

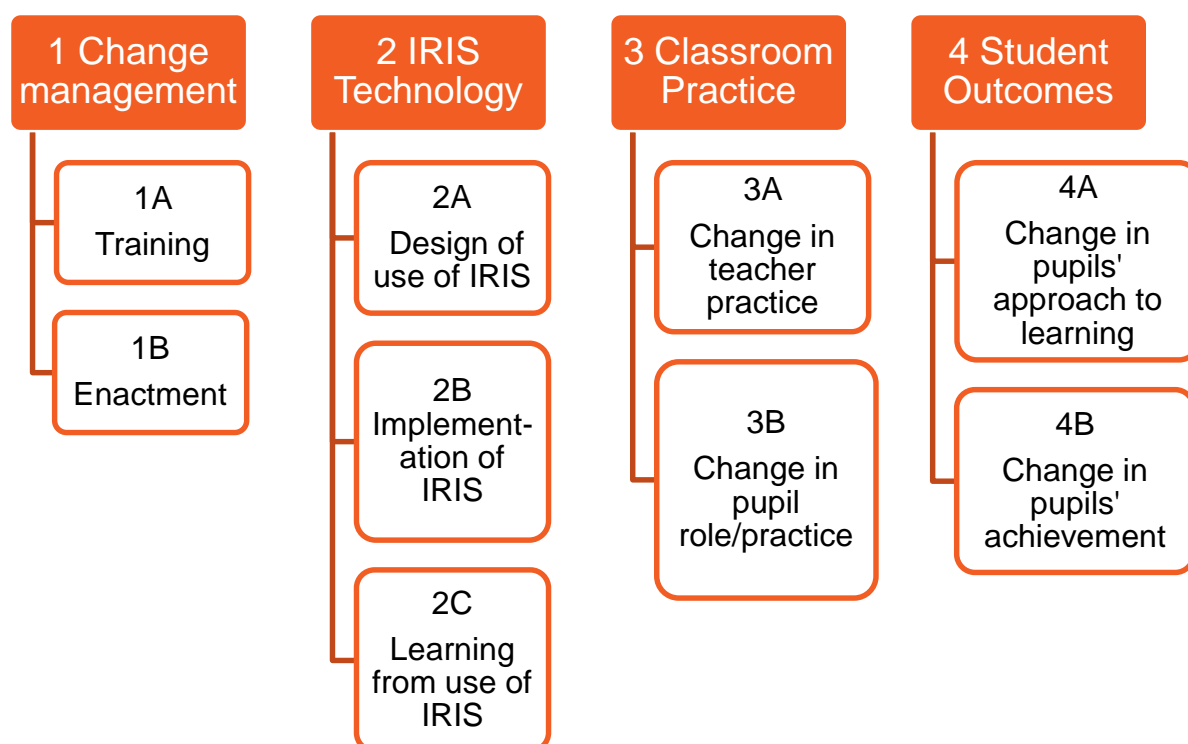
Evaluation Summary	
Age range	Pupils aged 10/11 or 15/16
Number of pupils	1000
Number of schools	24
Design	Developmental Pilot

Intervention

This intervention is predicated on a belief that school-wide change occurs when the introduction and development of a school initiative is managed as a gradual process as described the models of Joyce & Showers (2002) and Rogers (2010). This management process is expected to steadily increase the quantity of technology use (2B) and deepen the impact of using the technology on teachers' thinking (2C) and practice (3A). Previous research has reported improvements in the quality of teachers' analysis of classroom teaching and learning through the use of videoed lessons (e.g. Santagata et al. (2007). The IRIS system offers opportunities that appear to be an advance on this previous practice. In particular, it enables classroom videos to be reviewed and commented upon through an online platform. Moreover, the system facilitates comparison of practice and students' learning behaviours and this option (if used by teachers) might be expected to advance their thinking and practice if this comparison is used systematically to highlight critical dimensions in the quality of teaching (Pang & Marton 2003, Vikström 2014), The theory presumes that changes in teachers' thinking and practice which affect students' learning will operate in part through change in students' beliefs about their role as learners and what they do in the classroom. The benefits for children will be observed in their approach to learning as well as in their achievements.

The theory of intervention is portrayed in Figure 1. In general, the theory of causation runs from left to right in this diagram (1A-1B-2A-2B-2C-3A-3B-4A-4B), although the enactment of change management (1B) runs throughout the process.

Figure 1 Theory of Intervention



It is proposed to test this model through application in the provision of feedback. This choice is made in the light of the positive relationship between the quality of teachers' feedback and students' learning (e.g. Hattie 2013). This will provide a clear focus for schools' use of the technology and this will facilitate comparison. Schools participating in the development and pilot phases will be asked to use the IRIS technology to facilitate teachers' reflection on their practice in using feedback to improve students' learning using the guidance provided by the IRIS publication 'Teaching and Learning: 6 steps to success'. This will facilitate comparison and it will give the intervention a cohesive focus.

Methods

The intervention supports higher professional learning. A change management programme introduces and supports the use of IRIS technology to facilitate and embed evidence-based instructional strategies.

Research questions for the development phase

The development phase will be used to refine the change management programme and support for schools in using the IRIS technology. It will also be used to develop appropriate ways of gathering evidence of change in teachers' thinking and practice and students' learning.

Refining the change management process and support in using IRIS technology (see Table 1, page 6)

1. What initial factors affect school readiness for the change management process?
2. How are the schools enacting the change management strategy? Any challenges or adaptations?
3. What initial factors affect school readiness for implementation of IRIS?
4. Do the schools believe they have received enough support?
5. How are schools using IRIS?
6. What are the costs for schools in using IRIS?

Developing appropriate ways of gathering evidence of change in teachers' thinking and students' learning (see Table 2, page 6)

7. How can teachers' instructional practices be measured?
8. How can teachers' *thinking* about each instructional practice best be measured?
9. How can students' role/ engagement/ activity in each instructional practice be measured?
10. How can students' approach to learning be measured?

Research questions for the pilot phase

The pilot phase will be used to judge: (i) acceptability of the intervention to teachers and schools; (ii) likelihood of meaningful, sustainable and measurable change. These judgements will inform a decision on readiness for an efficacy trial.

The feasibility and acceptability of the intervention to schools and teachers (see Table 3, page 8)

1. To what extent have schools engaged with using the IRIS technology?
2. What costs have been incurred by schools?
3. To what extent do participating schools believe that their engagement with the IRIS technology has given them value for money?

The likelihood of meaningful, sustainable, measurable change (See Table 4 page 9)

4. To what extent have teachers changed their practice whilst making use of the IRIS technology?
5. To what extent have teachers changed their beliefs about teaching and learning whilst using the IRIS technology?
6. To what extent have pupils changed their activity and role whilst IRIS technology has been used by their teachers?
7. What would be the appropriate student achievement measures to use?

Design

Development Phase

During the development phase (May-December 2015) a process evaluation will support the refinement of the intervention and establish the basis for data collection during the pilot phase. The development phase will include primary and secondary age pupils pending a decision during the development phase about whether to focus on one age group at the pilot stage. The scope for using the evidence gathered directly through the IRIS technology (analysis of video extracts) will be reviewed during the development phase. A decision about whether to focus exclusively on maths or English will be taken during the development phase. The development phase will inform the pilot through providing the basis for choice of data collection methods including a baseline survey.

Pilot Phase

The pilot phase will be conducted between January 2015 and July 2015. The theory of intervention has several elements. The pilot will gather indicative evidence of the extent to which these elements adhere to the theory of change. At this stage it is envisaged that any efficacy trial would test the composite effect of these elements. There are two main reasons for this approach. First, IRIS and Whole Education regard the intervention as a complete package in which the power of each element is derived from the context of the whole intervention package. Second, evaluating the power of each element of the package would require a complex multi-stranded trial. However, the pilot may yield evidence which affects this judgement.

Sampling and recruitment

In each phase, 12 schools will be recruited from the state sector in England. It is provisionally estimated that about 500 pupils will be involved in each phase. This estimate is based on size of Year

6 and Year 11 cohorts in primary and secondary schools. Within each school the intervention will focus on English and mathematics. In the development phase IRIS and Whole Education will work with 12 schools currently in their network. The sample will include schools with a range of prior levels of engagement with IRIS. Schools' previous levels of engagement with IRIS will be recorded along with other school characteristics.

A different group of 12 intervention schools will be selected for the pilot phase. These schools will be selected from those known to IRIS but new to using the IRIS technology so that the pilot phase gathers indicative evidence of the impact of the technology on practice and learning. It is envisaged that the pilot phase will focus either on pupils in their final year of primary school or pupils in their final compulsory year of secondary school. A decision about whether to focus on primary or secondary schools will be made during the development phase in time for recruitment of pilot schools to completed in October. 2015.

Outcomes and evidence of promise

Decisions about the outcomes and measures for the pilot phase will be made on the basis of evidence collected during the development phase. The selection of outcomes and measures will take account of practicability and acceptability for participating schools as well as the technical merits of alternative measures in terms of validity and reliability. Evidence of promise will be determined through (i) evidence of the feasibility and acceptability of the intervention and data collection to participating schools and (ii) evidence of change in teachers' and students' classroom behaviour.

Implementation and process evaluation methods

The development phase will be used to

- Refine the process of the intervention including the guidance and support the schools; and
- Gather evidence to inform the selection of measurements used in the pilot phase.

Table 1 Process evaluation of change management in the Development Phase

Evaluation Question (Development Phase)	Link to Figure 1	Evidence to be collected	Output from Evaluation of Development Phase
1. What initial factors affect school readiness for the change management process?	1B	WE/IRIS to review existing experience using data collected through previous experience	Considerations for selection of schools in the pilot.
2. How are the schools enacting the change management strategy? Any challenges or adaptations?	1B	WE/IRIS will gather evidence through project meetings with schools and through conversations with school leaders. UoB will work as a critical friend in this process e.g. in relation to lines of enquiry and interpretation of data.	Revision of the 'Teaching is Learning Programme: 6 Step Guide to Success' (Guidance to Schools on Introducing and Developing their use of IRIS)
3. What initial factors affect school readiness for implementation of IRIS.	2B	WE/IRIS to prepare list of factors on the basis of prior experience. This to be focus of conversation between WE/IRIS and UoB. Action points for WE/IRIS for review of this list through the development phase.	List of initial factors affecting school readiness for implementation of IRIS: to be appraised during the pilot.
4. Do the schools believe they have	1B, 2B	WE/IRIS to send proposal for gathering evidence during the development to UoB for comment and then implement data collection.	Possible revisions to training and guidance (including Teaching is

received enough support?			Learning document). Evidence to inform process evaluation in the pilot.
5. How are schools using IRIS?	2A, 2B	WE/IRIS to provide UoB with a categorisation of different ways in which schools have used the technology. WE/IRIS to work with UoB to agree collection of data during the development phase on use of IRIS through (i) analysis of data captured online (ii) project meetings with schools.	Written guidance to schools to what to consider when deciding how to use IRIS
6. What are the costs for schools in using IRIS?	1A, 1B, 2B	WE/IRIS to provide UoB with detailed breakdown of actual licensing and training costs borne by participating schools and comparable costs for schools currently using IRIS. UoB to gather estimates of teacher time in change management and implementation using a pro forma with follow-up telephone interviews with 3 schools.	Procedure for collection of costs data during the pilot phase.

Table 2 Process evaluation of the role of IRIS technology in teaching and learning in the Development Phase

7. How can teachers' instructional practices be measured?	3A	UoB to review relevant literature on feedback and discuss with WE/IRIS. UoB to review video lessons captured online during the development phase and to propose a categorisation of practices exemplified by particular videos. UoB to discuss with WE/IRIS and agree a provisional categorisation. This categorisation to be discussed with teachers at a project meeting.	Categorisation of instructional practice to be evaluated through the pilot.
8. How can teachers' <i>thinking</i> about each instructional practice best be measured?	2C	UoB to review relevant literature on students' role in within feedback strategies and discuss with WE/IRIS. UoB to review video lessons captured online during the development phase and to interact online with teachers online re: their interpretation of and rationale for their practice, their interpretation of the video; what they believe they have learned through using the video; how they believe this learning is exemplified in their practice. These data to be supplemented by interview data from face-to-face interviews with teachers in two schools which (on the basis of the online data) it is believed will illustrate different conceptions of using feedback and differences in learning through the use of video. UoB to develop provisional categorisations of teachers' thinking, to discuss and agree with IRIS/WE and then discuss with teachers at project meeting.	Categorisation of teachers' thinking to be evaluated through the pilot.
9. How can students' role/ engagement/ activity in each instructional practice be measured/	3B	UoB to review relevant literature on students' role in within feedback strategies and discuss with WE/IRIS. UoB to review video lessons captured online during the development phase and to propose a categorisation of student role exemplified by particular videos. UoB to discuss with WE/IRIS and agree a provisional categorisation. This categorisation to be discussed with teachers at a project meeting.	Categorisation of student role to be evaluated through the pilot.
10. How can students' approach to learning be measured?	4A	UoB to review relevant literature on students' role in within feedback strategies and discuss with WE/IRIS. UoB to select 3 video lessons which they believe exemplify students adopting different roles in relation to feedback. To discuss this selection with WE/IRIS. Once categorisation is agreed – these lessons will be 'cartooned' to anonymise teachers and students. UoB to interview students in two schools (neither featured in the videos) initially to explore the students' conceptions of feedback, their role in feedback and how this relates to their learning. Then to invite students to comment on short extracts from the 3 videos which have been chosen in the belief that they illustrate differences in students' role. UoB to use this evidence to suggest different categories of student understanding/belief	Categorisation of student role in feedback to be evaluated in the pilot.

		about role in relation to feedback to be discussed with teachers at project meeting.	

The **Pilot Phase** will be used to evaluate the evidence of promise in terms of

- Feasibility, acceptability and cost of the intervention and measurement for schools (Table 3)
- Change in teacher and learner behaviour (Table 4)

Table 3 Evaluation of Feasibility, acceptability and cost to schools

Evaluation Question (Pilot Phase)	Link to Figure 1	Evidence to be collected	Output from Evaluation of Pilot Phase
1. To what extent have schools engaged with using the IRIS technology?	1B, 2B, 2C	WE/IRIS to gather evidence of schools use of the system and schools' views on support received using the pro formas developed or refined during the development phase. UoB to analyse these data	<p>The answers to these three questions will provide the main basis for judging <i>feasibility in terms of acceptability to schools and teachers</i>: feasibility will be judged in terms of what schools and teachers have been seen to do and the cost implications as well as in terms of schools' and teachers' voiced opinions on the usefulness to them of undertaking the intervention.</p> <p>The answers to these questions will also inform a judgement about <i>the readiness for trial</i> in terms of clear set of guidance to schools and the form of support provided when implementing this guidance.</p>
2 What costs have been incurred by schools?	1A, 1B, 2B	UoB to work with WE/IRIS in the gathering data from schools using a pro forma trialled during the development phase with clarification of these data through 3 telephone interviews.	
3 To what extent do participating schools believe that their engagement with the IRIS technology has given them value for money?	1B, 2B		

Table 4 Evaluation of change in teacher and learner behaviours

Evaluation Question (Pilot Phase)	Link to Figure 1	Evidence to be collected	Output from Evaluation of Pilot Phase
4 To what extent have teachers changed their practice whilst making use of the IRIS technology?	3A	UoB to work with WE/IRIS in implementation of the approach to the classification of instructional practice developed during the pilot (using video data, telephone interviews and pro forma).	<p>The answers to these questions will enable judgements regarding:</p> <p>1. The <i>clarity of the theory of change</i> as judged in terms of observable practice by schools, teachers and learners (and</p>
5 To what extent have teachers changed their beliefs about	3A	UoB to work with WE/IRIS in implementation of the approach to the classification of teachers' thinking developed during the pilot	

teaching and learning whilst using the IRIS technology?		(using video data, telephone interviews and pro forma).	therefore <i>readiness for trial</i>). 2. The extent to which the observed changes in practice are <i>likely to be sustainable</i> . 3. The plausibility of <i>impact on learning</i> given the observable changes in practice. 4. The relationship between resources made available to the schools, scale of use of IRIS and changes in practice (of teachers and learners) (i.e. what does 'high', 'medium' and 'low' dosage mean in the context of this intervention and what is the <i>importance of dosage</i>) 5. The <i>validity and reliability of process measures</i> which could be used to monitor adherence in an efficacy trial.
6. To what extent have pupils changed their activity and role whilst IRIS technology has been used by their teachers?	3B/4A	UoB to work with WE/IRIS in implementation of the approach to the classification of pupils' activity and role developed during the pilot (using video data, telephone interviews and pro forma)..	
7. What would be the appropriate student achievement measures to use?	4B	WE/IRIS to gather initial responses from schools re practicability issues in (i) choice of intervention year (ii) arranging for baseline testing using a bespoke test; (iii) extent to which testing arrangements might influence decisions about whether to participate in a full trial. Also WE/IRIS to gather data on school preferences re choice of subject to focus upon and the likely effect of a requirement to focus on a particular subject on their willingness to participate in a full trial. WE/IRIS to discuss with UoB and for the issues to be reviewed with teachers at the final project meeting in the development phase.	Informing choice of outcome measures and need for trialling arrangements at some future stage.

Costs

Data on costs of the intervention will be gathered in terms of (i) actual licensing and training costs borne by participating schools and (ii) estimates of teacher time in change management and implementation. The method of collecting costs for teacher time will be trialled during the development phase.

Ethics and registration

Ethical approval will be requested through the University of Birmingham ethics committee.

IRIS has existing procedures for gathering informed consent from parents for videos of pupils in classrooms to be used for teachers' training and development. This extends to use of these videos by teachers in other schools. The video technology has a facility for anonymising (through blurring) the faces of participants which can be used when permission for observation of individuals is not granted. The evaluation team will work with IRIS to ensure that the observation of videos by the evaluation team conforms to granted permissions subject to approval by the University of Birmingham ethics committee.

Personnel

Professor Peter Davies is Director of Research at the University of Birmingham's School of Education.

Role: Peter will lead the team, taking responsibility for research design, academic oversight of data collection and analysis, liaison with the intervention team and the EEF, reporting and keeping the project on schedule. He will negotiate the form of the process evaluation with the project team and lead the implementation of the process evaluation working closely with John Kirkman and Becky Morris.

John Kirkman is lecturer in science education in the School of Education at the University of Birmingham.

Role: John will support development of the intervention through the pilot and will support the research fellow (Tom Perry) in the collection of evidence for the process evaluation.

Experience: John is an experienced teacher educator currently holding a Universitas 21 Fellowship to work with the University of Hong Kong to develop 'Learning Study'.

Research Fellow (Tom Perry) Tom is a trained teacher with a first class degree Masters degree with distinction in Economics.

Role: Tom will work with John Kirkman in data collection and analysis for the process evaluation.

Lily Ilic is administrator for the Centre for Higher Education Equity and Access.

Role: Lily will be responsible for communications, data entry, storage and management.

Risks

Operational Risks - For the operational risks such as staffing and IT / assessment system we are confident that we have systems and procedures in place to minimise any risks.

School and pupil recruitment – The number of schools required for each phase is relatively small. IRIS and Whole Education have extensive networks and we do not envisage a problem in recruiting schools with a good range of prior experience of using video in teacher development.

Attrition and loss to follow up – The period of each phase is relatively short and this should reduce risks of attrition. Participating schools have the incentive of a reduced cost licensing agreement with IRIS which should encourage them to maintain their involvement.

Fidelity – the development and pilot phases will check on fidelity (in terms of engagement and focus of the use of the technology) and this will be one of the key indicators of evidence of promise.

Timeline

Date	Activity	Who?
1st May 2015	Development Phase Begins	
May 2015	Recruitment of Schools for Development Phase	IRIS/WE
May 2015	Setting up access for UoB evaluation team to online IRIS system	IRIS
June 2015	Proposal for gathering evidence during the development phase on whether schools believe they have sufficient support: to UoB for comment and then implement data collection.	IRIS/WE
June 2015	WE/IRIS to provide UoB with a categorisation of different ways in which schools have used the IRIS technology	IRIS/WE
June 2015	WE/IRIS to provide UoB with detailed breakdown of actual licensing and training costs borne by participating schools and comparable costs for schools currently using IRIS.	IRIS/WE
July 2015	Guidance on recruitment of schools for pilot on basis of previous WE/IRIS experience	IRIS/WE
July 2015	Review relevant literature on students' role in within feedback strategies and discuss with WE/IRIS.	UoB
July 2015	UoB and IRIS/WE to agree classification of ways in which schools are using IRIS technology. This classification to be used in data collection during the development phase.	UoB/IRIS/WE
July 2015	Review relevant literature on instructional practice related to feedback and discuss with WE/IRIS.	UoB
July 2015	IRIS to provide UoB with list of recruited schools for development phase, contact details and procedures for accessing use of IRIS by these schools during development phase.	IRIS
October 2015	Recruitment of schools for the pilot phase	IRIS/WE
October 2015	Revision of 'Teaching is Learning Programme: 6 Step Guide to Success' on basis of experience in the Development Phase	IRIS
October 2015	List of initial factors affecting school readiness for implementation of IRIS: - which will be used as reference point in the Pilot Phase	IRIS/WE
Sep-Nov 2015	Review video lessons captured online during the development phase and to propose a categorisation of practices exemplified by particular videos	UoB
Sept-Nov 2015	Face-to-face interviews with teachers in two schools re conceptions of using feedback and differences in learning through the use of video.	UoB
Sept-Nov 2015	Review video lessons captured online during the development phase and to interact online with teachers online re: their interpretation of and rationale for their practice, their interpretation of the video; what they believe they have learned through using the video; how they believe this learning is exemplified in their practice. Discuss with IRIS/WE	UoB
October 2015	Preparation for project meeting with schools: UoB to develop provisional categorisations of teachers' thinking	UoB

October 2015	WE/IRIS to discuss with UoB and for the issues to be reviewed with teachers at the final project meeting in the development phase.	WE/IRIS/UoB
November 2015	Written guidance to be used by Pilot Schools to what to consider when deciding how to use IRIS	IRIS/WE/UoB
November 2015	Gathering estimates of teacher time in change management and implementation using a pro forma with follow-up telephone interviews with 3 schools.	UoB
	Gather initial responses from schools re practicability issues in (i) choice of intervention year (ii) arranging for baseline testing using a bespoke test; (iii) extent to which testing arrangements might influence decisions about whether to participate in a full trial. Also WE/IRIS to gather data on school preferences re choice of subject to focus upon and the likely effect of a requirement to focus on a particular subject on their willingness to participate in a full trial.	WE/IRIS
January 2016	Pilot Phase begins	
Jan 2016	Information about pilot schools and planned use of video to be provided to UoB	IRIS/WE
Jan-May 2016	Gather data on changes in teachers' thinking and practice using analysis of video data, pro forma from the development phase	IRIS/WE/ UoB
March 2016	Review meeting to check on progress with data collection	IRIS/WE/UoB
Jan-May 2016	Gather evidence of schools' use of the system and schools' views on support received using the pro formas developed or refined during the development	IRIS/WE/ UoB
May 2016	Gathering data on costs of teacher time from schools using a pro forma trialled during the development phase	IRIS/WE
May 2016	Agree structure for evaluation report with EEF	UoB
May 2016	3 telephone interviews with schools to clarify information about costs in terms of teacher time.	UoB
June 2016	Analyse evidence of schools' use of the system and change in teachers' thinking and teachers' views on support	UoB
July 2016	Writing evaluation report	UoB
August 2016	Submission of First Draft Report to EEF	UoB

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