The Visible Classroom

Evaluation Report and Executive Summary

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The Education Endowment Foundation (EEF)

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

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

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

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

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

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

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

This project was co-funded by the EEF and Nominet Trust as part of a funding round focused on digital technology.

About the evaluator

The project was independently evaluated by a team from NatCen Social Research.

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The project

The Visible Classroom project aimed to use lesson transcripts to promote effective teaching practice and improve the attainment of pupils in primary school. The approach used 'real-time captioning' technology to generate a live transcript of teachers' speech in lessons and was developed by the University of Melbourne and technology provider Ai-Media UK.

Lesson transcripts were made available to teachers and used as the basis of a personalised 'dashboard' which provided information about key features of lessons, such as the balance of teacher and pupil talk, the amount of 'thinking time' given to pupils and the types of questioning used.

In addition, live transcripts could be projected directly onto a whiteboard or tablets. Pupils could use the transcripts to review learning instructions and goals, and used the devices to provide feedback on their learning at the end of each lesson.

This pilot evaluation involved ten primary schools in London and the West Midlands. Participating schools received training and followed the approach over two terms in the academic year 2013–14.

The evaluation had three aims. First, to assess the feasibility of the technology and overall approach. Second, to provide recommendations that could be used to improve the approach in the future. Third, to assess the promise of the approach, and its components, to inform any future trial.

This project was co-funded by the EEF and Nominet Trust as part of a funding round focused on digital technology.

Key conclusions
1. Overall, teachers were positive about the Visible Classroom approach, and believed that it had the potential to benefit both themselves and their pupils.
2. Most teachers were adept at using the technology in the classroom, even if they had not done so before this trial. There were some technical problems related to hardware, software, and internet connections, but after an initial bedding-in period most were overcome.
3. Though few teachers spent time reviewing the verbatim transcripts, the online dashboard and more detailed feedback reports based on the transcripts were seen as valuable tools to support teacher development. To maximise the impact of the feedback, teachers would benefit from being given greater opportunity to review and discuss their practice with peers and managers.
4. Pupils did not seem to use live transcripts of teacher dialogue regularly, consistently, or in a way that would suggest an obvious benefit in learning. Teachers had mixed views on whether the live transcripts might have additional benefit for disadvantaged pupils or their peers.
5. Further research would be required to assess the level of impact the approach has on academic attainment. Prior to considering a full trial it would be valuable to undertake some additional development work to refine the approach.

What did the pilot find?

The pilot study found that the Visible Classroom approach is feasible and has the potential to make an impact on teacher practice that may lead to benefits in pupils' learning.

Most schools that participated in the project were enthusiastic about the approach. Teachers appreciated having a record of their teaching performance and believed that they benefited from the analysis dashboard and the more detailed feedback reports. Though very few teachers spent time reviewing the entire transcripts of their lessons, all participating teachers used the dashboard regularly, and felt that this was the aspect of the approach most likely to change their behaviour and lead to increased pupil attainment. To further improve the impact of this component, it would be valuable to ensure that teachers are provided with allocated time to reflect on feedback, and are able to discuss the feedback with peers or managers. Most teachers were adept at using the technology, even if they had not done so before the project.

There was less evidence that live transcripts of lessons directly benefited pupils by increasing their engagement or enabling them to review previous parts of the lesson. Though some teachers thought that the transcripts were of benefit to children, many classes did not follow the live transcripts and some teachers actively discouraged pupils from following the live transcript during whole-class teaching.

Teachers also had mixed views about which pupils were likely to have most benefited from the live transcripts. Some felt that transcripts offered reinforcement and information checking for poorer performing pupils whilst others felt the pupils had to be fairly skilled to find the information they needed and so only the higher performing children were able to do this.

How was the pilot conducted?

The pilot was a qualitative evaluation of the Visible Classroom approach based on 27 semi-structured interviews with staff in participating schools, and two classroom observation visits. During observations the evaluation team assessed how the approach was used, levels of pupil engagement, and the use of tablets.

How much does it cost?

The approach is estimated to cost approximately £367 per pupil, based on five hours captioning per week over one school year and class sizes of 25 pupils. This estimate includes analysis costs (£158 per pupil), equipment (£12 per pupil), training (£125 per teacher), and live captioning (£192 per pupil).

| Question	Finding	Comment
Was the approach feasible?	Yes	All schools completed the project. There were no major technological problems.
Is there evidence of promise?	Mixed	Most teachers were very positive about the approach, and believed it had the potential to change their practice. However, pupils did not seem to use the live transcripts in a way that would suggest an obvious learning benefit.
Is the approach ready for a full trial?	No	Prior to considering a full trial it would be valuable to undertake further development work to refine the delivery of the approach.

Introduction

Intervention

The University of Melbourne and technology provider Ai-Media UK developed the concept of using captioning with pupils in Years 3-6 within the classroom setting to support pupil attainment and develop teachers' practice. Hattie's (2009) Visible Learning work provided a major impetus for giving teachers feedback about their teaching practice. He proposed that when teaching and learning are 'visible'—that is, when it is clear what teachers are teaching and what students are learning—student achievement increases. When teachers become more aware of their practice and gather structured feedback on their performance, they can make appropriate changes to better support pupils' learning. This project aimed to make teaching and learning 'visible' by using real-time captioning. They called this approach 'The Visible Classroom'. The University of Melbourne and Ai-Media UK worked with Nesta as their UK-based delivery partner for the EEF-funded development stage of this project.

While speaking in class, teachers wore a microphone which relayed their speech back to a transcriber or 'captioner'. This person (based in the UK) typed up what the teacher said, producing a live transcript, similar to subtitles. This written text was transmitted back to the class so pupils were provided with a real-time display of the teacher's dialogue during lessons ('captioning'). This could be displayed (using specific software) on tablets shared amongst the class.

Figure 1: The live transcription process
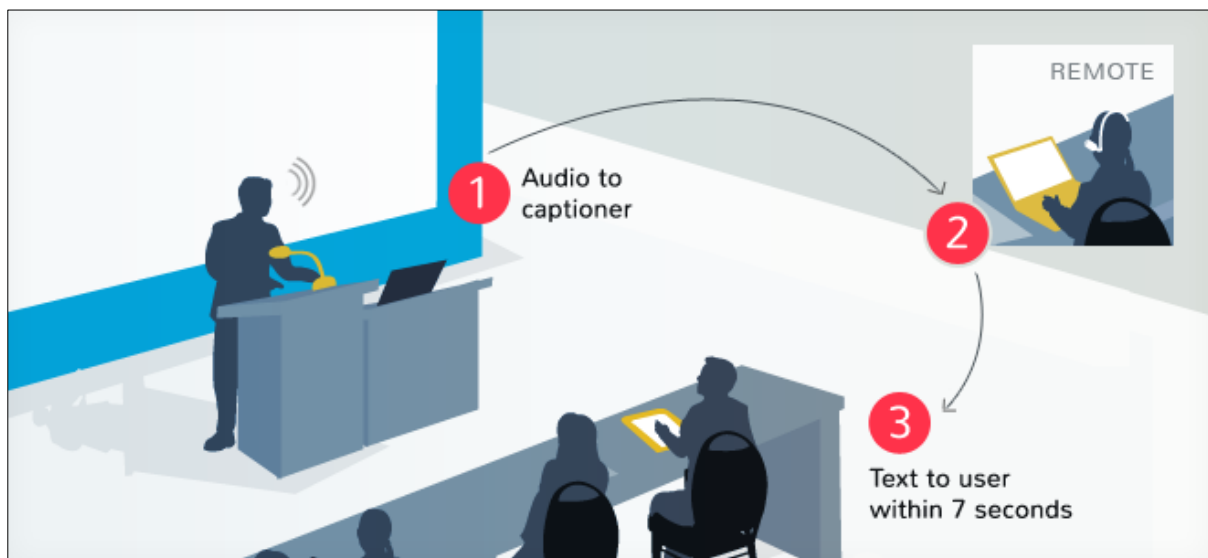
Each transcript was read by a transcript coder, part of the programme team. These coders measured aspects of the teachers' practice against a 16-point rubric developed by the programme team. This data was fed into the teacher's online dashboard.

After the lesson, teachers could review their teaching using the full transcripts and the online dashboard. This summarised the key features of their lessons, such as balance of teacher and student talk, 'thinking time' given to pupils, the types of questioning used, and speed of speech, along with the pupil feedback. Pupils were also required to complete an online survey about their experience of each lesson (see Appendix 3). This was completed jointly by the group of pupils sharing each tablet.

In order to further develop teacher involvement, an online forum was set up for participants and regular newsletters were circulated to those taking part. An individualised feedback report (see Appendix 4) was sent to each teacher twice during the trial (after six weeks for teachers in Phases 1

and 2 and after two weeks for teachers in Phase 3), which gave more detailed insight into their practice over the preceding period.

More information about the approach is provided at: **http://www.nesta.org.uk/project/digital-education/visible-classroom#sthash.75MlceDw.dpuf**

Background

According to the intervention team, the premise behind the intervention is that 'teachers who make a difference to student attainment understand their level of influence and have the ability and resources to collect and review evidence to support this impact' (Hattie, 2009; Clinton, 2015).

The approach had previously been used in a trial involving pupils with low academic achievement, pupils affected with learning difficulties, and pupils with who were deaf or hard of hearing (Melbourne Graduate School of Education, 2014). This evaluation instead focussed on implementing the approach for whole classes, assessing how well the technology could fit into mainstream education in the UK, and whether it had the potential to help raise the attainment of disadvantaged pupils.

Objectives

The aim of this developmental pilot was to test the feasibility and acceptability of the delivery model for schools in England. The evaluation had three aims. First, to assess the feasibility of the technology and overall approach. Second, to provide recommendations that could be used to improve the approach in the future. Third, to assess the promise of the approach and its components, to inform any future trial. More specifically, it sought to answer the following questions:

- Do any technological barriers exist and, if so, how can they be overcome?
- What more generally are necessary conditions for success?
- How well can the approach be embedded within the school setting and day-to-day teaching?
- What are teacher attitudes to the approach?
- What is core to the model and what is optional to the model? For example, could schools just use the transcripts, not the live captioning feed?
- Other questions, such as: are there any specific aspects that may differentially impact on disadvantaged children?
- How often should lessons should be captioned (both in terms of what is realistically deliverable and what is attractive to schools)?

Project team

NatCen Social Research led this evaluation, directed by Amy Skipp. Alexandra Fry, Nilufer Rahim, and Jonathan Paylor carried out interviews and observations of participants. Schools were recruited, trained, and managed by Nesta and the University of Melbourne team.

Ethical review

The project evaluation, including all materials used with teachers and data collection, was agreed by the internal ethical review board of NatCen.

Methodology

Evaluation design

A process evaluation was carried out spanning the full duration of the trial (from March to July 2014). Qualitative data from in-depth interviews with key stakeholders and observations of classroom practice were collected throughout each of the phases.

NatCen was commissioned by EEF to evaluate the project during the development stage, feeding back findings to the intervention team on a regular basis so that they could make changes to the project and take into account participants' experiences.

The evaluators worked collaboratively with the intervention team in order to:

- Collect process evaluation data to inform the design and technology used for any possible future trial.
- Define a general theory of change behind the intervention.
- Identify the hypothesised causal pathways that may lead to outcomes and the best way to set up and evaluate the intervention.

Participants

In total, ten primary schools were recruited to take part in the pilot study. The study was split into three overlapping phases with staggered start times in order for the approach to be adapted and developed:

- **Phase 1** involved five schools. Teachers from these schools participated in the project for up to four months during the Spring and Summer terms 2014.
- **Phase 2** involved three schools. Teachers from these schools participated for up to two and a half months during the Summer term 2014.

In both Phases 1 and 2, during weeks 1–4 teachers were asked to use the approach in at least two literacy lessons a week. After this they were invited to use the approach however much they wanted, in whatever lessons they chose.

- **Phase 3** involved two schools and tested a more intensive version of this approach, in which they used the approach for at least one lesson a day (resulting in 5–10 hours per week) but over a period of just one month. Teachers from these schools participated for up to one month at the end of the Summer term 2014.

Levels of use were captured by the intervention team from numbers of sessions booked and transcripts produced.

The ten state schools that participated in the project were from two regions in England—the West Midlands and Greater London. A total of 36 teachers participated in the project.

Table 1: Characteristics of participating schools

School	Phase	Local authority area	Number of pupils	Pupils receiving free school meals at school (%)	Number of participating teachers
1	1	Dudley	220	60.2	2
2		Dudley	518	22.4	4
3		Dudley	215	71.8	2
4		Dudley	622	8.2	4
5		Dudley	787	50.3	4
6	2	Birmingham	390	56.5	4
7		Birmingham	227	64.0	3
8		Dudley	477	7.9	5
9	3	Hackney	373	35.8	4
10		Hounslow	429	16.9	4
		England national average	257	26.7	

The intervention team was responsible for recruitment. Schools within chosen local authorities were invited to take part in the pilot study and evaluation. Phase 1 schools were recruited at an event in Dudley. Phase 2 schools were largely recruited through Nesta contacts, with one school recruited at the initial recruitment event. Phase 3 schools were recruited through Nesta contacts. After recruitment, each school nominated teachers to participate. In most cases these were all of the teachers for a whole year group (such as all Year 5 teachers). Schools selected were intended to be representative of a range of potential users of the technology so that findings would be as generalisable as possible. This included schools in urban and rural areas, schools with higher and lower levels of technology experience, and those with more newly qualified teachers and those with more experienced teachers who may be less familiar with the use of technology.

All schools were sent information packs and consent forms to be signed by all teachers involved in the project as well as information sheets for parents. Pupils' speech was not captioned or recorded in the transcripts, so parental consent was not sought.

The intervention

This pilot study of the Visible Classroom approach ran during the academic year 2013–14.

The intervention team:

- provided schools with between six and eight tablets per class (unless the school already owned devices).
- supplied the appropriate equipment and software to allow real-time captioning from participants' classrooms. This included microphones and mobile telephone connection.
- facilitated analysis of each transcribed lesson via an online dashboard (see Appendix 2).
- produced two feedback reports per participant, based on analysis of several of their lessons.
- set up an online forum for participants and circulated weekly e-newsletters containing project updates and examples of practice.
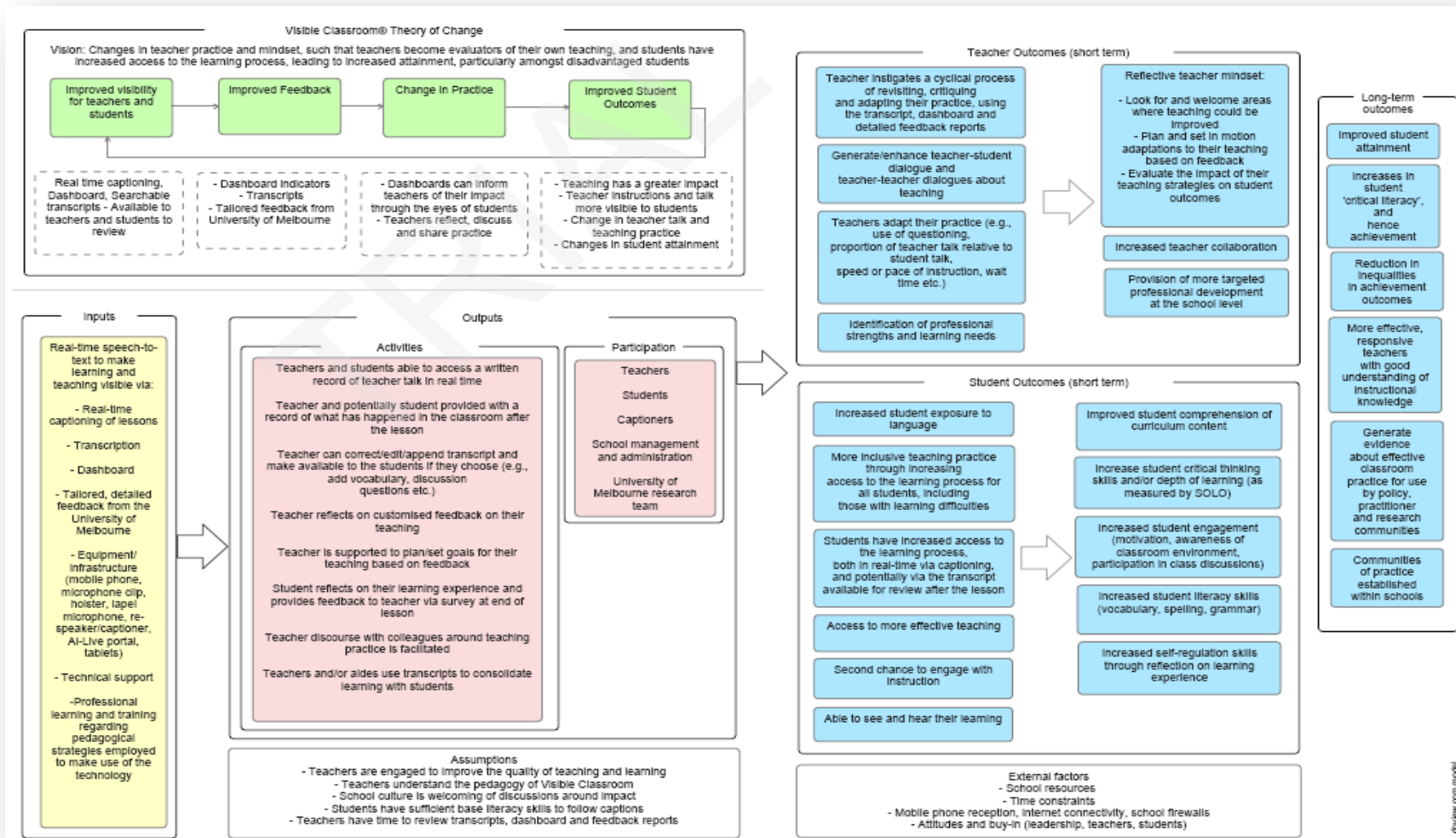
The school participants:

- used captioning for lessons as instructed with pupils in Years 3–6

- booked their transcription sessions with captioners in advance and uploaded any preparatory materials (to highlight particular vocabulary and topics and tasks, for example)
- asked pupils to complete a brief survey of their experience of each lesson
- received full transcripts of their captioned lessons
- accessed an instant 'dashboard' of analysis of their lesson delivery
- accessed an online discussion forum and were sent weekly newsletters about the trial.

Theory of change

The intervention team developed this model to reflect their approach prior to the pilot study. The evaluation was based around this, looking for evidence that the approach was leading to the outputs specified or that the outcomes detailed were being realised and by which mechanisms. The evaluation findings therefore could be used to refine this model or suggest where further evidence is required.

Figure 2: The theory of change

Visible Classroom® Theory of Change

Vision: Changes in teacher practice and mindset, such that teachers become evaluators of their own teaching, and students have increased access to the learning process, leading to increased attainment, particularly amongst disadvantaged students

- Improved visibility for teachers and students
- Improved Feedback
- Change in Practice
- Improved Student Outcomes

- Real time captioning, Dashboard, Searchable transcripts - Available to teachers and students to review

- Dashboard indicators
- Transcripts
- Tailored feedback from University of Melbourne

- Dashboards can inform teachers of their impact through the eyes of students
- Teachers reflect, discuss and share practice

- Teaching has a greater impact
- Teacher instructions and talk more visible to students
- Change in teacher talk and teaching practice
- Changes in student attainment

Inputs

Real-time speech-to-text to make learning and teaching visible via:

- Real-time captioning of lessons
- Transcription
- Dashboard
- Tailored, detailed feedback from the University of Melbourne
- Equipment/ infrastructure (mobile phone, microphone clip, holster, lapel microphone, re-speaker/captioner, Ai-Live portal, tablets)
- Technical support
- Professional learning and training regarding pedagogical strategies employed to make use of the technology

Outputs

Activities

Teachers and students able to access a written record of teacher talk in real time

Teacher and potentially student provided with a record of what has happened in the classroom after the lesson

Teacher can correct/edit/append transcript and make available to the students if they choose (e.g., add vocabulary, discussion questions etc.)

Teacher reflects on customised feedback on their teaching

Teacher is supported to plan/set goals for their teaching based on feedback

Student reflects on their learning experience and provides feedback to teacher via survey at end of lesson

Teacher discourse with colleagues around teaching practice is facilitated

Teachers and/or aides use transcripts to consolidate learning with students

Participation

- Teachers
- Students
- Captioners
- School management and administration
- University of Melbourne research team

Assumptions
- Teachers are engaged to improve the quality of teaching and learning
- Teachers understand the pedagogy of Visible Classroom
- School culture is welcoming of discussions around impact
- Students have sufficient base literacy skills to follow captions
- Teachers have time to review transcripts, dashboard and feedback reports

Teacher Outcomes (short term)

Teacher instigates a cyclical process of revisiting, critiquing and adapting their practice, using the transcript, dashboard and detailed feedback reports

Generate/enhance teacher-student dialogue and teacher-teacher dialogues about teaching

Teachers adapt their practice (e.g., use of questioning, proportion of teacher talk relative to student talk, speed or pace of instruction, wait time etc.)

Identification of professional strengths and learning needs

Reflective teacher mindset:
- Look for and welcome areas where teaching could be improved
- Plan and set in motion adaptations to their teaching based on feedback
- Evaluate the impact of their teaching strategies on student outcomes

Increased teacher collaboration

Provision of more targeted professional development at the school level

Student Outcomes (short term)

Increased student exposure to language

More inclusive teaching practice through increasing access to the learning process for all students, including those with learning difficulties

Students have increased access to the learning process, both in real-time via captioning, and potentially via the transcript available for review after the lesson

Access to more effective teaching

Second chance to engage with instruction

Able to see and hear their learning

Improved student comprehension of curriculum content

Increase student critical thinking skills and/or depth of learning (as measured by SOLO)

Increased student engagement (motivation, awareness of classroom environment, participation in class discussions)

Increased student literacy skills (vocabulary, spelling, grammar)

Increased self-regulation skills through reflection on learning experience

Long-term outcomes

Improved student attainment

Increases in student 'critical literacy', and hence achievement

Reduction in inequalities in achievement outcomes

More effective, responsive teachers with good understanding of instructional knowledge

Generate evidence about effective classroom practice for use by policy, practitioner and research communities

Communities of practice established within schools

External factors
- School resources
- Time constraints
- Mobile phone reception, internet connectivity, school firewalls
- Attitudes and buy-in (leadership, teachers, students)

dcview.com model

Methods

Qualitative data from in-depth interviews with key stakeholders and observations of classroom practice was collected throughout each of the phases.

At least one teacher was interviewed from every school. Teachers in each school in Phase 1 and 2 were interviewed at least two (and up to four) times throughout the pilot study. Teachers in each school in Phase 3 were interviewed once, at the end of their phase.

Table 2: Interviews carried out in each project phase

Phase	Number of schools	Number of interviews
1	5	17
2	3	8
3	2	2
Total	10	27

Two observation visits were carried out (one in a Phase 1 school, and one in a Phase 2 school) which involved watching how the intervention was running, interviewing staff, and holding small informal group discussions with pupils. More observations were not conducted due to timing and availability issues within schools and the evaluation team.

All other interviews were by telephone and involved teachers updating us on progress, issues associated with implementation, and programme perceptions.

The interviews were semi-structured, based around a topic guide (see Appendix 5) to ensure systematic coverage of key issues, but also flexible and interactive, allowing issues of relevance for individual respondents to be covered through detailed follow up questioning.

When signing up to participate in the pilot study teachers were given details of what the evaluation would involve (see Appendix 6). They opted in to taking part and providing their contact details. Verbal consent was sought from interviewees at the start of the interview for their anonymised feedback to be reported on and shared with the intervention team.

The interviews were digitally recorded and subsequently analysed using Framework, a systematic approach to qualitative data management developed by NatCen Social Research and now widely used in social policy research. All participants were told that everything discussed in the interview would remain confidential and would be treated in accordance with the Data Protection Act. In addition, it was made clear, both on recruitment materials and during the interview, that their views or opinions would not be discussed outside of the research team, including sharing individual feedback with the intervention team.

Process evaluation

In this section, we examine each element of the Visible Classroom project in turn. Although each element is seen by the intervention team as an integral part of the approach, it was felt that it was important to investigate each separately.

We then report on the overall intervention in terms of perceived impacts, future use and sustainability, and recommendations for potential future evaluation.

Training

This subsection covers the engagement of participating teachers and feedback on the training content and format.

When the intervention team recruited schools to take part in the trial, it was often the headteacher who agreed for the school to participate in the project, although it was the teaching staff who would actually be involved in the day-to-day working of the pilot study. Therefore, several participants knew very little about the project and what participation would involve before the training event. They had in effect been told they were taking part and that they should attend the training. This may have had an effect on how 'on board' they were with the approach and their engagement and fidelity to the approach.

A one-day training event was held for participants in each intake before the start of Phase 1 and Phase 2. For Phase 3, a two-hour training event was held with participants in their own school.

Teachers found the training event very informative and were positive about the interactive approach. They had the opportunity to observe a demonstration of captioning and to access the system and see the feedback dashboard. They felt there was ample opportunity to ask the training staff questions. They appreciated meeting with staff from other schools to discuss the project and gather ideas of how to implement it.

The training events were modified slightly after the first event (based on participant feedback) in order to provide sufficient theoretical background to the project and the concept of captioning, and to allow all participants sufficient opportunity to try out the technology. They also requested more explanation of the rationale behind which aspects of their practice were analysed and the evidence behind this.

Teachers at the Phase 1 training seemed unaware of why specific aspects of practice were highlighted, or that they were going to receive more in-depth feedback throughout the trial. Once the pilot study was underway they were looking at the dashboard to see how many words a minute they were using but they did not know why this was important for their teaching practice or have any idea of benchmarking their practice against good practice. In order to self-evaluate they needed to have these principles firmly embedded in their minds so they knew what they were working towards. The evaluation team notified the programme team of this issue, which led to them changing the training content for Phases 2 and 3.

Teachers requested that more choice of training dates be available to them. This was to ensure all of the staff involved had a chance to attend but that schools weren't left short-staffed by too many teachers having to be out on the same day.

The format and content of the training day by Phase 3 were generally considered appropriate by attendees.

Technology

This subsection covers:

- participants' experience of technology use
- use of technical support
- provision of equipment
- reliability
- concerns over appropriate use of tablets by pupils
- accessibility
- suitable numbers of tablets per pupils.

Participating teachers had a wide range of experience with using technology (including owning iPads or tablets, using laptops in class, and experience with online booking and support tools). Those few who were not proficient users of such systems struggled more with the concept of the project as well as integrating it into their everyday teaching and development practice.

What also seemed to make a difference was that some schools had technical support available to them. Where this was the case, support was available for setting up the tablets ready for lessons, closing down and deleting apps after lessons, and dealing with any access problems and other technical issues throughout the project. For schools where such a person did not exist, teachers found that these tasks took quite some time, and that this time took them away from other tasks. Teachers who struggled with the technology also turned to other staff who had more personal experience for help, or to Ai-Media UK.

The support from the intervention team was considered good, although response to issues did sometimes take some time. In a few cases this meant that schools were without one, two, or sometimes three out of eight tablets at a time. With too many tablets out of use, some teachers decided to suspend their involvement from the trial until the problems were resolved.

Unfortunately some technological difficulties required tablets being replaced or being sent away for repair. Other issues appear to have been caused by incorrect use or lack of knowledge of the software and so should have been possible to remedy quite quickly, with sufficient and accessible support.

In terms of equipment, early on it was suggested that teachers needed microphone clips and phone holders (so they did not have to hold a microphone or mobile throughout lessons) and these were provided. Similarly, checks were needed to ensure that any schools using different tablets (such as iPads they already had) were able to run all of the systems as they should. This caused some delay for some schools. Additionally, stands were ordered for the tablets to sit on as otherwise they were being laid flat on the table (where no one could see the screen content) or pupils were having to pile books up behind in order to stand them up.

Many of the schools raised issues of reliability. It is not possible to know if this was due to problems with their use or problems with their equipment. When these issues occurred teachers reported that they generally '*just put the tablets aside and went back to normal*' to prevent too much distraction from the lesson. This is a key consideration for any future trial as it could reduce the number of lessons that could be captioned.

Use of the tablets and familiarisation with the software, dashboard, and making online bookings definitely bedded in over time. Teachers suggested having a two-week preparation phase before the trial begins to accommodate this familiarisation and to deal with any teething issues.

Teachers reported initial concerns about pupils downloading apps and using the tablets in a way they should not. However, this resolved itself after a short time, as pupils lost interest in the novelty of the

tablets. Some schools had felt the need to discuss appropriate use of tablets with participating pupils, but this did not appear to be any sort of problem throughout the trial. Many schools already used such technology in class and so giving tablets to children of this age was not considered inappropriate.

Concerns were raised about the number of tablets available to pupils. In most classes, five or six pupils shared one 7" screen tablet. In many classroom settings, this meant that it was not possible for all of the pupils to see the transcript on screen. Many classes for pupils this age arrange seating in blocks and teachers said they felt it would work best if pupils could have one tablet between two. This would not only allow them to all be able to see the screen better but also increase the opportunities each pupil could take control of the tablet. In our classroom observations we saw that some children not only could not see a tablet screen from where they were sitting but also that many did not get a chance to hold the tablet, look through the transcript, or complete the lesson survey. This was clearly causing difficulties in some classes; for example, one interviewee scored the lesson poorly as he had not had a chance to touch the tablet screen in the lesson.

Some children were given their own tablet because of special educational needs and/or behaviour issues. We saw an example of a magnified screen for a child with visual impairment and a few children who had their own tablets either because they sat separately in class or with a teaching assistant or because their behaviour meant they were unable to share. It is interesting to consider whether use of the tablets is meant to improve teamwork and sharing and therefore whether guidance should be provided on this.

Likewise, some schools where several teachers were taking part in the trial were not provided with enough tablets for more than one class to use them at a time. This meant that teachers had to negotiate between them when each class could use the tablets. For schools where the whole year group does similar lessons at the same time, this led to some planning issues. Teachers suggested the optimum number of tablets in a class to be one between two.

Some teachers were concerned about the high level of daily use of the tablets and how quickly they were looking damaged. There were slight concerns about how quickly the tablets would look tatty or be damaged and the question of whether protective cases could be provided to reduce this.

In general, the technological issues were resolved and there were far fewer examples of issues after Phase 1.

Captioning in class

This subsection covers the use of live captions by pupils in class, referring back to transcripts, benefits of captioning for groups of pupils, the use of captioning in different subjects, and the extent to which the tablets caused distractions that may have detracted from learning.

By captioning teacher's speech in real-time and presenting it in written format almost instantaneously to pupils, it was intended that pupils would have several routes to learning, and thus have a direct positive impact on learning. The captioner aims to enable pupils to:

- connect oral and written expressions of language
- catch up on areas of the lesson they might have missed
- review teacher instructions and explanations during lessons by looking back through the transcripts on their tablets.

All teachers told us how important they considered it for pupils to be looking at the teacher when they are speaking to the whole class. This was a skill that pupils generally had to learn and it helped the teachers to control behaviour and engagement in learning. The idea of the pupils then having the option of watching the screen in front of them or interacting with the tablet while the teacher spoke was of some concern. All of the teachers spoke of needing each child's attention and that the tablets were a potential distraction from this.

Initially pupils found the captioning novel. They were interested in the idea of someone sitting listening in to their class and then typing what was said. Some pupils noticed the delay between the teacher speaking and the words appearing on their screen and occasionally words being misheard or mis-typed. However, there were no reports of these being common issues. Some teachers instructed children to not look at the screens while the teacher was speaking.

This novelty did not seem to last much past the first couple of weeks of the trial though. In our observation sessions (in week 3 of Phase 1 and week 7 in Phase 2) we only saw a few pupils even glance at the captions on screen during the lessons for either whole class or group/individual work.

If following the live captioning is expected of the children, and the intervention team think that access to this written record is likely to have a beneficial impact on pupils, then the fact that there is very little use of it is a concern. The theory of change states that outcomes for pupils are achieved by:

- Increased exposure to language
- Increased access to the learning process, both in real-time via captioning, and potentially via the transcript available for review after the lesson
- Ability to see and hear their learning
- A second chance to engage with instruction.

All of these points rely on the pupils using the captioning, and although it was not made explicit what extent of use is required, there was no evidence, from interviews or observations, that a high proportion of pupils were using the live captioning. It is possible that more instruction for the pupils on how to make the best use of captions would have been beneficial.

In terms of their use, it was reported that some children scrolled back over what the teacher had said. In some cases teachers suggested this as a strategy if pupils missed something that was discussed, needed instructions repeating, or the teacher was explaining something to a small group. If the teacher felt they had said something to a small group which may benefit the whole class then the pupils would all be encouraged to look back through the record of what the teacher had said.

In any future trial, the intervention team should make sure that the transcript is not used to the detriment of teachers' practice. For example, if pupils are regularly not able to follow instructions there may be a risk that teachers keep telling them to refer to the transcript, rather than questioning if their initial explanations were sufficient.

Teachers disagreed as to which students were more able to review and benefit from the transcripts. Some teachers thought that the ability to review what had been said would benefit lower ability pupils the most. They thought these children would be able to get the extra clarification they needed; for example, on what tasks they should be doing or how they should be doing them, and so would be more on-task and less likely to ask for help in class. However, other teachers thought that the ability to scroll back was dependent on the child having a certain level of ability in the first place. Teachers felt that finding the pertinent information or understanding it from the written word when they had not understood it from what was spoken required a high level of literacy ability. They therefore thought that the captioning was of greater benefit to higher ability pupils.

Some teachers noted that scanning the live transcripts and pulling out the information required a high degree of cognitive processing as well as ability and technique in using tablets. Some pupils were also physically more adept at using the tablets and it appeared obvious to teachers which children were used to having tablets at home and knew how to use them.

During the first stage of each of the phases, when schools were encouraged to only use captioning during literacy lessons, teachers reported that the captions provided important reinforcement of spelling, new concepts and words, and allowed them to give more detailed instructions. There were initial concerns about how captioning would fit into other lessons, especially maths (there were concerns that numbers would appear as words as would fractions and functions such as 'three times four'). In practice, we had reports of captioning being used in several other subjects and having a perceived beneficial effect, including the comments below:

- **Maths**—the layout supported learning (as it showed and therefore reinforced the use of mathematical symbols) and scrolling back helped children follow previous examples that had been worked through.

- **Science**—although children were working in groups and possibly at different stages the teacher could provide one set of instructions for everyone to follow at their own speed.
- **Physical education**—during noisy activities the teacher could present their instructions to the class directly via the tablets.

Overall, teachers reported the benefits of having captioning in class as being that:

- Pupils could scroll back to clarify instructions or refer to previous examples.
- Instructions or support could be given to pupils working in different groups at the same time.
- Children needed to ask fewer questions for clarification.

However, we found two issues that raised concerns about whether the captioning was having the intended impact:

- Many pupils were not watching it in real-time, so any anticipated benefit from that element of the theory of change is unlikely to materialise.
- Some teachers felt the processing required for children of this age to scroll back to find relevant information was so great that only higher ability pupils would benefit from this facility.

Pupil surveys

This subsection covers feedback on the end of lesson pupil survey. Generally this element of the approach was not seen as adding substantial value to the teachers' feedback based on lesson transcripts, and yet reduced learning time in lessons.

The theory of change states one of the approach's outputs as:

'Students reflect on their learning experience and provide feedback to the teacher via a survey at the end of each lesson.'

The reason for getting pupils to complete a survey at the end of each transcribed lesson is so that they feel more involved in the learning experience and teachers are able to modify their practice based on their pupils' experiences. In practice, the majority of teachers did not see any purpose for this aspect of the trial, and this was confirmed in our observations and discussions with the children.

The survey contains five statements which are answered using a five-point scale by each group of pupils sharing a tablet. The statements include:

- Please rate the quality of your learning in class.
- My teacher explains difficult things clearly.
- When I am confused my teacher knows how to help me understand.

In general, teachers or leaders in participating schools did not regard children in Years 3 to 6 as able to review their own or their teachers' performance over a one-hour lesson, nor to make valid judgements on a five-point scale. The overwhelming feedback on the survey was that teachers knew children would score them highly, just because they liked them. Most teachers stopped referring to this feedback as it had no relevance to the lesson. Most children did not appear to discuss amongst their groups what feedback to give and did not base their scoring solely on issues being asked about:

'Interviewer: So you just scored that one a 1. Didn't you like the way you learnt in this class?

Pupil 1: No, me and J[pupil] wanted to give a 1 last time but S[pupil] wouldn't let us 'cos she had the thing [tablet]. So this week we get to do the scoring, so we're putting a 1.'

Completing the survey took time out of the lesson. In general, teachers stopped pupils working 5–10 minutes early in order to answer it, and they were concerned that if this task was not relevant then learning time should not be taken up by it.

Transcripts

This subsection covers:

- Time needed to read transcripts;
- frequency of use of transcripts;
- use of transcripts for professional development;
- sharing of transcripts with peers and managers

The full transcript of a one-hour lesson could be very time-consuming to read. Teachers were not able to find time to go back over most of their transcribed lessons, let alone review their performance. Inevitably, the more captioning the teachers booked, the more there was to read, which was a disincentive to using the system to its full potential.

'At first the only chance I got to look at them was at night when I was in bed. I'd read some bits out to my husband and asked what he thought! But now I don't get round to reading them at all.'

Many teachers also felt that they were not in a position to necessarily learn much from simply reading the transcripts. Initially, some were surprised at how much they spoke, or noted how they could have phrased questions better and so on, but they needed external guidance on how to make changes to their practice.

Fitting in opportunities to review practice, digest, and learn from the transcripts or feedback was very challenging. Likewise, we had very few reports of any participating teachers discussing their practice with others.

The theory of change set out the intention that teachers will work with others, including their manager, to reflect on and improve their performance:

- Teacher is supported to plan/set goals for their teaching based on feedback
- Teacher discourse with colleagues around teaching practice is facilitated

We did not find evidence that this was happening. In some cases where several teachers were involved in the project they might have had conversations about their transcripts or what they had thought upon reviewing them, but these were the exceptions.

In general, we found very little wider discussion of the project beyond the specific teachers taking part. Interviews with headteachers revealed that many had not had time to see the captioning working in a class, or seen any of the transcripts of teachers' lessons.

This overlaps with another finding: that teachers seemed to feel more confident taking part in the project with the reassurance that all of the feedback on their performance was personal and so private to them. Many were comforted by the fact that no one else would see their assessment. Reassurances had been given by the intervention team that no data would be disclosed from transcripts, dashboard analysis, or the feedback report.

Had the project required discussion of performance within schools it is likely that it would have been received very differently. Some interviewees mentioned that the system had potential to be used like an observation, so senior staff could assess teacher performance by reading the transcript or reviewing the analyses. This was perceived to be a daunting prospect and many spoke about how

they would see that as being counter-productive and that reviewing their own performance was more beneficial. This raises the issue of how teachers know, by themselves, how to improve their practice.

The feedback reports were revised following the evaluation team notifying the intervention team of some teachers' concerns. The final versions used contained a stronger element of directing practice for improvement, which may help address this.

For any future trial it is important to note that:

- Teachers did not have, and did not appear to be able to make, time to read through full transcripts
- Teachers were not using their transcripts or other feedback as the basis for discussions with their managers about their performance and development

If this system is to be seen as a tool for professional development, it needs to contain as many pointers as possible to how teachers can improve their performance. There should also be guidance provided to schools on designating some participants' PPA time to review their performance on the project, and on encouraging participants to discuss transcripts/feedback with their managers.

Dashboard

Even though teachers were not looking back over their lesson transcripts, all regularly reviewed the data on the online dashboard. This subsection covers what aspects of this element they found useful and provides suggestions for further development.

The dashboard contained lesson-level analysis of teacher performance, including:

- Teacher's average number of words spoken per minute
- Number of teacher questions versus number of student questions
- Percentage of teacher dialogue per session
- Responses to the pupil survey

With the exception of the pupil survey results discussed above, teachers found the information it contained very useful and in some cases discussed their analysis with other participants. This was mainly as there was no guidance on what 'good' levels were and so they were comparing in order to get a sense of how they were doing.

This was seen as a way of reviewing performance without having to read the transcripts and so the more information contained on their personal dashboard the more feedback teachers would be getting on their performance (if this is possible whilst maintaining the brevity of the data).

Similarly to their lesson transcripts, teachers saw 'their data' as personal to them and were hesitant about the idea of other people seeing it. They did not like the idea of being judged by their analysis and some were initially unsure why particular features of their practice had been highlighted.

Figure 3: Example of data dashboard presentation
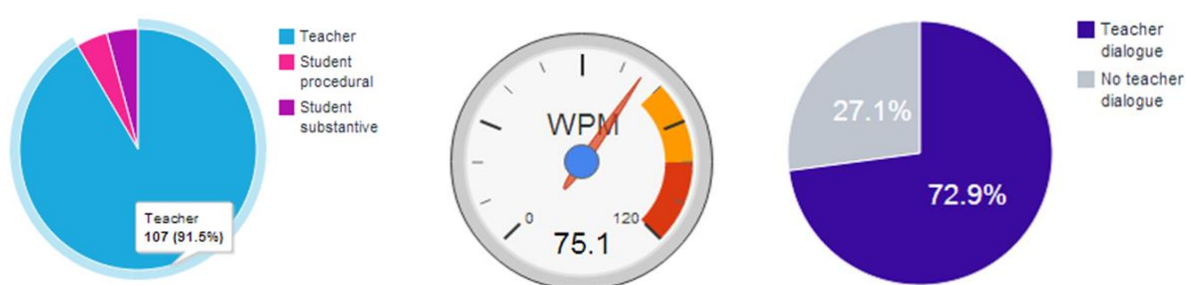
Feedback reports

As well as reviewing the data on the dashboard, participants also found the feedback reports that amalgamated of this data very useful. This subsection covers what aspects of this element they found useful and contains suggestions for further development.

The intervention team produced feedback reports for every participant at the midpoint and end of their trial involvement. The content and layout of these reports was amended substantially during the different phases of the trial, with later versions meeting the needs of teachers well. The reports are written by members of the intervention team based on higher level analysis of individual transcripts and changes over time. This analysis is carried out by comparing practice to an agreed rubric, covering 16 features of 'good' teaching (see Appendix 1). The reports covered teachers' performance on:

- Promoting critical understanding and thinking
- Promoting engagement and understanding
- Providing feedback and additional Instruction
- Pupil feedback

In addition, they provided information on how to understand the analytics in the online dashboard.

The feedback report covered:

- Which aspects of teaching are covered by the analysis
- Individual performance in relation to the performance of other teachers in the same phase
- What the results mean
- Suggestions for improving practice

The reports were seen as one of the highlights of the project. All teachers enjoyed receiving their personalised data and seeing it set within the wider context of good teaching practice. They all felt they benefited greatly from seeing their performance in relation to others and they hugely appreciated the tailored advice within the reports. There was a feeling that much of this background and benchmarking would have been useful for them to have known about earlier on in the phase, especially as it helped them make more sense of the dashboard analytics.

In particular, the revised version of the feedback report provided to schools in Phases 2 and 3 was well received. Teachers thought this was a useful tool for them and an excellent way to review and modify their performance. They thought it was the right length and was set out clearly, including stating why certain features were highlighted.

Initially, there were concerns about how long these reports would take the intervention team to produce and whether this approach was scalable to a larger group of participants. However, following the first round of reports changes were made which decreased the time taken to produce them whilst

at the same time improving their accessibility, without losing the personalisation which teachers valued.

Following their experience with this trial we believe the intervention team are now fully able to produce these regularly to a larger cohort of participants and that this is a key element to the impact this project may have.

An extract from a feedback report is shown in Appendix 4.

Forum and newsletter

The idea of an online forum to share feedback, exchange ideas for captioning use, and get advice on practice was good in theory as it could have facilitated peer support and the dissemination of good practice. However, as noted throughout, time was the major barrier to teachers using the one set up for this project. Forums do not work so well if there is little use and little information being put on them, so then participants use them even less. Participating teachers could not see how they would easily find sufficient time to be able to engage in this activity in a way that is useful for them and the project.

The newsletter, on the other hand, was seen as a really useful tool and this may be a better method of information exchange (despite being less interactive). Teachers found it helpful to read about different approaches and experiences and the newsletter made participants feel part of a wider project which may have increased their motivation to stay involved.

Perceived impacts

Although no analysis of pupil performance or attainment was carried out for this trial, teachers were asked what effect they felt the system was having on their pupils. This subsection discusses perceived benefits and issues for further development reported by participants and covers:

- Pupil behaviour
- Literacy and use of transcripts
- Which pupils benefited most
- Professional development and teachers' behaviour change

A number of teachers perceived that the tablets gave pupils more focus, or kept those who otherwise would have been struggling to follow engaged. There were reports that, since having the tablets in class, behaviour had improved and there was less disruption. Some teachers also used the fact that 'someone else is listening in' (i.e. the captioner) as a means of controlling behaviour in class. Several also made lessons they were planning to have transcribed free from all other distractions including having a sign on the door saying they were not to be disturbed, or limited the amount of small group work carried out ('*we don't do different group tasks when we have the captioner on*'). These features could all have improved class behaviour.

Teachers did not generally think that providing pupils with access to live transcripts was likely to increase levels of literacy, but did believe that it might help pupils to follow instructions in class and therefore to stay more engaged. Overall, the use of tablets by pupils was quite low and so the value of this (more expensive) element was questioned by teachers. If the captions do not act as a reinforcement of literacy and pupils do not regularly review them, or are unable to find the information they need, then the role of providing tablets to all pupils is unclear. As explained previously, teacher surveys were not felt to have been reliably completed, which also suggests the scale of tablet use should be reviewed.

As noted above, there were differences of opinion about which pupils benefit most from the system. Some teachers felt it supported lower ability children as they were able to review what the teacher had said and get help from the transcript. Others felt that poorer performing children of this age were not able to scan and filter the information contained in transcripts in order to find the parts that would

be useful. They felt that higher ability pupils got most benefit from the system as they could make the most effective use of it.

The age of participating children was questioned. Teachers wondered if even pupils in Year 5 (aged 9–10) were sufficiently skilled in processing large amounts of written data and extracting the pertinent points, let alone younger pupils. They were also unsure whether having tablets in the classroom was adding value to the learning experience of children this age, especially at a point when paying attention to the teacher was being emphasised.

Interestingly, not a single teacher had concerns about pupils being listened to by the captioner, and several thought it would have been helpful to have included pupils' comments in the transcript. There were no issues raised about confidentiality as teachers felt that as long as individuals were not identified, this could only add to the value of the transcripts. They thought that there was more to be learnt about their practice by including children's speech in the classroom and especially their responses to teacher questions. This may be a consideration for future development.

The focus of this intervention, as perceived by participating teachers, does appear to be teachers' professional development and improving their practice in line with evidence-based approaches. We do not believe that pupils or teachers saw the pupils' involvement (either having tablets to read the transcript, or completion of the survey) as a crucial element of this.

Teachers spoke highly of the effect the dashboard and especially the feedback report had on their performance. They were definitely more aware of what they were saying, how they were saying it, and how much they were talking. They were also modifying their behaviour in response to this. Certainly, after the six-week feedback report they had more of an idea of how they should modify their teaching and several examples were provided of steps they had taken.

This element could be strengthened further by using the feedback as a focus for discussions with peers and managers. Teachers are always going to be limited in their development if they are reviewing their own performance and coming up with ideas for change themselves. Sharing the analysis and discussing ways to address certain features is likely to bring about greater benefit. However, there was great reticence towards showing this analysis to others. The reason for this was not clear, as it could have been a feature of how the analysis was presented or how teachers felt about being assessed by anyone. There was a fear that, if this approach was rolled out further, this could be the first step towards Ofsted inspecting teachers' performance, and that others could make judgements on teachers' abilities by looking at their transcripts, dashboard, or feedback reports.

Very little was known about the project and the trial by other staff members within schools. A more open approach to what is involved in captioning, the feedback and benefits for professional development may have helped to normalise the intervention, and reduce the worry.

'There's lots of negativity from other teachers. They just don't "understand" what we're doing. They seem to think people will use it to judge them.'

How much does it cost?

The approach is estimated to cost approximately £367 per pupil, based on five hours captioning per week over one school year and class sizes of 25 pupils. This estimate includes analysis costs (£158 per pupil), equipment (£12 per pupil), training (£125 per teacher), and live captioning (£192 per pupil).

Dosage

The level of use of transcription was recorded by the intervention team (see Figure 4, below). The columns indicate the total number of lessons transcribed by all of the teachers in Phases 1, 2, and 3 separately for the 'pre-feedback' and post-feedback' stages.

Figure 4: Number of transcripts completed in the pre- and post-feedback periods
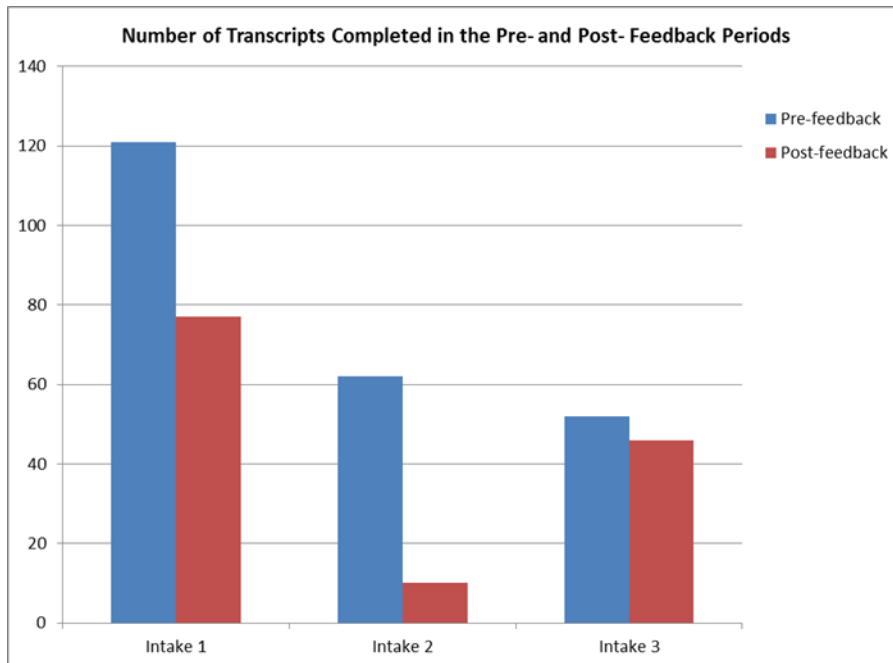
In the 'pre-feedback' period schools in Phases 1 and 2 were supposed to transcribe two lessons a week, while schools in Phase 3 were supposed to transcribe four a week. In the 'post-feedback' period schools were free to transcribe as many lessons as they wanted. The degree to which teachers completed booked lessons, and the degree to which teachers continued to use transcription in the post-feedback period may provide an indication of what level of transcription teachers found attractive.

Data collected by the intervention team showed that teachers completed 65%, 70%, and 75% of booked lessons in Phases 1, 2, and 3 respectively. This suggests that in Phase 3 schools trialled the approach over a shorter more intensive period.

In the post-feedback period, teachers generally chose to transcribe fewer lessons than in the pre-test period, although the average number of lessons transcribed varied between Phases 1, 2, and 3. In Phase 3, teachers were supposed to transcribe at least four lessons a week prior to receiving feedback. This seemed to encourage them to maintain higher levels of transcription throughout. They were averaging just under three transcribed lessons a week when free to decide their level of use (compared to one a week for Phase 1 and one a fortnight for Phase 2).

Future use, sustainability, and roll out

Anticipated future and wider use of the approach was dependent on schools' experience with the technology, level of perceived benefit for both pupils and teachers, and confidence in use of their data.

In general, teachers were positive about the Visible Classroom project and were interested in using the technology in some way in the future, as well as recommending others to try it. There were some recommendations on how this should happen though.

First, schools suggested that there be clear messaging about how the data would be used and they should be provided with reassurances that it would not become a tool to judge competency.

'It sounds a scary prospect to use, and no other teachers in the school are keen to try. They think it may be used to judge teacher practice. It needs to be made clear it's for teacher benefit only, and cannot be used by, for example, Ofsted. Ideally it would work just as a teacher tool.'

Second, teachers were interested in seeing what impact the approach had on teaching and pupil learning, especially those with specific learning needs or who struggled with literacy and reading, before implementing the approach more widely in their class or school.

'I would love to use the visible class long term. I thought it was amazing, I really did, I loved it. But I'd want to see the data to check it is useful for pupils on a broader scale. The other teacher in our school also enjoyed using it but used it less than me. I'd recommend it to other schools for pupils with concentration, hearing, and behaviour issues. I'm not sure about using it with younger pupils because it may be useless if they're unable to read sufficiently.'

Third, teachers who had used the technology thought that it was better suited to some lessons and subjects than others. The tendency was towards using it more for language-based subjects, such as literacy or history, rather than more practical subjects. This is important when considering advice on how teachers could best use the technology, and considering how it fits into schools.

'I would use it long term but only for some lessons and not all the time. I wouldn't use it in practical lessons though, because children need all the desk space and should be left to their own devices rather than distracted by the recordings. It might be better suited to use in the Autumn term, really, when we're less busy. This would give teachers more time to review and familiarise themselves with the technology too.'

Fourth, schools chose not to implement the project with their Year 6 pupils, or stopped using it with these pupils in the run up to the Spring/Summer term. This shows that they had concerns about how much it would support or distract pupils, or lead to deviations from what and how they had to teach for pupils approaching their end of Key Stage exams.

The only negative feedback was around the level of technology reliability in the school setting, reported to various degrees by nearly all participants. Schools' attitudes to future use were affected by issues with getting their equipment to work and the support and speed of response they got from Ai-Media UK.

'I'd probably not use it again and would advise other schools to ensure that all their technology will work every time before the class come in.'

In the case of the school who dropped out (and withdrew from the evaluation) they did not feel that this was a project they could continue with as it had not been adequately explained to them by their management. This should be kept in mind if considering a larger trial as participating teachers need to be fully familiar with the project, its ethos, the captioning, technology, and what its role is supposed to be in the classroom. Where staff are not completely engaged with every aspect of the approach, or willing to learn, or where staff change, this can lead to lack of fidelity or attrition from the project.

Conclusion

Key conclusions
1. Overall, teachers were positive about the Visible Classroom approach, and believed that it had the potential to benefits both them and their pupils.
2. Most teachers were adept at using the technology in the classroom, even if they had not done so before this trial. There were some technical problems related to hardware, software and internet connections, but after an initial bedding-in period most were overcome.
3. Though few teachers spent time reviewing the verbatim transcripts, the online dashboard and more detailed feedback reports based on the transcripts were seen as valuable tools to support teacher development. To maximise the impact of the feedback, teachers would benefit from being given greater opportunity to review and discuss their practice with peers and managers.
4. Pupils did not seem to use live transcripts of teacher dialogue regularly, consistently or in a way that would suggest an obvious benefit in learning. Teachers had mixed views on whether the live transcripts might have additional benefit for disadvantaged pupils or their peers.
5. Further research would be required to assess the level of impact the approach has on academic attainment. Prior to considering a full trial it would be valuable to undertake some additional development work to refine the approach.

Limitations

The main limitation of this pilot evaluation is that no explicit data was collected by the evaluation team on levels of pupil or teacher engagement. We did not monitor quantitatively how much the live captioning was used in classes, how much and in what ways teachers were using the transcripts or dashboard, or what level of discussion was taking place with colleagues and managers based on these.

Moreover, no impact data was collected. This means we did not measure changes in teacher performance before, during, and after the trial. It also means that we cannot say if the approach had any effect on the academic attainment of pupils and, if so, whether it impacted more on any particular subgroups of students.

More observations of captioning use in classrooms could have been useful, especially over time as the approach bedded in. Similarly, more work could have been carried out to explore pupils' use of tablets, perceived benefits, and their opinions on the approach.

Interpretation and considerations for any future trial

Based on the feedback collected from participating teachers, there are a number of recommendations for how the approach, or aspects of it, could be developed for future wider use. In addition, the pilot has raised a number of issues to be considered for any future trial of the approach.

The Visible Classroom approach was well received in general and teachers felt there could have been benefits of using such a programme. However, there was no consistent message on what effects it was having, which pupils it was most likely to be benefiting, or how it was likely to help them.

The initial introduction to the project needs to engage the relevant teachers directly, as well as school leaders, as this buy-in is important for the sustainability and success of the intervention.

The training needs to clearly set out the theory behind the rubrics used to assess performance and the features summarised in the feedback, and why these are important to develop teaching practice.

Schools should be prepared for the additional tasks associated with using tablets in the classroom and/or preferably have a staff member who is responsible for the setting up and closing down of the technology before and after lessons.

Support from Ai-Media UK needs to be as responsive as possible and available by phone so that problems are resolved promptly. Where tablet faults are identified, replacements need to be in place quickly. More problems with hardware and software occurred initially and so the intervention teams need to be prepared for this or allow a bedding-in period.

The dashboard analysis was the most highly used element of the approach and so could be developed further (to cover additional aspects of practice, or suggestions for practice development) to maximise the level of teacher reflection on performance and behaviour change.

Feedback reports are an element of the project that could be developed even further in terms of coverage and signposting to support in order to add as much value as possible to teachers' professional development.

Analysis in feedback reports should be presented less as a personal tool and more as the basis for further discussion to aid development. At the same time, teachers do need the reassurance that their results will not be shared with anyone they do not choose to share them with.

External factors, such as staff availability and SLT (senior leadership team) level of engagement, played a significant role in the implementation of the approach. The intervention team should try to mediate or allow for these.

The theory of change may need to be revisited in terms of what are realistic expectations of an intervention in a real-world context. It may be that expectations of teacher performance and engagement, plus the anticipated level of impact, are too high.

Future research

There are a number of outstanding questions that may warrant further evaluation:

- Which areas of attainment is this approach most likely to impact on and how dependent is this on the lessons in which it's used?
- Is there sufficient added value of having the real-time captions available to all pupils to justify the additional cost of the technology?

There was little evidence of live transcripts being used consistently or regularly. In addition, teachers disagreed on how pupils should use the captioning, and about which pupils were likely to have benefited most from their use.

Following from that:

- Is the impact on attainment greater for some pupils than others? Is this likely to be more for disadvantaged pupils? Is this related to how transcripts are used?
- Is one tablet per two pupils the best provision? Does this level of provision increase use of transcripts by pupils? How affordable is this?

The trial did not cover particularly remote areas, or those with known internet problems (such as rural regions). The unreliability of technology was cited as an issue and this is likely to be worse in less urban areas/less internet-enabled schools.

There was evidence of a 'tailing off' effect over the course of the study. This reduction in engagement was shown by the reduced use of lesson captioning as well as increasingly reluctant participation in the evaluation. More work could be done to identify the best ways to maintain engagement over time and continue developing teacher practice.

Finally, it could be worthwhile to investigate the relationships between student feedback and factors such as lesson content, format, or the teacher's performance.

References

Allen, J., Gregory, A., Mikami, A., Lun, J., Hamre, B. and Pianta, R. (2013). 'Observations of Effective Teacher–Student Interactions in Secondary School Classrooms: Predicting Student Achievement with the Classroom Assessment Scoring System—Secondary'. *School Psychology Review*, 42: 76–98.

Clinton, J. (Forthcoming) 2015. 'The Visible Classroom: Intervention Team Report'.

Hamre, B.K., & Pianta, R.C.(2005). 'Can Instructional and Emotional Support in the First-grade Classroom make a Difference for Children at Risk of School Failure?'. *Child Development*,76: 949–976.

Hattie, J. (2009). *Visible Learning: A Synthesis of Over 800 Meta-analyses Relating to Achievement.* New York: Routledge.

Marzano, R. (2009). *The Art and Science of Teaching: A Comprehensive Framework for Effective Instruction*. Association for Supervision and Curriculum Development.

Measures of Effective Teaching Project (2010). *Learning about Teaching: Initial Findings from the Measures of Effective Teaching Project*. Bill and Melinda Gates Foundation.

Measures of Effective Teaching Project (2013). *Feedback for Better Teaching: Nine Principles for using Measures of Effective Teaching*. Bill and Melinda Gates Foundation.

Melbourne Graduate School of Education (2014). 'Evaluation of the Victorian Deaf Education Institute Real-Time Captioning Pilot Program. Internal Report. The University of Melbourne.

Appendix 1: Transcripts and transcript coding

Ai-Media provided the University of Melbourne team with copies of the transcripts received by teachers (that is, the printed versions of the captions that appear onscreen during the lesson) to analyse for evidence of change in teacher practice or interactions within the classroom over the course of the term since the introduction of captioning. In order to analyse and understand effective teaching practice, a rubric-based coding scheme with four main components was developed (see the next subsection below). This allowed for an examination of teacher practice and provided insight into its potential influence on student outcomes such as engagement and achievement.

Transcript coders were familiarised with the rubric and trained by the project manager who acted as lead coder during this project. Training included providing an overview of the rationale and decision-making process that underpinned the final 16 criteria, and a collective, collaborative analysis of transcripts, to ensure reliability across coders. Coders were then given several practice transcripts to analyse, which were checked and cleaned. Analysis of live transcripts began again once an agreement level of 80% or above was achieved between experienced and new coders on several practice transcripts. Finally, all coded transcripts were checked and cleaned by the project manager prior to being finalised and added to the database.

Coders were allocated 15–30 mins for each transcript, depending on length. The transcripts were read and frequency counts were made against each of the 16 criteria. Relevant information was then extracted from each transcript and entered into a database. This comprised the frequency count for each criterion in the rubric; as well as the lesson number, type of lesson (e.g. literacy), duration, the date, the teacher's name and intake (either Intake 1, 2, or 3), and whether the lesson occurred before or after the teacher received their individualised feedback report (i.e. pre-feedback or post-feedback).

Teaching practice rubric

Hattie's (*Visible Learning*, 2009) work emphasised the importance of clear goals, learning intentions and success criteria; the linkage of new knowledge with old; clear instructions; feedback as a powerful tool with which students can confirm, add to, overwrite, or restructure learned information; a combination of deep and surface level pedagogies with questions tailored to both ends of this spectrum; and the use of peers as co-teachers. The most effective of these practices were used as a framework to develop a rubric of effective teaching practice, which was subsequently used as a tool to code transcribed lessons. In addition to the work by Hattie, works including those by Marzano (2009), Allen et al. (2013), Hamre and Pianta (2005), and the Measures of Effective Teaching Project (2010) were used to inform the development of the rubric, particularly for core aspects of teaching practices upon which more advanced practices hinge, such as managing student behaviour, creating a positive and respectful environment, engaging students, and so on. The rubric was refined over a series of iterations in which transcripts were practice-coded and the frequency counts were analysed statistically. The final 16 rubric items are shown in Table A1.

Table A1: Teaching practice rubric

Code	Item	Description
1	Deepen understanding	Provides student with opportunity to deepen understanding and make connections between ideas and build on prior knowledge through sustained context-specific dialogue and open-ended or divergent questions, to which there is no one correct answer
2	Scaffolded activities and collaboration	Provides opportunities for collaborative, scaffolded activities with their peers in order to actively engage in learning
3	Connections	Help students to make connections to the real world

4	Convergent	Checks fact recall by asking closed questions (characterised by YES/NO questions/quizzes), or questions which have one correct answer
5	Review	Reviews previously learned concepts at the beginning of and/or throughout the lesson
6	Repeats comment	Repeats comment or question from student before answering in order to encourage and reinforce correct answers
7	Positive classroom environment	Creates a classroom environment in which students have an opportunity to freely/spontaneously ask/provide task-related questions/feedback that is content specific
8	Instructions	Provides clear step-by-step instructions on completing tasks/activities
9	Prompting	Teacher uses prompting or probing (a question or statement used to elicit an appropriate student response)
10	Summarise	Concludes the lesson by recapitulating/summarising key points, AND provides opportunity for follow up/future engagement
11	Behaviour	Sets clear behaviour expectations and prompts behaviour reminders during the lesson
12	Introduces and explains	Introduces and explains new/complicated vocabulary/terminology; simplifies concepts by breaking into different levels or elaborates on abstract concepts using concrete, developmentally appropriate, and high-quality examples
13	Resources	Utilises written/visual/audio resources to support learning
14	Important	Emphasises important points
15	Feedback	Teacher provides immediate, specific, and corrective feedback to individual students/student group
16	Goals/success criteria	Clearly expresses the purpose of the teaching content at the beginning/throughout the class/activity (goals and expected learning outcomes) and refers to goals throughout the lesson

Appendix 2: The dashboard

After each lesson, teachers were given access to an individualised online dashboard that presented a number of teaching analytics. For each lesson, the dashboard comprised teaching analytics (*teacher's average number of words spoken per minute*, *number of teacher questions versus number of student questions, percentage of teacher dialogue per session, and responses to the student survey*) and captioning analytics (*student's rating of the captioning quality, number of unclear terms, technical errors, and overall audio quality*). The goal of the personalised dashboard was to highlight meaningful information that would be useful for teachers in informing their practice and, also, to promote and enable regular, real-time, self-reflection on teaching practice.

Figure A1: De-identified sample of the individualised online dashboard available to teachers after every lesson
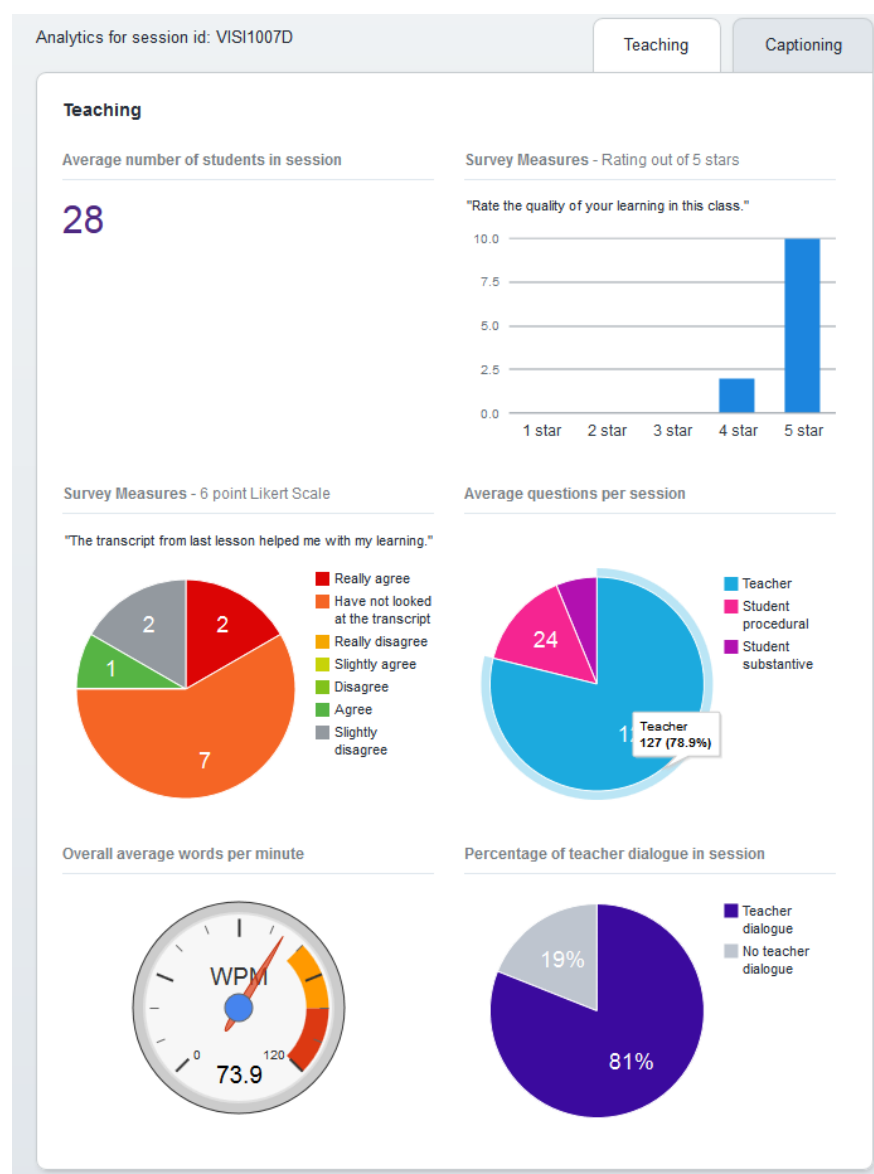
Appendix 3: Online student survey

An online student survey was created based on the work of the Measures of Effective Teaching Project (2013). This work identified seven key areas that contribute to how a student perceives their teacher and achieves academically. These are the teacher's level of care for the students and respect for their ideas and contributions; behavioural control of the classroom; and ability to clarify and consolidate information, and challenge and captivate students.

In addition to sampling the seven key areas listed above, the survey also examined students' perceptions of the captioning technology. The survey was delivered via iPad to students at the conclusion of each captioned lesson in order to provide insights into the role of real-time captioning within the classroom. This survey gave students an opportunity to reflect upon the aspects of the lesson they liked most, as well as provide feedback to teachers on their teaching practice and the use of captioning.

Figure A2: De-identified sample of the survey completed by students after a captioned lesson

Appendix 4: Individualised feedback report

Approximately every six weeks for teachers receiving a non-intensive version of the intervention (Phases 1 and 2), and every two weeks for those teachers involved in the intensive phase (Phase 3), teachers were given individualised feedback reports, as an aim of the project was to track changes in teaching practice after feedback. For Phase 1 teachers, this resulted in three feedback reports in total; for the other phases, feedback was given mid-way through and at the conclusion of the study. In this report, teachers were provided with feedback regarding their teaching performance on the 16 rubric items relative to the average performance of all teachers involved in the project. In the second feedback report, in addition to the group comparison, teachers were also shown a comparison of their performance in Phases 1 and 2 of the study. Teachers were also provided with a detailed explanation of the dashboard and given resources to assist in their professional development. These resources were individually selected in relevance to those areas of teaching practice identified as requiring future attention and support.

For each captioned lesson, teachers received a frequency count for each of the 16 teaching practices (Table A1). For example, for a particular lesson, a teacher may have employed *scaffolded activities* twice, and fostered a *positive classroom environment* four times, and so on. This data was averaged across lessons, so that each teacher had an average frequency count for each of the 16 rubric items.

Because of the relationships between clusters of these 16 teaching practices, four higher level *factors* were created, which were essentially composites of the 16 teaching factors. These factors provide the opportunity for clearer and more simplified analyses. All of the statistical analyses on teaching practices have been conducted at both the rubric level and the factor level, the latter option providing greater ease of interpretation.

We examined the participants change their teaching practices over time (i.e. the 16 rubric items, and the four factors) in two ways. The first method involved comparing teaching practices in the initial stage, middle stage, and final stage of the project. Although, ideally, teachers were meant to adhere to a fixed timeline (that is, all members of a particular phase group starting and finishing at the same time and committing the same length of time to the project), this did not always work due to the realities of the teaching environment. Each teacher essentially worked to their own timeline (beginning and ending the project at different times and committing different lengths of time to the project). Subsequently, each teacher's initial, middle, and final stages were identified by comparing their first third of transcripts, to their second third of transcripts, to their final third of transcripts. Of particular interest was the participants' performance on the 16 rubric items, and the four factors, across the three time periods.

The major finding of these analyses, shown in subsections on rubric items) and factors, was that most teachers showed a peak level of improvement across a majority of teaching practices within their initial and middle stages of involvement in the project, but only teachers in the intensive group were able to carry this improvement into the final stages of the project. These findings highlight the important issue of maintenance of improvements in teaching practice within this project, which will be explored in the discussion section.

The second method involved comparing teaching practices in the pre-feedback and post-feedback period of the project. Of particular interest were teacher's performances on the 16 rubric items, and the 4 factors, across the Pre-feedback and Post-feedback periods. The major finding of these analyses, shown in subsections on rubric items) and factors, was that the majority of teachers showed a peak level of performance in the pre-feedback period of the project, and encountered difficulty in maintaining this high level of performance into the post-feedback period. The exception to this was the intensive group of teachers, who actually showed further improvement in teaching practice even in

the post-feedback period. This method highlights teachers' differing responses to feedback, and barriers to engaging with the project over an extended period of time.

In addition to analysing the rubric data for changes to teaching practice over time, we also analysed the student survey data and dashboard analytics, by comparing the data from the pre-feedback and post-feedback periods. We also analysed a small sample of the teacher survey responses that were available at the time of this report.

The above analyses examined changes to teaching practice and student and teacher perceptions at the group level, with consideration to the different cohorts of teachers. In addition to these analyses, we also conducted teacher-level analyses in which each individual teacher's initial third of transcripts were compared to their middle and final third. The results of these analyses, along with individualised teacher survey results.. The results of these individualised teacher profiles indicate that there is considerable variability across teachers, both in their initial teaching practices, and in the way in which they changed over the course of the project. Therefore, while substantial differences are noted between the three intakes of teachers, it is important to note that even within their respective cohorts, teachers showed considerable variation.

Appendix 5: Topic guide

<div style="text-align: center;">

Making Teaching Visible

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Research aim: to understand how the project is working in participating schools as well as its impacts on teaching and professional development and pupils.

The interview aims to gather participants' views about:

×　how the project has been working in practice

×　how the project is impacting on teaching, pupils and the school and

×　potential for the future roll-out of this approach.

Introduction

Thank you for agreeing to take part

Introduction to researcher

Introduction to NatCen—social policy research organisation, independent of Education Endowment Foundation (EEF), who are funding the evaluation as well as Nesta and University of Melbourne who are running the project.

Explanation of research:

NatCen have been asked to independently evaluate the Visible Classroom project

The purpose of the interview is to inform future development of tool and project.

We would like to understand:

- how use is going and how you're getting on
- what's changed since the start of project
- what changes could be useful going forward.

Participation is voluntary

What you say is confidential—we want to hear your genuine thoughts as this project is still being developed

We will be writing a report of our findings but individuals' names will not be included

We will be recording the interview so we have an accurate record of what is said. Files are stored in secure folders in line with the Data Protection Act

The interview will last about 20 minutes

Questions?

Ask for permission to start recording

<u>START RECORDING</u>

Implementation

Aim: to understand how teachers are using the system within the classroom and how useful they find the feedback features.

Use of the system

How they are using the technology and how this has changed since the last interview:

      Which lessons (format and content)

      How often used

      Use of tablets

Experience of lessons so far

How easily / quickly it's fitted into the school / class

Any times when they don't / wouldn't use it

Any novel uses such as using it in PE or Technology to display instructions

Views about using the system

Staff

      Confidence using the system

      Enthusiasm and engagement for using the system

      How feelings have developed since last interview

Class, how pupils respond in terms of

      Attitudes towards / views of the system

      How it supports students

      How the above has changed since last interview

Use of dashboard

How often reviewed

What they look for

What's useful and what could be further developed

Use of scripts

How often they review transcripts

What they look for

What they've learnt about their practice

Expectations of feedback

Usefulness of six-week feedback:

Level of detail, value of surface vs deep feedback

Any issues highlighted

What was helpful / less helpful

How they have responded to feedback.

Suggested improvements (the team really want to develop the feedback provided)

CPD tool

How they are developing their practice since the project started

Use with managers and peers—development of CPD

Other communications

Use of forum

Use of newsletters / sharing practice

Perceived impacts

Aim: understand teachers' views of how the system is impacting on teachers and pupils

On teachers

Style of teaching

Professional development

Workload

Effect on non-MTLV teachers

Other impacts

On students

Ways in which pupils have been affected, impact on:

Literacy

Behaviour

Attainment

Engagement vs distraction

Lessons

Consistency across all pupils, whether some pupils are benefitting and not others

Other impacts

Sustainability

Would they use in longer term?

Why / why not continue?

Plans for roll out in school

Encourage/ recommend use:

For which schools/ types of pupils?

Any other support needed?

STOP RECORDING

Reassure regarding confidentiality

Check to see if participant has any further questions

Thank for their time and ensure they have research team's contact details

The Visible Classroom
Project information
Thank you for your interest in our 'Visible Classroom' project. This letter explains more about the project and what it will involve so that you can decide if your school is happy to take part.

The aim of this project is to evaluate the impact of 'The Visible Classroom', a project using real-time captioning and lesson transcripts to support teacher professional development and student learning. The results of the research will contribute to our understanding of what works in teacher development and enhancing pupils' learning, and will be widely disseminated to schools in England. The Education Endowment Foundation (EEF) have funded us to explore this project and develop it with teachers in preparation for a large-scale trial. We will provide teachers with a professional development tool to reflect on their practice and involve them in developmental research to help define how this tool is rolled out across a large group of schools. Teachers will gain experience with a new CPD tool to give them insights into their practice. They will also experience being part of a research project. CPD will be provided by the University of Melbourne team led by Associate Professor Janet Clinton and Professor John Hattie and informed by their influential work on 'Visible Learning'.

The Visible Classroom
The programme is based on work carried out previously by the University of Melbourne. It involves the real-time capture of what the teacher is saying in the classroom – a microphone relays what the teacher is saying to a transcriber who types the 'script' of the lesson. This script is used in two ways:
1. Teachers look back at the script after the lesson as a tool for reflecting on their
practice. They can also look at their scripts with other teachers and use them as a detailed starting point for conversations reflecting on teaching and learning. The teacher also gets feedback on aspects of their practice from the University of Melbourne (in terms of number of questions asked, rephrasing, use of open questions). In this way it may be a useful tool for continued professional development.
2. The script can be instantly relayed back to the teacher and displayed in the classroom (on the whiteboard or on tablets used by each of the students) for pupils to refer to and recap key aspects of the lesson.
You will be fully trained on how to set the system up and use it for both of these uses. There will also be support given throughout the trial for any issues or questions you have.
Nesta and Ai Media UK are implementing the trial and providing support to participating schools. The University of Melbourne are providing the feedback on teaching.

The development trial
As this trial is to develop the system for a future full trial we need to regularly get your feedback on the programme, the IT system, the use of transcripts, the support and information you need and how it works in the classroom. EEF have

funded NatCen Social Research to work with us as independent evaluators so that they can find out what you think of the Visible Classroom and what suggestions you have for the future roll out of the programme.

NatCen will come to visit you once or twice during the programme, possibly to watch the Visible Classroom in action and talk to pupils, and find out how the trial is working for you. They will schedule telephone catch-ups with you between visits to find out how you're finding the programme, how it is fitting into school-life, and any impact you're seeing on your development and teaching and the attainment of your pupils.

The scripts will also be passed on to them to look at they type of feedback you're being provided with. This level of evaluation will be the same in all 8 schools selected for the trial.

The trial programme

There will be two intakes of 4 schools onto the trial – one starting in Feb 2014, the other in April. The trial will run until mid June. Four teachers in each school will take part in the trial. You will be invited to a local 1 day training session on the programme and associated technology. You will then receive a visit to help you make sure you have everything set up correctly to carry out the programme.

➢ **Stage 1 - CPD as prescribed (4 weeks)**

● You will be asked to carry out 2 hrs of captioning (to produce the script) a week
● This will be with literacy lessons
● You will be asked to record how you review the scripts, if they feed into your discussions with colleagues and managers and any impact you see them having on your practice, pupils and school

➢ **Stage 2 – You decide (10 weeks)**

● You continue using the scripts for at least one hour of literacy a week
● You will also have the chance to use the script and live feed in whatever way you choose, how ever often you like and in whichever lessons you like

We will provide template letters for parents to let them know that your school is participating in the project and what it will involve.

Outcomes

Following this trial we will report back to the EEF on how it went and collate all of the feedback we have received from participating schools. This report will include
recommendations for how the programme should be developed to operate as a full trial.

We really appreciate your interest in helping us at this development stage, and the fact that you will give us honest feedback and opinions. This should enable us to develop the programme further so that more teachers and pupils could benefit from it in the future.

Participating

If you would like to be one of the schools to take part in this trial please fill out the form attached.

The Visible Classroom
Agreement to participate in the Evaluation of 'The Visible Classroom'

Please sign both copies, retaining one and returning the second copy to Oliver
Quinlan at Nesta, 1 Plough Place, London, EC4A 1DE or a scanned copy electronically to oliver.quinlan@nesta.org.uk.
School Name:

_____

Aims of the Evaluation

The aim of this project is to evaluate the impact of 'The Visible Classroom', a project using real-time captioning and lesson transcripts to support teacher professional development and student learning. The results of the research will contribute to our understanding of what works in teacher development and enhancing pupils' learning and will be widely disseminated to schools in England.

The Project

The project will involve a programme of professional development in which teachers use the Ai Live captioning and transcription system during their Literacy lessons. They will then receive a transcript of their lesson with feedback and use this to reflect on their teaching. This is a development project and their feedback on how useful the initiative is will shape the direction that the project takes.

The project partners intend to cover the costs of the Ai Live service, feedback and CPD from the University of Melbourne and additional technology required to take part as part of the project. Use of some existing school resources such as broadband, PCs or tablets (if the school has them) will be required. We also intend to fund release time for the initial training day for all four teachers.

Schools need to commit to supporting teachers in spending sufficient time to undertake meaningful reflections on their transcripts. Different schools will manage this in different ways, but for teachers to explore the potential of this project for professional development it is essential they spend time reviewing their lessons.

This could take the form of some release time from lessons or meetings, dedicated professional development time, or support with tasks such as marking to reduce the pressure on their time. The shape this takes will be different in different schools, and exploring the best way to facilitate this will be part of the learning from this project which we value your views on.

They also need to commit to the time needed to evaluate the effectiveness of the project, including communicating with NatCen to organise visits and conversations, taking part in interviews by telephone and face to face. NatCen are experienced in working with schools, understand the pressures on time faced and will work with you to make this process as convenient as possible.

This project is being run by a partnership between the University of Melbourne, Nesta (registered charity no. 1144091) and Ai Media UK. This project is funded by the Education Endowment Foundation (registered charity no. 1142111).

We will let schools know if funding or support for the project is withdrawn, or if any partner is unable to fulfil its responsibilities under this agreement for any reason.

The partners are not responsible for any costs, loss or liabilities incurred by the schools by participating in the project except as set out in this agreement. Any technology or equipment made available to schools must be returned at the end of the project.

Structure of the project

We will involve 4 teachers per school, ideally in two different year groups in key stage 2. Schools will belong to a 'Phase 1' group or a 'Phase 2 group'.

Phase 1 schools:
wb 24th March - Training session for teachers (1 day)
3rd March - 28th March - Stage 1: CPD as prescribed
31st March - 18th July - Stage 2: You decide

Phase 2 schools:
30th April - Training session for teachers (1 day)
5th May - 5th June - Stage 1: CPD as prescribed
9th June - 18th July - Stage 2: You decide

*These dates may shift depending on how the the project develops, but we will correspond with schools about any changes with reasonable notice and work with them to support practical implications.

Structure of the Evaluation

NatCen will come to visit schools once or twice during the programme to watch the Visible Classroom in action, talk to teachers and pupils and find out how the trial is working for you. They will schedule telephone conversations between visits.

This level of evaluation will be the same in all 8 schools selected for the trial.

Use of Data

Data collected through the project will be used for the purposes of the project and for evaluation and research. Any data collected which identifies individual teachers or pupils will be treated with the strictest confidence and will be used by NatCen and the Education Endowment Fund for the evaluation, and by the University of Melbourne and Nesta for development of the project. The results of the research will be published, but no individual teachers or pupils will be identified in any report arising from the research. Transcripts will be anonymised and added to the University of Melbourne's database on teaching and learning. Teachers who wish to withdraw a particular transcript from this database can do so up to two weeks after the lesson has taken place by contacting project lead, Oliver Quinlan at Nesta.

Responsibilities

Nesta will:
Deliver the training session on the initiative and the use of the associated
technology
Co-ordinate the implementation of the technology with Ai Media (the technology provider)
Be the first point of contact for any questions about the project in general, the professional
development activities and the evaluation
Provide on-going support to the school in relation to this project
Send out regular updates on the progress of the project through a newsletter

The University of Melbourne will:
Analyse the transcripts produced and provide feedback on features of teaching and learning
Work with Nesta to adapt the initiative based on the feedback of teachers
and
schools

Ai Media will:
Provide training on the use of the technology as part of the training event
Provide the equipment required for each school to make effective use of the real time captioning and
transcription technology
Provide the real time captioning service to schools for the sessions defined in this document and any
further sessions mutually agreed with the school, Nesta, the University of Melbourne and Ai Media
Be the first point of contact for technical support

NatCen will:
Correspond with schools to evaluate the project including visits, observations,
interviews and collecting written feedback
Collect and analyse all the data from the project
Ensure all staff carrying out assessments are trained and have received CRB/DBS clearance
Disseminate research findings

Teachers will:
Use the Ai Live system during their lessons as specified in this document
Spend time reviewing their transcripts after their lessons and reflecting on their practice
Consent to their transcripts being anonymously added to the University of
Melbourne database on teaching and learning
Consent to data regarding their involvement in the project being collected by
NatCen for the purposes of their evaluation and report

Schools will:
Commit to carrying out the real-time captioning of lessons and the use of
transcripts as defined in this document
Support teachers in spending sufficient time on reviewing transcripts and reflecting on their practice
Allow time for interviews and data collection as agreed with NatCen and as set out in 'The Evaluation'
above
Release teachers involved in the initiative so that they can attend the training
session
Ensure the shared understanding and support of all school staff for to the project and personnel
involved.
Be a point of contact for parents / carers seeking more information on the project
We commit to the Evaluation of *Making Teaching and Learning Visible* and
consent to the use of information collected as detailed above.

Head teacher
[NAME]: _____
[SIGNATURE]: _____
Lead teacher (main contact in school about the implementation of the project)
[NAME]: _____

[EMAIL]: _____

[SIGNATURE]: _____

Teachers

[NAME]: _____

[AGE GROUP TAUGHT]: _____

[SIGNATURE]: _____

[NAME]: _____

[AGE GROUP TAUGHT]: _____

[SIGNATURE]: _____

[NAME]: _____

[AGE GROUP TAUGHT]: _____

[SIGNATURE]: _____

[NAME]: _____

[AGE GROUP TAUGHT]: _____

[SIGNATURE]: _____

Please note, the lead teacher may also be one of the teachers involved in the project.

The Education Endowment Foundation

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