

# Leading research engagement in education

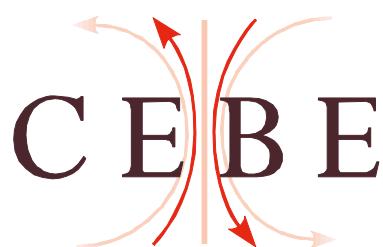
## Guidance for organisational change

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Links to helpful resources

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Examples of research engagement



# Links to helpful resources

A wide range of free resources is available to support the use of research. Some are about generic issues such as pedagogy, curriculum or professional development; other are more specific – science, the arts or disadvantage, for example. To raise awareness of these resources, this document is designed to grow as readers send in information about resources they have found helpful (see disclaimer below<sup>1</sup>).

**Here are some we are aware of initially that are free to use:**

Aim	Tool	What does it offer?	Where to find it
Assess your organisation's state of research-engagement and preparedness to engage further	Use the NFER audit tool	A checklist to help senior leaders self-audit and understand the current level of research engagement in school, how prepared you are to increase levels of engagement and monitor changes over time	<a href="#">NFER website</a>
Inform your in-school strategies with evidence <a href="http://www.beib.org.uk/">http://www.beib.org.uk/</a>	Use the EEF toolkit	A toolkit summarising the level and strength of evidence behind interventions intended to raise pupil outcomes	<a href="#">EEF website</a>
	Receive <i>Best Evidence in Brief</i>	A fortnightly newsletter of the latest education news and research including practical implications for schools and policy makers.	<a href="#">Institute for Effective Education website</a>
	Alumni journal access	Many universities offer their alumni free journal access. This can give staff access to original journal articles.	Encourage staff to inquire with their university's alumni service
	Read a systematic review from EPPI	The EPPI centre conducts systematic literature reviews. You can search for your topic of interest in their index.	<a href="#">EPPI website</a>
	Deans for Impact	A group of US Deans committed to using research to improve learning. Includes a growing section of resources.	<a href="#">Deans for Impact</a>
	Read reports from charitable foundations	A number of foundations produce research relevant to specific areas of education: The Wellcome Trust on science Gatsby on scientific and technical skills JRF on inequality Paul Hamlyn on the arts Nuffield Foundation on science, maths and early years	<a href="#">Wellcome Trust</a> <a href="#">Gatsby</a> <a href="#">JRF website</a> <a href="#">Paul Hamlyn</a>
Engage with other research leads	Attend a local cluster meeting	Share findings of new research or of research already done in school	Organised locally by contacting other local schools
	Join the <i>Evidence Based Teachers Network</i>	Contact other teachers, share resources and best practice, stay up to date with new developments	<a href="#">EBTN website</a>
	Attend a ResearchED conference	Local and national conferences where practitioners can present their work and share their experiences	<a href="#">ResearchED website</a>

<sup>1</sup> While the resources listed have been recommended to us by teachers, we do not endorse any specific resource over another. Rather, we include them here for your benefit and consideration.

Aim	Tool	What does it offer?	Where to find it
Understand the role of the Research Lead	Education Development Trust research reports	3 reports looking at the role of the research lead in school and conditions for their success	<u>EDT website</u>
Link with front line educational researchers and be part of larger research projects	Contact an education or psychology faculty at a nearby university	Your school may be able to link with researchers and collaborate on research with academics in the field.	University Education Departments
	Involve your school in an Educational Endowment Fund Randomised Controlled trial	Your school could become part of a larger research project set up by the Education Endowment Fund.	<u>EEF</u>

### Paid-for resources

There are also programmes available to support the increased use of evidence-based strategies in school, such as

- SSAT: Lead Practitioner Accreditation
- Curee: services and tools for practitioners' use of research

Please send your suggestions for additional resources to the LREE project team c/o [jee@york.ac.uk](mailto:jee@york.ac.uk)

# 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 below. 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						✓
<b>Research focus</b>						
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	✓					
<b>Research focus</b>						
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 was 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 of 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 at: [www.grahamhall.org/FENumeracy/](http://www.grahamhall.org/FENumeracy/)

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.

## The Romsey School, Hampshire

### At a glance

Phase	Key stage of children involved in research				
	KS1	KS2	KS3	KS4	KS5
secondary					✓

### Research focus

A new model for Professional Learning

### Context

Romsey School is an over-subscribed comprehensive school in the heart of Romsey which draws around forty percent of its cohort from the less affluent and more culturally diverse area of Southampton. The school vision is to develop a community that is excited about Teaching and Learning, with pupils who develop really effective 'Habits of Mind' and staff who constantly reflect on and improve practice.

### What they did

For the academic year (2016-17) we investigated the current research on 'What makes a difference with Professional Learning'. We selected some key literature as a starting point to inform our work.

*Developing Great Teaching: Lessons from the international reviews into effective Professional Development (Coe, Higgins, Cordingley & Greany 2016 - The Teacher Development Trust found at [Report](#))*

*Developing Great Teaching @ Teacher Toolkit (a summary of the research paper above found at [summary](#))*

*Standards for teachers' professional development; Implementation guidance for school leaders, teachers, and organisations that offer professional development for teachers (DfE July 2016)*

*How can we best grow transformational learners and leaders in our classrooms? The Eight Ps of Clear, Intentional, Explicit Theories of Teacher Development (Reference unknown)*

*The SSAT model Framework for World Class Education*

From the literature we synthesised the following 8 key themes that would inform our own developing practices:

1. Professional Development should have a focus on improving and **evaluating pupil outcomes**.

2. Professional Development should be underpinned by **robust evidence and expertise**
3. The duration and rhythm of effective CPD support requires a longer-term focus of **at least two terms**
4. We need to step away from a 'one-size fits all' approach so **individual needs are carefully considered** and that colleagues can engage meaningfully and repeatedly in relevant pedagogy
5. Effective CPD is associated with certain activities such as explicit discussions, **in class experimentation and problem solving/inquiry**
6. We need to empower teachers through **collaboration**, peer learning and expert challenge
7. Professional development must be **prioritised by school leadership**.
8. **Powerful leadership** is pivotal in defining staff opportunities and embedding cultural change

As a school, our vision was to better meet these themes and to make them priorities. To this end we developed a new model for Professional Learning at the Romsey School for 2016-17, which aligned with these recommendations.

*The new model:*

This model consisted of Inquiry Teams of colleagues who clustered as they had developed similar Performance Management objectives (in the form of an inquiry question) for the year. Each group was facilitated by a Lead Learner (Lead Practitioner) and one member of SLT. Each colleague would complete at least one action research cycle of 'plan-do-review' by the end of the performance management cycle, led by a Lead Practitioner.

The development model developed to facilitate the research at Romsey was ground in terms of a 'cultural readiness'. The head had a very clear vision for learning which was shared across the school. The inclusion of an SLT member in each team also aligned with international research evidence related to the importance of research being led through the school. Developing teams were based on Performance Management goals which also made the Professional Learning more meaningful and sustainable for colleagues. Additionally, it also made Performance Management relevant to daily practice and to school outcome measures

The Lead Practitioners modelled their research journey and encouraged staff to inquire. The SSAT Lead Practitioner model was used to help scale up the research initiative and led to us adopting the 4 Es approach for the Lead Professionals:

Engage (with the evidence base)  
 Enact (through action research classroom in the classroom)  
 Embed (trial in a different context, another classroom...and refine)  
 Extend (leading other practitioners beyond your team / faculty)

## Outcomes

It is very early to state any concrete outcomes. However, the anecdotal data is very clear; for the vast majority of our colleagues' feedback was extremely positive. Colleagues felt empowered and, as a result, (excited) conversations on Teaching and Learning were much more regular. We have moved towards 'professionalising the profession' and staff cite their research reading on a regular basis. The culture has already evolved to be more questioning, more reflective, more impact oriented. Lastly, there is a real buzz about our research questions and around T&L interventions in school, which has been incredible to witness, be part of, and lead.

Annie Eagle (Deputy Headteacher)