THE RISE PROJECT: EVIDENCE-INFORMED SCHOOL IMPROVEMENT

Evaluation Report

May 2019

Meg Wiggins, John Jerrim, Jan Tripney, Meena Khatwa and David Gough

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; and
- 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 (formerly Impetus Trust) 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.

This trial was funded by the Education Endowment Foundation (EEF), the Department for Education and the Mayor's London Schools Excellence Fund as part of a round of funding exploring Research Use in Schools.

For more information about the EEF or this report please contact:

Jonathan Kay
Education Endowment Foundation
5th Floor, Millbank Tower
21–24 Millbank
SW1P 4QP

0207 802 1653

jonathan.kay@eefoundation.org.uk

www.educationendowmentfoundation.org.uk

Contents

About the evaluator

The project was independently evaluated by a team from UCL Institute of Education; Meg Wiggins, John Jerrim, Jan Tripney, Meena Khatwa and David Gough.

The lead evaluator was Meg Wiggins.

Contact details:

Meg Wiggins
Department of Social Science,
UCL Institute of Education,
20 Bedford Way,
London
WC1H 0AL

020 7612 6000

m.wiggins@ucl.ac.uk

Executive summary

The project

Research leads Improving Students' Education (RISE) aimed to test whether a research-informed school improvement model improved the mathematics and English attainment of pupils in years 10 and 11. Each participating school appointed a senior teacher as a Research Lead who was responsible for promoting and supporting the use of research throughout the school. The Research Leads were supported by a programme developed and delivered by a team from Huntington School in York. This included an initial eight CPD sessions, termly follow-up meetings over two academic years, a bespoke email newsletter, a website with resources, a peer network, and school visits by the RISE team. The team also provided a workshop for headteachers and annual workshops for English and mathematics subject leads. Research Leads were encouraged to deploy a research-informed school improvement model:

1. **Decide what you want to achieve**. Identify priorities using internal data and professional judgement
2. **Identify possible solutions**. External evidence summarized in the Toolkit can be used to inform choices
3. **Give the idea the best chance of success**. Applying the ingredients of effective implementation
4. **Evaluate the impact of your decisions** and identify possible improvements for the future
5. **Secure and spread change**. Mobilise the knowledge and use the findings to inform the work of the school to grow or stop the intervention.

A randomised controlled trial was used to evaluate the impact of the intervention on GCSE grades in mathematics and English. 40 secondary schools were randomly allocated to either participate in RISE or to a control group which continued with business as usual. The impact evaluation examined the impact on two cohorts of pupils. The first cohort took their GCSE exams in the 2015/6 academic year and was only exposed to one year of the intervention. The second cohort was in year 10 in 2015/16, so took their GCSE exams in 2016/17 and was exposed to two years of the intervention. The accompanying process evaluation involved observations of training; interviews with Headteachers, Research Leads and heads of English and mathematics; and surveys of teachers. The project was funded by the Education Endowment Foundation (EEF), the Department for Education and the Mayor's London Schools Excellence Fund as part of a round of funding exploring Research Use in Schools.

Key conclusions
1. For both the one-year and two-year cohorts, children in RISE schools made a small amount of additional progress in mathematics and English compared to children in the comparison schools. This result has a high security rating. The differences were small and not statistically significant. This means that the statistical evidence does not meet the threshold set by the evaluator to conclude that the true impact was not zero.
2. There was no evidence that RISE had an impact on the outcomes of pupils eligible for free school meals.
3. The intervention was considered appropriate and helpful by the participating schools. Uptake by schools and attendance at the intervention training was high and sustained over the 30 months of the intervention.
4. Schools' adoption of the research-informed school improvement model was highly variable and influenced by schools' context and relationships, and the stability of the Research Lead role. The teacher in the role of Research Lead changed in 40% of the schools during the project.
5. Key conditions for success in implementing the intervention included choosing a well-respected Research Lead with strong relationships in the school, visible support from the Headteacher, and ring-fenced time for the Research Lead to work on the project.

EEF security rating

The mathematics and English outcomes for the one-year cohort and the mathematics outcome for the two-year cohort have high security. The GCSE English results for the two-year cohort has moderate-to-high security – losing a padlock due to the trial not being as well-powered for this outcome as originally intended. This was a well-designed randomised control trial. It was an efficacy trial, which was designed to evaluate the programme under ideal conditions with strong implementation, led by the developer. The size of the trial was limited, as a larger trial could have stretched the developer beyond their capacity to deliver and led to poor implementation. Relatively few pupils who started the trial were not included the final analysis. The pupils in RISE schools were similar to those in the comparison schools in terms of prior attainment.

Additional findings

Due to problems with data collection, there was insufficient evidence to draw conclusions regarding the planned secondary outcome of teachers' research use and understanding. The process evaluation suggested that RISE was more successful when Research Leads had developed strong relationships within the school, headteachers gave clear and visible support for implementation, Research Leads had additional ring-fenced time to undertake the role, there was a strong link between the Research Lead and the school's Teaching and Learning Co-ordinator, and Research Leads had a solid understanding of their school attainment data.

Future changes to the intervention could increase the likelihood of an impact on pupils' outcomes. These include the addition of training focusing on change management and knowledge brokering skills, training two Research Leads from each school to insure against staff changes and providing more time for this intervention to be embedded before measurement of change in pupil outcomes.

Cost

The annual cost of the programme per pupil over 3 years is £0.86. There will be additional costs to schools in terms of cover for teachers attending training days, travel costs for training attendance, and ideally also the costs of some non-teaching time for Research Leads to fulfill their role within school.

Impact

Table 1: Summary of impact on primary outcomes

Group	Effect size (95% confidence interval)	Estimated months' progress	No. pupils	p- value	EEF security rating	EEF cost rating
GCSE mathematics (1 year of intervention)	0.09 (-0.03 to 0.2)	1	6814	0.15	🔒🔒🔒🔒🔓	£££££
GCSE English (1 year of intervention)	0.05 (-0.07 to 0.17)	1	6784	0.38	🔒🔒🔒🔒🔓	£££££
GCSE mathematics (2 years of intervention)	0.04 (-0.09 to 0.16)	0	6675	0.57	🔒🔒🔒🔒🔓	£££££
GCSE English (2 years of intervention)	0.03 (-0.11 to 0.18)	0	6639	0.64	🔒🔒🔒🔓🔓	£££££

Abbreviations

APS	Average Point Score
EAL	English as an Additional Language
FSM	Free School Meals – ever eligible
GCSE	General Certificate of Secondary Education
ICC	Intra-Cluster Correlation
IoE	UCL Institute of Education
ITT	Intention To Treat
KS3	Key Stage 3
KS4	Key Stage 4
LA	Local Authority
MDES	Minimum Detectable Effect Size
NPD	National Pupil Database
OLS	Ordinary Least Squares
RL	Research Lead
RCT	Randomised Controlled Trial
SAT	Standardised Assessment Task
UPN	Unique Pupil Number
URN	Unique Record Number

Acknowledgements

The authors would like to thank the participants in this study and the developers of the RISE intervention for their time and input, and Claire Kilner at Huntington School for all the much appreciated administrative liaison. Thank you to Anneka Dawson at the EEF for editorial comments and to the peer reviewers of this report for their astute points. Special thanks to Professor Sandy Oliver and Mary Sawtell at UCL IoE for invaluable support in completing this evaluation.

Introduction

Intervention

The Huntington RISE trial provided an opportunity to investigate the feasibility of a sustainable model of research use within schools, which utilises a 'hub' school leading other schools through a process of school improvement, using research evidence as the driver for change. The project aimed to equip a senior teacher in the role of research advocate (Research Leads), to help teachers at their school to use educational research to develop their pedagogy in a way which would maximise the positive impact on student outcomes. The RISE programme provided several components: a package of training to the Research Leads – an initial eight sessions held over 8 months, plus termly follow-up meetings for a further 2 academic years; a workshop for headteachers; annual workshops for English and Mathematics subject leads; on-going support for the Research Lead via a bespoke emailed newsletter, a website with resources, a network of peers, and school visits by the RISE team.

The study assessed whether such a model of training and support of Research Leads makes a significant difference on student outcomes and teachers' research use and understanding in English secondary schools. The study assessed outcomes for two cohorts of pupils: those who could potentially have been impacted by the RISE intervention for one year (year 11 in 2015/6 academic year) vs the same cohort year from the control schools; and secondly, those who could have been impacted over two years (year 10 in 2015/6 and 2016/7 academic years) vs control pupils.

A concise summary of the intervention is provided in box 1 below.

Box 1: RISE Intervention Description: TIDieR checklist [1]

TIDieR checklist

1. **Brief name:** RISE: Research Leads Improve Student Education

2. **Why: Rationale, theory and/or goal of essential elements of the intervention**. Research-based school improvement, led at individual school level by a senior teacher in the role of research advocate ('Research Lead'), would improve teachers' use of research based teaching and learning practices, thus improving performance on Mathematics and English GCSE grades.

3. **Who: Recipients of the intervention training, as well as other teachers in their school who received information cascaded by the Research Leads**. Secondary school pupils in Years 10 and 11 (age 14 - 16) in England.

4. **What: Procedures, activities and/or processes used in the intervention**. Training for Research Leads provided by the RISE team; training for heads of English and Mathematics and Headteachers in intervention schools. Ongoing support via newsletters, website and research briefings. Research Leads to support local action within own school to create a more research based culture –e.g. through CPD, own school newsletter/briefings and a local school-led evaluation of an intervention.

5. **Who: Intervention providers/implementers**. The intervention training and curriculum was provided by a team from Huntington School in York, Durham University's Centre for Evaluation and Monitoring and City of York Council. The local delivery of the intervention was carried out in secondary schools by Research Leads who were senior leaders in those schools.

6. **How: Mode of delivery**. Training for Research Leads and Headteachers, peer support.

7. **Where: Location of the intervention**. Within secondary schools in England, predominantly in Yorkshire and the Humber.

8. **When and how much: Duration and dosage of the intervention**. The Research Leads had training and support for 30 months, and during this time were cascading information and supporting school change. One cohort of pupils were exposed to the intervention within their school during the 2015/16 academic year, a second cohort involved both the 2015/16 and 2016/7 academic years.

9. **Tailoring: Adaptation of the intervention**. The central training was delivered to all intervention schools in the same way, but the expectation was that there would be local adaptation from Research Leads to fit their own school context.

10. **Modifications**: Because of staff changes, some schools had multiple people trained as Research Leads, rather than sending the same individual to all the training sessions. There was less focus on a local school-led evaluation than originally planned.

11. **How well implemented (planned)** Researchers captured implementation data on intervention delivery via observations, attendance records and a teacher survey, as well as case study interviews.

Programme training and resources

The components of the RISE intervention are described in detail in this section.

Training and support

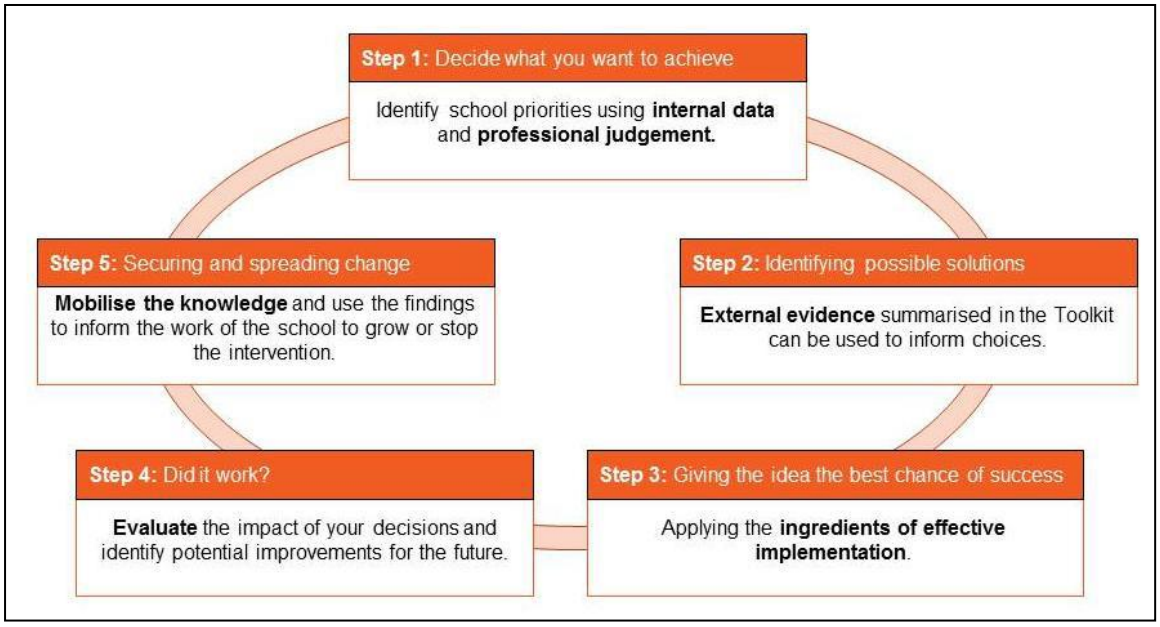
Core training for Research Leads in Secondary School

Each school nominated one senior teacher to adopt the role of Research Lead and attend training through the RISE programme. The core training for Research Leads was comprised of eight one-day training sessions, held monthly between January and October 2015. These training sessions covered

the aspects of the EEF School Improvement Cycle (see Box 1), and were led by the RISE team, which comprised the Deputy Head of Huntington School, York (who is an English teacher and former head of English) and a Mathematics expert (initially a consultant, followed by Huntington's Head of Mathematics when the consultant retired), as well as participation from two academics from Durham University's Centre for Evaluation and Monitoring (CEM) who helped develop and deliver the content of the Research Lead training. Each training day had some sessions led by the Huntington Team and some by the CEM team, so there was a mix of academic evaluation expertise and school – level implementation knowledge, with the balance depending on the topic.

The core training covered the reasons for and principles behind incorporating research use in teaching, as well as the practicalities at school level of implementing research evidence into local contexts. The content was designed to cover the basic steps of the Education Endowment Foundation's School Improvement Cycle (see Figure 1)

Figure 1: Education Endowment Foundation's School Improvement Cycle



The subjects covered in each session of the RISE core training are detailed in Box 2.

Box 2. Timing and content of RISE core training for Research Leads

Core training workshop	Subjects covered
12 Jan 2015	Introduction to the programme and its evaluation; the focus on research in Mathematics and English; key questions for own school; expectations of Research Leads *(* this session for Headteachers as well)*
13 Jan 2015	'Finding and appraising research evidence' introduction to good appraisal guide; working with evidence; developing local questions
11 Feb 2015	Role of Research Lead; Veracity of research; local context; survey of what works; use of local data
6 March 2015	'Evaluation – the nuts and bolts' (Introduction to aspects of evaluation and design – methods, analysis; tackling biases; discussion of arguments presented by Research Leads to their school staff)
27 April 2015	'Thinking Evaluatively' (discussing local level initiative plans; focus on new curriculum and potential GCSE mathematics/English interventions)
3 July 2015	'Research Informed CPD'
30 Sept 2015	'The role of the research lead'; 'Analysis and interpretation of school data'
1 October 2015	'Monitoring implementation, steering an intervention and learning from failure'

In between these core workshops, homework assignments were given to allow the Research Leads to practice and embed the learning from the training workshops. These assignments included: An exercise to consider issues raised by local school data about attainment; a concise proposal highlighting one area where school improvement was needed within English or Mathematics and selecting a possible research-based approach for addressing it; outlining a local evaluation that could be undertaken to test this research approach.

Event for Headteachers

In addition to training the one Research Lead from each intervention school, the RISE project also wanted to ensure that their Headteachers had awareness of the issues and understood how research based teaching could potentially benefit their school, as well as being clear about the expectations of intervention schools. In January 2015, a one day event was held at Huntington School for intervention schools' Headteachers and Research Leads. This event, which also counted as the first day of the Research Lead training programme, brought in speakers from the Education Endowment Foundation, the Department for Education, Huntington School, Durham University, and the lead of the UCL IOE evaluation team.

On-going support workshops with Research Leads

An additional purpose of the RISE intervention was to help Research Leads provide ideas, learning and support to each other, specifically around the implementation of research in their schools. To facilitate this on-going networking and support, following the completion of the core Research Lead training in October 2015, further termly one-day workshops were held for the Research Leads in the two following academic years. A total of five workshops were held during March 2016, July 2016, October 2016, February 2017 and July 2017.

Each workshop had some content delivered by the RISE team, followed by activities and sessions where local issues were discussed. Key topics covered included: what evidence is available for

addressing the changing curriculum and assessment for English and mathematics? What tools do you need for local evaluation?

Training for subject leads: Mathematics and English

The intervention team provided annual one-day training workshops for intervention schools' subject leads in English and Mathematics. A total of three such workshops were offered – in July of each year, 2015, 2016 and 2017. The key issues covered in these workshops had to do with curriculum and assessment changes in these subjects, and sharing research based strategies and local solutions to the challenges put forward by these subject changes. Providing subject leads with understanding about the importance of research-based teaching also reinforced the messages of the intervention being provided to the Research Leads.

Access to research evidence and support

In addition to leading the RISE training, the hub school, Huntington, provided facilitation of the network for peer support. Components of this support included:

- Development and circulation of **newsletters** for Research Leads. These provided succinct research briefings on topics relating to global secondary school teaching and revision practices, with a focus on ones that related to English and mathematics. These newsletters had a substantial level of contributions from Research Leads. Twenty newsletters were produced and distributed via email during the intervention period.

- Hosting of a **RISE website** – with password protected areas for Research Leads and subject leads, providing them with easy access to research evidence, materials used in training, and case study examples.

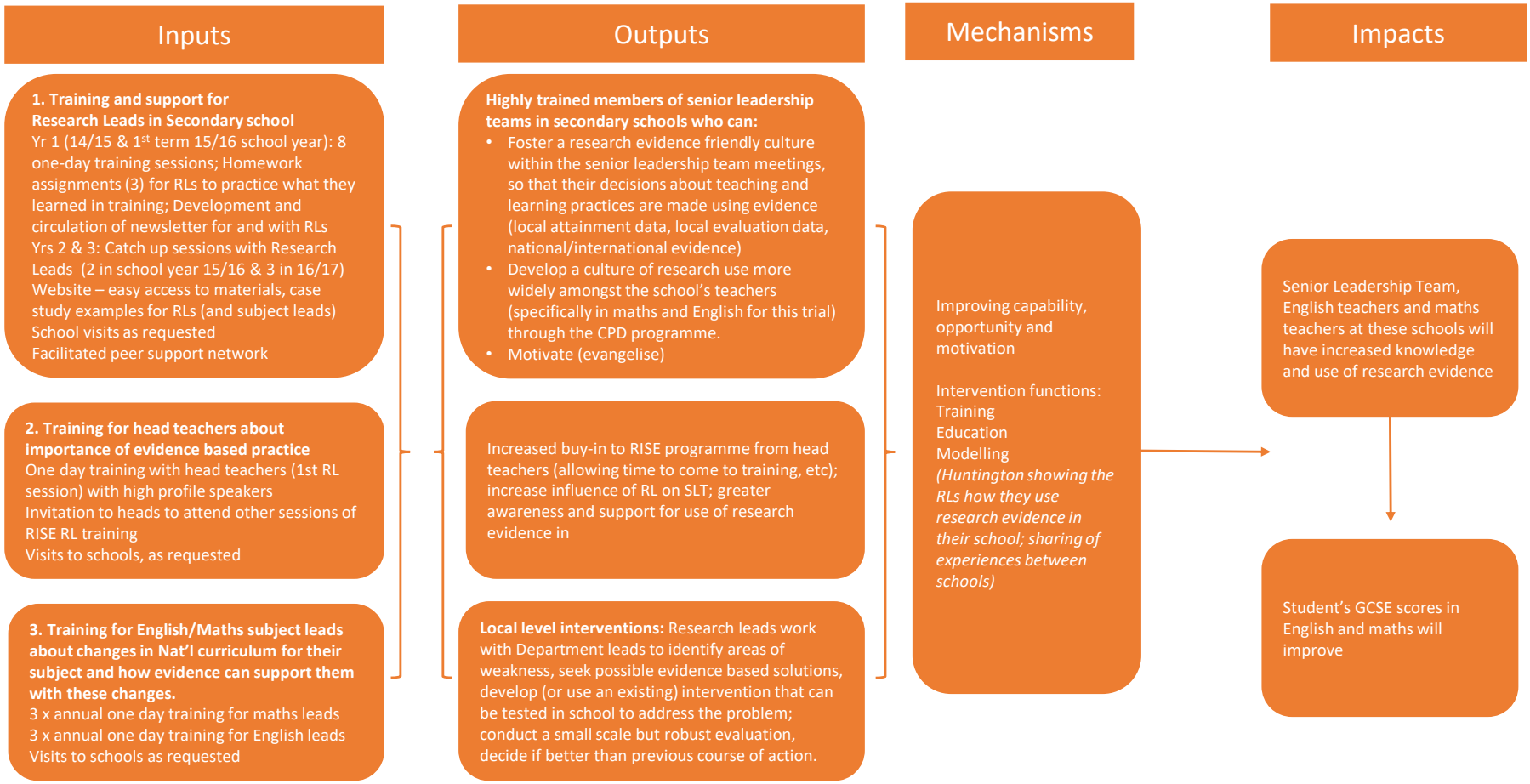
The Huntington RISE team engaged in **visits to intervention schools** who requested additional input. This was offered when new Research Leads came into post mid-stream, but also was adopted when the Research Lead found resistance within their senior leadership team, or wanted additional support in cascading the research use philosophy more widely within their school.

Programme Logic model and theory of change

At the beginning of the programme, there was an implicit assumption that increasing awareness about the role of research evidence would help teaching to improve. We asked the RISE programme developers to provide information regarding their key expectations about the inputs that would be provided by the programme; the intermediate outputs that would be provided as a result; as well as their understandings as to why the intervention was hypothesized to have an effect. This informed the development of a logic model for the Huntington RISE intervention (see Figure 2).

As the intervention developed, there were some adaptations made from the original intended programme, as described in the study protocol. Most notable was a shift in primary focus away from each school conducting and evaluating their own local research project. Additionally, the content of the follow up sessions, especially for subject leaders, became more focused on strategies for teaching for the new GCSE exams than on research evidence alone. This will be discussed further in the process evaluation findings section.

Figure 2. RISE Logic Model, based on developers' views



This evaluation highlighted some changes to the intervention that will be discussed further in the process evaluation section. These included: the turnover of Research Leads given staff changes in schools, the additional support visits given to schools, and the shift away from a central focus on a local research project within each intervention school.

Background

This study joins the evaluations of other recent initiatives within the UK to determine the best methods for increasing knowledge, understanding and use of research within school leadership teams and classroom teachers. The trial described in this report was one of six studies funded by the Education Endowment Foundation to explore ways of improving research use within schools and to increase the evidence base around such endeavours [2] [3] [4] [5] [6] [7]. Three of these projects were pilot or feasibility studies and three were randomised controlled trials. At the time of the inception of this trial, increasing the use of research in schools to improve teaching was a growing theme of interest within UK educational bodies and initiatives (e.g. the Institute for Effective Education, ResearchED). At this time, the UK Department for Education commissioned an evaluation to determine the progress of evidence informed teaching in England. This two year study included a systematic review and interviews with key stakeholders [8] During the course of the trial, the UK Government issued a government policy White Paper, Education Excellence Everywhere [9], relating to education that increased the focus on, and importance of, research-based teaching practices, including the development of a research schools network – which mirrors, to some extent, the focus of the RISE intervention.

Huntington School in York, which was the 'hub' school leading the intervention in this study, conducted some proof of concept work in 2012-2014, by trying out a similar model of school improvement in their own school. They found that their school-based research programme involving implementation at local level, when properly supported, was feasible and valuablei1, and they used this as the basis for devising the RISE intervention, in conjunction with Durham University's Centre for Education and Monitoring.

At the point at which the RISE trial was conceived there were no trial findings available related to such a programme being implemented in schools. During the course of this trial there has been research looking at key factors relating to successful mechanisms for increasing the use of evidence by decision makers and practitioners. Langer and colleagues, through a systematic review of reviews of social science literature, created a framework around evidence use mechanisms, and aspects that are critical for success of such interventions [10]. These aspects and framework will provide a lens through which to assess the findings of the RISE trial (This is described further in the 'Process Evaluation methods – analysis' section).

Evaluation objectives

The primary objective of the evaluation was to answer the research question:

1. Do the schools taking part in the RISE intervention boost attainment at GCSE in mathematics and English for pupils versus those in schools that maintain the status quo?

The evaluation aimed to answer the following additional questions about the impact of the RISE programme:

2. Do treatment effects of the RISE intervention differ between those with/without free-school meal eligibility? (This questions was added at the request of the Education Endowment Foundation.)

[1] See, for example, this write up of some of Huntington Schools experiences of the research cycle within their school: https://www.theconfidentteacher.com/2013/01/evidence-driven-education/

3. Does the RISE intervention change the use of research evidence by secondary mathematics and English teachers?

Additionally, the evaluation aimed to explore a number of issues relating to the implementation and potential sustainability of the RISE programme.

4. What are the priorities for school improvement identified by each school and how is evidence sought to inform the development of a strategy to achieve these priorities?

5. How is this evidence assessed, interpreted and applied to develop the school improvement strategy?

6. What is the strategy for the programme as a whole and its theory (or theories) of change (intervention components; necessary conditions for different stages of the intervention to be achieved; intermediary outcomes; outcomes of goals of intervention; necessary conditions for continuation of intervention process and outcomes)?

7. How is the programme strategy implemented (and to what extent that the implementation itself is evidence informed)? How faithful is it to the original design?

8. What are the barriers and facilitators for achieving each part of the theory of change?

9. What outcomes are actually achieved (planned and unplanned) in terms of the priorities of the schools plus awareness, understanding and actions related to research more broadly (as this is uncontrolled it is simply mapping outcomes not causal effect)?

10. How do schools self- evaluate and respond to RISE intervention processes and outcomes?

11. What supports provided by the developers of the intervention best enabled these processes?

12. How acceptable do Research Leads, Headteachers, and mathematics and English teachers find the intervention?

13. What components are critical for sustainability of the RISE intervention?

The published protocol for this study can be accessed here:

https://educationendowmentfoundation.org.uk/public/files/Projects/Research_Use_-_Huntingdon_RISE.pdf

Ethical review

The project was submitted for review to the UCL Institute of Education's Faculty Research Ethics Committee and was granted ethical approval - Data Protection registration: Z6364106/2016/11/69.

There were three forms of consent in this evaluation. First, school-level consent was obtained from Headteachers for agreement to take part in the trial, to randomisation, and to access pupils' data from the National Pupil Database (NPD). This school-level consent, via a Memorandum of Understanding was followed by the distribution of an information letter about testing to parents, with an opt-out consent slip for parents to return if they did not wish to have their child participate in the testing or allow their child's NPD test data to be used (see Appendix C for the Memorandum of Understanding for schools and Appendix D for the consent form for parents). The third layer of consent took place with teachers, where those who took part in the survey gave on-line consent, and in case study schools where teachers gave verbal consent to interviews.

Trial registration

The trial has been registered with the ISRCTN clinical trials registry: ISRCTN number 18127836.

Project team

RISE intervention team:

Huntington School – a Co-educational Secondary Comprehensive School in York, UK.
https://huntingtonschool.co.uk/

Alex Quigley – intervention lead, programme developer and trainer – based at Huntington School; Deputy Head and English teacher.

John Tomsett – recruited schools to the trial, programme developer and occasional trainer - Headteacher Huntington School

Matt Smith – (joined in second academic year of intervention) intervention developer and trainer - Huntington School, Assistant lead of RISE Mathematics Lead – Huntington School

Clare Kilner – RISE project administration; administrator Huntington School

Durham University, Centre for Evaluation and Monitoring (CEM), UK

Dr Stuart Kime – intervention developer and trainer -Durham CEM

Prof Rob Coe – intervention developer and trainer - Durham CEM

Consultant

Alan Easterbrook – (first academic year of intervention) intervention developer and trainer, mathematics subject lead – consultant; previously a secondary Mathematics head of department and also worked with York Education, City of York Council

Evaluation team – UCL Institute of Education:

Meg Wiggins, principal investigator—oversaw impact and process evaluations, conducted process evaluation data collection and analyses and co-wrote the study report.

Prof John Jerrim – designed the impact study, randomised the schools, conducted the analysis of the impact data, and co-wrote the study report.

Janice Tripney – helped design the study and process evaluation instruments, co-conducted some process evaluation interviews, contributed to the study report.

Prof David Gough – helped design the study and process evaluation instruments, contributed to the study report.

Dr Meena Khatwa – data collection, analysis and fed into the study report.

Methods

Trial design

Table 2: Trial design

Trial type and number of arms		2-arm cluster randomised controlled trial
Unit of randomisation		School
Stratification variable(s) (if applicable)		3yr average % A-C GCSE grade
Primary outcome	Variable	GCSE mathematics and GCSE English grades
	Measure (instrument, scale)	NPD data: KS4_EBPTSMAT_PTQ_EE and KS4_EBPTSENG_PTQ_EE
Secondary outcome(s)	Variable(s)	Teachers' research use and understanding
	Measure(s) (instrument, scale)	NFER Research Use tool.

The evaluation was a 2-arm clustered randomised controlled trial, with randomisation at the school level. School level randomisation was the only appropriate type for this whole-school intervention.

The study employed a 'business as usual' control group model. The control sites were offered £500 after randomisation when they provided UPNs, and a further £1000 at the end of the study.

This impact study was combined with an integrated process evaluation that was designed to provide valuable insight into what the intervention entailed and how it had, or did not have the intended impact on school practices and pupil attainment.

Participant selection

Schools were recruited by Huntington School, through networking and presentations at events for Headteachers, research events and through emailing Headteachers in the Yorkshire and Humber region. Schools that agreed to take part in the trial returned a Headteacher consent form confirming participation in the study and allowing access to the NPD data for the school (Memorandum of Understanding, see Appendix C). The full recruitment target of 40 secondary schools in England was recruited to the trial by the initial target date. The size of the recruitment pool was determined by the capacity of the intervention team to deliver the intervention to a maximum of 20 schools. The eligibility criteria included any state secondary schools.

Outcome measures

Primary outcome

The dual primary outcomes are GCSE mathematics and GCSE English grades. These are national examinations sat by English pupils at the end of secondary school (when pupils are typically aged 15 or 16). These grades are a reliable, externally valid measure. These are also 'high stakes' tests for schools in that schools are ranked in publicly available league tables by their pupils' performance. These tests are not specific to the RISE intervention and are marked blind to treatment.

These outcomes were pre-specified as part of the evaluation protocol. Initially the intention was to create a single primary outcome variable by combining GCSE mathematics and English grades. However, early in the project, prior to any outcomes data collection, we reconsidered this decision, as we realised that if there were to be a positive effect, one would want to know if it is consistent across both subjects, or only in one or not the other. One challenge with this trial was that it straddled three academic years, with two academic years over which outcomes were examined (2015/16 and 2016/17) at a time when the GCSE examinations underwent significant changes, both in content and type of score/grades provided. The analysis therefore has been conducted separately by subject area (English and mathematics as dual primary outcomes) and by year group cohort (2015/16 and 2016/7).

For both cohorts (pupils who took their GCSEs in 2015/16 and 2016/17 academic years), we have used the point score in the mathematics EBacc pillar (variable name KS4_EBPTSMAT_PTQ_EE from the NPD tables downloaded from https://www.gov.uk/government/publications/national-pupil-database-user-guide-and-supporting-information) and the Point score in English EBacc pillar (variable name KS4_EBPTSENG_PTQ_EE).

Note that the above are not truly continuous variables (they have only a limited number of categories – 10). In our analysis, we will therefore test the robustness of results by using an ordered logistic regression as an alternative to an Ordinary Least Squares OLS regression.

Secondary outcomes – Survey of teachers' research use

The intended secondary outcome was teachers' research use and understanding based upon the research use outcomes survey tool devised by NFER (see Appendix E). This survey was administered to teachers at study schools at two time points: baseline (pre-randomisation autumn 2014) and post intervention (winter/spring 2018). The sample included all teachers from English and mathematics departments, as well as school senior leadership teams. Following NFER guidance on the analysis of the tool [11], the analysis was intended to focus on combined scores for six specific constructs, including:

- Positive disposition to academic research in informing teaching practice
- Use of academic research to inform selection of teaching approaches
- Perception that academic research is not useful to teaching
- Perception that own school does not encourage use of academic research
- Active engagement with online evidence platforms
- Research knowledge

To determine a measure for each construct the answer scores were summed from the included items to form a raw score. However, due to low response rate, this secondary outcome has not been included as a secondary measure. See Impact Evaluation analysis (secondary outcomes) section for further information.

Compliance measurement

In our statistical analysis plan we anticipated using Complier Average Causal Effect (CACE) [12] analysis to explore dosage effect. It should be noted that this methodology essentially takes the ITT estimate and scales the estimated effect size upwards by the amount of non-compliance. Formal compliance with this intervention was determined by uptake of the offer of the RISE training; continued engagement and attendance by a staff member from the school throughout the 2.5 years of the

intervention training. All twenty intervention schools reached this formal level of compliance, and as such, no compliance analysis was required.

Baseline test

The baseline measures used for the dual primary outcomes are the test scores from Key Stage 2 SATs in English and mathematics. These are described further in the analysis section.

Sample size

We have estimated power calculations for a) the primary outcome relating to pupil attainment at GCSE and for b) the secondary outcome of teachers' research use and understanding (as measured by the survey). These have been calculated originally using the Optimal Design software, and at analysis stage using the POWERUP software.

The intervention providers only had the capacity to provide the intervention to 20 schools. Agreement was made that the total sample size of schools would therefore be limited to 40. For pupil attainment in English and mathematics at GCSE, with school level randomisation of 40 schools, we have assumed an intra-cluster (between pupils within schools) correlation of 0.152, 200 pupils per school year group, a baseline of KS2 SATS, and a pre-post correlation (KS2 to KS4) of 0.7 (authors' calculations using NPD database). Given these assumptions, if 40 schools were retained in the trial, one could detect a minimum effect size of approximately 0.355 (See Appendix F for further details). This is a large MDES, and we believe the RCT to be substantially underpowered. However, as the intervention providers only had capacity to deliver the intervention in 20 schools, and the quality of implementation is very important for an efficacy trial such as this, little could be done to overcome this challenge.

For teacher research understanding and use outcomes using the (at the time, new) NFER devised research use tool, with school level randomisation of 40 schools, we had to make assumptions for the power calculation without previous evidence to base this one. These included an intra-cluster (between schools) correlation of 0.05, 20 teachers per school, a baseline using the same tool, and a pre-post correlation of 0.8. Given these assumptions, if 40 schools were retained in the trial, one could detect a minimum effect size of approximately 0.23 (80% power for 95% CU).

Randomisation

The 40 participating schools were first divided into four strata, each containing ten schools. These strata were formed based upon a 3-year average of historical school level GCSE grades. Within each stratum, five schools were randomly allocated to treatment and five to control. The randomisation was performed by John Jerrim, using a random number generator in Excel. In total, there are 20 treatment schools and 20 control schools.

A random number was drawn from a uniform distribution. The schools in the bottom half of the random draw distribution, within each stratum, were assigned to the control group. Schools with a number in the top half of the random draw distribution, within each stratum, were assigned to treatment.

As the baseline test scores in this trial are Key Stage 2 results, technically randomisation was conducted after the pre-test measure. However, as pupils and teachers would not have known they were to be

[2] Based upon previous EEF trials, an ICC of 0.15 for GCSE mathematics and English outcomes was decided. See Table 3 of the following link:
https://educationendowmentfoundation.org.uk/public/files/Publications/EEF_Research_Papers/Research_Paper_1_-_Properties_of_commercial_tests.pdf

part of this RCT when they took their Key Stage 2 examinations, this is unlikely to have an impact upon the results.

Data collection – teacher's research use survey

Prior to randomisation, schools supplied a list of email addresses of key categories of their teachers to Huntington School, who passed these to the research team. The list included all English and mathematics teachers, as well as the emails for all senior leadership team members. These teachers from each of the 40 schools were sent an email invitation to take part in the online survey about research use. This invitation included a link to the survey, a personal id code and further information about the study. Email reminders were sent to non-responders. Additional email reminders were sent via heads of department and also through the school's main contact.

At follow up, key contacts from the participating schools were sent the original school lists with teacher names and email contacts and asked to update these, in light of staff changes and email changes. In control schools, this proved to be an extremely challenging exercise, requiring considerable efforts to engage with the schools and acquire the lists; ultimately seven did not supply updated lists, and in these schools, the original baseline lists were utilised. The follow- up repeated the same procedures for dissemination and reminders from non-responders as the original baseline.

Analysis

The analysis was conducted by John Jerrim who performed the randomisation. It was therefore not possible to conduct this blind to group identity. The statistical analysis plan for this study can be accessed from:
https://educationendowmentfoundation.org.uk/public/files/Projects/Huntingdon_SAP_18.02.14__FINAL.pdf

Our primary analysis model will take the form of the following OLS regression model:

$$Y_{Ij} = \alpha + \beta.T_j + \gamma.P_{ij} + \varepsilon_{ij} \qquad \nabla K$$

Where:

Y_{Ij} = GCSE pillar points score (see above for details)
T_j = A school level dummy variable for treatment status (0 = Control; 1 = Treatment)
P_{ij} = The student level pre-test score (as measured by Key Stage 2 scores in English and mathematics)
ε_{ij} = The error term. Clustering of pupils within schools will be accounted for by a Huber-White adjustment to the estimated standard errors. Stratification will also be accounted for by an adjustment made to the estimated standard errors.
I = Pupil i
J = School j
∇K = Indicating that the model will be estimated separately for the 2015/16 and 2016/17 cohorts.

Note that the use of stratification and clustering in the sample design has been accounted for via adjustments to the estimated standard errors. This has been done via the 'PSU' and 'strata' commands within Stata's 'svy' module. Stata will be used to conduct all the analyses. We also supplement the above by estimating the treatment effect in terms of the sample difference in mean scores between treatment and control group.

Analysis on both teacher and student outcomes were by intention to treat (ITT). Effect size calculations will be based upon the regression model specified above (i.e. 'adjusted differences' will be used) will be reported using Cohen's d and estimated separately for each regression model. After our main

analysis, we re-estimated model 1 separately for FSM pupils. We also conducted an ordered logistic regression to check the assumptions in our analysis model and an exploration of missing data.

Changes from the statistical analysis plan

The major change from the statistical analysis plan was that full analysis was not undertaken for the secondary teachers' outcome due to very low response rate (see impact section for further discussion). Two minor alterations have been made from the statistical analysis plan for the primary analysis. These concern the NPD variable used to control for prior achievement at Key Stage 2. Specifically, the statistical analysis plan stated we would use the variables KS4_VAP2TAMAT_PTQ_EE and KS4_VAP2TAENG_PTQ_EE. However, after inspecting these variables, there was a small number of observations with large outlying values. We have therefore used the variables ks2_mattotmrk and ks2_readmrk instead. The correlation between the variables is extremely high (e.g. 0.99 between KS4_VAP2TAMAT_PTQ_EE and ks2_mattotmrk) with the same substantive results produced whichever is used.

Implementation and process evaluation—methods

The process evaluation was integral to the trial and had three key objectives: to assess the fidelity of delivery of the intervention, to answer questions related to the feasibility of the intervention, and to support understanding of the results of the impact evaluation. This methods section includes sections on the methods relating to the construction of a logic model; data collection across different aspects of the process evaluation; and analysis of data.

Constructing a logic model

A logic model was developed to clarify the assumptions of RISE developers on the theory of change of the programme and to provide a framework to support the evaluation including the assessment of fidelity and explanation of findings. The construction of a logic model was undertaken in spring 2016 and was carried out by sending emails to six members of the RISE team; two responded. The research team analysed the responses and constructed a logic model that reflected the combined views of the two experts. The final version of the logic model can be found in the intervention description section (see Figure 2).

Data collection

Data collection methods are described below. Numbers expected and achieved through these methods are detailed in Table 16 in the findings section.

Observations of training

Headteacher event

In January 2015, to begin the intervention, a one day conference with plenary speakers was held at Huntington school with representatives from the 20 intervention schools: 20 Research Leads and 19 Headteachers attended. At this conference, a researcher led a session outlining the evaluation plans and observed the other sessions.

Research Leads: core RISE training and follow up termly workshops

One researcher carried out non-participant observations at each of the eight Research Leads one-day training workshops (held January – October 2015 at Huntington School) as well as the five subsequent termly networking and training workshops (2 held in the Jan 2016 – July 2016 and 3 held in the 2016/17 academic year). The purpose of the observations were to describe the training process, to understand what is required for achievement of fidelity and to assess feasibility and satisfaction from the perspectives of trainers and trainees.

Workshops with subject leads: English and Mathematics

Observation by a researcher took place at 3 of the 4 workshops for subject leads (held in July 2015, 2016 and 2017.) In the first year, the workshops were held separately for the different subject leads; in the subsequent years they had a combined workshop in the morning, with separate sessions in the afternoons.

Questionnaire for intervention Headteachers and Research Leads

This short self-complete questionnaire asked about levels of existing interest in, and experience of, evidence based teaching practices within their school. The questionnaire was distributed to participants at the beginning of the conference for Headteachers and Research Leads in January 2015, and collected back in at the end of the day by the researcher who was present. (See Appendix G).

Case Studies—selection and data collection

Four case study schools were purposively selected for additional, more in-depth data collection. The purposive selection was conducted at the end of the first academic year following Research Lead training (May 2016). The evaluation team narrowed the pool to schools where the intended model of Research Lead training had occurred (e.g. no change in Research lead during first year), and excluded schools where there was critical upheaval in the Senior Leadership team. From these remaining schools, a selection of four schools was made to capture a range across the following criteria:

- levels of engagement with the intervention (this was assessed through attendance at training and participation in subsequent intervention activities, as informed through discussions with the intervention team lead);
- evidence use in schools prior to the intervention beginning (using the brief survey to heads and Research Leads in January 2015);
- school average attainment levels (as used to stratify during randomisation).

These criteria were revised from those proposed in the protocol, after observations of the RISE training. These captured key areas that we hypothesised would show difference across the involved schools. Visits were made to four case study schools; at two of these schools two members of the research team were present, and in the other two, one of these researchers undertook the fieldwork.

Interviews with Research Leads, Headteachers and teachers in case study schools

Semi-structured interviews were conducted face-to-face during site visits. Interviewees included Research Leads, Headteachers, and teachers from English or mathematics departments. Consent to interview, and for digital recording, were obtained. These interviews provided detailed information about the ways the RISE was being used in the classroom, perceptions of usefulness, and views on training and support by the Huntington team (see Appendix H for topic guide). Notes were made during and after the interview; audio recordings were used as backup reference to the notes. Focus groups with teachers proposed in the protocol proved difficult in practice to organise, so were not conducted.

Process questions on follow up teacher survey with intervention schools

An online teacher survey was carried out between December 2017 and May 2018 (see above in Methods -Secondary Outcome section). With intervention schools the survey included process questions about the RISE programme. These included questions about knowledge of, and levels of participation in, aspects of the RISE programme; satisfaction with their involvement (where relevant) and general comments about the utility of the programme.

Telephone interview with nominated lead in control schools

A telephone interview was conducted with a nominated person from control schools, who was aware of the school's engagement with evidence based teaching initiatives. These short interviews covered engagement. These interviews were added post protocol after the intervention began, when the profile of research use in schools was increased substantially following the publication of the education White Paper and the development of the Research Schools Network. Following discussions with EEF, these were added as a means of exploring the extent to which the control schools (rather than just individual teachers) were engaging with the research opportunities on offer and whether these activities could be considered 'contamination'.

Analysis

Framework Analysis was used for the analysis of the qualitative data from interviews and observations. This involved constructing frameworks based on key themes from the research questions and reflected the logic model. Additionally, it considered the six categories identified by Langer et al (2016) in terms of identified evidence use mechanisms (See Table 3) [10].

Table 3: Langer et al: categories of evidence use mechanisms

Evidence use mechanisms	Definition
Awareness	Building awareness of, and positive attitudes toward, evidence-informed decision making
Agreement	Building mutual understanding and agreement on policy relevant questions and the kind of evidence needed to answer them
Communication & Access	Providing communication of, and access to, evidence
Interaction	Interaction between decision-makers and researchers
Skills	Supporting decision-makers to develop skills in accessing and making sense of evidence
Structure & Process	Influencing decision-making structures and processes

Adapted from Langer et al, 2016 Table 1.1, p.9 [10]

As utilised in Langer et. al., in the framework analysis of process data, we also considered Michie et. al.'s three key aspects of behaviour change: Capability, Motivation and Opportunity [13].

This analysis method allowed the exploration of the data by both theme and respondent-type, enabling identification of patterns and associations across themes and types of respondents.

Descriptive statistical analyses of the brief Headteacher & Research Lead surveys, as well as process questions from the online teacher survey were carried out using SPSS V25.

Process Evaluation methods - changes from protocol

The process evaluation was modified from the original protocol in several ways. Fewer visits were made to case study schools, and the focus group discussions with teachers were not conducted. Extra telephone interviews were added and conducted with a lead from control schools.

Costs

The cost per year was calculated by the evaluation team using data provided by the intervention team at Huntington school. The evaluators asked a series of questions about costs which the delivery team supplied. Calculations were made based on the cost data provided related to training and ongoing support. As per EEF costing guidance, initial set up costs were spread over three years and annual running costs for three years were added to this in order to calculate a per year cost averaged over 3

years. Pupil numbers for the cost per pupil per year calculations were determined using average pupil numbers across the treatment schools, with pupil numbers obtained from the DfE's September 2014 school census data. The additional costs of school cover for training days was not included in these costings: arrangements for cover differ greatly between schools so cover requirements are presented separately.

Timeline

Table 4: Timeline of evaluation

Date	Activity
June 2009 and June 2010	Baseline KS2 Assessments undertaken by students in cohort A and cohort B (national tests, not specific to this evaluation)
July – September 2014	Schools recruited into trial including agreement of data access for NPD
October – November 2014	Baseline on-line teachers' research use survey conducted
January 2015	Intervention Headteacher and Research Lead conference
January – October 2015	Observation of Research Lead training sessions (8)
January 2015 and September 2015	Parental information and opt-out consent sheet distributed in control (01/15) and treatment (09/15) schools
January – July 2016	Observation of termly Research Lead workshops and annual department lead sessions
May 2016	Development of logic model with intervention team
May/June 2016	Cohort A sit GCSE exams
July 2016	Case study site visits: Research lead, Headteacher and teacher interviews
September 2016 – July 2017	Observations of termly Research lead workshops and annual Department lead sessions
May/June 2017	Cohort B sit GCSE exams
Dec 2017– May 2018	Follow up teachers' on-line research use survey (with process questions about RISE for intervention school teachers).
February - March 2018	Telephone interview control schools

Impact evaluation

Participants

Figures 3 and 4 below illustrate the flow of the participants who participated in the study, for the two primary outcomes: GCSE point scores in mathematics and English. Of the 40 recruited schools, half of these were allocated to the intervention (20 schools) and half to the control group (20 schools). Although consent to access the NPD data was gained from all of the schools allocated to the intervention, one control school refused to continue its participation and dropped out of the study (including the impact evaluation, as they refused access to NPD data). Consequently, data available for analysis comes from 19 out of the 20 schools allocated to the control group. Additionally, for both cohorts, some pupils did not have GCSE grade data available, or their parents chose to opt- them out of participation and have therefore been excluded from the analysis. Similarly, some pupils did not have Key Stage 2 test score data available. These pupils are retained in the analysis when we report average scores for treatment and control groups, but are excluded from models where key stage 2 test scores are controlled. Total attrition was: Cohort A mathematics – 9%; Cohort A English – 9%; Cohort B mathematics – 13%; Cohort B English – 13%.

Figure 3: Flow of participants for mathematics outcome

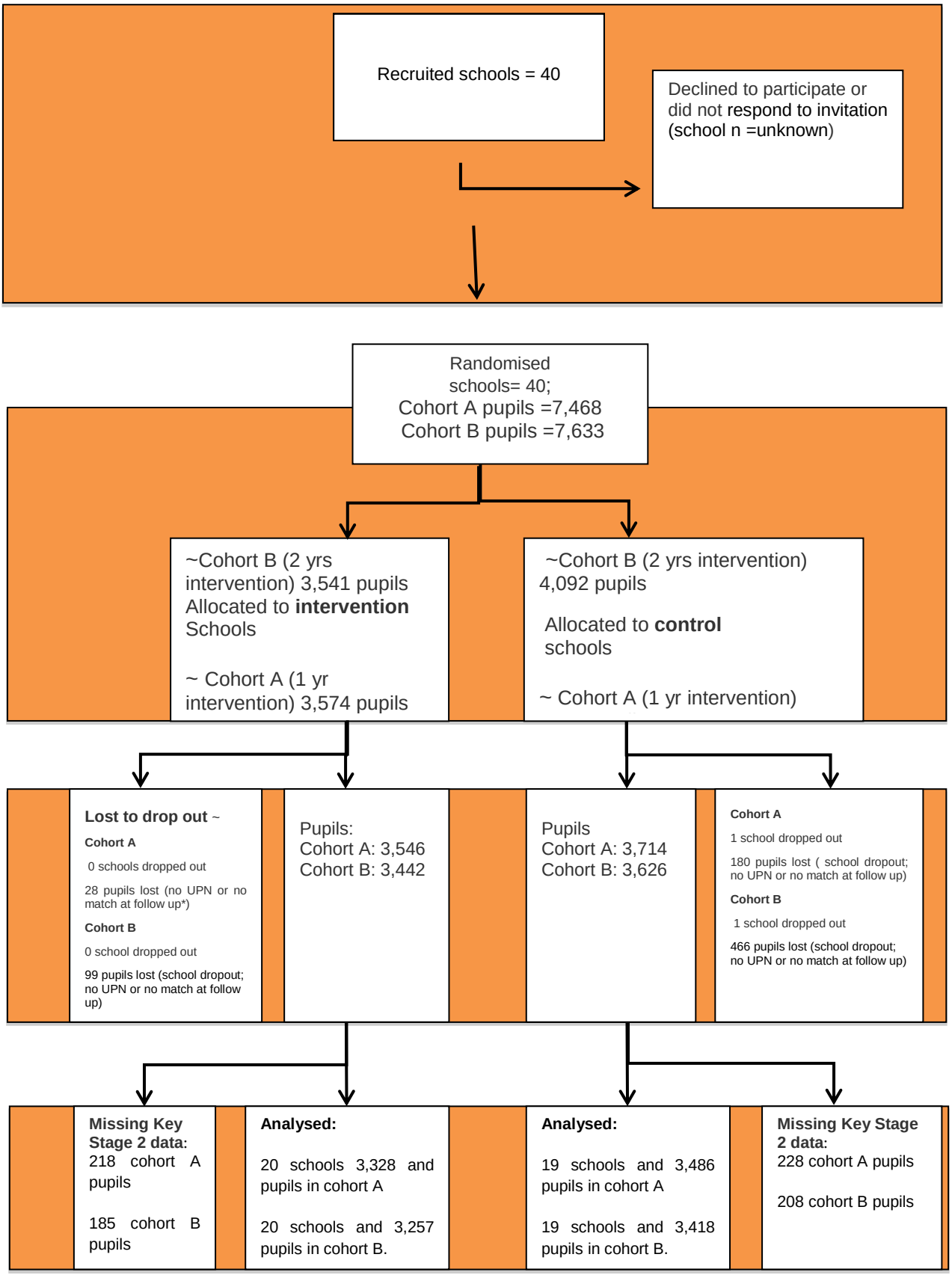
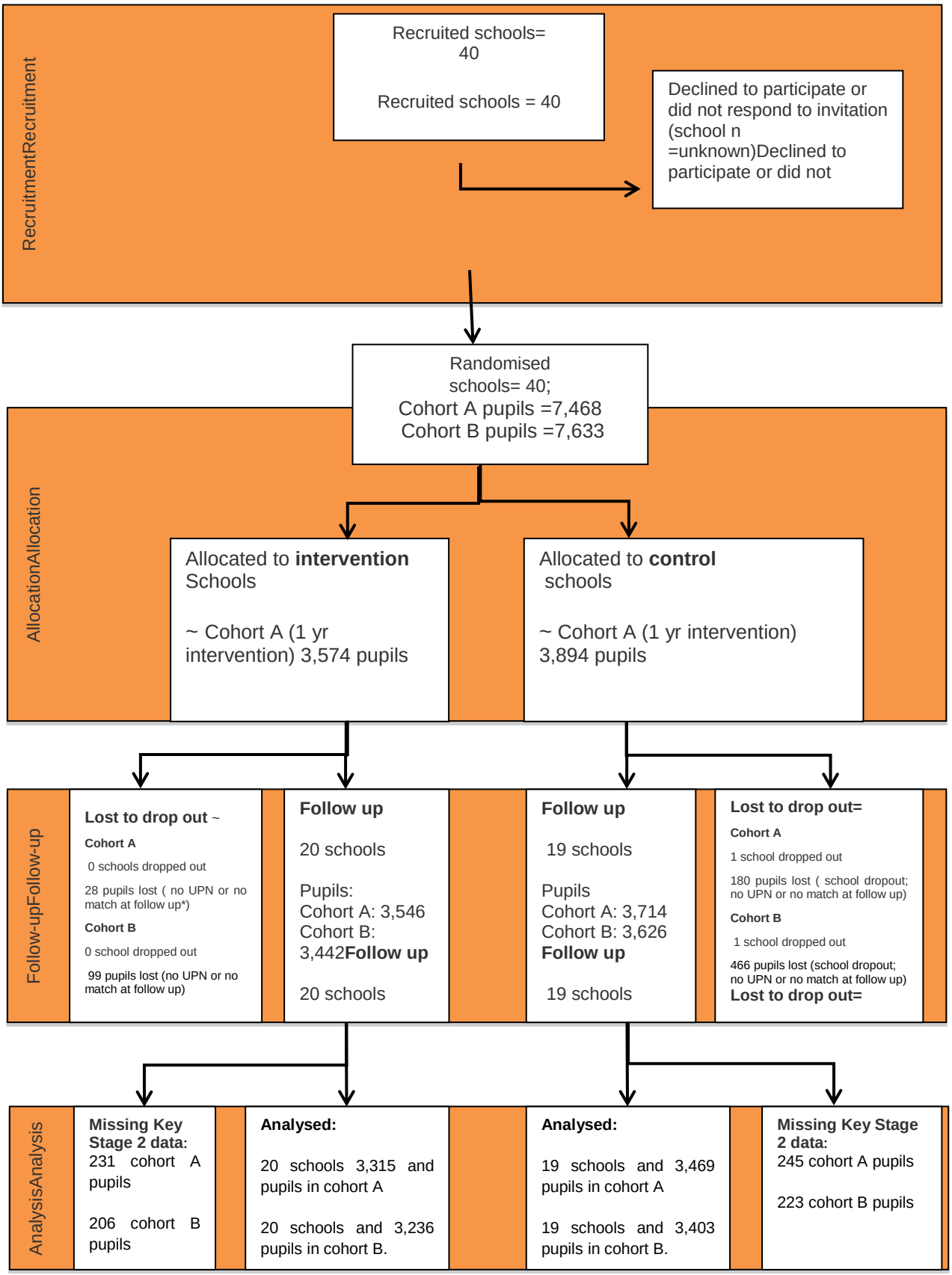


Figure 4: Flow of participants for English outcome



Tables 4 and 5 illustrate how the power calculation presented above change when the final pre/post-test correlation, ICC and participants numbers are used. Although the number of schools and pupils in the analysis is slightly lower than anticipated, this has been offset (in terms of power) by a lower ICC than expected. The final minimum detectable effect size within this clustered RCT is therefore slightly lower than the 0.35 initially anticipated, ranging between around 0.25 and 0.32 depending upon the cohort and the outcome.

Power-calculations – Mathematics

Table 5 Cohort A (1 year of intervention):

		Protocol		Randomisation		Analysis	
		Overall	FSM	Overall	FSM	Overall	FSM
MDES		0.355	N/A	0.265	0.279	0.269	0.283
Pre-test/ post-test correlations	level 1 (pupil)	0.7	N/A	0.74	*	0.74	0.67
	level 2 (class)	N/A	N/A	N/A	N/A	N/A	N/A
	level 3 (school)	N/A	N/A	N/A	N/A	N/A	N/A
Intracluster correlations (ICCs)	level 2 (class)	N/A	N/A	N/A	N/A	N/A	N/A
	level 3 (school)	0.15	N/A	0.083	*	0.083	0.083
Alpha		0.05	N/A	0.05	0.05	0.05	0.05
Power		0.8	N/A	0.8	0.8	0.8	0.8
One-sided or two-sided?		2	N/A	2	2	2	2
Average cluster size		200	N/A	187	*	175	46
Number of schools	intervention	20	N/A	20	20	20	20
	control	20	N/A	20	20	19	19
	total	40	N/A	40	40	39	39
Number of pupils	intervention	4000	N/A	3574	*	3328	803
	control	4000	N/A	3894	*	3486	972
	total	8000	N/A	7468	*	6814	1775

**As one school did not provide data, a precise figure cannot be provided for number of FSM pupils at randomisation. MDES figure based upon analysis number of FSM pupils.*

Table 6 Cohort B (2 years of intervention)

		Protocol		Randomisation		Analysis	
		Overall	FSM	Overall	FSM	Overall	FSM
MDES		0.355	N/A	0.296	0.308	0.301	0.312
Pre-test/ post-test correlations	level 1 (pupil)	0.7	N/A	0.74	*	0.74	0.673
	level 2 (class)	N/A	N/A	N/A	N/A	N/A	N/A
	level 3 (school)	0	N/A	N/A	N/A	N/A	N/A
Intracluster correlations (ICCs)	level 2 (class)	N/A	N/A	N/A	N/A	N/A	N/A
	level 3 (school)	0.15	N/A	0.104	*	0.104	0.104
Alpha		0.05	N/A	0.05	0.05	0.05	0.05
Power		0.8	N/A	0.8	0.8	0.8	0.8
One-sided or two-sided?		2	N/A	2	2	2	2
Average cluster size		200	N/A	191	*	171	45
Number of schools	intervention	20	N/A	20	20	20	20
	control	20	N/A	20	20	19	19
	total	40	N/A	40	40	39	39
Number of pupils	intervention	4000	N/A	3541	*	3257	821
	control	4000	N/A	4092	*	3418	941
	total	8000	N/A	7633	*	6675	1762

**As one school did not provide data, a precise figure can not be provided for number of FSM pupils at randomisation. MDES figure based upon analysis number of FSM pupils.*

Power-calculations - English

Table 7 Cohort A (1 year of intervention):

		Protocol		Randomisation		Analysis	
		Overall	FSM	Overall	FSM	Overall	FSM
MDES		0.355	N/A	0.284	0.297	0.287	0.301
Pre-test/ post-test correlations	level 1 (pupil)	0.7	N/A	0.62	0*	0.62	0.528
	level 2 (class)	N/A	N/A	N/A	N/A	N/A	N/A
	level 3 (school)	0	N/A	0.62	N/A	0.62	N/A
Intracluster correlations (ICCs)	level 2 (class)	N/A	N/A	N/A	N/A	N/A	N/A
	level 3 (school)	0.15	N/A	0.094	*	0.094	0.092
Alpha		0.05	N/A	0.05	0.05	0.05	0.05
Power		0.8	N/A	0.8	0.8	0.8	0.8
One-sided or two-sided?		2	N/A	2	2	2	2
Average cluster size		200	N/A	187	*	174	45
Number of schools	intervention	20	N/A	20	20	20	20
	control	20	N/A	20	20	19	19
	total	40	N/A	40	40	39	39
Number of pupils	intervention	4000	N/A	3574	*	3315	794
	control	4000	N/A	3894	*	3469	964
	total	8000	N/A	7468	*	6784	1758

**As one school did not provide data, a precise figure can not be provided for number of FSM pupils at randomisation. MDES figure based upon analysis number of FSM pupils.*

Table 8 Cohort B (2 years of intervention)

		Protocol		Randomisation		Analysis	
		Overall	FSM	Overall	FSM	Overall	FSM
MDES		0.355	N/A	0.317	0.331	0.322	0.335
Pre-test/ post-test correlations	level 1 (pupil)	0.7	N/A	0.622	*	0.622	0.523
	level 2 (class)	N/A	N/A	N/A	N/A	N/A	N/A
	level 3 (school)	N/A	N/A	N/A	N/A	N/A	N/A
Intracluster correlations (ICCs)	level 2 (class)	N/A	N/A	N/A	N/A	N/A	N/A
	level 3 (school)	0.15	N/A	0.119	*	0.119	0.118
Alpha		0.05	N/A	0.05	0.05	0.05	0.05
Power		0.8	N/A	0.8	0.8	0.8	0.8
One-sided or two-sided?		2	N/A	2	2	2	2
Average cluster size		200	N/A	196	*	170	45
Number of schools	intervention	20	N/A	20	20	20	20
	control	20	N/A	20	20	19	19
	total	40	N/A	40	40	39	39
Number of pupils	intervention	4000	N/A	3541	*	3236	821
	control	4000	N/A	4092	*	3403	941
	total	8000	N/A	7633	*	6639	1762

**As one school did not provide data, a precise figure can not be provided for number of FSM pupils at randomisation. MDES figure based upon analysis number of FSM pupils.*

Pupil characteristics

Table 9 provides information about the schools in the sample. Overall, the schools were relatively well balanced in terms of Ofsted ratings of effectiveness, the proportions that were academies, the percentage achieving A-C GCSE grades and the percentage who had ever been eligible for Free School Meals (FSM). There were differences between the intervention and control schools in terms of the proportions with large pupil intakes and with pupils who speak English as an additional language (EAL). We are uncertain whether these differences would influence the findings of the impact evaluation, although it is possible that the smaller intakes in the intervention schools could potentially make the intervention easier to implement (fewer teachers to cascade the learning from the RISE training).

Table 9: School level characteristics at baseline, by trial arm at randomization

Variable	Intervention schools		Control schools	
School-level categorical	n/N (missing)	Percentage	n/N (missing)	Percentage
Ofsted overall effectiveness: outstanding or good	14/20	70%	15/20	75%
Secondary Academy or Free schools	9/20	45%	9/20	45%
Large secondary (>200 students at end of KS4)	7/20	35%	12/20	60%
School-level (continuous)	n (missing)	Mean	n (missing)	Mean Percentage
%pupils attaining % A-C GCSEs (3 yr average)	20(0)	63%	20 (0)	59%
% Ever eligible FSM	20(0)	26%	20 (0)	28%
% English as additional language	20 (0)	5%	20 (0)	15%

[a] *DfeE Data 2014-15.. 'Academy'refers to any school that has academy status (whether a community or faith school) and also includes academy converters.*
[b] *Ofsted rating at 1 September 2014*

Tables 7 and 8 compare the intervention and control groups in terms of pre-intervention characteristics, all of which are measured at the individual pupil level. (These figures refer to only the pupils in the final analysis sample – as detailed at the bottom of Figures 3 and 4).

For cohort A, the treatment and control groups are well balanced in terms of gender and eligibility for FSM. The distribution of Key Stage 1 scores is also similar, as are average scores on the Key Stage 2 mathematics exam (the difference in terms of an effect size is 0.01). There is slightly more of a difference in terms of average Key Stage 2 reading scores, which is of moderate magnitude (0.08 standard deviations in favour of the treatment group). Nevertheless, our overall interpretation of Table 10 is that the treatment and control groups are indeed well balanced in terms of observable characteristics.

Similar findings hold for cohort B. The treatment and control groups appear well balanced in terms of gender, FSM eligibility and Key Stage 2 mathematics scoresthe difference in terms of effect size is 0.02). There are some modest differences, however, in terms of Key Stage 2 reading scores (0.07 standard deviation difference in favour of the treatment group) and Key Stage 1 average point scores (0.07 standard deviation advantage to the treatment group). Hence, although the trial overall seems reasonably well balanced, the intervention group did have slightly stronger reading skills than the control group prior to the intervention taking place (See Appendix I for histograms of these pretest results).

Table 10. Baseline comparison for cohort A (1 year of intervention)

Variable	Intervention group		Control group	
Pupil-level (categorical)	n/N (missing)	Percentage	n/N (missing)	Percentage
Eligible for FSM	463	13.0%	544	14.5%
Sex, male	1726	48.3%	1759	46.8%
KS1 mathematics				
Below Level 1	3348	1.3%	3497	1.7%
Level 1		8.3%		8.2%
Level 2c		16.2%		16.8%
Level 2b		25.4%		23.6%
Level 2a		29.4%		30.0%
Level 3		19.5%		19.8%
KS1 reading				
Below Level 1	3348	2.3%	3497	2.6%
Level 1		11.8%		12.9%
Level 2c		13.2%		13.5%
Level 2b		21.7%		21.6%
Level 2a		26.6%		25.8%
Level 3		24.4%		23.6%
KS1 writing				
Below Level 1	3348	3.5%	3497	4.7%
Level 1		13.8%		14.7%
Level 2c		22.8%		21.8%
Level 2b		28.8%		27.7%
Level 2a		20.5%		19.3%
Level 3		10.6%		11.9%
KS1 APS				
Mean	3310	15.3	3467	15.2
Standard deviation		3.61		3.75
KS2 mathematics				
Mean	3348	66.1	3523	66.3
Standard deviation		20.91		20.59
KS2 reading				
Mean	3336	30.9	3506	30.2
Standard deviation		10.15		10.18

Note: In this table percentages are rounded and do not always equal 100%

Table 11. Baseline comparison for cohort B (2 years of intervention)

Variable	Intervention group		Control group	
Pupil-level (categorical)	n/N (missing)	Percentage	n/N (missing)	Percentage
Currently eligible for FSM	492	13.9%	546	14.5%
Sex, male	1798	50.8%	1823	48.4%
KS1 mathematics				
Below Level 1	3312	1.6%	3463	1.6%
Level 1		7.0%		8.0%
Level 2c		15.5%		16.7%
Level 2b		25.5%		27.3%
Level 2a		31.2%		28.3%
Level 3		19.2%		18.1%
KS1 reading				
Below Level 1	3312	2.3%	3463	2.5%
Level 1		11.2%		13.1%
Level 2c		11.4%		13.5%
Level 2b		23.7%		23.2%
Level 2a		27.5%		25.5%
Level 3		23.8%		22.2%
KS1 writing				
Below Level 1	3312	3.0%	3463	3.6%
Level 1		13.2%		15.8%
Level 2c		21.8%		23.0%
Level 2b		31.3%		27.3%
Level 2a		20.7%		20.1%
Level 3		10.0%		10.2%
KS1 APS				
Mean	3294	15.4	3450	15.1
Standard deviation		3.52		3.64
KS2 mathematics				
Mean	3339	70.2	3527	70.6
Standard deviation		20.49		19.73
KS2 reading				
Mean	3315	31.7	3510	31.1
Standard deviation		9.68		9.46

Note: In this table percentages are rounded and do not always equal 100%

Outcomes and analysis

Primary outcomes

Tables 12 through 15 present the results, first for a cohort of pupils who took exams after 1 year of the RISE intervention and then for those pupils who took exams after 2 years of the intervention. For both English and mathematics GCSEs, the mean score is higher for the intervention group than the control group in both of the cohorts. However, the difference is small, as highlighted by the results from the regression models. The effect size is always below 0.10 standard deviations and never approaches statistical significance at conventional thresholds. There is hence no evidence that the intervention had a meaningful impact upon pupils' outcomes in either English or mathematics GCSEs. Figures 5 - 8

provide histograms to show the distribution of the scores for these primary outcomes for cohorts A and B.

Table 12: Primary analysis for cohort A (1 year of intervention)

	Raw means				Effect size		
	Intervention group		Control group				
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	n in model (intervention; control)	Cohen's d (95% CI)	p-value
Mathematics	3546(28)	5.08(4.91, 5.24)	3714 (180)	4.93(4.77, 5.10)	6814 (3328,3486)	0.09 (-0.03, 0.20)	0.15
English	3546 (28)	5.17(5.06, 5.29	3714 (180)	5.01 (4.85, 5.29)	6784 (3315, 3469)	0.05 (-0.07, 0.17)	0.38

Table 13 – **Effect size estimation** for cohort A (1 year of intervention)

Outcome	Unadjusted differences in means	Adjusted differences in means	Intervention group		Control group		Pooled variance
			n (missing)	Variance of outcome	n (missing)	Variance of outcome	
Mathematics	0.134	0.157	3328 (246)	3.153	3486 (408)	3.191	3.176
English	0.145	0.083	3315 (259)	2.183	3469 (425)	2.159	2.176

Figure 5 A histogram of the distribution of GCSE Mathematics scores for Cohort A

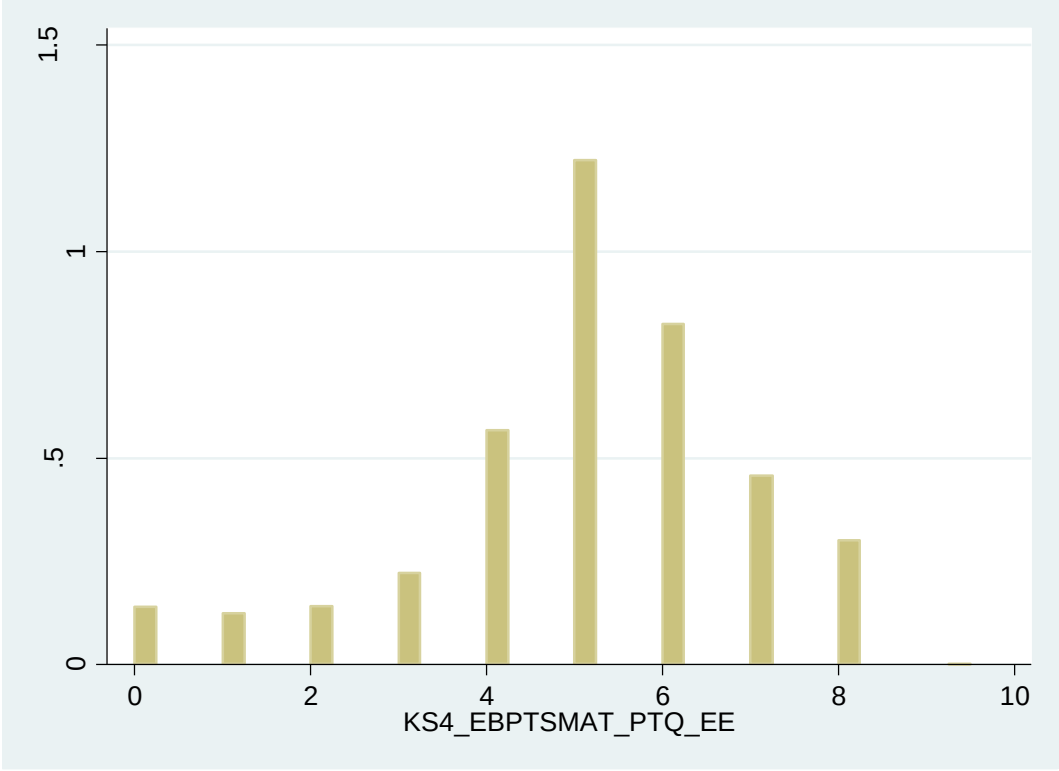


Figure 6 A histogram of the distribution of GCSE English scores for Cohort A

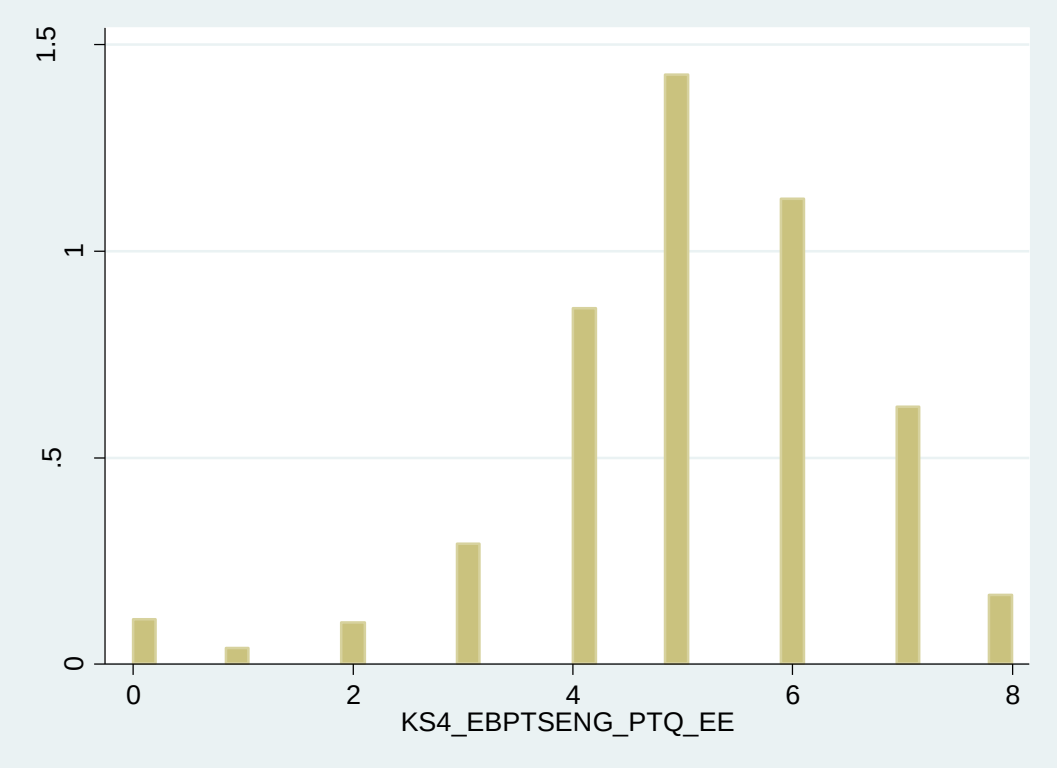


Table 14. Primary outcome estimates for cohort B (2 years of intervention)

	Raw means				Effect size		
	Intervention group		Control group				
Outcome	n (missing)	Mean (95% CI)	n (missing)	Mean (95% CI)	n in model (intervention; control)	Cohen's d (95% CI)	p-value
Mathematics	3442(99)	4.64 (4.40, 4.88	3626 (466)	4.54(4.37, 4.71)	6675(3418,3257)	0.04 (-0.09, 0.16)	0.57
English	3442 (99)	4.72 (4.49, 4.95	3626 (466)	4.53 (4.35, 4.70)	6639 (3236, 3403)	0.03 (-0.11, 0.18)	0.64

Table 15: Effect size estimation for cohort B (2 years of intervention)

Outcome	Unadjusted differences in means	Adjusted differences in means	Intervention group		Control group		Pooled variance
			n (missing)	Variance of outcome	n (missing)	Variance of outcome	
Mathematics	0.047	0.078	3257 (284)	4.537	3418(674)	4.303	4.417
English	0.155	0.699	3236 (305)	3.962	3403 (689)	3.834	3.901

Figure 7 A histogram of the distribution of GCSE Mathematics scores for Cohort B

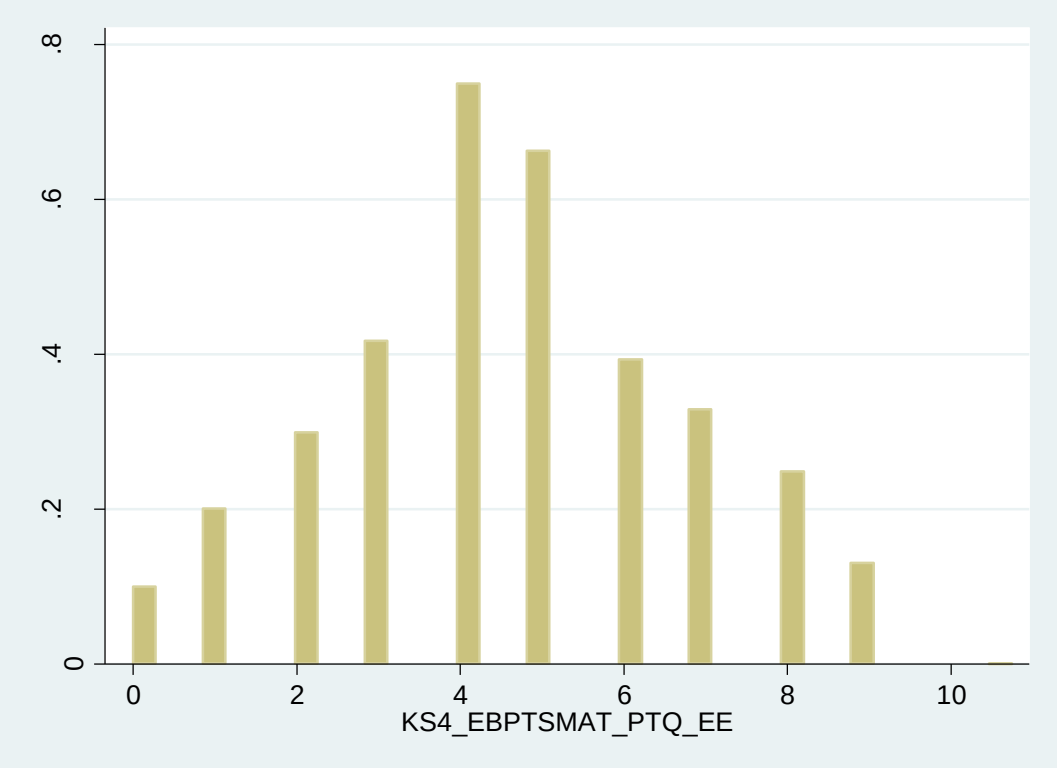
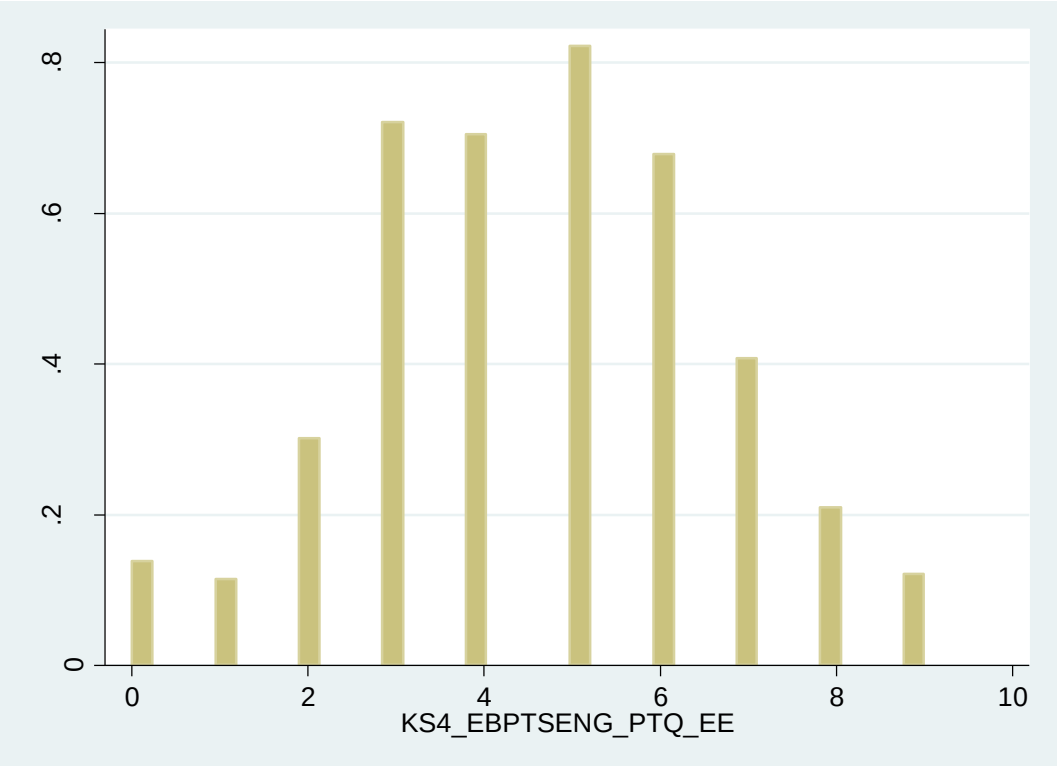


Figure 8 A histogram of the distribution of GCSE English scores for Cohort B



We tested the robustness of results using an ordered logistic regression as an alternative to an Ordinary Least Squares (regression. These confirmed our initial findings, which showed no significant differences.

Table 16. Robustness test. Results from additional models

	N	Effect size	SE	P-value
Cohort A mathematics	6798	0.07	0.04	0.09
Cohort A English	6768	0.0449	0.0464	0.34
Cohort B mathematics	6665	0.0176	0.039	0.655
Cohort B English	6629	0.0251	0.0506	0.523

Notes: Controls for prior key stage 1 and key stage 2 scores in the subject randomisation strata, gender, FSM eligibility and ever-FSM eligibility.

Sub-groups

Tables 17 - 18 repeat our analysis for a pre-specified sub-groups: pupils ever eligible for FSM. Very similar results emerge as for the main results in both Cohorts A and B. Effect sizes from the intervention model are small for both cohorts in both English and mathematics, with the coefficient never above 0.10 and never statistically significant at conventional thresholds. There is consequently no evidence that a one- or two-year dose of the intervention led to any improvement in GCSE grades for pupils who have ever been eligible for FSM.

Table 17. Primary outcome results by sub-group: FSM pupils. Cohort A (1 year of intervention)

	Raw means/n (%)				Effect size				
	Intervention group		Control group						
Group	n (missing)	Mean (SD)	n (missing)	Mean (SD)	n in model (missing)	Effect size	95% CI		p-value
							Lower	Upper	
Mathematics	850	4.06 (3.81, 4.32)	1044	4.11 (3.82, 4.41)	1775 (119)	0.05	-0.10	0.21	0.50
English	850	4.30 (4.11, 4.49)	1044	4.35(4.05, 4.65)	1758 (136)	-0.02	-0.20	0.16	0.81

Table 18. Primary outcome results by sub-group: FSM Pupils Cohort B (2 years of intervention)

	Raw means/n (%)				Effect size				
	Intervention group		Control group						
Group	n (missing)	Mean (SD)	n (missing)	Mean (SD)	n in model (missing)	Effect size	95% CI		p-value
							Lower	Upper	
Mathematics	874	3.41 (3.17, 3.66)	999	3.60 (3.37, 3.84)	1762 (111)	-0.03	-0.14	0.09	0.66
English	874	3.58 (3.36, 3.80)	999	3.73 (3.40, 4.05)	1749 (124)	-0.03	-0.20	0.14	0.72

Exploratory analysis: Missing data analysis for the primary outcomes

Cohort B had a level of missing data of 13%, so we conducted a missing data analysis for this cohort. See Tables 19 -21

Table 19: Cohort B: Missing data investigation

	Control	Intervention	Total n
Randomised	4092	3541	7633
In NPD file	3763	3541	7304

Tables 20 and 21 provide further details about missing data for cohort B. Within the control group, of those who had outcome data available, 14 percent were currently eligible for FSM. In contrast, of those who were assigned to the control group but for whom GCSE grades were unavailable, 22 percent were FSM eligible. This suggests that children from low-income backgrounds are more likely to have missing administrative data, and hence be excluded from our analysis. However, a similar pattern is also observed for the treatment group (of children with complete data 13 percent were currently eligible for FSM compared to 22 percent of those with missing data) meaning that this is unlikely to introduce bias into the analysis. A similar pattern can also be observed if “Ever FSM” is used instead.

A similar pattern is found with respect to Key Stage 2 scores and GCSE grades. The average Key Stage 2 mathematics score of children with complete data (i.e. had both Key Stage 2 and GCSE data available) was around 71 points. For those children with missing mathematics data (i.e. missing either Key Stage 2 mathematics or GCSE mathematics grades) the average Key Stage 2 score was less than 60. This illustrates how low-achievers were more likely to be dropped from our analysis due to missing data than higher achievers. However, the pattern is again similar across treatment and control groups, suggesting that this is unlikely to introduce substantial bias into the analysis.

Table 20 Mathematics missing data investigation for Cohort B.

		Complete data	Missing data	N
FSM	Control	14%	22%	3763
	Treatment	13%	22%	3541
Ever FSM	Control	28%	41%	3750
	Treatment	25%	38%	3526
% Female	Control	49%	42%	3763
	Treatment	51%	48%	3541
Average Key Stage2 mathematics	Control	71.0	57.3	3527
	Treatment	70.6	53.8	3339
Average GCSE mathematics grade	Control	4.64	2.94	3626
	Treatment	4.68	3.82	3442

Table 21 English missing data investigation for Cohort B

		Complete	Missing	N
% FSM	Control	14%	23%	3763
	Treatment	13%	21%	3541
% Ever FSM	Control	28%	41%	3750
	Treatment	25%	39%	3526
% Female	Control	49%	40%	3763
	Treatment	51%	46%	3541
Average Key Stage2 English	Control	31.2	26.1	3510
	Treatment	31.9	25.9	3315
Average GCSE English grade	Control	4.62	3.05	3626
	Treatment	4.78	3.79	3442

Secondary outcomes

The intended secondary outcomes were teachers' outcomes on the NFER Research Use Survey. The response rate on the follow up survey was too low (18%) to provide any meaningful evidence of impact. See Appendix J, Table 1 for a detailed response rate. Additionally, for transparency, a descriptive analysis of the teacher survey data is provided in Appendix J.) The poor response rate was influenced by a number of factors. There are three major reasons for such high attrition: turnover of school staff; lack of re-engagement from control group schools, which was compounded by departure of key senior staff who had originally agreed participation; delay in undertaking the follow up survey. The turnover of staff included major changes in senior leadership teams (sometimes the entire team), where there was no institutional memory or residual commitment to the project. Additionally, a six-month evaluation delay in surveying teachers while attempting to re-engage control schools may have exacerbated the numbers of teachers who had left their school.

Cost

Table 22 shows that to employ the RISE intervention for the whole school would cost a school approximately £0.86 per pupil per year, over three years. This includes the costs of all the training for Research Leads, as well as a session for Head teachers and ones for department leads for English and Mathematics. It also includes the costs of on-going support from the intervention team – such as visits to schools and the production of a newsletter containing research summaries and the provision of a website for the programme.

In addition to these specified costs, the school would need to add the cost of staff cover for eight days for the first year for the Research Lead to attend training, as well as five further days of on-going support training in the following two years. Cover would also need to be provided for 3 days each for Department Leads for English and mathematics. As cover arrangements are handled differently in each school, these costs are not included as part of the accounting in this report. School would also need to cover the costs of travel to these training events.

One final cost, which again would be variable across schools, is allowing the Research Lead some ring-fenced non-contact time each month to carry out their role within school. The amount of time was not specified or required, and varied greatly across the Research Leads in the trial (from e.g. no additional time to half a day per week), but having this was a condition for success (see process evaluation section for discussion of this).

In this evaluation the costs for the programme were covered by the EEF grant. Intervention schools were provided £10,000 to help with the costs of teaching cover, travel costs and Research Lead time.

For the cost per pupil calculations, an average numbers of pupils per intervention school was determined and utilised.

Table 22 Costs of the RISE intervention per school and pupil

Item	Type of cost	Cost	Total cost per school over 3 years	Total cost per pupil per year over 3 years
RISE training	Training for Research Leads (including 8 initial sessions plus 5 follow up sessions) Training for department leads for English and Mathematics - 1 solo session and 2 of the follow up sessions -shared with research lead)	£2775	£2775	£0.86
Total			£2775	£0.86 per pupil per year

Implementation and Process Evaluation

Table 16 provides a summary of the data collection methods that were utilised in the process evaluation. This data forms the basis of the findings discussed in this section of the report.

Table 16: Process evaluation data collection—methods and response rates

Treatment arm: observations & interviews	Expected	Achieved
Observation of RISE initial trainings and follow up workshops for Research Leads	13	13
Observation of RISE workshops for subject leads Mathematics and English	4	3
Head teacher and Research Lead initial survey	40	39
Case Study schools: interviews with Research Leads, Head teachers	12	8
Case Study schools: interviews with teachers	16	10
Process data from follow up teacher survey	470	98
Control arm: interviews & survey	Expected	Achieved
Telephone interviews with nominated lead from control schools	19	12

Implementation

Summary

The Research Lead training within the RISE programme was delivered as intended, in terms of the numbers of sessions provided and the general types of topics covered. The intervention team provided more training sessions (for Department leads) than originally envisaged, and also provided more individual support visits to schools.

Uptake of the intervention was universal – with all 20 schools sending Research Leads to the first training day and 19 schools additionally having a Headteacher attend the initial event. Attendance remained high throughout the core phase of Research Lead training, averaging between 18 to 19 schools in attendance at each session. In the initial training period, when Research Leads experienced some difficulties in attendance, these were for reasons such as clashes with important school events or the distance of travel. All 20 schools remained involved throughout, although some became less engaged as the intervention progressed into its final year, with considerable changes in personnel in the later period.

The survey of Research Leads and headteachers from the first intervention event and the observation of initial training sessions provided evidence that the participant schools came to the training with very different starting points: different contexts; different motivations; differing levels of experience of evidence informed teaching, both in terms of school experience and individual experience and understandings of research use in education.

Perceptions of the intervention by stakeholders

The training and support workshops for Research Leads were extremely well liked and generally highly valued. The participants were very positive about the skills they acquired, the learning from peers, and the expertise of the trainers.

> *'Without doubt the best CPD I've ever had. It has transformed teaching and learning in our school.' (Research Lead)*

Experts

This positive view was expressed by participants, regardless of variable prior experience of educational research. For approximately a third of the Research Leads, this was an extension of a role that they had been pursuing, either at their school's behest or from their own personal interest. These individuals were au fait with sources of educational research, followed research in education initiatives, and had tried to disseminate research-based ideas within their schools. For these 'experts', some of the information in the initial RISE training sessions was already familiar. For them, the training was still a positive experience; one that allowed them to consolidate their knowledge; to explore their ideas with the RISE developers who they regarded as imminent experts in the educational research field; and as a means to acquire a higher profile for their desires to incorporate more evidence within their school.

Novices

At the other end of the spectrum, there were approximately a quarter of the Research Leads who were completely new to the idea of research-use in education, and were unfamiliar with research methods, the range and sources of evidence available, and the EEF's school improvement cycle. These 'novices' confessed to being daunted and overwhelmed early on in the training. By the end of the initial training, this group also felt that they had learned a great deal and had been given the appropriate skills for understanding the evidence and identifying areas for school improvement.

> *'I have found this year a great experience, in terms of my own knowledge and personal development. It has been extremely well organised, and it has been fantastic meeting new people.' (Research Lead)*

Latecomers and Lighter touch involvement

Many of those that joined the project later, either as replacement Research Leads or for the Department heads sessions, found the experience somewhat less rewarding than those Research Leads who were involved from the beginning. While still generally positive, some in this situation stated that they lacked the context of the project and the shared camaraderie that others experienced.

> *'Although I attended perhaps 2 training courses I was not involved at the start of the process so did not have the broader picture of the underlying purpose of the project. Some of the information sent out via email was of interest and I often forward this on to colleagues within the department. It opened my eyes to other opportunities that were out there.' Department Lead*

Department Leaders

Some Department Leads were very pleased with their involvement with the RISE programme though, even if it was less intensive than the training provided for Research Leads.

> *'The English sessions run by Alex were highly informative and we were given useful resources. The research was English specific and easy to share with colleagues. It was an excellent opportunity to discuss ideas with other Subject Leaders for English and establish connections. The RISE newsletter was full of great ideas to implement and research further.' Department Lead*

'This was EXTREMELY useful!!!!!' (Email feedback from a Department Head about a RISE research summary to a Research Lead, who passed it on to the evaluation team)

Perceived Outcomes

School Change

Regardless of the level of expertise with which the individual Research Leads arrived at the beginning of the training, the evidence from the process evaluation suggests that Research Leads generally considered that the RISE core training and follow up support had provided them with information and skills acquisition around aspects of many, if not all, of the key mechanisms identified in the Langer et al review as key for evidence-use [10]. These included raising their awareness and positive attitude towards evidence-informed decision making in their school; understanding around the types of questions that needed to be answered using evidence; access (in different forms) to quality research evidence; the skills to both access and interpret the evidence they needed. Some Research Leads found being involved in RISE also gave them the structure and process to use the evidence to enact change within their school – the final mechanism in the Langer model.

For this subgroup, they found the RISE intervention was transformative at school level, as they were able to use the knowledge and skills from training and the leverage of being part of the project to springboard change in their schools.

'The RISE project has not only transformed my own understanding and knowledge but has been responsible for significant whole school change. The access to the latest thinking regarding the most effective pedagogy has meant that we have been privileged to be able to lead our teachers through really high quality CPD. Many of our teachers comment that they feel we are "head and shoulders" above other schools and we now are approached by others to share our work.' (Research Lead)

'RISE was invaluable in developing my evaluation skills and approach to leading CPD in the school. It is now much more robust in quality and more focused in approach. Research is built into our PD systems and all staff are engaged on some level with the outcomes of evidence based practice and some aspects of action research. ...The quality of the training and the potential for impact in the future [...]is vast. Most importantly it has engaged me and the SLT in important considerations of impact and the role of pedagogical training and development in the classroom, from which I feel all schools would benefit.' (Research Lead)

In these schools that were most successful at implementing the full School Improvement Cycle at local level, they discussed that they were able to identify key areas for improvement using a combination of local data (e.g. from testing) and professional knowledge within a department. This was followed by a search for possible solutions, using the EEF toolkit and the RISE website's summaries of evidence on key topics. The Research Lead or members of the department identified an appropriate intervention or change in practice, and an evaluation of the innovation was developed, using some form of control group and a pre-agreed set of outcomes to measure. After the intervention, the outcomes and the implementation process were reviewed and a key learning about delivering the innovation was shared within the department and wider within the school. Decisions were made about continuing with the intervention. The Research Leads in these schools highlighted that the evaluation of these local innovations remained the most difficult aspect of the Cycle, one that would benefit from additional training.

For other schools, the RISE training provided them with a platform for making small-scale local forays, but had not led to the global changes described by some Research Leads. Most in this group appeared to address narrower questions of practice with the most willing teachers, but found challenges in convincing others to attempt new initiatives or to stop usual practices.

Head teachers in case study schools, and Research Leads (from all schools, in training sessions) discussed the influence of RISE on their SLT decision making processes. There was general agreement that the RISE programme had raised awareness of the role of evidence (local, national, international) in decision making and of usefulness of the School Improvement Cycle. Only a few of the schools had staff who stated that their SLT had changed their decision making processes to incorporate all the tenets of the School Improvement Cycle. Examples were given where the SLT had become more questioning of their existing processes, or more willing to consider the evidence behind possible solutions to identified problems, or showed greater willingness to admit that innovations had failed.

The Research Leads as a whole, and teachers within case study schools, were universally reticent about suggesting that RISE would make a difference to their students' GCSE grades in English and maths. A few offered that they hoped that this would be the case, given the programme's focus. Most though followed the views of one of the RISE training team, who stated early on to the Research Leads that he had no expectations that the programme would have an impact on these students GCSE grades. The key reason for this perception of limited impact was that students would not be exposed for enough time to changes, even under the best implementation conditions. Variable embracing of research use or initiatives by teachers, or limited local implementation of new initiatives by particular departments also added to this scepticism about impact. Some also mentioned the limited size of the sample as a potential factor in influencing impact.

Barriers to implementation

There was much nuanced discussion within the RISE training of Research Leads and of Department Leads about the challenges that they faced in implementing aspects of the School Improvement Cycle within the structures of secondary schools. The process evaluation identified key barriers to implementation of the RISE programme. These can be categorised as barriers at individual level of Research Leads; team level within the English and Mathematics departments or Senior Leadership team; Organisational level; and Systemic level. These barriers are briefly highlighted in Table 17.

Table 17. Barriers to implementation of the RISE programme

Individual level barriers – Research Leads
• Time – to attend training; liaise with colleagues; develop & deliver strategies for sharing learning • Distance – some (but not all) teachers who had further to travel did not attend all training sessions. • Relationships and role – some Research Leads had strong relationships within their schools • Access to school resources – those that had limited clout or access to resources (e.g. CPD) had a more difficult time making local in-roads with the intervention. • Lack of skills for creating capacity building and culture change within their school (and less focus on this within the training). • Paucity of previous knowledge about research use in schools • Joining the training late/ being a replacement research lead – lack of understanding and skills to enact change
Team level
• Resistance from others on their senior leadership team to adopting an evidence based approach • Great turnover of teachers at the school • Disinterest from other teachers to enact evidence-based change in their teaching practices

Organisational level
• Lack of Headteacher and/or Chair of Governors support • Focus on other priorities • Poor Ofsted results • Changes to school leadership
System level
• Global focus on exam results for schools, rather than on teaching practice • Overhaul of GCSEs creating wholesale change in secondary schools – shifting focus away from 'extras' such as research evidence.

Individual level barriers

The RISE programme had at its core the delivery of training to Research Leads. This was considered by the developers as the key aspect of their intervention, particularly the initial phase of eight sessions. The key barrier to attendance at training and implementation of RISE, was the turnover of Research Lead staff – either because they found employment at other schools or because their role in the school changed and someone else was asked to take on the Research Lead role.

Some Research Leads expressed regret at missing some training sessions, but admitted that it became more difficult to justify the time away from school required to continue to attend the support workshops over the three academic years of the intervention.

Team barriers

Following the RISE training, the expectation of the intervention was that the Research Leads would take their learning from the sessions and develop the means for disseminating this to others within their school. Some found barriers in conducting this aspect of the role – in terms of resistance of colleagues in English and Mathematics departments to change; in terms of getting buy-in to their plans from other Senior Leaders or sometimes the Teaching and Learning co-ordinator. While the core training and on-going support provided some time for addressing these issues, most Research Leads encountered barriers of this nature that were not overcome during the life of the project. Some teachers and Research Leads commented that greater time was required to embed new practice, even with less resistant colleagues.

Organisational level barriers

The schools involved in the intervention varied in a range of contexts: pupil population; size; senior leadership priorities; OFSTED ratings, etc. In this whole school intervention, school contexts influenced the ability of the Research Leads to enact change within their school.

> *'In another school, with a bigger budget, bigger [Senior Leadership Team] and more will, then there would be more mileage. In terms of [our department], we got a lot out of it. It's a shame the whole school didn't.' Department Head*

For some intervention schools, poor prior attainment performance or a designation as a school in special measures had prompted the senior leadership team to join the RISE programme, as a means to addressing some of these historical concerns. It became clear, however, that it was difficult to participate fully in the intervention when a school was undergoing 'crisis'. It was difficult for releasing a senior leader for so much time for training; dissemination of messages was problematic when there was a time of great upheaval and change within staff teams and senior leadership teams. The priorities and focus of the Headteacher shifted away from those of the RISE intervention.

Variation in intervention implementation

Attendance at training, as mentioned above, tailed off slightly over the 30 months of the intervention, but remained high. All 20 schools in the intervention group remained involved throughout the life of the intervention, although one school became less directly engaged in the final six months. For some schools, their levels of involvement varied at times of school crisis or major structural change.

The content of the intervention training sessions was developed in depth during the course of the delivery period, honed prior to each session. This meant that there was a degree of change in training content from what was initially envisaged – although this was generally perceived to be a positive. This development allowed for flexibility towards levels of understanding and capacity amongst the participating Research Leads, but also allowed the trainers to be responsive in terms of feedback received about the usefulness of initial training and barriers encountered at local level.

Latterly, there was recognition within the training team of a need for more emphasis to be put on training regarding supporting culture change at local level, rather than the emphasis on conducting local research projects. The content and nature of training and support thus shifted somewhat away from the EEF research use cycle of identification and assessment of local evidence, to one of helping to support teachers with navigating national changes to curriculum and assessment, using evidence where possible. This change was particularly noticeable in the sessions with Department leads from mathematics and English.

As discussed above, one key factor for fidelity had to do with the number of changes in Research Lead mid-stream through the programme. In total, eight of the 20 schools changed their initial Research Lead – primarily because of changes in staffing at the school; this was higher than expected by the intervention developers. Although all the schools found a substitute to take on this role, many of these missed out on most (or all) of the initial training for the Research Leads. The role of the Research Lead was key for embedding the messages of the intervention, so this transfer of role interrupted the expected progression of information-sharing and action in some schools. The RISE developers supported those who took up the Research Lead role as replacements, often with visits to the school and running additional individual training, but these individuals missed out on the initial group learning experience and collegiate support.

Adapted elements of the intervention: Local implementation

The initial RISE programme envisaged that at school level there would be a determination of local need, followed by local research projects – small scale research to try research-based innovation - to address that need, thus following the EEF's School Improvement Cycle (as illustrated in Figure 1) . In schools where this local model was implemented there was a range of ways this was adopted. For some, the local innovation was identified, initiated, run and evaluated by one or two teachers; for others it was considered and implemented at departmental level. For a few schools, the Senior Leadership Team was involved in the decisions about what gap needed to be addressed, what innovation could be tested, and who should be involved. One school provided time and funds for teachers to bring forward ideas to try out and evaluate.

However, for a large proportion of the intervention schools, these local projects were not carried out in the way they were originally conceived – within English or mathematics Departments; with the cohort A/B year groups; trying innovation to address an identified issue relating to teaching/attainment. All the Research Leads developed the skills to identify issues and gaps, and many to find evidence to support an alternate practice. However for many schools the Research Lead, and/or the school as a whole, lacked the capacity, support or motivation to self-run local evaluation of initiatives in their mathematics or English departments. Some Research Leads who were less used to working with school data or who started with greater unfamiliarity with evaluation methods or who had less developed relationships with colleagues in the English and mathematics departments found that they encountered barriers in

developing and following though on testing of local initiatives. Examples of where school motivation and support for the local enquiry diminished included in schools that experienced poor Ofsted inspections or a worsening set of exam results and hence where focus changed away from undertaking what was perceived as an additional and less urgent task. As a result, the focus shifted in the training away from supporting the development, implementation and analysis of one locally based initiative per participating school.

Instead, partly in response to these issues, and also because of the turnover of Research Leads, there was greater focus by the RISE team than initially envisaged on providing school visits to support the Research Leads and their senior leadership teams. In light of the changes to GCSEs during the period of the intervention, the RISE team offered annual training workshops (3) to English and Mathematics leads, rather than originally proposed two more formal conferences, so that issues relating to teaching the new curriculum and for these new exams, and the relevant evidence for these, could be explored in greater depth.

Unintended consequences of the intervention

Some in this enthusiastic group of early adopter Research Leads found that this training provided them with a platform for promotion, and for some this meant leaving their original school. While individually this had positive consequences, their departure had negative consequences for their school and the dissemination of RISE programme information and initiatives

Necessary conditions for successful implementation

Based on the information gathered in the process evaluation observations, interviews and survey process questions, those schools who appear to have had the most successful local implementation of the RISE programme had in place the following key conditions:

A Research Lead who had developed strong relationships within the school, both with senior leaders and 'ordinary' teachers. Those with these pre-existing positive relationships commanded more respect and had a stronger platform for asking for colleagues to consider research evidence and try changes to their practices.

Active and visible support of the Headteacher for the principles behind the RISE programme. When such support was in place, Research Leads were given a higher profile to challenge normative practices and to carry out local innovation and evaluation. In these situations, greater resources were also present for the Research Lead's role, e.g. paid time away from teaching responsibilities, a budget for evaluation etc.

Following on from this, **additional ring-fenced time to undertake the role of Research Lead** considerably improved the ability to turn the RISE training into local action.

As well as support from the school Headteacher**, it was beneficial when there was a strong link between the Research Lead and the school's Teaching and Learning Co-ordinator** – such co-operation allowed for greater research lead impact and input with CPD.

To enact local change, Research Leads found it easier when they had **a solid understanding of their school attainment data**. Those that were familiar with interpreting such data and had a global overview, found it easier to construct local research-based strategies to target issues of greatest local concern.

Formative findings

When considering ways in which the intervention could be improved, the process evaluation findings, using observation, case study interview and process survey data, suggest that there are some aspects that could be changed to ensure greater local action at school level following the RISE training. Evaluations using RCTs are restrictive on programmes. In a less restrictive environment, it would improve attendance and help with networking if the **training could be provided to a more local population of schools**. Where this was the case, as it was for many of the RISE schools in Yorkshire, the travel distance and therefore time required for training was much reduced, and additionally the Research Leads were able to provide each other with local context based insight and support.

Some **additional groundwork, potentially in the form of a school visit and CPD session with senior leaders, prior to the selection of an individual to be Research Lead**, may ensure greater organisational and team support for the changes that the Research Lead will propose as a result of the programme.. The critical nature of selecting someone with strong relationships within the school could also be discussed in advance, to further embed the understanding of what the role entails.

A suggestion put forward by one of the intervention schools was to have **two people from each school go through the full training for Research Leads**. Such a solution, although requiring additional senior leader time away from school, would provide greater degree of influence on school decision making; provide a 'forum' for discussing school level strategies for implementing the RISE model of school improvement; and would safeguard against the training knowledge being lost when a single individual leaves the school.

A further improvement for future success may be to add into the training **evidence around relationship building and culture change strategies** (in addition to evidence for teaching and evaluation skills). Having these discussions at the fore from the beginning would provide a greater foundation for Research Leads taking forward all dimensions of their role and supporting them to have the best foundation for a culture of change.

Finally, **taking a longer view of the time that is required for changing culture and teaching practice** should be taken into account. This intervention was conducted over a relatively short time, but had great ambitions. A longer time scale would provide greater opportunity for embedding the aims of the programme at school level.

Control group activity

The control group was to conduct 'business as usual'. This study was not carried out, however, within a standard pool of schools, nor at a static time for secondary education in the UK. The recruitment techniques used (Headteacher networking and research use events) meant that the control group contained many schools where the Headteacher or key senior leaders had a heightened awareness of, or interest in, evidence-use in education. Some of the control school Headteachers expressed extreme disappointment to be allocated to the control group. There appeared to be some level of resentful demoralisation in subsequent encounters with a small number of the control schools. One school allocated to the control group dropped out of the trial immediately, others were reluctant to participate further and were very slow at the time following randomisation to provide information to enable further evaluation. This engagement with the study became more challenging with time, with seven control schools unwilling to provide lists for follow up of teachers at the end of the study, despite numerous attempts at engaging them.

The trial was conducted at a time when policy makers had increasing focus on the use of evidence in teaching. A government White Paper, Education Excellence Everywhere [9] was published half way through the intervention period. This mentioned evidence use throughout as a key theme, and

suggested the development of a Research Schools Network, where key schools provide research training and support to their peer schools. The introduction of this new programme, during the life of the RISE intervention, will have had some impact on teaching within both intervention and control schools.

In a brief interview with a key respondent from 12 of the 20 control schools, 'business as usual' was explored, in terms of involvement with networks and initiatives focused on research-use in education. This determined that there were 8 of the 12 responding control schools which had a staff member who had the formal role (laid out in their job description) of engaging with research evidence about teaching, an echo of the role of Research Leads in intervention schools. These staff members utilised similar routes to dissemination of research evidence as did RISE Research Leads – e.g. emails, departmental meetings, CPD, and SLT meetings. Although the role echoed that of the RISE Research Lead, none of these staff members had been involved in the RISE training or training provided by Huntington School during the life of the study. The increasing emphasis on research use in schools was also evident in these 12 control schools' involvement with, and interest in, research networks and initiatives – with four having applied to become Research Schools at the period just after the RISE intervention was complete. Three of the 12 control schools said they had learned of what was happening in the RISE programme through other events they attended, but the remaining nine had not.

Conclusion

Key conclusions
1. For both the one-year and two-year cohorts, children in RISE schools made a small amount of additional progress in mathematics and English compared to children in the comparison schools. This result has a high security rating. The differences were small and not statistically significant. This means that the statistical evidence does not meet the threshold set by the evaluator to conclude that the true impact was not zero.
2. There was no evidence that RISE had an impact on the outcomes of pupils eligible for free school meals.
3. The intervention was considered appropriate and helpful by the participating schools. Uptake by schools and attendance at the intervention training was high and sustained over the 30 months of the intervention.
4. Schools' adoption of the research-informed school improvement model was highly variable and influenced by schools' context and relationships, and the stability of the Research Lead role. The teacher in the role of Research Lead changed in 40% of the schools during the project.
5. Key conditions for success in implementing the intervention included choosing a well-respected Research Lead with strong relationships in the school, visible support from the Headteacher, and ring-fenced time for the Research Lead to work on the project.

Interpretation

Key impact finding

This study hypothesised that the RISE intervention would create research-based school improvement, led at individual school level by a senior teacher in the role of research lead, which would significantly increase pupils' achievement in mathematics and English at GCSE. This RCT found pupils in RISE schools made small levels of additional progress compared to those in control schools, but the results were not statistically significant. Additionally, no effect was found for young people who were eligible for Free School Meals or for boys or girls.

Comparison to other trial impact findings

These results are similar to the findings of three other recent trials of research use in English schools, funded by the Education Endowment Foundation. The Research Learning Communities Trial was run in 119 primary schools, and had an intervention where two influential teachers from a school acted as 'Evidence Champions'. These teachers attended workshops with academics from the UCL Institute of Education and other Evidence Champions from four other schools, and examined the latest evidence on key, agreed topics of interest. The Evidence Champions were expected to implement an improvement strategy in their school and collect data on effectiveness. The evaluation, led by team at Bristol University, found no change in reading scores for pupils in the Research Learning Communities intervention schools [4]. Additionally, there were two further trials in English primary schools – the two large-scale Literacy Octopus Trials. These both used light touch approaches to increasing evidence use by primary teachers. One, which involved 823 primary schools had an intervention where high-quality evidence-based resources were sent to schools. The second included 12,500 primary schools and involved sending such evidence-based resources alongside offers of support (such as access to websites or one-off seminars on how to use the resources in teaching). Neither of these interventions were found by the evaluations carried out by NFER to have influenced attainment scores in literacy at Key Stage 2 [7] [6].

Comparison of process evaluation findings

The findings from our process evaluation also resonate with those of other recent research-use studies. In RISE, a vulnerable part of the intervention was relying too heavily on one individual Research Lead

for the duration of the intervention, as only 60% remained in this role for the duration. Staff turnover was also found to be problematic for the Evidence Champions in the Research Learning Communities Trial described above [4].

When considering how the RISE programme could influence teaching, the logic model we constructed, based on the programme developer's input, was aligned with Michie et al.'s [13] theory that behaviour change results from a combination of capability, opportunity and motivation. The training sought to enhance the motivation of Headteachers in order to provide the opportunity for Research Leads and Department Heads to engage in the training and thereby raise their capability and motivation. This theory is supported by empirical systematic review evidence that enhancing skills in accessing and making sense of evidence is effective, but only when simultaneously enhancing opportunities and motivation to use evidence [10].

The Coldwell et al evaluation of progress in England of evidence-informed teaching found that a key factor for high engagement was the involvement of senior leaders [8]. This focus had also been identified by the RISE and was carried through in terms of initial involvement of Headteachers and also in the determination that the Research Lead needed to be a member of the Senior Leadership Team. Motivation amongst Headteachers, who volunteered their schools to participate in the RISE trial, appeared generally high at the beginning, and the intervention did not require them to have enhanced research-related skills. However, findings from the process intervention reveal how the opportunity for Headteachers to maintain their initial support could be interrupted by a change of leadership or when other priorities, such as OFSTED inspections, required greater attention. This echoes findings from the Research Champions pilot trial [2] where competing school priorities and variable buy-in from senior leaders was a practical barrier of the programme.

While motivation was very high amongst the core of Research Leads who had longevity with the programme, motivation amongst other teachers in their departments was mixed. The programme aimed to develop a network of highly trained Research Leads capable of motivating colleagues and changing school culture. The RISE training sessions covered well the skills for evidence-informed practitioners, but less well the skills and evidence behind change management processes in schools.

Another finding from the Coldwell et al study was that schools that were highly engaged. The Langer et al. systematic review [10] provides cautious evidence that use of research may be enhanced by formalising and embedding decision making into existing structures and processes. However, this was not a large part of the intervention and the process evaluation revealed engagement with formal decision-making structures such as school governor boards or local authorities in only a small number of schools. The argument for trying such approaches became stronger with the publication of the Education Excellence Everywhere white paper [9] in March 2016, after the core training for Research Leads was complete.

In hindsight, the RISE intervention had very ambitious culture change and improvement in attainment aims, and a short timescale to deliver these in. Other studies that have attempted such change in practice have been similar in length or longer. Some of these evaluated interventions that have been more direct in working with teachers to change practice (not expecting a cascade) e.g. Embedding Formative Assessment, which had a two year intervention, and while finding some improvement in the Progress 8 measure, also did not find differences in mathematics or English GCSEs. [14] Other studies of training for research use have had longer intervention timescales just for changing the practice in the public sector, for example the four year B-CURE programme [Approaches to Build Capacity to Use Research Evidence] which worked with government stakeholders to make effective use of research in policy making decisions. The B-CURE evaluation authors concluded that even after four years of intervention, it was too soon to begin to measure an impact. [15]It is perhaps unsurprising, therefore, that student outcomes were not impacted during this timescale, as it may be that this period of time is not enough to embed the culture change for the teachers, and then to translate this into improved exam

results. It would be interesting to conduct a longer term comparison (e.g. 5 years) within these schools to see if attainment rates differ.

This trial was conducted on an intervention that had not been formally piloted and evolved as it was underway. In retrospect, this study could be considered more a large-scale pilot trial than an efficacy trial. Much was found, via the process evaluation, to be feasible and acceptable about the RISE intervention: the training was well-attended and viewed as highly useful; the increasingly targeted support to individual schools, to help the Research Lead to gain traction within their school community; the research summaries that were developed and circulated. The intervention developers were proactive in responding to the aspects of the intervention which emerged as less feasible: e.g. expecting the Research Lead to be the sole individual from the school to experience the intervention, which was latterly addressed by increasingly involving Department Leads. The process evaluation findings suggest that further changes to the intervention could make it more feasible, including training that incorporates greater focus on culture change and interpersonal/knowledge brokering skills; training two Research Leads from each school to weather against staff changes; as well as providing a longer period of time for this intervention to be embedded before measurement of change on pupil outcomes.

Limitations

The sample size was limited by the number of schools which the intervention could handle, which meant the effect size required to show a difference was large for an intervention of this nature. The study was therefore powered to show a minimum detectable effect size of between 0.25 and 0.32. The data were, however, robust, coming from national tests.

The secondary outcome of teachers' use of survey data was not able to be included due to low response rate. This response rate was influenced by: turnover of school staff; lack of re-engagement from control group schools, which was compounded by departure of key senior staff who had originally agreed participation; and evaluation delay in administering the survey while trying to re-engage the control schools.

The participating schools were recruited via convenience methods, rather than a specifically selected pool, and it appears that this business as usual sample was also relatively 'research-engaged' so it is difficult to comment on the generalisability of the results to other schools.

This trial considers specifically the RISE approach to research engagement in schools, and as such no inferences can be drawn from it about the impact of research engagement in schools generally.

Future research and publications

Much of the RISE model, including content of the training and aspects of hub-school support to other schools, has been incorporated in the new Research Schools Network. The key difference is that Research Schools do not offer a training package aimed primarily at one formal Research Lead per school. Future research could include a larger trial of school training and support offered by these hub schools. A more in-depth article exploring the findings of the RISE process evaluation will be published by the authors of this report.

References

[1] T. Hoffman and e. al, "Better reporting of interventions: template for intervention description and replication (TIDieR) checklist and guide," *BMJ*, vol. 348, p. q1687, 2014.

[2] J. Griggs, S. Speight and J. Cartegna Farias, "Ashford Teaching Alliance Research Champion: Evaluation report and executive summary," Education Endowment Foundation, London, 2016.

[3] S. Speight, M. Callanan, J. Griggs and J. Cartagena Faria, "Rochdale Research into Practice: Evaluation Report and Executive Summary," Education Endowment Foundation, London, 2016.

[4] J. Rose, S. Thomas, L. Zhang, A. Edwards, A. Angero and P. Roney, "Research Learning Communities: Evaluation Report and Executive Summary," Education Endowment Foundation, London, 2017.

[5] P. Lord, D. Sims, R. White and P. Roy, "Evidence for the Frontline: Evaluation report and executive summary," Education Endowment Foundation, London, 2017.

[6] P. Lord, A. Rabiasz, P. Roy, J. Harland, B. Styles and K. Fowler, "Evidence-based literacy support: The Literacy Octopus trial evaluation report and executive summary," Education Endowment Foundation, London, 2017.

[7] P. Lord, A. Rabiasz and B. Styles, "Literacy Octopus Dissemination Trial," Education Endowment Foundation, London, 2017.

[8] M. Coldwell, T. Greany, S. Higgins, C. Brown, B. Maxwell, B. Stiell, L. Stoll, B. Willis and H. Burns, "Evidence-informed teaching: an evaluation of progress in England. Research Report," Department for Education, July 2017.

[9] D. f. Education, Educational Excellence Everywhere, Department for Education. (2016). Educational Excellence Everywhere. [online] Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/508447/Educational_Excellence_Everywhere.pdf [Accessed 15 May 2018]., 2016.

[10] L. Langer, J. Tripney and D. Gough, "The Science of Using Science: Researching the Use of Research Evidence in Decision-Making," EPPI-Centre, Social Sceience REsearch Unit, UCL Institute of Education, London, 2016.

[11] H. Poet, P. Mehta and J. Nelson, "Research Use in Schools: Survey, analysis and guidance for evaluators," NfER, Slough, 2015.

[12] A. Gerber and D. P. Green, Field Experiments: Design, analysis and interpretation, New York: W. W. Norton and Company, 2012.

[13] S. Michie, M. M. van Stralen and R. West, "The behaviour change wheel: a new method for characterising and designing behaviour change interventions," *Implementation Science,* vol. 6, no. 1, p. 42, 2011.

[14] S. e. a. Speckesser, "Embedding Formative Assessment: Evaluation report and executive summary," Education Endowment Foundation, London, 2018.

[15] I. Vogel and M. Punton, "Final Evaluation of the Building Capacity to Use Research Evidence (BCURE) programme," Itad, Brighton, 2018.

Appendix A: EEF cost rating

Cost ratings are based on the approximate cost per pupil per year of implementing the intervention over three years. More information about the EEF's approach to cost evaluation can be found here. Cost ratings are awarded as follows:

Cost rating	Description
£ £ £ £ £	*Very low:* less than £80 per pupil per year.
£ £ £ £ £	*Low:* up to about £200 per pupil per year.
£ £ £ £ £	*Moderate:* up to about £700 per pupil per year.
£ £ £ £ £	*High:* up to £1,200 per pupil per year.
£ £ £ £ £	*Very high:* over £1,200 per pupil per year.

Appendix B: Security classification of trial findings

SECURITY RATING COHORT A ENGLISH

Rating	Criteria for rating			Initial score	Adjust	Final score
	Design	Power	Attrition[3]			
5 🔒	Well conducted experimental design with appropriate analysis	MDES < 0.2	0-10%			
4 🔒	Fair and clear quasi-experimental design for comparison (e.g. RDD) with appropriate analysis, or experimental design with minor concerns about validity	MDES < 0.3	11-20%	4	Adjustment for Balance **[0]**	4
3 🔒	Well-matched comparison (using propensity score matching, or similar) or experimental design with moderate concerns about validity	MDES < 0.4	21-30%			
2 🔒	Weakly matched comparison or experimental design with major flaws	MDES < 0.5	31-40%		Adjustment for threats to internal validity **[0]**	
1 🔒	Comparison group with poor or no matching (E.g. volunteer versus others)	MDES < 0.6	41-50%			
0 🔒	No comparator	MDES > 0.6	over 50%			

- **Initial padlock score:** lowest of the three ratings for design, power and attrition = The design is a randomised controlled trial which has been powered to 0.284 and there was pupil level attrition of 9%. Therefore, this trial should have 4 padlocks.
- **Reason for adjustment for balance** (if made): There was slight imbalance of pre-test data but this appears to be by chance.
- **Reason for adjustment for threats to validity** (if made): No threats to validity are present so no adjustment is needed.
- **Final padlock score:** initial score adjusted for balance and internal validity = 4 padlocks.

[3] Attrition should be measured at the pupil level (even for clustered trials) and from the point of randomisation to the point of analysis.

SECURITY RATING COHORT A MATHS

Rating	Criteria for rating			Initial score		Adjust		Final score
	Design	Power	Attrition[4]					
5	Well conducted experimental design with appropriate analysis	MDES < 0.2	0-10%					
4	Fair and clear quasi-experimental design for comparison (e.g. RDD) with appropriate analysis, or experimental design with minor concerns about validity	MDES < 0.3	11-20%	4		Adjustment for Balance [0]		4
3	Well-matched comparison (using propensity score matching, or similar) or experimental design with moderate concerns about validity	MDES < 0.4	21-30%					
2	Weakly matched comparison or experimental design with major flaws	MDES < 0.5	31-40%			Adjustment for threats to internal validity [0]		
1	Comparison group with poor or no matching (E.g. volunteer versus others)	MDES < 0.6	41-50%					
0	No comparator	MDES > 0.6	over 50%					

- **Initial padlock score:** The design is a randomised controlled trial which has been powered to 0.265. However, there was pupil level attrition of 9%. Therefore, this trial should have 4 padlocks.
- **Reason for adjustment for balance** (if made): There was slight imbalance of pre-test data but this appears to be by chance.
- **Reason for adjustment for threats to validity** (if made): No threats to validity are present so no adjustment is needed.
- **Final padlock score:** initial score adjusted for balance and internal validity = 4 padlocks.

[4] Attrition should be measured at the pupil level (even for clustered trials) and from the point of randomisation to the point of analysis.

SECURITY RATING COHORT B MATHS

Rating	Criteria for rating			Initial score		Adjust		Final score
	Design	Power	Attrition[5]					
5	Well conducted experimental design with appropriate analysis	MDES < 0.2	0-10%					
4	Fair and clear quasi-experimental design for comparison (e.g. RDD) with appropriate analysis, or experimental design with minor concerns about validity	MDES < 0.3	11-20%	4		Adjustment for Balance [0]		4
3	Well-matched comparison (using propensity score matching, or similar) or experimental design with moderate concerns about validity	MDES < 0.4	21-30%					
2	Weakly matched comparison or experimental design with major flaws	MDES < 0.5	31-40%			Adjustment for threats to internal validity [0]		
1	Comparison group with poor or no matching (E.g. volunteer versus others)	MDES < 0.6	41-50%					
0	No comparator	MDES > 0.6	over 50%					

- **Initial padlock score:** The design is a randomised controlled trial which has been powered to 0.296. However, there was pupil level attrition of 13%. Therefore, this trial should have 4 padlocks.
- **Reason for adjustment for balance** (if made): There was slight imbalance of pre-test data but this appears to be by chance.
- **Reason for adjustment for threats to validity** (if made): No threats to validity are present so no adjustment is needed.
- **Final padlock score:** initial score adjusted for balance and internal validity = 4 padlocks.

[5] Attrition should be measured at the pupil level (even for clustered trials) and from the point of randomisation to the point of analysis.

SECURITY RATING COHORT B ENGLISH

Rating	Criteria for rating			Initial score		Adjust		Final score
	Design	Power	Attrition[6]					
5	Well conducted experimental design with appropriate analysis	MDES < 0.2	0-10%			Adjustment for Balance [0]		
4	Fair and clear quasi-experimental design for comparison (e.g. RDD) with appropriate analysis, or experimental design with minor concerns about validity	MDES < 0.3	11-20%					
3	Well-matched comparison (using propensity score matching, or similar) or experimental design with moderate concerns about validity	MDES < 0.4	21-30%	3				3
2	Weakly matched comparison or experimental design with major flaws	MDES < 0.5	31-40%			Adjustment for threats to internal validity [0]		
1	Comparison group with poor or no matching (E.g. volunteer versus others)	MDES < 0.6	41-50%					
0	No comparator	MDES > 0.6	over 50%					

- **Initial padlock score:** The design is a randomised controlled trial which has been powered to 0.317 and there was pupil level attrition of 13%. Therefore, this trial should have 3 padlocks.
- **Reason for adjustment for balance** (if made): There was slight imbalance of pre-test data but this appears to be by chance.
- **Reason for adjustment for threats to validity** (if made): No threats to validity are present so no adjustment is needed.
- **Final padlock score:** initial score adjusted for balance and internal validity = 3 padlocks.

[6] Attrition should be measured at the pupil level (even for clustered trials) and from the point of randomisation to the point of analysis.

Appendix C – Memorandum of Understanding

RISE: Research-leads Improving Students' Education

An Education Endowment Foundation (EEF) Randomised Controlled Trial Project

Memorandum of Understanding

Agreement to participate in the Evaluation of *RISE: Research-leads Improving Students' Education, a Randomised Controlled Trial funded by the Education Endowment Foundation.*

Please sign both copies, retaining one and returning the second copy to Mr Alex Quigley at Huntington School, York: aj.quigley@huntington-ed.org.uk.

School Name: _____

Aims of the Evaluation and the Project

The aim of this evaluation is to assess the impact of *RISE: Research-leads Improving Students' Education*, a project led by **Huntington School**, which aims to test whether having a school based Research-lead implementing the EEF school improvement model makes a significant difference to classroom practice and student outcomes in GCSE English and mathematics.

The results of the evaluation will contribute to our understanding of how best to disseminate educational research in schools so that we know with greater certainty what really works in raising students' attainment specifically in GCSE English and mathematics and more generally across the school. The outcomes will be widely disseminated to schools in England.

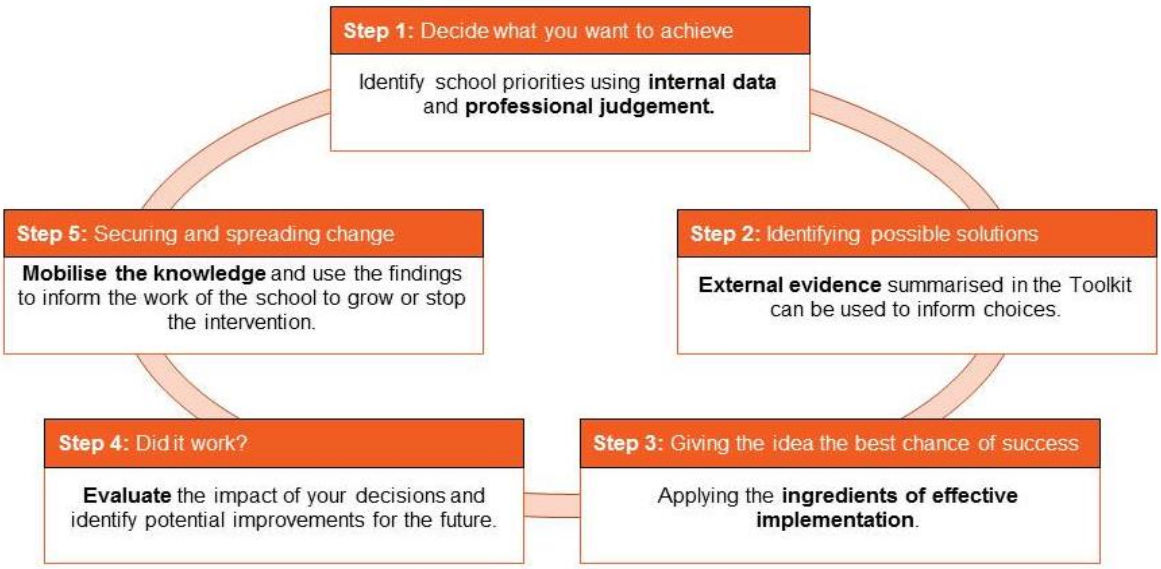
Ultimately we hope that the project will equip schools with a way of helping teachers use educational research to develop their pedagogy in a way which maximises the positive impact on student outcomes.

The Project

Each school in the project will appoint a Research-lead who will be responsible for implementing the improvement programme in their school, with a particular focus upon improving student attainment in English and mathematics at GCSE. The Research-leads will be supported by a thorough programme of workshops delivered by the team from Huntington School, alongside a collaborative network-based approach to support. The Centre for Evaluation and Monitoring (CEM) at Durham University will support

Huntington to develop and deliver the content of these workshops, as well as provide guidance on designing appropriate, robust, school–led trials.

A Research-lead (RL)is effectively a new role in the school leadership structure. The RL must have a role on the Senior Leadership Team in their schools. We think this is essential as the project is about how research evidence can inform school improvement plans, so the RL needs to have a focal role, supported by the Headteacher, in enhancing those school improvement plans with knowledge of the best of research evidence. The RL will work directly with the English and mathematics departments to source, apply and evaluate the most effective teaching & learning strategies and raising attainment interventions in those core subject areas at GCSE. From September 2015 the RL will work with the English and mathematics subject leaders and with teachers in those two departments in evaluating data and implementing specific strategies for improvement and intervention. The RL would also have a secondary role in promoting the use of research evidence throughout the school, such as in whole school CPD sessions; supporting staff in sourcing and evaluating research etc.



Structure of the Evaluation of the Project

The project is being evaluated by Meg Wiggins, IoE, Director of the Evaluation. Schools that are selected to take part will be randomly allocated to either the *treatment* group or a *control* group.

This trial involves forty secondary schools. Once selected, the forty schools will be chosen *by lottery* to be either a *control* school or a *treatment* school – hence the *random* nature of the trial. There will be twenty of each. Random allocation is essential to the evaluation as it is the best way of outlining what effect RISE has on students' attainment. *It is important that schools understand and consent to this process.*

Evaluation commitments from all schools

We shall need all participating schools, whether they are in the treatment or the control group, to provide the Unique Pupil Numbers to us of all their September 2014 Year 9 and Year 10 students. These will be used to track the students' performance in English and mathematics GCSE examinations in 2016 and 2017 respectively. Headteachers will need to consent to the evaluators linking UPNs to the National Pupil Database (NPD).

We shall also need all schools to distribute information sheets and opt-out consent forms to parents/carers at the beginning of the project in October 2014. These forms ensure that responses get to the research team and encourage parents to bring any queries to the research director.

In all schools we will survey staff in English and mathematics departments, as well as key members of the SLT, regarding research engagement and use. These short on-line surveys will be distributed at three time points in the evaluation – autumn 2014, June 2016, and June 2017.

Additional evaluation commitments from *treatment* schools

In addition to examining the effectiveness of the RISE project, the evaluation will also explore the project's acceptability, as well as the facilitators and barriers to implementation. To gather this additional information, researchers will observe the various training workshops and conferences and the evaluation will choose four case study schools. In these schools, interviews will be conducted with the RL, another member of the SLT and some teachers from within the English and mathematics departments.

The schools in the *treatment* group will follow the project timeline below:

- **Jan – Oct 2015**: *Research-leads* to undertake a bespoke training programme (eight intensive sessions) in York led by the project lead Alex Quigley from Huntington School and leading educational researcher Professor Rob Coe from *Durham's Centre for Evaluation and Monitoring,* based around the *EEF School Improvement Cycle* (see above). The *Head Teacher* will be expected to attend the first session in January 2015.

- **Oct – Nov 2015**: Each *treatment* school will select the best research led priorities for school improvement, focused upon student attainment in English and mathematics at GCSE. Research-leads will support those core departments in improving student outcomes.

- **Nov 2015 – July 2016**: Year 1 of the core intervention. GCSE data collected from NPD. Research-leads will be engaged in a network of cutting-edge schools looking to implement the best of research, whilst supporting their core subject areas and undertaking well supported, high quality CPD. Interviews will be conducted in case study schools.

- **July 2016 – Nov 2017**: Year 2 of the core intervention. GCSE data collection from NPD and overall evaluation. Schools will once more define their research led priorities and use the *EEF School improvement Cycle* to help drive improvement for student outcomes in English and mathematics at GCSE. Interviews will be conducted in case study schools.

- **Nov 2017 – March 2018:** The IoE finalise the analysis of the impact of RLs in *treatment* schools compared to *control* schools.

- **April 2018:** Final report on the RCT published.

Use of Data

Students' GCSE results and any other pupil data will be treated with the strictest confidence. The responses will be collected electronically by the IoE and accessed by Meg Wiggins, IoE, Director of the Evaluation and Dr John Jerrim, IoE, lead statistician. No individual school, teacher or student will be identified in any report arising from the research.

Responsibilities

The **RISE project team** from Huntington School and CEM will:

Control schools

- Provide schools in the control group with £500 in September 2015 and £1,000 in October 2017 in recognition of their important role in the project.

Treatment schools

- Deliver 8 training sessions during January 2015-October 2015 to the Research-leads, the first of which all headteachers must attend;
- Facilitate termly meetings of the Research-leads and organise whole day conferences in July 2016 and 2017;
- Support the treatment schools to complete the trial by providing £5,000 p.a. for two years, £5,000 to be paid on 31 March 2016 and 31 March 2017, and will pay reasonable travel costs for Research-leads and Headteachers to attend the eight training sessions and the two summer conferences in York;
- Be the first point of contact for any questions about the RCT;
- Provide on-going support to the school with regards to research evidence about improving outcomes in English and mathematics GCSE;
- Send out regular updates on the progress of the project through a newsletter;
- Set up a high quality protected website for sharing progress on the project and generating a network of highly-informed research-focused practitioners.

The **Institute of Education** will:

- Conduct the random allocation of recruited schools to treatment and control groups;
- Collect and analyse all the data from the project, including staff surveys, staff interviews, observations of training sessions, and accessing of NPD attainment data;
- Ensure all staff carrying out fieldwork are trained and have received DBS clearance;
- Be a point of contact for parents / carers seeking more information on the project;
- Disseminate research findings.

The **School** will:

- Consent to random allocation and commit to participating in the trial irrespective of the outcome – i.e. viz. whether it is a *treatment* or *control* school;
- Provide UPNs of Sept 2014 year 9s and 10s.
- Distribute information and consent forms to parents/carers.
- Allow time for each staff survey and case study interviews, where appropriate.

Treatment schools will:

- Release Research-leads, Headteachers and other subject specific staff so that they can attend the initial 8 training days, the termly meetings and the two summer conferences in 2016 and 2017;
- Ensure that Research-leads prioritise the completion of preparation tasks between the initial 8 training days;
- Attempt to maximise the usefulness of the project by ensuring, as far as is possible, that Research-leads deliver the project in a way that is faithful to its original design;
- Ensure the shared understanding of the project amongst all school staff;
- Ensure unqualified support from the school for the personnel involved;
- Pay £2,500 p.a. for two years as a contribution to the overall cost of the project.

We commit to the taking part in the evaluation of the *RISE: Research-leads Improving Students' Education RCT* project as detailed above.

Head teacher [NAME]: _____
Chair of Governors [NAME]: _____
Other relevant school staff [NAMES]: _____
Other relevant school staff [NAMES]: _____
Other relevant school staff [NAMES]: _____
Other relevant school staff [NAMES]: _____

Date: _____

Appendix D: Consent form for parents (intervention schools' version)

RISE: Research-leads Improving Students' Education Project

Dear parent/carer

We are writing to let you know that your child's school is participating in the RISE: Research-leads Improving Students' Education Project.

The aim of the project is to help us find out the value of having a trained senior teacher to act as a Research Lead within their school. Research Leads help teachers to introduce into the classroom the best research evidence regarding effective teaching and learning strategies, with a particular focus upon improving student attainment in English and maths. Research Leads are supported by a programme of workshops delivered by a team from Huntington School, guided by the Centre for Evaluation and Monitoring (CEM) at Durham University.

How are we testing the RISE: Research Leads Improving Students' Education project?
The Institute of Education at University College London is evaluating the project to see whether taking this approach makes a significant difference to classroom practice and student attainment in GCSE English and maths. It will contribute to our understanding of how teachers can use research evidence most effectively to improve students' results.

The research is using a randomised controlled trial design and involves 40 English secondary schools. Schools have been selected by lottery to be either a school that receives the programme or as a 'business as usual' control school . There are twenty schools in each group. Your child's school has been chosen to be in group that will receive the programme.

How will we know if the RISE: Research Leads Improving Students' Education programme improves learning?
To find out whether the programme makes a difference, the evaluation team would like to follow the current Year 10 and Year 11 students' achievement in English and Maths GCSEs, and compare these between the schools that have the programme and those in the control schools. To do this, we would need to have the students' SATs scores at Key Stage 2 and their maths and English GCSE grades. We would ask schools to provide their students' names and unique pupil numbers so that we could access these tests scores from the National Pupil Database. All pupil data will be treated with the strictest confidence. We will not use your child's name or the name of the school in any report arising from the research.

What will happen to the information after the study finishes?
The data from the study will be anonymised (all names removed) and shared for research purposes with two special data archives being kept from all the education projects being carried out for the Education Endowment Foundation – the EEF data archive and the UK Data archive

What happens next?
If you or your child would like more information about what the evaluation involves, please feel free to contact Meg Wiggins, Director of the Evaluation, whose details are below.

If you are happy for your child's exam results to be included in the study you do not need to do anything. ***If you do not want your child's results to be included please complete the attached 'opt out' form and return it by post to the research team at the address given below.***

You are free to ask for your child to be withdrawn from the evaluation at any time. Opting out of the evaluation will not affect your child's time in school in anyway or the lessons they receive.

How will I find out the results?
You will be able to find out the results from the project once it has been completed in 2017 from the Social Science Research Unit at the Institute of Education (www.ioe.ac.uk) and the Education Endowment Foundation (www.educationendowmentfoundation.org.uk).

We look forward to working with your son/daughter's school and value your child's contribution to the RISE: Research Leads Improving Students' Education project.

Yours faithfully

Meg Wiggins (IOE Evaluation Director);
M.Wiggins@ioe.ac.uk or 0207 612 6786.

…….

OPT out form – ONLY COMPLETE IF YOU DO NOT WANT YOUR CHILD'S RESULTS TO BE INCLUDED IN THE RISE: RESEARCH LEADS IMPROVING STUDENTS' EDUCATION PROJECT EVALUATION.

Child's name:

DOB:

School name:

I **do not** want my child's anonymous exam results to be included in the RISE: Research Leads Improving Students' Education project evaluation.

Signed:

Print name:

Relationship to child:

Return to:
Meg Wiggins
Social Science Research Unit
Institute of Education, University of London
18 Woburn Square
London
WC1H 0NR

Appendix E – NfER research use survey

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

Thank you very much for taking part in this survey. Your responses will contribute to a study conducted by the Institute of Education on behalf of the Education Endowment Foundation. The study is exploring the Huntington RISE programme, which involves different approaches to improve pupil progress in KS4 maths and English. 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.

The survey should take no more than fifteen 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.

This baseline survey will be conducted in late October and early November 2014. Following completion of these baseline surveys, schools will be randomised to either the intervention or comparison group. We ask that you please complete this by Wednesday November 12th.

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

ID Access Code

We will need you to enter you ID Access Code, as found on your email invitation to take part in this survey. This allows your responses to be completely anonymous and confidential.

* 1. What is your ID Access Code?

access code

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

About you

2. What is your job role?

- ◯ Classroom teacher
- ◯ Middle leader (e.g. head of department, subject or curriculum area leader, key stage leader, pastoral services leader)
- ◯ Senior leader (e.g. headteacher, principal, director, deputy or assistant headteacher)

Other role (please specify)

3. Do you teach English or maths? (please tick all that apply)

- English
- Maths
- Neither subject

4. How long have you been a teacher?

- ◯ Less than 2 years
- ◯ 2 to 5 years
- ◯ 6 - 10 years
- ◯ more than 10 years

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

About a specific approach to supporting pupils' progress in English

5. Please name in the box below an approach that you have used within the last two years to support pupils' progress in English at KS4. For example this could be a teaching method, or a resource, product or initiative.

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

6. Which, if any, of the following were important in identifying the approach you named above? (please tick all that apply)

- [ ] Ideas generated within my own school
- [ ] Ideas from other schools
- [ ] Advice from my academy chain or local authority
- [ ] 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)
- [ ] The promotional materials of an external supplier
- [ ] Action research conducted by me or my colleagues
- [ ] Information gathered through training/CPD
- [ ] Online evidence platforms or databases (e.g. the Sutton Trust Teaching and Learning Toolkit)
- [ ] Guidance from official bodies such as DfE and Ofsted
- [ ] Guidance from exam boards
- [ ] Don't know
- [ ] Other

(please specify)

7. Out of the options you selected in question 6, which were the THREE most important in identifying the approach you named above? (please tick three boxes only)

- Ideas generated within my own school
- Ideas from other schools
- Advice from my academy chain or local authority
- 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)
- The promotional materials of an external supplier
- Action research conducted by me or my colleagues
- Information gathered through training/CPD
- Online evidence platforms or databases (e.g. the Sutton Trust Teaching and Learning Toolkit)
- Guidance from official bodies such as DfE and Ofsted
- Guidance from exam boards
- Don't know
- Other

(please specify)

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

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

We thought it…

	Strong influence	Some influence	No influence	Not applicable
…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 / independent evidence of effectiveness				○
…was a good fit with existing practices	○	○	○	
…aligned with our professional experience	○	○	○	○ ○

9. How effective do you think your approach has been so far in supporting pupil progress? (please tick one box only) ○

- ○ Very effective
- ○ Quite effective ○
- ○ Not very effective
- ○ Not at all effective
- ○ Don't know
- ○ It is too early to tell

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

About a specific approach to supporting pupils' progress in maths

10. Please name in the box below an approach that you have used within the last two years to support pupils' progress in maths at KS4. For example this could be a teaching method, or a resource, product or initiative.

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

11. Which, if any, of the following were important in identifying the approach you named above? (please tick all that apply)

Ideas generated within my own school

Ideas from other schools

Advice from my academy chain or local authority

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)

The promotional materials of an external supplier

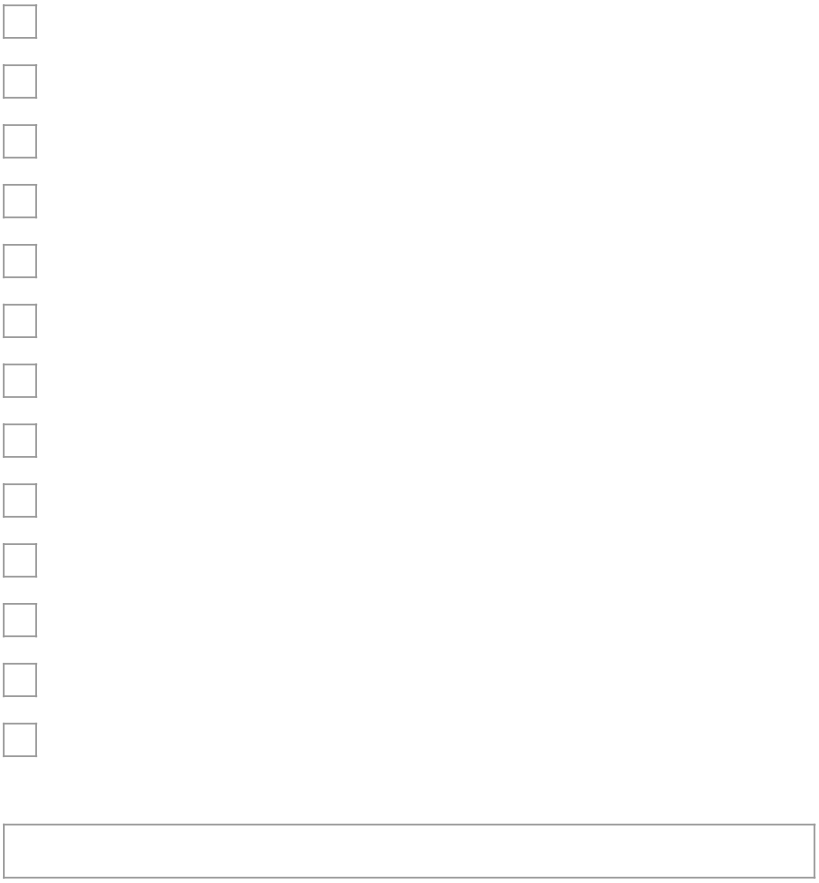
- [ ] Action research conducted by me or my colleagues
- [ ] Information gathered through training/CPD
- [ ] Online evidence platforms or databases (e.g. the Sutton Trust Teaching and Learning Toolkit)
- [ ] Guidance from official bodies such as DfE and Ofsted
- [ ] Guidance from exam boards
- [ ] Don't know
- [ ] Other

(please specify)

12. Out of the options you selected in question 11, which were the THREE most important in identifying the approach you named above? (please tick three boxes only)

- Ideas generated within my own school
- Ideas from other schools
- Advice from my academy chain or local authority
- 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)
- The promotional materials of an external supplier
- Action research conducted by me or my colleagues
- Information gathered through training/CPD
- Online evidence platforms or databases (e.g. the Sutton Trust Teaching and Learning Toolkit)
- Guidance from official bodies such as DfE and Ofsted
- Guidance from exam boards
- Don't know
- Other

(please specify)



Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

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

We thought it…

	Strong influence	Some influence	No influence	Not applicable
…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 / independent evidence of effectiveness				○
…was a good fit with existing practices	○	○	○	
…aligned with our professional experience	○	○	○	○

14. How effective do you think your approach has been so far in supporting pupil progress? (please tick one box only)

- ○ Very effective
- ○ Quite effective
- ○ Not very effective
- ○ Not at all effective
- ○ Don't know
- ○ It is too early to tell

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

About a specific approach to supporting pupils' progress

15. Please name in the box below an approach that your school has used within the last two years to support pupils' progress in either English or maths at KS4. For example this could be a teaching method, or a resource, product or initiative.

(If you are unfamiliar with any such approaches for either English or maths, please leave blank and move on to question 16.)

Activity name/brief description/English or maths? (please type in the box below)

16. If you have listed an approach, please press the 'next' button at the bottom of this page.

If you don't know of any approaches, please tick below.

- ◯ I am unfamiliar with any such approaches for KS4 English or maths

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

17. Which, if any, of the following were important in identifying the approach you named above? (please tick all that apply)

Ideas generated within my own school

Ideas from other schools

Advice from my academy chain or local authority

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)

The promotional materials of an external supplier

☐ Action research conducted by me or my colleagues

☐ Information gathered through training/CPD

☐ Online evidence platforms or databases (e.g. the Sutton Trust Teaching and Learning Toolkit)

☐ Guidance from official bodies such as DfE and Ofsted

☐ Guidance from exam boards

☐ Don't know

☐ Other

(please specify)

☐

☐

☐

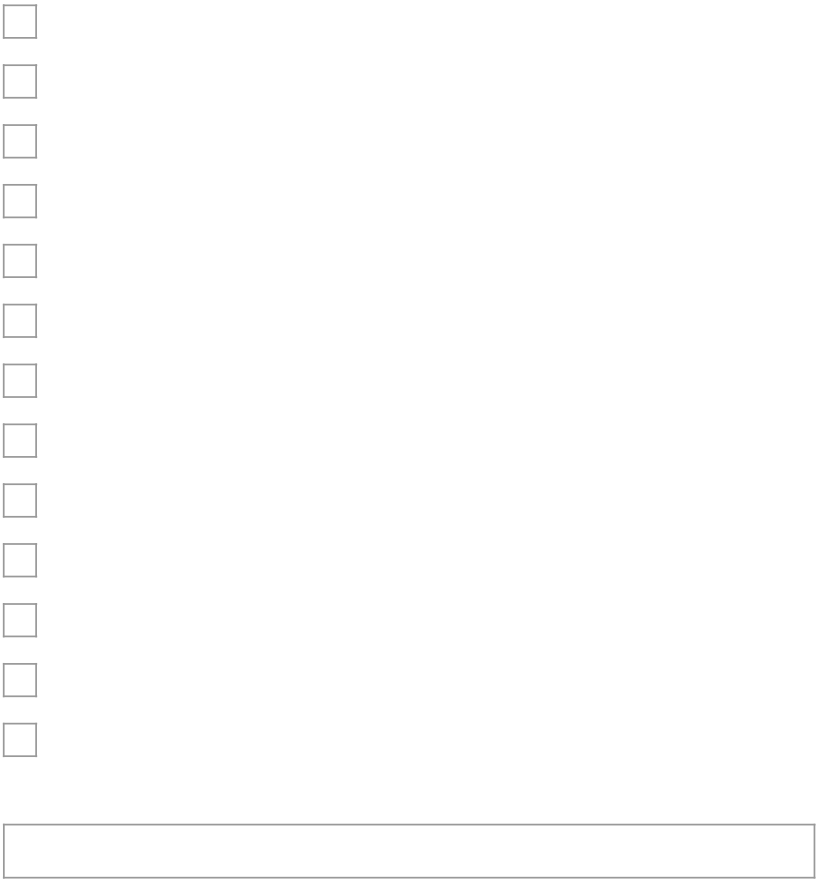
☐

☐

18. Out of the options you selected in question 17, which were the THREE most important in identifying the approach you named above? (please tick three boxes only)

- Ideas generated within my own school
- Ideas from other schools
- Advice from my academy chain or local authority
- 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)
- The promotional materials of an external supplier
- Action research conducted by me or my colleagues
- Information gathered through training/CPD
- Online evidence platforms or databases (e.g. the Sutton Trust Teaching and Learning Toolkit)
- Guidance from official bodies such as DfE and Ofsted
- Guidance from exam boards
- Don't know
- Other

(please specify)



Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

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

We thought it…

	Strong influence	Some influence	No influence	Not applicable
…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 / independent evidence of effectiveness				○
…was a good fit with existing practices	○	○	○	
…aligned with our professional experience	○	○	○	○

20. How effective do you think your approach has been so far in supporting pupil progress? (please tick one box only)

- ○ Very effective
- ○ Quite effective
- ○ Not very effective
- ○ Not at all effective
- ○ Don't know
- ○ It is too early to tell

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

21. How do you know that the approach has been effective?
(tick all that apply)

- ☐ I/my colleagues like it
- ☐ Pupils seem to like it
- ☐ Our pupil performance data shows an improvement
- ☐ Our own evaluation shows a positive impact on pupil attainment
- ☐ We've had an independent evaluation which shows a positive impact upon pupil attainment

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

22. How do you know that the approach has not been effective? (tick all that apply)

- ☐ I/my colleagues don't like it
- ☐ Pupils don't seem to like it
- ☐ Our pupil performance data does not show an improvement
- ☐ Our own evaluation does not show a positive impact on pupil attainment
- ☐ We've had an independent evaluation which does not show a positive impact upon pupil attainment

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

Your general approach to supporting teaching and learning in KS4 English or maths

In these next two questions we would now like you to think more broadly about how you develop your teaching of KS4 English or maths.

For SLT members who do not teach either of these subjects, we would like you to answer these from your perspective regarding the development of teaching in these subjects.

23. To what extent do you consult the following sources when deciding on your (or your school's) approaches to teaching KS4 English or maths? (tick one box in each row)

	A lot	A little	Not at all
Pupil performance data (e.g. Raise Online)	○	○	
External organisations such as academy chain, local authority, DfE, 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	○	○	
			○
	○	○	○
			○
			○

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

24. How easy do you find it to understand the information that these sources provide about how to support pupils' progress in KS4 English or maths? (tick one box in each row)

	Very easy	Quite easy	Not very easy	Not at all easy	I don't use this source
Pupil performance data (e.g. Raise Online)	○	○	○	○	
External organisations such as academy chain, local authority, DfE, 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	○	○	○	○	
					○
	○	○	○	○	○
					○
					○

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

Evidence based teaching and using evidence from research

The questions in this section ask you to think about your teaching practice in general, rather than about your approaches to supporting KS4 English or maths specifically.

25. What does the term 'evidence-based teaching' mean to you? (tick all that apply)

Conducting action research and applying the learning

Learning from colleagues and applying the learning

Applying Ofsted or DfE guidance

Using an online evidence platform/database (e.g. Sutton Trust Toolkit) and applying the learning

Applying exam board guidance

Combining academic research evidence with my professional expertise

- [ ] Using pupil performance data to track pupil progress and plan ahead
- [ ] Applying the recommendations of an external supplier
- [ ] Reading and applying information from academic research or from working with researchers
- [ ] Learning from external consultants, trainers or advisors
- [ ] I don't know
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]
- [ ]

Leading education and social research
Institute of Education
University of London

Baseline RISE teachers

Use of research information in your work

26. These questions aim to find out how you use research information in your work. By ‘research’ we mean information from books, reports, articles, summaries, training or events that is based on academic studies.

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

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Information from research plays an important role in informing my 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					

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

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
Other staff in my school rarely use information from research to inform their teaching practice					
I feel confident about interpreting 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					

Baseline RISE teachers

28. 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 research in the past year
- [ ] I have used information from research to inform my thinking
- [ ] I have used information from research to discuss best practice with colleagues
- [ ] I have used information from research to reflect on my own practice
- [ ] I have changed classroom practice, as a result of information from research
- [ ] I have used information from research to contribute to my own research/enquiry
- [ ] I have influenced colleagues to change their practice as a result of information from research
- [ ] I have used information from research to improve my knowledge of a topic or subject

Thank you very much for completing our survey. When you press the 'done' button below, your responses will be submitted to the Institute of Education team.

Appendix F. Power calculations

Appendix Table A1. Apriori power calculations for primary outcome

Assumptions		Comments
Alpha Level (α)	0.05	Probability of a Type I error
Two-tailed or One-tailed Test?	2	
Power (1-β)	0.80	Statistical power (1-probability of a Type II error)
Rho (ICC)	0.15	Proportion of variance in outcome that is between clusters
P	0.50	Proportion of Level 2 units randomised to treatment: J_T / (J_T + J_C)
R_1^2	0.50	Proportion of variance in Level 1 outcomes explained by Level 1 covariates
R_2^2	0.00	Proportion of variance in Level 2 outcome explained by Level 2 covariates
g*	0	Number of Level 2 covariates
n (Average Cluster Size)	200	Mean number of Level 1 units per Level 2 cluster (harmonic mean recommended)
J (Sample Size [# of Clusters])	40	Number of Level 2 units
M (Multiplier)	2.88	Computed from T_1 and T_2
T_1 (Precision)	2.02	Determined from alpha level, given two-tailed or one-tailed test
T_2 (Power)	0.85	Determined from given power level
MDES	**0.355**	Minimum Detectable Effect Size

Appendix G – Survey of Headteachers and Research Leads at start of interventions

Leading education and social research
Institute of Education
University of London

Evaluation of RISE programme

The independent evaluation of the RISE programme is being carried out by a research team from the UCL Institute of Education. We would be very grateful if you would complete this short questionnaire about your initial thoughts on the programme. We will use your answers to help identify potential case study schools. Your answers are confidential to the evaluation team.

What is the name of your school? _____

1. What is your role?

Head teacher ☐ **Research lead** ☐

2. What would you say is your school's motivation for becoming involved in the RISE programme?

3. Prior to this programme, in your view, how much importance has been placed on the use of research evidence in informing classroom practice at your school? (*Scale of 1 'no importance, to 5 'great importance'. Please circle one***)**

No importance				Great importance
1	2	3	4	5

4. What do you think will be the key facilitators to introducing/sustaining the RISE programme in your school?

5. What do you think will be the key challenges to introducing/sustaining the programme in your school?

6. Finally, in your assessment, how many of the teachers in your maths department are keen on taking part in the RISE programme?
Please tick ONE only.

All/nearly all ☐ **Some** ☐ **Few** ☐ **None/hardly any** ☐

And how many of the English teachers do you think are keen on taking parting the RISE programme?

All/nearly all ☐ **Some** ☐ **Few** ☐ **None/hardly any** ☐

Many thanks for completing this. Please put this questionnaire in the envelope provided and hand the sealed envelope to Meg from the evaluation team.

Appendix H - Topic Guide for Case Study interviews

Research Lead guide *(modified slightly for head teachers/ department teachers)*

Explanation of purposes & Confidentiality
Confirmation of consent to participate and record

1. How long have you been a teacher at this school? What would you say are the particular challenges for this school as a whole?

2. How much was research evidence a part of your own teaching and the school as a whole before you started on RISE?

3. Who drove the decision for your school to become involved in RISE? How did you become research lead? Why did you want to undertake the role?

4. Overall, what have you thought of the RISE training? *Has it been as you expected? Have you learned anything new? What has been particularly useful; what has been a waste of time? Too much/ not enough/ about right in scale?*

5. With every school, the RISE Research Lead has had a slightly different role. In your school, what would you say your role has been? *How much management support would you say there has been for the role of research lead?*

6. Since attending the training, has the school made any changes that you feel are a result of RISE? *Please describe.* On what basis were those changes made? *(external research evidence – what sort, information sharing at training, data from the school) How well received have proposed changes been by the SLT? teachers?*

7. Have the teachers in your school had any CPD in the last year relating to research, evidence or evaluation? Was this as a result of RISE, or another initiative or something ongoing/existing?

8. Do you think being involved in the programme has made any difference to the <u>practice</u> or <u>awareness</u> of research evidence to the teachers in your department? *(in terms of preparation, structure or delivery) If so, describe changes, and reasons why the programme might have impacted. If not, reasons why.*

9. Do you think being involved in the RISE programme is likely to have made any difference to your students' attainment? In English? maths? In this years GCSEs? *If so, describe changes, and reasons why the programme might have impacted. If not, reasons why.*

10. What barriers have there been to your school becoming more evidence based? To making the most of the RISE programme?

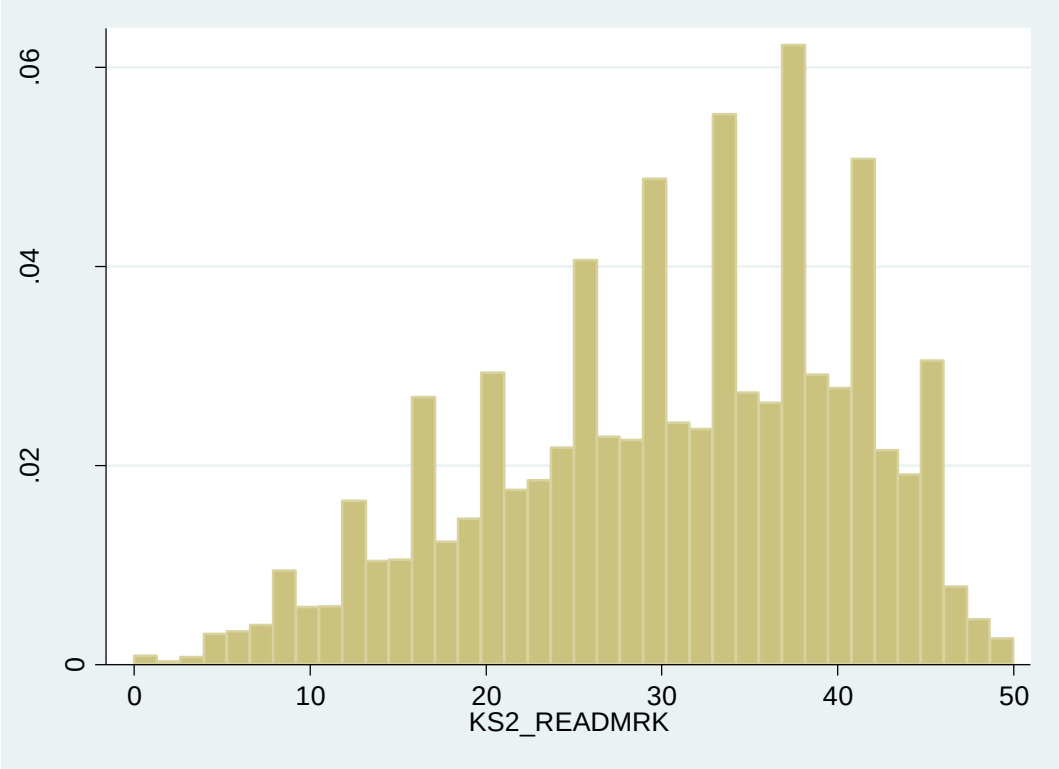
11. What has facilitated this?

12. When the funding for this project finishes, how sustainable will this type of work be in your school?

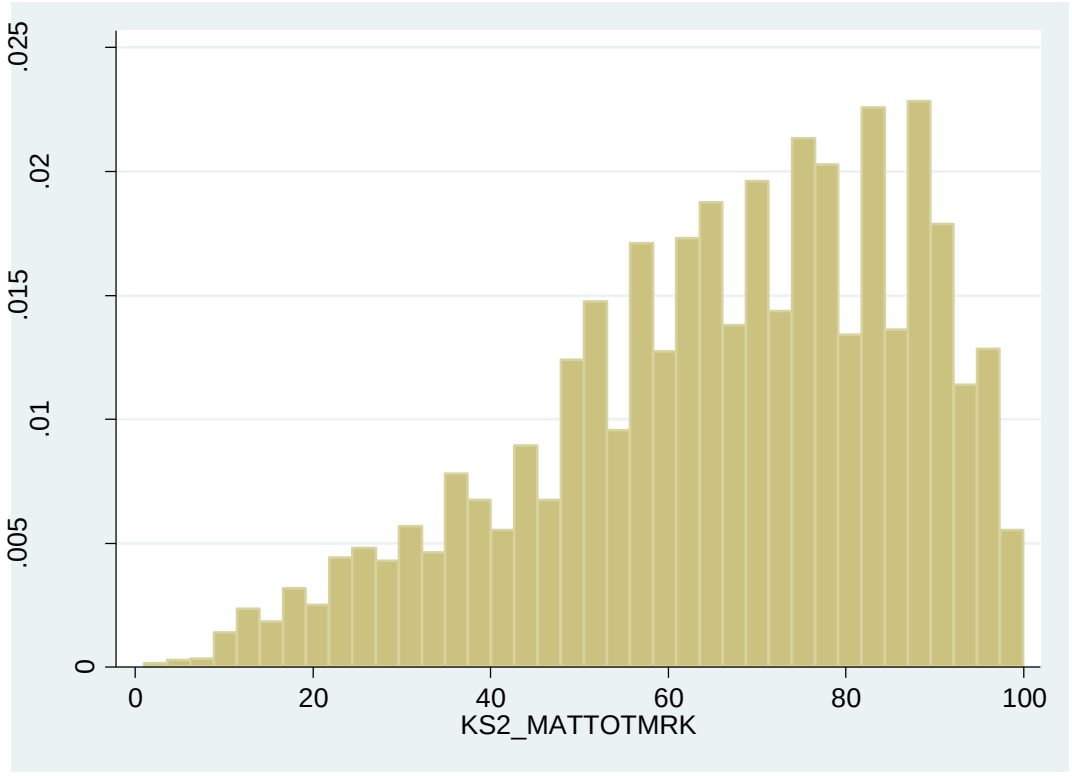
{Thank you and what happens next}

Appendix I: Histograms of distribution of Key stage 2 (pre-test) data for primary outcomes

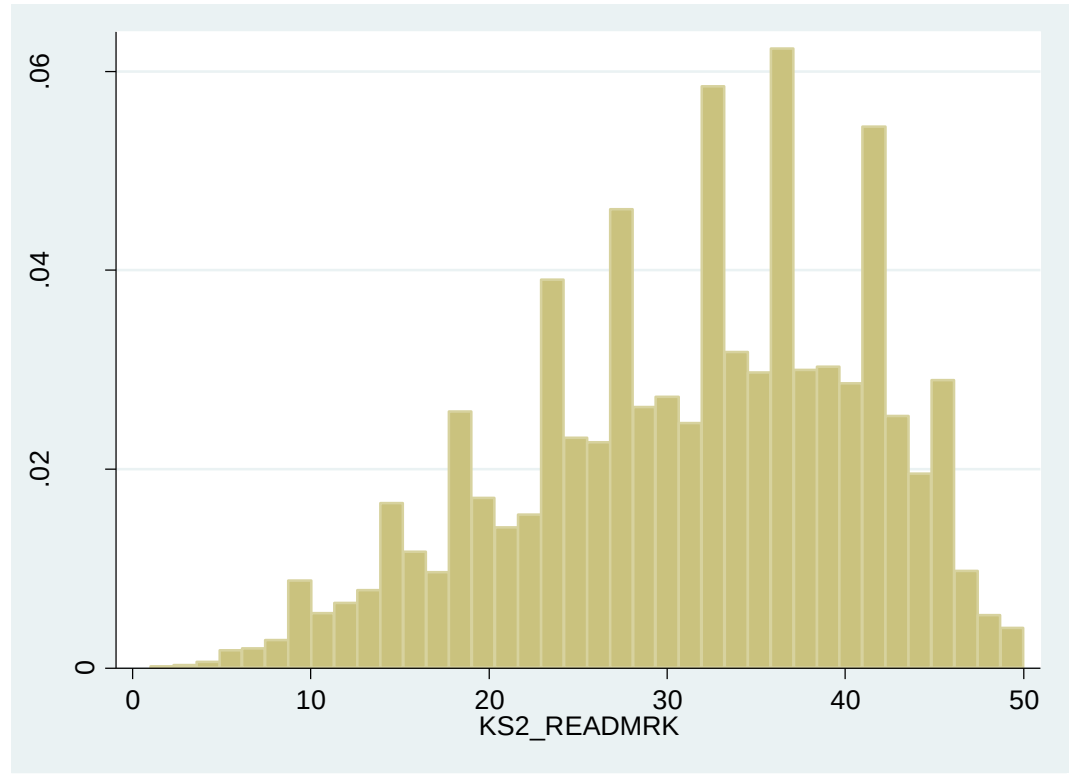
Appendix I, Figure 1. A histogram of Key Stage 2 (pre-test) reading scores. Cohort A



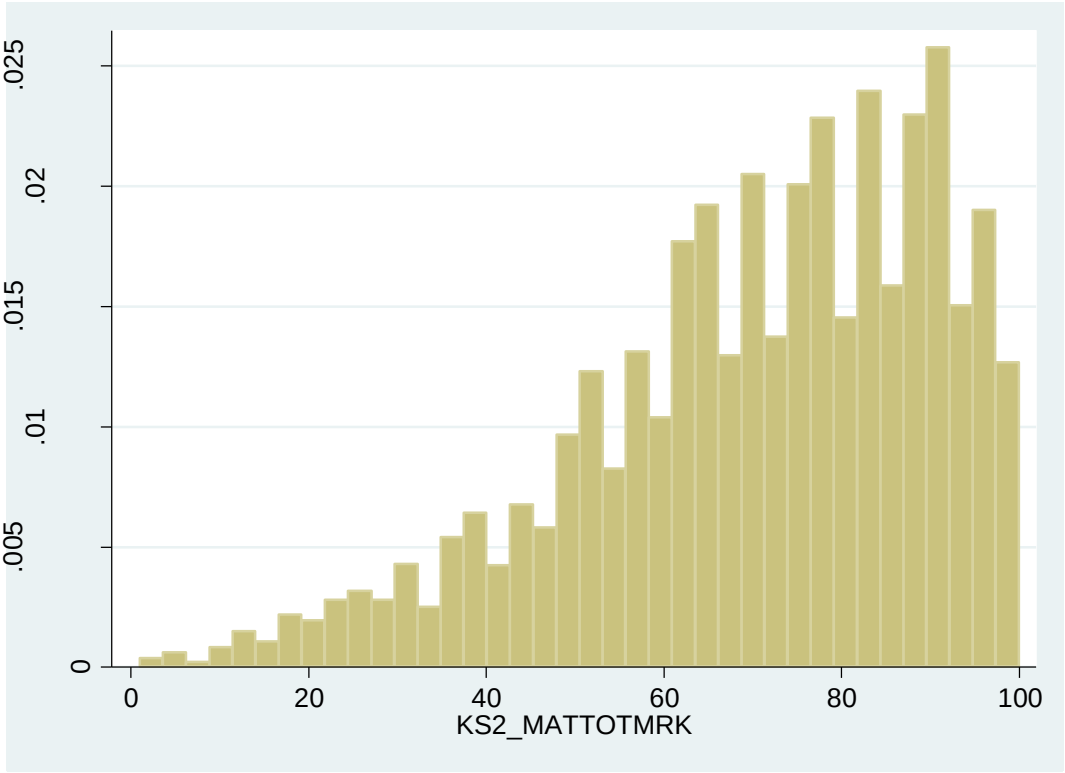
Appendix I, Figure 2. A histogram of Key Stage 2 (pre-test) mathematics scores. Cohort A.



Appendix I, Figure 3. A histogram of Key Stage 2 (pre-test) reading scores. Cohort B



Appendix I, Figure 4. A histogram of Key Stage 2 (pre-test) mathematics scores. Cohort B.


0
.005
.01
.015
.02
.025
0
20
40
60
80
100
KS2_MATTOTMRK

Appendix J –Teachers' Survey Data Descriptive analysis

1. Missing data / attrition

Number initially randomised

Number of teachers within the 20 treatment schools = 470
Number of teachers within the 20 control schools = 509

Number of teachers with data available

- Table 1 illustrates that attrition from the study was extremely high. For the 979 teachers initially randomised, we only have complete data (baseline and follow-up) for 76. A response rate of 8% (i.e. 92% attrition). We have outcome data (without baseline) for a further 98 teachers. If these teachers are included, the response rate increases up to 18% (i.e. 82% attrition). However, some of these teachers were not been in the school when the intervention began (i.e. they are new recruits to the school) and hence were not part of the 979 initially randomised.
- Therefore, the rate of attrition is somewhere between 82% and 92%. This is very high, with EEF guidelines stating that evidence quality receives zero padlocks if attrition is above 50%. Clearly, attrition from the teacher survey is well above this threshold.
- There are three major reasons for such high attrition. The first is schools not providing teacher lists to enable follow-up. The second is teachers not responding to the survey. The third is that the schools involved tended to have high rates of teacher turnover.
- Moreover, note that only around 140 of the 174 teachers have actually completed the survey scales of interest within this study. This will add a further level of non-response.

Appendix J, Table 1. The number of teachers with data available

Survey	Control	Treatment	Total	Response rate
Randomised	509	470	979	-
Pattern of data completion				
Baseline only	256	236	492	50%
Follow-up only	45	53	98	10%
Baseline & follow up	32	44	76	8%
Total completed some data	**333**	**333**	**666**	

2. Descriptive statistics from the teachers' survey

As part of the survey, questions were asked using the NFER survey tool. Six scales were then formed using teachers responses to these questions:

- Scale 1: Positive disposition to academic research
- Scale 2: Use of academic research to inform selection of teaching approaches
- Scale 3: Perception that academic research is not useful to teaching
- Scale 4: Perception that own school does not encourage use of academic research
- Scale 5: Active engagement with online evidence platforms
- Scale 6: Research knowledge

3. Comparison of mean scores following the intervention period

Table 2 below compares mean scores on the six-survey scale across treatment and control groups from the follow up, post intervention survey. These comparisons do not adjust for pre-intervention scores.

Appendix J, Table 2. Comparison of average post-test scores across treatment and control groups

	Control		Treatment	
	N	Mean	N	Mean
Scale 1 Positive disposition to academic research	71	21.05	72	21.76
Scale 2 Use of academic research to inform selection of teaching approaches	73	4.48	73	5.3
Scale 3 Perception that academic research is not useful to teaching	71	4.17	70	4.27
Scale 4 Perception that own school does not encourage use of academic research	71	5.54	70	4.94
Scale 5 Active engagement with online evidence platforms	70	4.9	70	5.22
Scale 6 Research knowledge	54	4.52	46	6.07

4. Regression model and effect sizes

Table 3 provides analogous estimates based upon OLS regression models. As baseline survey scores are missing for a large proportion of teachers with post-survey data, we use multiple imputation by chained equations to impute missing covariate data. The variables included in the imputation model include school-average baseline scores across the six survey scales. We have deviated from the SAP and because of the very low response rate, we have not undertaken complete case analysis, explored the patterns of missingness, nor undertaken sub-group analysis.

Appendix J, Table 3. Regression model estimates of the association between the intervention and teachers' research knowledge

	N	Difference	SE	Effect size
Scale 1 Positive disposition to academic research	143	0.715	0.551	0.19
Scale 2 Use of academic research to inform selection of teaching approaches	146	0.822	0.27	0.48
Scale 3 Perception that academic research is not useful to teaching	141	0.102	0.27	0.07
Scale 4 Perception that own school does not encourage use of academic research	141	-0.592	0.372	-0.34
Scale 5 Active engagement with online evidence platforms	140	0.321	0.206	0.28
Scale 6 Research knowledge	100	1.547	0.474	0.63

This document is available for download at https://educationendowmentfoundation.org.uk

The Education Endowment Foundation
5th Floor, Millbank Tower
21–24 Millbank
London
SW1P 4QP

https://educationendowmentfoundation.org.uk
@EducEndowFoundn
Facebook.com/EducEndowFoundn