project. Teacher enquiry can potentially: fill gaps in existing knowledge; test the effectiveness of existing or new approaches to teaching and learning; and motivate your staff, by giving them evidence that their work has made a real difference in their students' lives. It can be a useful way of testing if something is working in the classroom.

5. Evaluate
At times, it can feel that educational institutions are pushed to produce stories of unadulterated success. However, successful research implementation requires a more authentically evaluative and iterative approach. There are short and long term benefits of supporting evaluation. The short term benefits include gaining a reasonable idea of whether particular practices are worth retaining, refining or removing. The longer term benefits include developing a culture of reflective practice where staff and pupils are encouraged to engage in rational analysis of their own performance. Designing and evaluating a particular pedagogical initiative may influence how they approach other aspects of their practice. Lessons may also be learned *en route*, in addition to the success (or otherwise) of specific initiatives. Dewey famously maintained that education is best served by a communal approach to inquiry[11]; research engagement conducted collaboratively has similar implications.

TEACHER ENQUIRY

In a primary school in Kent, the school's Research Lead and Year 3/4 team undertook a research project to explore whether 'mistake making' could be re-framed as an integral part of learning. A series of observations and discussions were undertaken and new maths textbooks were tested. Evaluation criteria were developed and tested during a series of lessons. Changes were made to the maths exercise books and the benefits warranted investing in its implementation across the school.

> **Think of research engagement as a multi-stage process. Rather than view these activities as a linear process, you should revisit them as part of a continual cycle of improvement**



10 Wiliam, D. (2016) op.cit.
11 Dewey, John. Democracy and Education. 1st ed. Waiheke Island: Floating Press, 2009. Print.

Leading research engagement across your organisation

Once preparations for effective research engagement have been put in place – particularly support from senior leadership – you can begin to create an environment in which evidence-informed practice can flourish. Reviews of successful research engagement and evidence from wider literature on organisational change provide a useful framework for integrating research into a school and ensuring it is 'research ready'. In designing your approach, it may help to start small and deliver early success, before trying to embed research across your organisation.

1. Understand your baseline engagement

a. In many schools, a few staff will be individually motivated to use research to inform their practice and will be willing to use their own time to do this. This is not the same as having a culture of research-engagement across the school.

b. Invest time to understand your staff's attitudes to research-engagement: who is supportive, who is ambivalent and who is resistant.

> Start small and deliver early success, before trying to embed research across your organisation

2. Start small

a. While research engagement may be a whole-school priority, it takes time to develop an approach that will work in your context. You need an effective strategy before you try to involve everyone.

b. Identifying individuals who are interested in research is an important first step and building research groups around those who already believe in the benefits of using or doing research to inform their practice.

c. Rather than making research engagement a priority for every staff member, it may be better to trial it with your smaller supportive group. This group can develop and iterate an approach for using research to inform their practice. They will face setbacks, but are more likely to persist and succeed because they are willing to invest time and effort to do so.

d. Once you have an effective method and evidence that research-engagement can deliver improvement in your school, you can then work to bring in other ambivalent or resistant staff.

3. Select priorities connected to the school improvement plan and with a strong evidence base

a. Since the support of senior leaders is a pre-condition for success, it may be better to start with a focus for research-informed practice that is part of the school development plan. Senior leaders will already be looking to prioritise improvements in that area, so there should not be a conflict of priorities if the research group focus their time towards improving it.

b. Some areas of practice have a richer evidence-base than others. Again, it is advisable at first to select an area where there is plenty of evidence for effective practice that your research group can draw upon.

c. Staff are unlikely to welcome initiatives that add to their workload, so practically it is worth focusing on an area for which resources and capacity are available.

> Select priorities connected to the school improvement plan and with a strong evidence base

4. Balancing personal motivation and school needs

a. Once your supportive group has developed an effective approach for using, you can start to foster a whole-institution culture of research engagement that includes the wider staff body.

b. For those not individually motivated to use research to inform their practice, you will need to make a case. For most teachers, a positive impact on pupil

STARTING SMALL

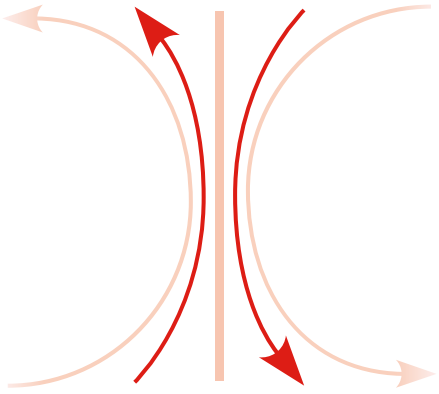
Janette Dunderdale, Deputy Head at an Infant School in Lincolnshire used the Evidence for the Frontline service to ask: What strategies work best in improving low level disruptive behaviour in a Year Two class? Research evidence from US and UK studies identified school-wide approaches which she tested: engaging with the children about the causes of low level disruption and involving them in developing new strategies. She made changes to her classroom and conducted a mini research project which she shared with her colleagues, leading colleagues to re-think the design of their own.

IMPACT ON STUDENTS

Graham Hall and Suzanne Slaney, teachers at an FE college in Wales, used a framework drawn from the research literature to help incorporate numeracy activities into vocational courses. They carried out research with many student groups to identifying ways to integrate numeracy into courses using realistic vocational activities. The changes proved highly motivating for students, producing improvements in their maths, critical thinking and problem solving. Through sharing their research, colleagues offered examples of good practice which enabled a book to be self-published, using local case study examples.

outcomes is the clearest reason to engage in the use of evidence. You can use evidence of the impact on outcomes achieved by the smaller, pilot group to persuade the wider staff body that it is worth engaging with research.

c. In order to create a whole-organisation culture, more formal professional development structures will be needed that give all staff the time and resources to use evidence. These include:
   i. Access to external support or expertise
   ii. Access to journal articles or evidence summaries
   iii. Formalised research groups, or a cluster of research groups, if all staff are expected to be involved
   iv. Time set aside to read and interpret research, to plan lessons reflecting the literature, to reflect and iterate in research groups
   v. Time allowed for strategies that are ineffective to be iterated before they are stopped
   vi. A clear approach to measuring the impact of research-engagement on outcomes
d. Your supportive individuals have a vital role to play as champions within the wider staff body. They may lead research groups, take the time to read and distil evidence in order to select strategies, or coach others through the implementation of strategies. If the school is investing in external CPD, these are also the individuals to target first.



Sources of evidence and support

One of the clearest challenges to using research to inform practice is gaining access to robust but accessible evidence of strategies which have potential to be effective. In general, reading papers in journal articles is time consuming and also requires a critical eye, since each individual paper will be part of a much wider literature on the topic. Instead, looking for systematic reviews of the literature or for toolkits can save time and, if carefully selected, give a balanced view of the existing literature. However, training staff to be critical readers is vital to ensure they are rigorous in their use of evidence.

There is now a wide range of tools available to support research engagement in school. Many are free and we have collated a list of those resources in an accompanying document: *Links to helpful resources and examples of research engagement*.

If you have further free resources you would recommend please email the team c/o iee@york.ac.uk. Reviews of helpful books can be found on blogs including Learning Spy[12] and The Confident Teacher[13].

To help illustrate how different educational settings are making effective use of research evidence, a number of case studies are given at the end of this document. Further cases will be added to these in the accompanying document *Links to helpful resources and examples of research engagement* as readers send them in. Contact the project team via iee@york.ac.uk.

Closing comments

There is no single blueprint for how education organisations should make more effective use of research evidence. However, we hope that by drawing on recent evidence about the process of engaging with research evidence, and by signposting you to some of the resources available to help with this, you will be better equipped on the journey towards being more research informed, and to realise the potential benefits this can bring.

12 www.learningspy.co.uk/recommended-reading/
13 www.theconfidentteacher.com/category/wider-reading-for-teachers/

Examples of research engagement

To illustrate some of the points made in the guide *How to be research engaged* a number of examples are offered on the next pages. Over time it is hoped to add further examples, from a variety of different settings.

Sandringham Secondary School

At a glance

Phase	Key stage of children involved in research					
	KS1	KS2	KS3	KS4	KS5	Whole school
Secondary						✓

Research focus
G&T students

Context

This is a larger than average comprehensive school, with a large and growing sixth form. The school, which is popular and over-subscribed, is situated in an area of relative social and economic advantage to the north of St Albans in Hertfordshire. Students start the school with standards that are generally a little above average. The proportion with learning difficulties and/or disabilities or a statement of special educational needs is below average. The majority of students are of White British heritage and speak English as their first language. As a designated outstanding school, Sandringham leads on a number of key national programmes as a National Teaching School and, together with Sir John Lawes School in Harpenden, run the Alban Teaching School Alliance.

What they did

Martin Young, a teacher responsible for 'high starter', or gifted and talented students at Sandringham School in Hertfordshire, was interested in how to improve provision for these students in the school. He asked the following question to the Evidence for the Frontline service: Is there any evidence of the most effective strategies for supporting G&T students in the classroom and outside of the classroom? His question was answered by Professor Steve Higgins of Durham University with research evidence from the EPPI Centre, NFER and CfBT. Professor Higgins suggested that a programme should be high challenge and open-ended, or 'low floor, high ceiling' as he described it.

Based on this research evidence and advice, Martin developed a new programme for the 'high starter' students. He invited all students to carry out an independent piece of work to be submitted for publication in a school book called *Ignite*. He provided students with guidance to help them plan and submit by the deadline. However, there was no prescription over the topic or the form of the submission. A large number of students chose to submit pieces of work and they included pieces of art-work, essays, short stories and scripts. Each was beyond the curriculum of their subjects in school and reflected students' diverse interests. The collection of work that resulted in a book was impressive and something all students were really proud of. Students and their parents were invited to a book launch where the student authors read extracts from the book. The publication raised the status of independent academic pursuits in students' minds. Feedback from Oxford University was positive and an admissions officer commented 'I am particularly encouraged that students from all year groups have been encouraged to take part, as all too often, students realise the benefit of independent learning too late in their school careers'. Professor Higgins commented: '*Ignite* is an excellent example of what can be achieved when young people are allowed to pursue something which interests them, and then to communicate what they have done with others. It provides both a record and a celebration of this learning.'

Outcomes

From this case study, it is clear that research evidence supported Martin to rethink and develop provision for 'high starter' students in his school. In particular, he was able to successfully translate the research which identified high challenge and open ended tasks as important into a tangible project that students could take advantage of.

Little Gonerby Church of England Infant School

At a glance

Phase	Key stage of children involved in research					
	KS1	KS2	KS3	KS4	KS5	Whole school
Primary	✓					

Research focus
Behaviour

Context

This is a smaller than average school of its type. The proportion of pupils known to be eligible for the pupil premium funding is below the national average. A below-average proportion of pupils is from minority ethnic groups, or speak English as an additional language. The proportion of disabled pupils and those who have special educational needs supported at school action is below average. The proportion of pupils supported at school action plus or who have a statement of special educational needs is also below average.

What they did

Janette Dunderdale, a teacher and Deputy Head from Little Gonerby Infant School in Lincolnshire was interested in how to improve behaviour in her classroom. She asked the following question to the Evidence for the Frontline service: What strategies work best in improving low level disruptive behaviour in a Year Two class? Her question was answered with research evidence from the American Psychological Association, Ofsted and the What Works Clearing House. Together, the evidence identified a number of in-class interventions and school-wide approaches that could help.

Based on this research evidence and some further reading, Janette set about testing out the suggested approaches to investigate which ones could have an impact in her classroom. For example, one suggestion from the evidence related to the way in which the classroom environment could be used to support behaviour and so Janette altered her classroom. Alongside this, Janette engaged with the children in her class about the causes of low level disruption and involved them in developing new strategies. Furthermore, Janette was supported by a coach in her school and together they discussed the strategies being used, the data that were being collected and the views of the children.

Based on this work testing out approaches, Janette made more permanent changes to her classroom and accounted for this in a mini research project which she shared with her colleagues. This provided a stimulus for discussion and encouraged teachers to visit Janette's classroom to see the children learning and working in new ways. The impact on low level behaviour was positive and led colleagues to re-think the design of their own classrooms.

Outcomes

From this case study, it is clear that research evidence supported Janette to develop her practice and improve learning for the children in her class. In addition, supportive mechanisms in school including the expectation that teachers should consult research, that teachers work collaboratively and that teachers share the outcomes of their professional development have encouraged dialogue and the sharing of practice in school.

Phoenix Community Primary School

At a glance

Phase	Key stage of children involved in research					
	KS1	KS2	KS3	KS4	KS5	Whole school
Primary		✓				

Research focus
Developing pupils' questioning techniques

Context

Phoenix Community Primary is smaller than the average-sized primary school situated on the outskirts of Ashford, Kent. The proportion of pupils who are known to be eligible for free school meals is much higher than average. The proportion of disabled pupils and those who have special educational needs who are supported at school action plus or have a statement of special educational needs is higher than average. The majority of these have moderate learning difficulties or speech, language and communication difficulties. More than a quarter of pupils join or leave the school part-way through their education.

What they did

Following an audit of existing provision within Years 3 and 4, a research project was undertaken which sought to explore whether 'mistake making' could be re-framed as an integral part of learning. Its goal was to develop pupils' questioning techniques. A working party was established comprising the school's Research Lead and the Year 3/4 team. Following a series of observations and discussions, teachers reported that several children had a 'fear' of being

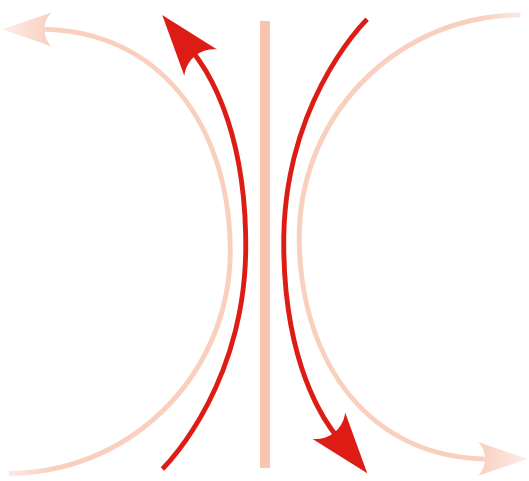
asked a question in class and so did not, or could not, show the desired higher level of thinking. In addition, some children reported that they did not want to make mistakes in their exercise books because it made their work look messy or difficult to read.

In response, it was agreed that the Year 3 and 4 classes would make more use of a mini whiteboard in literacy to enable children to 'test' their spellings. The school also tested the use of new textbooks in maths which featured alternating plain and squared rulings so that children had designated spaces for testing their understanding and for 'neat' work.

Evaluation criteria were developed and tested during a series of lessons. Children in the trial classes overwhelmingly spoke in favour of having a jottings page which they could use to 'test' or 'try out' ideas, methods and calculations before committing an answer to their work. In both the Year 3 and 4 classes, the only group which voiced reluctance towards the jottings page was the more able children, who felt they did not need to try something out first and could instead do the working out in their head. However, on looking through their books, there was evidence that the jottings page *had* in fact been used, highlighting that further work was needed to model when books are introduced across the school, using modelling to support the learning of key concepts or skills in the curriculum.

Outcomes

As a result of the study, feedback from class teachers and the children involved in the trial, changes were made to the format of the exercise books which were used for maths within Key Stage 2. Despite the additional costs involved in the bespoke printing of exercise books for maths, which have a plain jottings page alternating with a squared page, it was felt that the benefits warranted investing in its implementation across the school.



A collaborative research project in six primary schools

This example is of a collaborative research project across a group of primary schools, supported by a university academic. The schools involved were:

- Hempstalls Primary, Newcastle-under-Lyme
- St Albans Catholic Primary, Macclesfield
- St Thomas' C of E Primary, Kidsgrove
- Cledford Primary, Middlewich
- Burton Manor Primary, Stafford
- St Mary's Primary, Tunstall

At a glance

Phase	Key stage or phase						
	EYFS	KS1	KS2	KS3	KS4	KS5	Whole org.
Primary							✓

Research focus
Teacher research skills and whole school improvement

Context

This project involved six primary schools working collaboratively with an academic from Manchester Metropolitan University (MMU). At the time of the project (2015/16), all six schools were rated 'Good' or 'Outstanding' by Ofsted.

What they did

The 'Building Research into Primary Schools (BRiPS)' project involved building research capacity in and across a group of six primary schools located across Staffordshire and Cheshire. Funded by the Association for the Study of Primary Education (ASPE), the project was led and managed by Dr Ruth Dann from MMU. Underpinning the project was the principle that partnership and collaboration enable research to be interpreted, shared and disseminated, thus contributing to a wider knowledge base for the intersection of theory and practice.

Each school identified two teaching staff willing to be engaged in practitioner research. Working with the academic from MMU, each school identified one or two topic areas for investigation. These areas reflected institutional priorities or personal professional targets.

Over a total of four training sessions, participating teachers were introduced to the notion of evidence-based teaching and supported to develop research questions and tools for data collection. They then carried out their own investigations and were supported with analysis, interpretation and dissemination of the findings.

Research projects were undertaken on a range of themes which included the development of:

- pupil feedback
- automaticity in handwriting
- basic numeracy skills
- peer mentoring
- higher order questioning skills for more gifted and able pupils.

All of the participants indicated that they valued their involvement in the research process, both in terms of progressing school objectives, and for supporting their own professional development. Ten of the twelve teachers presented their research at a conference held at MMU in June 2016.

Outcomes

This case study highlights the potential of focused, collaborative, school-led research, supported by a university academic. This supported approach to designing and developing a research project helped teachers to scaffold and deliver a research project. This involved scaling up to other year groups as well as repeating and adjusting their projects for another academic year.

Coleg Meirion-Dwyfor

At a glance

Phase	Key stage of children involved in research					
	KS1	KS2	KS3	KS4	KS5	Whole org.
Further Education						

Research focus
Numeracy in vocational areas

Context

Coleg Meirion-Dwyfor is a multi-campus FE college in Wales offering an extensive choice of courses, including over 20 A Levels and a wide range of vocational and land-based courses. These are delivered in three campuses in Dolgellau, Glynllifon and Pwllheli. Graham Hall and Suzanne Slaney teach numeracy across a range of vocational areas including construction, engineering, computing, environmental science and business studies.

Many further education courses have a significant numeracy content, and there has been concern amongst college lecturers that this can cause difficulties for students who have had difficulty in learning mathematics to an adequate standard at school. This research initiative identified effective approaches for helping students to develop the necessary numeracy skills for success in their further education courses.

What they did

Graham and Suzanne had the opportunity over several years to carry out practitioner research with many student groups, with the objective of identifying ways to deliver numeracy more effectively. They made use of a framework proposed by Tang, Sui and Wang (2003) which identifies five levels for incorporating numeracy activities into vocational courses, representing a progression from applications set by the teacher, through increasing student involvement in the solution of real world problems, to totally independent project work.

They adopted a broad definition of numeracy, in line with the range of numeracy skills expected and valued by employers. In addition to a knowledge of mathematical techniques, numeracy can include: problem solving, especially in the design of solutions to non-routine tasks; communication of mathematical results in formats which are suitable for the intended audience and facilitate decision making; an ability to use computer technology to collect and process data; and a familiarity with number which allows appropriate levels of accuracy to be chosen, estimates made and errors detected.

Preliminary findings from the research project are that the integration of numeracy into courses using realistic vocational activities is highly motivating for students, and has produced improvements in the ability of students to communicate mathematical ideas clearly and to move easily between arithmetical, algebraic and geometrical representations of sets of data. Students' critical thinking and problem solving skills have been developed.

Outcomes

After sharing their research with colleagues at training events, Graham and Suzanne found that there was interest amongst teaching staff to develop examples of good practice in integrating numeracy into vocational courses, and to contribute these as case studies for a book. The numeracy activities were not limited to simple arithmetic and tasks involving shape and space, but included more advanced topics such as: statistical analysis, mathematical modelling, calculus and design of algorithms. The book has now been published in paperback format, and an electronic version is freely available[14].

Through the college's links with the School of Education at the University of South Wales, it has been proposed that the book will form a central text for a Master's Degree module on the integration of numeracy into vocational courses.

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