

Innovations in professional development: real-time, in-ear coaching

“Human interaction is the key to professional learning. In-ear coaching is just one element in a suite of very powerful human interactions that help us move forward professionally.” Mike Fleetham: The Thinking Classroom



Dr Christina Preston

Associate Professor of Education

MirandaNet Fellowship Founder and Director of Innovation

Institute for Education Futures

De Montfort University

Dr Sarah Younie

Reader in Education, Innovation and Technology

MirandaNet Fellowship Director of Research

Institute for Education Futures

De Montfort University

Researchers:

Atisha Parmar MA

Dominic Preston MBA

Co-researchers:

Vesna Belogaska - *MirandaNet and IRIS Connect*

Naiomh Campbell - *Braunstone Community Primary School, Leicester*

Paul Collin - *St Augustine Academy, Woodard Academies Trust*

James Ediker - *Independent support teacher*

Mike Fleetham - *The Thinking Classroom*

Michelle Fritche - *Braunstone Community Primary School, Leicester*

Martin Shaw - *Seal Primary School, Kent*

Advisors:

Dr. Garth Stahl - *Lecturer, Secondary English and Secondary Education*

School of Education, University of South Australia

Ms. Erica Sharplin - *Research Assistant, School of Education, University of South Australia*

Dr Shawn Edmondson - *CEO IRIS Connect USA*

Editor:

David Longman,

MirandaNet Fellowship, Director of Communications, MirandaNet Fellowship

© Published by MirandaNet 2016

mirandanet.ac.uk

Contents

| | |
|---|-----------|
| Introduction | 4 |
| Literature Review | 5 |
| What works in professional development | 5 |
| The history of coaching | 8 |
| E-coaching methods and skills | 8 |
| In-ear coaching pedagogies | 10 |
| The research design | 11 |
| Aims and objectives | 11 |
| The questions | 11 |
| The methodology | 12 |
| The sample | 12 |
| Findings about in-ear coaching | 13 |
| Perspective from interviewees | 13 |
| Critical incidents | 16 |
| Analysis and discussion | 20 |
| What makes this CPD method of real time in-ear coaching effective? | 20 |
| What are the pre-conditions for this method to be effective? | 20 |
| What is the impact on learning over time for teachers and pupils? | 25 |
| Can in-ear coaching be disruptive? | 25 |
| Is an in-ear coaching programme replicable and sustainable over time? | 27 |
| Conclusions | 27 |
| Recommendations | 28 |
| Advice for the coaches | 28 |
| Advice for the coachees | 30 |
| Collecting evidence | 30 |
| Further Research | 30 |
| References | 31 |
| Appendix | 35 |

Introduction

High rates of attrition among early career teachers are of concern to practitioners, managers and policy makers and could indicate that practice in the classroom is challenging, overall workload is excessive and that current professional development models are not meeting their needs (Guardian, 1/8/2013). The initial findings in this MirandaNet Fellowship research report suggest that coaching teachers in a positive, reflective and learning culture using web-based audio and video tools offers an opportunity for the profession to enhance practice with the school, teacher and coach working in partnership to develop and define best practice in a 'live' environment.

This research builds upon an initial MirandaNet study which surveyed 100 teachers who had been actively using the IRIS Connect web-based video system for professional learning for at least 4 months. In brief, the results of that survey were that:

- 94% of teachers using the system said their teaching had improved;
- 88% said their confidence had risen;
- 88% felt there had been a positive impact on collaboration;
- 96% felt they were willing to take more risks;
- 99% felt there were more conversations between teachers about teaching in their school.

(Preston 2014; Preston and Belogaska 2015)

This second phase of the research concentrates on a particular aspect of web-based video coaching called 'in-ear' coaching. This was prompted by anecdotal feedback collected during the first phase suggesting that in-ear coaching, a feature that can be used with IRIS Connect, was a powerful tool for teachers who had used it. It was decided that this required further review and analysis. In this mode, the teacher wears an earpiece and is coached by somebody who is not in the classroom (and may even be in a remote location). The coach observes the teacher via a video link and can make suggestions to the teacher in real-time. The pupils cannot hear the suggestions although they will have been told that this process is taking place. Video and audio is recorded and stored on the IRIS Connect cloud-based platform¹ where it can be annotated with time-stamped comments and edited for later review, reflection, analysis and sharing.

While research into in-ear coaching has already reported positive impact in Australia (Dinham, 2013; Stahl, 2016 in press), the Netherlands (Coninx et al, 2013) and the United States (Rock et al, 2014) this qualitative UK study begins to set a European standard by outlining contexts in which in-ear coaching is effective. It presents observations and commentary from a small sample of teachers and coaches at different stages in their career.

¹ For full description please refer to the Appendix in this document.

The findings of this small scale research project suggest that:

- Deep learning, which is replicable and sustainable over time, can be achieved through providing immediate and contextualised feedback that the teacher can instantly put into practice;
- Using the platform promotes reflective practice and sharing across and between schools, ensuring that the deep learning provided by in-ear coaching is replicable and sustainable over time;
- Pupils are cooperative and the experience can also prompt pupils to be more reflective about their own learning and behaviour;
- The focus on classroom practice in real-time strengthens not just the confidence and capability of early career teachers but of any teacher keen to actively improve their performance;
- Sustainability can be of concern if those who set up and run the programme leave the school without training others to make use of the investment;
- This is an innovation that may be resisted if the introduction is not managed with sensitivity. Teachers need to know from the outset that the system cannot be used as means of surveillance and that the whole process is based around teacher control and empowerment.

Evidence from this small sample indicates that in-ear coaching may have the potential to transform practice where the teacher is comfortable with the process and is keen to learn.

Literature review

After reviewing models for professional development we have selected key researchers who are working in the field of coaching as a mode of professional development. More specifically, this includes some who have examined the use of web-based audio visual technology. We give a brief overview of the history of coaching, e-coaching methods and skills and developing in-ear coaching pedagogies.

What works in professional development

A growing, global consensus in research can be traced to suggest that, among school-related factors, the quality of teaching has the greatest impact on pupil achievement. For example, research by Sanders & Rivers (1996) shows that there is a difference of 53 percentile points between the achievements of pupils with a high performing teacher and those with a teacher who is low performing (Figure 1):

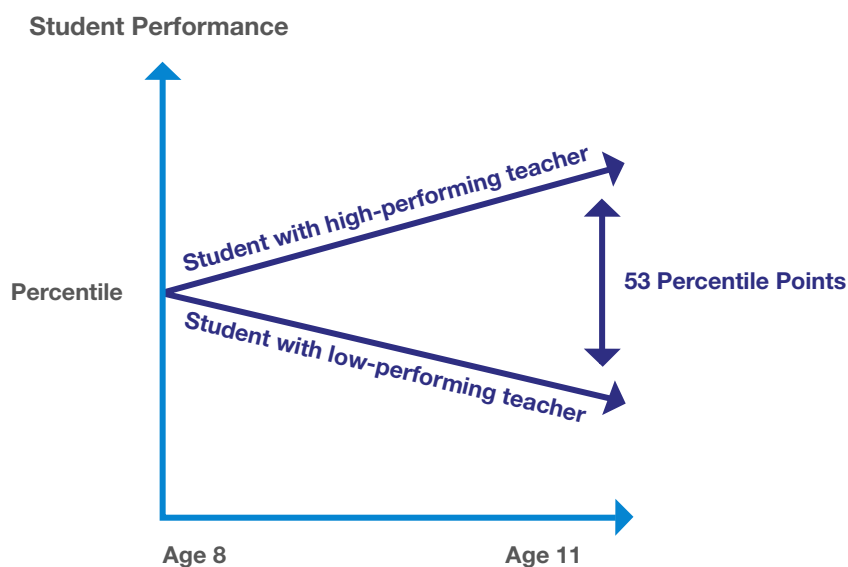
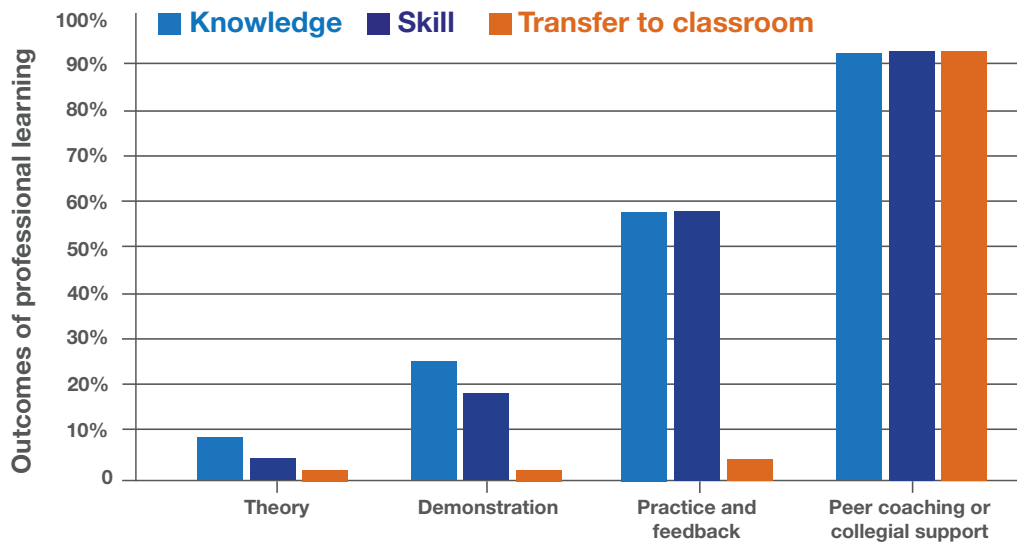


Figure 1:

Teacher-Student performance effect. Adapted from Sanders and Rivers (1996).

In Figure 2 each component of this model for effective professional learning is a building block. A small amount of knowledge can be acquired through the presentation of theory and a limited amount of skill can be demonstrated within a practice environment. However, there is a limited transfer to the classroom practice. It is only when all four elements are experienced that there is a significant increase in knowledge, skills and, crucially, transfer to the classroom practice.

Teacher professional learning



Partners in School Innovation (2014)
Adapted from Joyce and Showers (2002)

Figure 2:

Teacher Professional Learning (Graham Newell, 2016, adapted from Joyce and Showers, 2002)

The model for effective Professional Development (Figure 3), summarised by Cooper (2004) adds to this view, explaining that theories about pedagogy can only be realised through an iterative cycle of practice and feedback actively undertaken by the teacher. A demonstration of correct practice is not enough, he contends, to transform a teacher's practice. A practitioner needs to be both active and reflective about the feedback that is given through coaching.

Model for Effective Professional Development

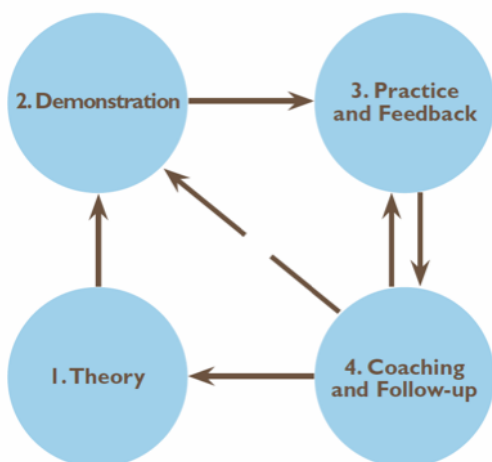


Figure 3:

Professional Development: An Effective Research-Based Model (Cooper, 2004)

The next diagram (Figure 4) illustrates the IRIS Connect model for supporting teachers in the complex journey from 'fair' to 'outstanding' practice, a process that requires different levels of input at different stages and involves high levels of interaction with colleagues. In this model the development of professional skills involves moving away from simply building the 'human capital' invested in the individual teacher to building the 'social capital' of the staff group where skills and knowledge are deployed for mutual support and benefit. A coach can help each teacher to articulate his/her discoveries and build a common vocabulary to share this new knowledge (where the teacher has given permission).



Figure 4:

A CPD model for all stages of a teacher's career (©IRIS Connect, 2012)

A system of professional development that matches well with a school's intention to change and improve their pedagogy is called practice-based research (Pachler et al, 2011). Under this paradigm teachers decide with the school leaders what aspects of professional development they wish to investigate and set up research projects that explore the topic. Whether they are working with the support of the school community, a regional group or an international professional organisation such as the MirandaNet Fellowship, the key aim is to share findings and collaborate on effective strategies for innovation that are agreed at the grassroots.

This present research is designed on the MirandaNet iCatalyst model² in which practitioners are invited to share their expertise and knowledge with the profession as co-researchers. In this way the profession remains in control of policy and practice, ready to commit to change that is agreed to be appropriate.

The following sections look at some of the research on coaching, both with and without digital tools. They also highlight the potential for improving professional practice and teacher performance through the use of video coaching to improve a teacher's performance.

² <http://mirandanet.ac.uk/icatalyst/professional-development-approach/>

The history of coaching

Given that research findings show that teacher performance is paramount in the cycle of pupil achievement it follows that the quality of classroom teaching should be a key focus of teacher education (Imig & Imig, 2006; Hassel & Hassel, 2010; Dinham, 2013).

The idea that a teacher should be encouraged to reflect on their own performance (in contrast to being told what to do) was first developed by Schön (1983). His innovative thinking around notions such as 'the learning society', 'double-loop learning' and 'reflection-in-action' has become part of the language of education. In this spirit, coaching was well established in the 1980s to support the development of teachers (Joyce and Showers, 1980). Whitmore (1992) describes coaching as mentorship that promotes personal learning rather than just teaching or instructing teachers about teaching. Coaching concentrates on what the teachers can already do and aims to help them to reflect about ways of improving performance.

By the 1990s education policies in England determined that new teachers should discuss their professional learning and practice with a 'mentor' to allow them to develop their teaching practices and raise student achievement (McIntyre, 1991; Hobson and Malderez, 2013). Similar projects to support early career teachers took place in North America and parts of Europe (Feiman-Nemser, 1990; Medgyes and Malerez, 1996). Originally developed to support the induction of new teachers as part of initial teacher training and induction, coaching has now become a central feature of pre-service and in-service level university programmes (Hobson and Malderez, 2013).

Coaching involves the observation of learner-performance by an experienced practitioner who provides feedback on performance with the intent of improving that practice. Coaching is typically composed of learning activities in which goals are personalized and which engage the student in purposeful, often authentic, activity while providing opportunities to gain valuable experience with the intended practices. Through consistent cycles of performance, observation, feedback, and refinement, novices refine their practices and develop both experience and expertise. For novices to develop their skills, each component of coaching must be effective and strategically delivered to foster confidence. Coaching, in this context, has overlapping elements of teaching, mentorship, facilitation, counselling, and motivation, and it is always learner-centric and adaptive to their needs in the moment. In teacher education, coaching should be used to facilitate learners' reflection upon practice rather than be explicitly demonstrative (Whitmore, 1995) and aid the transition to higher levels of performance (Clutterbuck, 1991) through consistent support and honed feedback (Downey, 2001; Parsloe & Wray, 2000).

E-coaching methods and skills

Key types of coaching methods include: face-to-face, elbow coaching and e-coaching. Face-to-face coaching tends to concentrate on the professional practice under observation with discussions sessions before and after the observation by the coach. Observation by another in the classroom can in itself disturb the learners as well as the teacher of course. Elbow coaching is an approach in which coaches teach elbow-to-elbow with the teacher in the classroom. This can be more powerful than coaching sessions in which feedback is given after the in-class observation, as the teacher can see best practice in action (Johnson, 2012) and immediately try it. However, the issue of classroom disruption with this method is still present.

E-coaching has been defined by Rock et. al. (2014) as the relationship between one or more persons mediated via online interactions, to potentially enhance teaching skills and which may or may not be synchronous, i.e. in real-time. E-coaching using in-ear coaching is synchronous but does not require face-to-face on-site discussion or delivery. Instead it allows the coach to offer discreet real-time in-ear feedback to the teacher (Rock et al., 2009; Rock et al., 2011). Feedback can be provided from another room, another building or in some cases, another country.

Although studies have shown that e-coaching is a highly effective method of improving the efficacy of teaching (Franke and Dahlgren, 1996; Marable and Raimondi, 2007) there are also some challenges. Hobson and Malderez (2013) indicate that e-coaching does not always bring positive outcomes for the practitioner and can restrict a teacher's learning and development. They believe that, for trainee teachers, e-coaching can hinder the beginning of their career and possibly damage their self-esteem (Beck and Kosnick, 2000; Maguire, 2001). The reason is that coaches may be too insensitive in their comments or the coachee may misinterpret what has been said.

In contrast Cox (2013) argues that e-coaching enables reflection on practice which can be transformative (see also Mezirow, 1990). Furthermore, Rock et al. (2009) in their study found that in-ear coaching not only supported the performance of the teacher, but also the students' learning.

In-ear coaching started in America (where it is known as 'bug-in-ear'³) and has been used subsequently in a variety of countries to provide quick and immediate feedback to teachers. In-ear coaching can help to both enhance teachers' delivery and also support the behavioural management of an increasingly diverse student population (Rock et al., 2009; Rock et al., 2011). A study by Rock et al. (2009) reported that 73% of the teachers in their study found virtual coaching to be invaluable and which resulted in significant improvements in practice.

In Europe, research on in-ear coaching has already been undertaken in The Netherlands. An in-ear pilot project (2014 – 2016) for synchronous coaching in pre-service teacher education presented some interesting conclusions (Coninx, Krejins & Jochems 2013). Both teachers and coaches reported the experience as mainly easy and beneficial. Using in-ear coaching did not disrupt the class while it added value to student learning. Direct feedback and the option to respond immediately to suggestions was reported as the most important advantages of working with an in-ear device. However in their research the coach was whispering suggestions while in the classroom whereas in our research the IRIS Connect video platform allowed the coach to be watching from outside the classroom (which could be a remote location).

Whatever the technology used, a number of skills need to be mastered before e-coaching can be effective. Time to learn the process is important. For example, Rock et al. (2011) in their study showed that teachers need 3 to 4 coaching sessions before they are able to process the voice of the coach, the students and other noises around the classroom. Blackman (2010) suggests that both coach and coachee should be able to easily adapt to a variety of situations, build a trusting relationship, and have a high level of initiative and commitment to the workplace. Additionally, Rock et al. (2011) established four skills that a coach will need:

1. saying more and saying less - the coach should learn when to intervene during teaching;
2. setting and evaluating targets - the coaching should be goal based;
3. personalising feedback - providing feedback on the teacher's goals in order to help them improve; and finally
4. remaining positive – coaches should remain positive and supportive in order to improve the teacher's performance.

So far effective coaching has been defined by a variety of approaches (Hudson, 2010) but ideally it seems effective coaches are supportive and encouraging in order to strengthen teaching practices. Successful virtual coaching relies on the coach's expertise in the art of teaching and classroom management (Rock et al., 2013). A significant skill for coaches is providing effective feedback which in-ear technology can enable in real-time.

The quantitative research by Rock et al. (2009: 64) indicates that the use of in-ear technology is a 'practical and efficient way to provide immediate feedback'. Furthermore Rock et al. (2011) explain how the in-ear technology works and why it promotes strong teaching using the case of a coach and a middle school teacher collaborating in real-time to improve practice. Qualitative and quantitative data showed that instructional effectiveness improved after the sessions and students' skills and strategies were noticeably better.

³ Throughout this paper we refer to 'in-ear' coaching even when citing American or Australian research where the phrase 'bug-in-ear' is preferred. However all quotations, where used, are verbatim.

In-ear coaching pedagogies

In this section we look more specifically at what the literature says about in-ear coaching and in particular what kinds of pedagogies are being pursued and what kind of relationship the coach and the coachee are expected to develop. This particular method of e-coaching allows the coach to remotely observe a lesson as well as to provide discreet feedback because the feedback from the coach is only heard by the teacher through an earpiece (Scheeler et al., 2006).

A variety of studies have covered the effectiveness of the in-ear technology. For instance, the study by Rock et al. (2012) found that 12 out of 13 trainee teachers reported that the in-ear allowed them to receive feedback and encouraged them to use a cycle of reflection. The trainee teachers expressed how instant feedback from the coach benefited their teaching and allowed the feedback to immediately 'stick'. Furthermore, the research showed that receiving the feedback promptly allowed the teachers to see the immediate effect it made to their lesson.

According to Scheeler et al. (2004) immediate feedback enables teachers to make better decisions during lessons and to rescue insecure lessons. Moreover, the use of in-ear technology can also save time (e.g. not having one-to-one discussions after lessons) and in some circumstances can also save money. This has also been supported by Rock et al. (2009: 80), who outlined that the use of in-ear technology is 'both cost-effective and an efficient means to provide teachers with real time feedback on instruction'.

Based on their small project, Real-time Coaching and Instant Feedback in Pre-service Teacher Training and Education, Stahl et al. (2016 in press) define e-coaching as real time coaching (RTC). In this model coaches typically provide feedback in two ways: deferred and immediate. In deferred feedback the coach examines empirical evidence (videos, observation, etc.) from the activity and discusses an interpretation and recommendations with the participants at a later date. In immediate feedback, coaches observe an activity and stop and start the activity in order to modify and improve. While each of these methods has strengths and weaknesses in terms of their effectiveness, immediate feedback via in-ear technology can enhance the process further. Stahl et al. record further advantages of this technology-mediated approach to RTC principally that it is more discreet than in-class observation and does not interrupt activity. In a much broader sense this RTC learner-centred approach to teacher education,

“Looks beyond curriculum guides and pen and paper diagnostics, and rather focuses on developing the process of teaching and reflection to better engage the budding identities of pre-service teachers”

It encourages a teacher education pedagogy that focuses on self-reflection, mentoring and teacher autonomy using constructivist pedagogies.

There is at least one model of RTC that is more directive in which coachees are instructed in how to teach using particular preferred methods and approaches. This is the Real Time Teacher Coaching® model of Lee Canter (2016) based essentially on behaviourist principles and which has had significant take up in US charter schools. The research base for the method is sparse but the website offers a flavour of this approach which includes:

- Immediate feedback to teachers using wireless “bug-in-the-ear” technology;
- A pre-condition is attendance on a ‘No-Nonsense Nurturer®’ course;
- Real-time feedback and ‘course-correction’ on the application of ‘research-validated’ classroom management and instructional strategies;
- Uncovering and addressing disempowering mind-sets that hold teachers back;
- Reflective discussion on the teachers’ experiences.

Here it is clear that overall this approach relies on a model of preferred or correct approaches to teaching and that RTC is used to train the teacher in the implementation of these approaches. Perhaps most telling is the idea of “uncovering ... disempowering mind-sets” which prompts the question about the nature and purpose of ‘reflective discussion’ if that discussion is aimed at uncovering deficits in the teacher’s approach to classroom teaching rather than seeking out strengths on which to build. In contrast to this the research undertaken here draws out the importance of the control that the coachees have over many of the details of the coaching process, including the use of recorded data or the style of the coaching provided.

Kamens (2007) is concerned that teachers are given support in theory and in subject knowledge but too often are left to improve their practice on their own. Ploessl and Rock (2014) argue that early career teachers should be provided with an opportunity to collaborate in order to develop their skills. They comment, however, that although co-teaching has become a popular approach in special education service provision in inclusive classrooms, practitioners have struggled to carry it out well. One suggestion for improvement has been to provide co-teachers with training that includes coaching. In this study, Ploessl and Rock used single-case withdrawal design, to investigate the effects of e-coaching, delivered through in-ear technology with co-teachers as they planned and carried out co-teaching. They concluded that in-ear coaching methods have improved the implementation of specific classroom strategies like behavioural support for the pupils.

The research design

This second stage of the research builds upon the earlier study which concentrated upon teachers who had been using the IRIS Connect web-based video system for at least 4 months. This, the second phase of research, focuses on the value of in-ear coaching where a coach outside the classroom can see what is happening and make suggestions about practice in real-time.

Aims and objectives

This project undertaken in England was designed in order to provide a context and framework for a further quantitative study into in-ear coaching that could also be used by European educators when similar projects are set up.

The questions

The focus of this research was web-based audio and video technology with a particular emphasis on the introduction and use of real-time in-ear coaching. The selective literature review and the discussion with researchers in Australia and the US helped to clarify relevant questions.

The overarching research question is:

- What makes this CPD method of real time in-ear coaching effective?

The more detailed questions are:

- What are the pre-conditions for this method to be effective?
- What is the impact on learning over time for teachers and pupils?
- Can in-ear coaching be disruptive?
- Is an in-ear coaching programme replicable and sustainable over time?

The methodology

In this second stage of the research interviews with six key practitioners were undertaken using open-ended questions to explore their experience of coaching in more detail and to highlight critical incidents. The use of in-ear coaching in the classroom was not directly observed.

The interviews were analysed using grounded theory techniques first outlined by Glaser & Strauss (1967). In this method the analysis is not dictated by a rigid framework but researchers code the data based on categories that are identified in or arise from the data offered by the subjects. The data is not coded with categories that have been pre-defined. Researchers therefore must be sensitive to ideas that they might not have predicted or expected in the data. Grounded theory procedures are intended to ensure that the emerging findings are denser, more complex, more precise and more firmly grounded than they might be if they were not exposed to the comments of all the stakeholders (Charmaz, 2000). This methodology seemed to be appropriate because in-ear coaching is a tool used to develop and improve some very complex human behaviours that have not yet been fully categorised by practitioners and researchers.

The sample

The MirandaNet iCatalyst team was composed of two academic researchers, six co-researchers from the teaching profession and a co-researcher from IRIS Connect who was included in order to draw on company experience as well as to give to the company an opportunity for in-depth learning based on Rose Luckin's Golden Triangle of Evidence-Based Product Design (Luckin, 2016) (Figure 5):

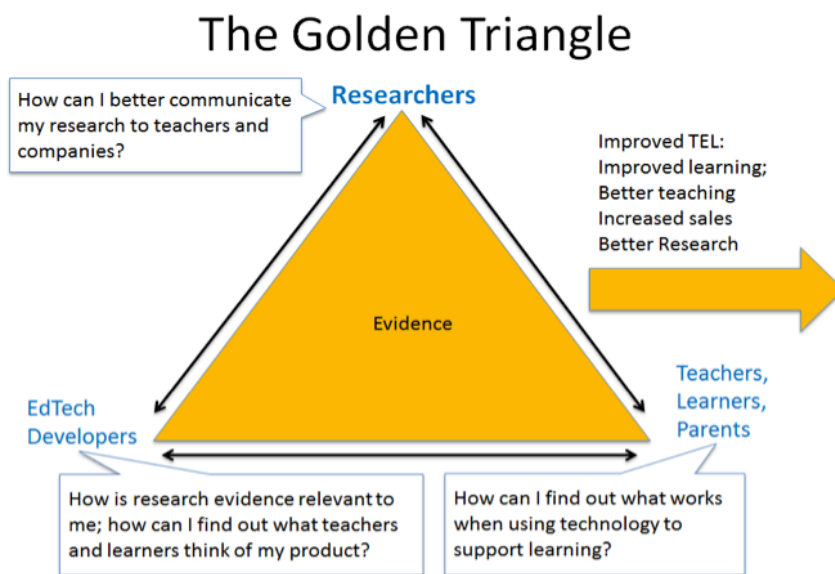


Figure 5:

The Golden Triangle of Collaborative Evidence-based Product Design (Luckin, 2016).

The involvement of the interviewees as co-researchers meant that they have all been invited to comment on the data as means of increasing knowledge sharing. Each of the co-researchers qualifies to submit their own study at certificate, diploma or Masters level.

The co-researcher from IRIS Connect is also a member of MirandaNet. As Luckin's model suggests, the direct participation of the company in the research is an important element of effective product development because it is driven by direct experience, observation and knowledge of the adoption and implementation of the innovation in the context for which it was intended.

The interviewees

In this qualitative study the six interviewees, all practitioners, were selected from schools where in-ear coaching had been established and had been in use for at least a year. (At this stage in England there is a limited pool of practitioners to draw on and this is a small sample.) The experience and knowledge of the interviewees ranged from those who were just beginning in teaching, to leaders who were well established in their profession, leaders who were learning to be coaches and one experienced in-ear coach. All of the interviewees were, in general, enthusiastic and positive about the value of in-ear coaching but also articulate about the potential pitfalls and risks.

Findings about in-ear coaching

All interviewees emphasised that the effectiveness of this method could not be divorced from the design and culture of the whole CPD programme. They were generous with the time they devoted to passing on experience to others in an area that is quite new in Europe.

Perspective from interviewees

Mary's⁴ perspective

The first coachee, Mary, is an early career teacher who felt herself fortunate to have had access to a wide and varied range of continuing professional development opportunities (CPD). In order to think critically and reflect deeply on such opportunities she decided to focus on these CPD experiences in her NQT year because she felt this had had the greatest impact on her own performance and on her pupils learning.

Mary explained that she had kept a journal about her training year particularly about her professional relationship with the coach. The CPD process first required filling in a form provided by the coach. In this exercise she identified aspects of her teaching that she wanted to improve. She then selected from the video she had recorded and stored in her private web space the clips she wanted to show the coach in order that they could work collaboratively. (These clips are called 'reflections' in the terminology used by IRIS Connect to describe a videoed lesson.) Some coaching sessions were held after the lesson but the in-ear coaching offered a powerful real-time way of getting immediate feedback.

In her journal Mary describes the experience:

“In the lesson I would be wearing an ear-piece, microphone and recording the lesson. I do not need anyone else in the room as the camera responds to my movements through a necklace that I wear. Like the reflective sessions there will be a pre-agreed focus outlined on a coaching form. Previous foci have included questioning, instruction giving and the use of success criteria. During the session my mentor coaches me via an ear-piece with the aim that I will practice the skill I have detailed in my form with the intention of mastering the skill. Thus I am engaged in a coaching relationship and a self-reflection experience that help me to build an effective learning partnership with a ‘more knowledgeable other’ (Vygotsky, 1978). In-ear coaching, however, has the additional value of providing experienced based learning in real-time”.

⁴ These are not the interviewees' real names.

John's perspective

The second interviewee, John, an internal supply teacher, had been going through 'a bad patch' in his career, and had begun to consider if teaching was the right job for him. At the time the staff were going through a management transition with school coming out of special measures while working with disadvantaged children (typically 15 out of 28 children in the class were from disadvantaged background).

As a young teacher he dreaded being observed as he had so little confidence. He remembers vividly his first observation using web-based video while working as an internal supply teacher teaching English to year 2 students. He said, "I felt pretty resigned by that time – whatever happens, happens". However, the in-ear coach was encouraging because although the interviewee felt he was a terrible teacher when he saw the clips he realised that he was 'actually quite good at teaching.' That was a turning point:

"I was in a bad place. The in-ear coaching saved my teaching career, but even further, had a big impact on my life. I am now so much more confident".

In addition, talking with the coach during the in-ear session had a positive impact on the children's learning. From that point on this internal supply teacher started videoing himself and advises everyone to do so. He sees in-ear coaching as the best innovation in professional development, the greatest tool he has come across in his career. This teacher has now been promoted to being a coach as well as a coachee. But he finds that being a coach is "much trickier".

Marilyn's perspective

The third coachee, Marilyn, was offered in-ear coaching as an early career teacher. At this stage she was an English Subject Leader at an inner city school where most of the pupils were disadvantaged, many were mixed race and there was a higher than average number of pupils were categorised as Special Educational Needs (SEN) or Free School Meals (FSM). She found in-ear coaching valuable at the start of her career on placement in the School Direct programme (school-centred initial teacher training). As a result of her positive experience she is now learning to be a coach in her school where she is now a senior leader. She is an advocate of the notion that great leadership begins in the classroom.

"I have a thirst for learning which drives me forward and pushes me to want the best for all, including the adults I work with, children within the school and for myself".

Marilyn has risen quickly and had been recognized by the city and by Ofsted as an outstanding practitioner. She concentrates on raising the aspirations of pupils who join the school with little independence and limited capacity for learning. Through raising expectations, exploring learning and teaching them a purposeful and exciting curriculum they make good progress and are thoroughly engaged in their learning. Working in disadvantaged areas, Marilyn is proud that the children she teaches develop high expectations of themselves and their peers and are passionate about achieving their own success.

Bernard's perspective

The fourth interviewee, Bernard, also an early career teacher, started as an English Language teacher in Germany after graduating from Cambridge with a first degree in Maths and Philosophy and an MPhil in Philosophy. He then became Management Consultant in fundraising for private equity funds in Germany for five years but eventually decided to come back to England and retrained as a teacher at a PGCE course in a South coast university. He specialised in Middle Years with a maths specialism. Bernard joined his primary school as an NQT and later joined the management team as an Assistant Head with responsibility for Phase 1 (years 1, 2 and 3). He has been at his current school for 9 years and he is now responsible for rolling out the digital coaching tools throughout the school. When Bernard joined this study he had been coached himself and was now coaching about a dozen student teachers, mentoring 3 NQTs and coaching about 6 members of teaching staff, including some school-to-school coaching support. He has also spoken at conferences about the school experience and is planning to roll out a school-to-school in-ear coaching programme.

Charles' perspective

The fifth interviewee, Charles, was an experienced Senior Lead Practitioner of Teaching and Learning, Coaching & CPD as well as a Director of Training. He has been teaching within secondary education for fourteen years. Developing his practice through his main subject area of Performing Arts, Drama and Theatre studies, this school leader has an impressive track record of moving teaching within schools to 'Good' or 'Outstanding'. Charles will be undertaking more training as an in-ear coach and his school is also a hub connected to a teaching school offering support to other schools in introducing and developing innovative CPD projects to be used as models for the local academies trust.

Paul's perspective

The sixth interviewee, Paul, is an experienced coach of several years standing. He worked as an electronics and software design engineer in the defence industry before retraining as a teacher. He quickly assumed leadership roles then became frustrated with the bureaucracy and lack of innovation in classrooms. He set up a training business and website in 2002 and since then has supported school around the UK and abroad to make their teaching more effective, creative and more enjoyable.

“Coaching has been part of my professional skill set since I mentored junior engineers in industry and in-ear coaching has been a natural extension to this, drawing on my continuing interest in technology. The kind of coaching approach I take is integrative: not subscribing to a particular school or model of coaching, but being open to all of them. It is non-hierarchical”.

Paul has recently developed more resources for the IRIS platform and designs for teacher training programmes in association with IRIS Connect. He is responsible for running a CPD pilot within his academy chain and has received training with remote coaching included as part of Trust funding. He has been asked to set up a hub and to bid to set up a centre of excellence for coaching as the focus of the hub.

What emerges from these portraits of the interviewees in schools is that there is a crossover between coaches and coachees. The coaches do not set themselves up as the ultimate arbiter of good practice. Coaching is a joint enterprise that demonstrates the tacit agreement that, no matter how experienced, everybody gains from the coaching experience.

Critical incidents

All the interviewees were asked to supply critical incidents anecdotes that might indicate a new direction, new idea or to pinpoint learning. These events are useful in illustrating how the change might feel to participants. Each has to be understood in its own context and is used here to indicate how complex and varied are human reactions to this innovative method of professional learning at different points in their professional lives.

John

I am a great advocate of using the web-based video coaching for teacher professional development because in-ear coaching saved my teaching career. At the time I was going through a bad patch and starting to wonder if teaching was the right job for me.

Like most young teachers I used to worry about being observed so I remember vividly the first web-based video observation when I was working as an internal supply teaching English to year 2 students. The school was going through management transition in order to move out of Special Measures: typically 15 out of 28 children in the class were from disadvantaged background- nearly two thirds. I felt pretty resigned by that time to my fate – whatever happened, would happen, I thought.

The coach was using the in-ear method, which was considered by the staff to be a strange new-fangled thing. I was sure I was a terrible teacher but the in-ear coach was surprisingly encouraging. I dreaded watching the video clip. But once I did, I realised that I was actually quite good at teaching.

That was a turning point. From that point I started videoing myself. I now have a portfolio of about 20 video clips that I have learnt from through my own analysis. I do not always invite other people to see them but I learn even more if I do. I really think all professionals would learn from this in-ear coaching process if they have the right attitude. For me it was a transformational process.

Mary

One of the frequent weekly targets in my Primary Journal was the need to eliminate low-level disruption and to ensure that the pupils followed my instructions. At the time I thought that the two targets that I had to tackle were very distinct.

This view changed when my coach and I reviewed one of my reflections. The focus of the session was the delivery of clear instructions to address Teacher Standard 2: the promotion of good progress and outcomes by pupils. However, as the coaching session developed it became clear that the problem was not necessarily that my instructions were not clear enough. In fact the children were struggling to understand me. I was speaking too quickly and in a Northern Irish accent that few of the children had ever heard before. I immediately changed the way I spoke to the children ensuring that I spoke very slowly and enunciated clearly.

The effect was instantaneously discernible and was particularly noticeable for one child for whom English is an Additional Language (EAL).

[...]

The in-ear coaching experience that I feel most improved my pupils' outcomes was my decision to refine my use of 'The Progress Line-Up'. This is an assessment for learning (AFL) technique I had been using in class and had researched during the course of my writing my Second Reflective Journal. What happens is the children take a position in a line-up that they feel reflects the progress of their learning.

During this particular session the in-ear coach prompted me to ask the children why they had placed themselves in a particular position against the success criteria and to explain the rationale behind their evaluation of their learning. This caused some of the children to move their positions. When I questioned why this had happened some said that they had simply followed their friends whilst others commented they weren't sure of the point of the exercise. In subsequent lessons children were much more aware of how to assess their learning. As a result when using this AFL technique I garnered a clearer picture as to where the children were with their learning, what route the lesson needed to take next and most importantly what the children needed me to do to help them succeed in their learning. This allowed me to adapt my teaching to respond to the strengths and needs of all pupils (Teacher Standard 5) and to make accurate and productive use of assessment (Teacher Standard 6).

[...]

The in-ear coach observed that I was not using enough detailed Assessment for Learning within the lesson. This meant that the pace and progress were slowed. He made the suggestion of asking pupils a question and then making them write it down on a mini-whiteboard so that this information became visible. This way I could instantly see who had understood the learning and who needed further input. As a result I was both working with a targeted group as well as pushing those who had understood and wanted to move onto a more difficult task or challenge.

Marilyn

My English class was disrupted by some particularly difficult special needs kids. The teaching assistant in my class and some of the other teachers were afraid of these boys. On this day one boy, in particular, started to disrupt the class. The coach's in-ear advice was to move the entire class out of the room, which I did.

The boy was confused by this response as he wanted attention. I then brought the class back in on my terms, not his. I made it very clear how he had to behave if we were to return. What I learnt from this was that balance is out of kilter when the whole class is disrupted by the needs of a few. In this case the disrupter needs to be isolated.

[...]

I was struggling because my Think, Pair and Share routine was not being effective. The children were not working well together and there was low-level disruption. The in-ear coach suggested I asked the pairs to go knee-to-knee and eye-to-eye. The quality of the paired work rose exponentially. It was such a useful tip.

[...]

I found working with a coach gave me insights that I could not discover easily myself. For example, the coach identified two children who continually disrupted the class. I discussed with the coach how to manage these two disruptive children. It seemed that these they would go to any lengths to seek and keep my attention. The answer was to let them choose a silly hat from a collection. The two pupils then entered into a bargain. When I put on the silly hat they were not to interrupt. The hat signalled that I was unavailable. Because the two disruptive pupils were partners in this contract the system worked well.

[...]

I was really concerned about my primary class who seemed to be too dependent on me. They lacked interest in their learning; displayed off-task behaviours; were disengaged; and unsure of what I actually wanted them to do. Basically they couldn't be bothered and didn't see the point in changing!

After discussions with the coach my first move was to show my class the video clip I had taken and ask them if they thought my practice and their behaviour was acceptable – a brave move, but I knew the class well. In fact showing the children the video had a positive impact as they felt involved in building a team approach to learning. With the encouragement of the coach, I changed the whole atmosphere by engaging them in what learning really was and why it mattered.

[...]

Now I am a coach I can use my experience as a coachee. One teacher was having significant problems with all her classes and was on the point of giving up teaching altogether. By watching the video in feedback with me she realised what the issue was herself. She could see she was being very aggressive and didactic. Nerves probably. She was horrified.

Charles

I found that the language that one teacher in our programme used to explain the in-ear video system to the pupils was fascinating. The children asked a lot of question – what's that, what it is for, who is talking to you? They really understood that teacher was working to help them teach better.

Bernard

Once I started to learn to be a coach in our programme I wanted to talk to others were keen to get involved with coaching so I am now investigating how a teacher from another school in the Trust and I can work remotely using in-ear coaching. The other school is quite isolated geographically and this is a good option for them. In addition the feedback from another school will help to tighten the process for me too. I think an observer will be valuable too in helping us as the coach and the coachee to pinpoint elements of practice.

[...]

I enjoyed a lightbulb moment when a year 8 student helped carry the kit into a classroom and another pupil asked what it was for. The year 8 student replied immediately before I had a chance, "This is a teaching tool that we use in school to make our teachers better".

Paul

Now I work as a coach seeing parts of the room that the teacher cannot see so well I have caught a couple of students who do the clever thing of not working but looking like they are. I suggest to the teacher to go to them and ask what they have learned so far. The impact: because they have been spotted, two children concentrate on 40 minutes of learning that they wouldn't have otherwise. Long term the coach is training the teacher to be more vigilant.

Tell teacher to pause, stand in a specific area and just watch. They seem to think they need to be seen to be doing something every moment of the lesson. But stopping and observing can be very valuable – specifically, I'd say: "Think about what you are thinking and feeling now and if appropriate – tell me". This causes the person to do the reflection right there and then rather than relying on their memory of it. Those two things: the directing to behavioural and learning interventions are specific effective learnable and sustainable examples. The next time I watch live I see people doing it: step back and use the information to intervene in the right place rather than the first place. Hand the earpiece over to the child – maybe at presentation, or in group work: I was able to praise the child while working in a group and encourage them to speak up.

The most powerful example I have done 5 times now, and it's worked 4/5 times: If the behaviour needs modifying, I've directed the teacher to have a child come to the coaching room and observe the lesson with the task of identifying the most effective and the most destructive learning behaviours of their peers. At times the child, facilitated by me, has coached the teacher about who needs praise and who doesn't – it's fascinating. When they go back to class, their behaviour is modified. They don't look into the camera, thinking – "I am being watched now, I'd better behave" - they just get on with it.

[...]

In-ear coaching helps a teacher to focus not so much on planning and performance but more nuanced reflection on how the class can be engaged. A lesson plan is important but with in-ear coaching the teacher's attention shifts to the effectiveness of the implementation. It stops being about delivering a lesson and becomes about teaching learners.

[...]

One of my coachees was also with me at a different training session in another school, so I asked her to coach me. I knew her well. Therefore the dynamic was brisk, very short and sharp – single words.

She noticed that I had a mannerism where I put my thumbs into my belt loops – looking like John Wayne. She said: "Get your thumbs out of that belt". It looks very slovenly so I tried to stop it. The next time I did it in that same session, she just said: "John Wayne".

Now every time I move towards putting my thumbs in my belt loops I think of her words. Even though this habit was a deeply embedded comfort thing, I had stopped in 20 minutes. It really was a transformational moment

Analysis and Discussion

What makes this CPD method of real time in-ear coaching effective?

It establishes authentic change in practice and behaviour

Interviewees quoted evidence of improvements in pupil outcomes as a result of the changes that they had made in their practice that they could use in OFSTED and Pupil Premium submissions. Some of the detailed changes teachers had made in their practice as a result of in-ear coaching in a supportive context are:

- A teacher moderating strong regional accent and the speed of delivery because she realised that the pupils could not understand her;
- Recognising that an aggressive and negative tone was hindering behaviour and learning;
- Inviting pupils to be more reflective about their behaviour and where they sit in class.

Coachees also commented on how they had learnt to build on the pupils' respect for the teacher's desire to improve and had taken an interest in the pupils' opinion. Others had worked on specific techniques like developing the use of open-ended questions instead of closed questions and developing dialogic talk in the classroom.

The teachers had also enjoyed contributing to a face-to-face and online community of teachers who share ideas and support each other. One school leader commented:

“The value of the video platform is teachers can edit, share and comment to a range of people and then meet as a group to discuss a probe point – we look for one probe point within a reflection.

The long-term impact of web-based video I am seeing is that behaviour, thinking and language changes sustainably because of some well-timed comments from someone else in an in-ear coaching relationship.

The kids get used to it. But a sensible school will not use the system with pupils for whom it will not work: for example, autistic students who do not want to be filmed’.

What are the pre-conditions for this method to be effective?

What we have found in this qualitative study is that real-time in-ear coaching can be significantly effective in changing practice if the right conditions are in place and coaches and coachees are clear about their role. Schools that are thinking about introducing this in-ear coaching technology into their professional development programmes should consider all the elements listed here that will help to ensure that the investment is repaid.

The school culture

There was general agreement that, ***'In-ear coaching is not a magic bullet and cannot be used effectively to develop teaching techniques unless the teachers work out techniques for noticing their behaviour in their own time'. The intention of the coachee to learn is crucial to success.'***

The interviewees were sophisticated in their understanding of the need to be clear about the pre-conditions that need to be in place in order to ensure that CPD supported by web based video is effective. Introducing in-ear coaching into the CPD mix relies on significant levels of trust having been established between the parties involved. All the coaches had developed significant resources to support their work which showed a deep understanding of the principles. They were also generous in sharing those resources with other colleagues across academy chains and schools.

The whole cohort were using the same system. They emphasised the unique value of this particular web-based video innovation because the teacher owns the video they have recorded themselves or have allowed the coach to record remotely. The teacher is in full control over all recorded video because it is uploaded automatically into the teacher's individual user account on the web platform, protected by a personal password, and only they can decide if, when and with whom they might share their videos. This avoids any suggestion of surveillance and puts the teacher in control of their own improvement process.

One coach who had tried to sign up all the staff in his first programme had experienced hostility from staff who were nervous about being observed and were afraid of the surveillance implications. He had had more success when he invited a small group of teachers to lead a slow change in the school culture by signing up voluntarily. That way he worked first with those who had confidence in this method and took to it naturally. They then became advocates for change in CPD processes.

There should be a symbiotic relationship between the coach and the school. Through their coaching activities the coach can introduce cultural change to the school itself but they themselves must also understand and adapt to the existing culture of the school.

If coaches are not in full time employment in the schools it is essential they are made aware of all the policies of the school and the relevant information on the school's social and economic background that may impact on the way the school operates.

Establish a code of practice

A general view was that a school that engages with web-based video in CPD should adopt a sample code of practice with their staff and also be prepared to change this code as more was learnt and circumstances changed. Staff ownership of the staff was considered to be paramount.

Here is an example of a jointly developed code of practice:

As a professional learning community we agree:

- The system is for personal reflection, collaboration, coaching and enquiry learning, and remains under the control of the individual teacher at all stages;
- The system will not be used for surveillance;
- No pressure will be placed on teachers to share their practice with other users of the system;
- All individual users agree to use the system sensitively, developmentally and with due respect for colleagues;
- Individual users agree to use all of the system's security features and protocols to ensure privacy and security for teachers and pupils;
- Consideration will be given to teachers applying to use the system for different purposes although each new purpose will only be agreed if it can be shown to enhance teaching and learning and be aligned with our collective ethos of positive, trust-based collaboration;
- If new uses for the system are agreed, in future the adoption of the new approach will proceed on an opt-in basis and old videos will not be put to new use;
- All individual users have the responsibility to gain appropriate training in the use of the system;
- All individual users have the responsibility to ensure that relevant parties (learners, other teachers, visitors etc.) know when the cameras and microphones are recording and the purpose of the recording;
- All individual users have the responsibility to protect their own data and the data of others, and not to disclose passwords.

One of the coaches also explained how he got started with coaching:

“I knew what coaching was because before I joined a school I was doing executive coaching. So I ended up applying the executive coaching principles and ethos to this new video technology and seeing what worked and what didn't. Because there wasn't really a map for in-ear coaching that could find, I researched and found a couple of people: Lee Canter model (different ethos, not the kind I would subscribe to) and Marcia Rock, which I would. At the beginning I didn't know what I needed to know.

The specific skills that I have taught myself are what you say, how and why you say it and in what context. It's down to the timing and down to the context of the session. I am always open to new research of how this works. So my skillset is – and always will be – growing, evolving, changing.

The model I have evolved at the moment is:

- ***Pre-meeting;***
- ***The technology bit***
- ***Then a debrief.***

The specific skills used at each stage are guided by general principles of integrative executive coaching.”

Set expectations

When introducing the innovation to the staff school management leaders are advised to make it clear that the teacher who is the coachee owns the video and audio and is in control of how it will be distributed. Blanket permissions from parents and carers should also be obtained before the programme can start. The ICT staff will also need to set up systems to elicit and record permissions from parents and staff and establish procedures for such issues as password protection ensuring good security and use of online resources.

Appropriate induction

Clear messages emerged about managing the first group of teachers to participate in an in-ear coaching programme. It may be preferable in the first stage only to sign up teachers who want to learn and are comfortable sharing. This 'pathfinder' team will be able to devise ways of supporting teachers who do not have the same openness to coaching in the second stage.

When the first team is established the programme planners are advised to insist on a positive and encouraging coaching approach and to develop a professional culture where the presence of the video is not seen as a sign of failure. Also it is best where possible to have the camera in the classroom all the time, whether it is on or not, so that familiarity grows amongst the pupils.

Effective feedback

Views about feedback were varied but what was most clear and valued was that each individual teacher can specify a different style of feedback related to the context and to their preferences and perceived expertise:

“It’s an individual thing about how you like the in-ear feedback in real-time – you can give a signal when you want to hear feedback, e.g. when you feel you have no idea what to do next, ask the coach to help out. Everyone has different approach and style – it might be difficult for some people to change their teaching style on receiving the feedback but that was not an issue for me with in-ear coaching.”

One coachee tried to explain why the immediacy of in-ear coaching mattered:

“I have come across research that talks about the immediacy of the feedback – the relationship between how long after the session the feedback is given and its impact. If that is the case, extrapolating backwards, if you receive feedback at the exact moment you are doing something, then if that works this will be the most effective way to modify your behaviour, compared with the feedback that would happen in a post-coaching dialogue. The model we are looking at is this: the coached or observed lesson. Without video we draw on the different individual memories – both the observer and the teacher: with video it’s a shared memory.”

Other comments from other interviewees were that:

- Immediate feedback during the lesson is the best exemplar of assessment in the moment;
- Immediate feedback in real-time can promote an instant change. It can be transformational;
- There is nothing like quick feedback. It is so valuable in building a completely different rapport and level of respect;
- Feedback is most effective when it is based on mutually agreed targets;
- Real-time feedback links in well with the annotations and the notes of the lesson on the platform – it is difficult to disagree when you have the evidence.

As pointed out by one interviewee it is not the case that coaching always takes place between an experienced coach and an inexperienced teacher:

“You can be coached by people from all levels and even the pupils. As a school leader I have been coached by more junior members of staff who have a very different feedback. The video is very much the teachers and entirely private. On average I only give 4-5 pieces of feedback per hour”.

These examples of immediate feedback on practice by in-ear coaches before, during and after a teaching session illustrate the range of feedback that can be provided. Usually the coachee would be aware of what kinds of practice areas they were engaged in observing and would have asked for this advice:

- Too many instructions for the pupils to absorb;
- Closed questions do not stimulate children as well as open ended questions;
- Only the bright and noisy pupils are answering;
- Ask pupils to consider where they sit and why in terms of effective learning;
- Be clear about the outcomes you expect.

Two coaches explained how they decide to deliver their comments:

- ***“If the in-ear comment doesn’t need to go at that very moment, I would write it in the reflection section as a comment for later use, but use the live verbal one as required. This gives you a chance to rehearse your live comments”;***
- ***“The feedback that is better for real time in-ear coaching is when it’s more the behavioural or instantaneous stuff, the things that are actually in the moment; the things, the moments that will be gone if you don’t respond there and then: when a teacher is having an assessment discussion with a child, for example. For the moments that you know will be repeated or extended it can be just asynchronous feedback e.g. when group work is happening. Real-time in-ear feedback when you think you won’t get another opportunity”.***

Another coach indicated the different methods used in his coaching sessions:

- Coach makes general comments about teaching style;
- Coach agrees which aspects of technique to target;
- Coachee coaches the 'coach';
- Teacher can be her/his own coach.

One coach and coachee partnership invited pupils to be behaviour coaches and even pupils to give their feedback where trust is good and ethical considerations have been met:

“Children can be highly sophisticated individuals; they appreciate the fact that I am trying to improve. I ask them what has gone well what hasn't and they are positive about it and give their input”.

What is the impact on learning for teachers and pupils?

Key in-ear coaching experiences focused mainly on teachers' professional learning rather than the impact on children which would require more time to research.

As in-ear coaching is such a new intervention in CPD, case studies written by teachers for teachers were found to be valuable in helping to develop strategies. Building up a bank of web resources over time helped with sharing experience like show-reels made by practitioners to share changes in technique as they happened. This also raised teachers' self-esteem because it validated their discoveries about practice and performance through measuring progress and sharing.

Two of the interviewees were leaders in academy chains of schools who had found that sharing their programme with other schools helped to build professional knowledge and expertise across all the schools. In the context of the pupils, several references were made to the pride they took in teachers who were also prepared to learn as well in order to help pupils more.

Can in-ear coaching be disruptive?

Disrupting the classroom

Several of the interviewees pointed out that in the field of innovation, disruption can be an important and positive dynamic for change but they also explained that technical hitches with the in-ear tools or video can be negatively disruptive such as when some students were waving at the camera! The behaviour had been exacerbated by a teacher who had not followed the instructions to explain the system to the class. Once this was done the poor behaviour was short lived. Another coach advised, *'If you leave the camera in situ the kids get used to it. But a sensible school will not use the system with pupils for whom it will not work: for example, autistic students who do not want to be filmed'*.

The worst case, said an experienced coach, is children being forced to do the learning but for the wrong reasons. Unethical motivation is when an ill-informed head threatens that they can watch the children any time in what is called colloquially 'Big Brother' style⁵.

⁵ Such behaviour of course should be explicitly prevented by a code of practice such as the example given in the section 'Getting Started'.

Equally seriously another teacher described 'scare-mongering' amongst the staff when the use of the system was announced. 'An older colleague of mine used to put a bag over the camera for fear of being filmed all the time'. Another teacher warned:

“When web-based video coaching was first introduced there was a ‘failing teacher vibe’ from the other staff. It is important that in the school culture we remove the stigma of implying that having the kit in the room implies that that particular teacher is failing”.

One coach said the first meeting with the staff is very important to overcome these understandable responses:

“The initial impact is essential and an insensitive announcement of the CPD programme can be met with a ‘sea of negativity’. Launching to the whole staff body in one school was met with an array of ‘verbal assassinations’ by the other staff. The instant reaction was reticence about being monitored - it took over one year to change the culture”.

Learning from this disruption, the academy team launched the approach to a small number of selected staff the next time with a two-day programme which included an overview of the approach taken, how the team would be coached, how the system fitted into the school experience and the technical set-up. This worked much better. The success has been such that the programme will now be rolled out to three more schools in the chain. In addition the original lead school is becoming a centre of excellence to train in coaching and in-ear coaching.

The value of disruption

In-ear coaching was seen generally by those who used it as a valuable and positive disruption to the usual routines and which enabled teachers to reassess their practice in real-time from a new perspective. Additional benefits could be derived from the data such as providing evidence of pupil progress and effective learning but it is important that any uses of recorded video and audio must be explicit and conform to the code of practice that has been adopted and against which parental permission has been granted.

Similarly, senior leaders must establish that this equipment and techniques will not be used for performance management or surveillance activities. Some members of staff who are not web-savvy will also need a clear explanation of how privacy is possible in their web space before they are convinced. Furthermore, care and sensitivity should be exercised in deciding which classes of pupils are involved and schools are advised to avoid using the equipment in classes where pupils are autistic or have other challenges where in-ear coaching may disturb them unduly.

Is an in-ear coaching programme replicable and sustainable over time?

Overall the view was that in-ear coaching leads to increased self-reflection and stronger teaching, and that positive benefits arising from the ease of sharing good practice within the school or across school clusters. This kind of exchange on the web platform was already opening up broader communications, helping to establish sharing culture and build knowledge and expertise in a wider professional context.

For example one school had made a show-reel video to share how changes in technique have developed and how progress might be observed. Schools found that building up a bank of resources over time helped with sharing experience and that case studies are useful to help develop strategies.

The key to replicability and sustainability was the social learning value of the web platform and the opportunity to share and discuss video clips. In order to see a return on investment teachers were advised to make full use of the platform: having a community inside and outside the school to share with is the best way to go forward.

Users suggested the promotion of informal using of the platform to begin with and then building up the use through formal commitments. Senior managers can head up a focus group and give positive feedback to their colleagues.

Conclusions

The interview transcripts have been quoted at length in this report because what is important is the style and tone of the contributions - the conversational language helps the reader to tune into the strength of conviction of the interviewee. In this small, qualitative study there is evidence from practitioners that the innovation of in-ear coaching has improved professional practice significantly. In essence it is clear that in-ear coaching has its challenges because when human behaviour is observed by others there is the danger of disruption, fear and unethical surveillance. On the other hand, the findings indicate that when the team is knowledgeable and committed to this method of professional development it can be highly effective because of the immediate, personalised and contextualised feedback that enables the teacher to act upon and see an immediate impact on their classroom practice. In turn this can lead to deep learning that is replicable and sustainable over time.

The qualities mentioned in this research as paramount in facilitating human interaction are manifested. These include trust, sensitivity, reflection, empathy and ownership, as well as humour, and, sometimes, chocolate can help too.

One can only admire those teachers who have the courage to invite others to critique their classroom practice and to learn how to enhance their practice. The sheer volume of the sharing of video clips on the platform is witness to teachers' keenness to learn with and for each other. They deserve rewards for enduring the positive stress that accompanies such adventure.

These committed experts felt that the use of videos and synchronous coaching in authentic situations should be standard practice in teacher training. Indeed it appears that, at its best, in-ear coaching in the classroom has the potential to be transformational for teachers and pupils alike. It is hoped that larger scale studies will endorse these professional observations.

Recommendations

Advice for coaches

The overall advice to coaches was to develop trust, empathy and discernment: quite a tall order.

“When undertaking in-ear coaching I follow a protocol around principles of empathy and discernment for when to talk and when not to talk to the teacher. There were several steps on the way about creating the right context that would help towards this ultimate aim”.

Perhaps not such an obvious first step is to make sure that as a coach they could use the technology well. The presence of the equipment should be seamless and unobtrusive so that issues of practice can be focused on. This also affects the quality of the observation. One expert operator explained:

“I have had to learn new skills: the technological skills of moving the camera, pressing the button and getting the comment right at the right time. The skills are close to that of a filmmaker – camera operator, producer, editor. I’ve used video editing skills and media awareness to craft the recorded sessions I made for coachees. For example I have a shot I call the “Peter Greenaway” which has a very slow left-right pan - a kind of slow establishing shot that allows teachers to look back and get a sense of what’s going on in the whole room rather than a specific place”.

Another important precondition was to create a contract with all the participants that was a “live” document” so that new considerations could be added. The coach was also advised to agree in advance the type of input with the coachee.

“The one thing that springs to mind is empathy – it’s being absorbed into the lesson, getting into the rhythm of the teacher and then being better able to judge when it’s appropriate to talk. The vast majority of teachers don’t think they can listen to you while talking to the children. As an informal test of how we are going to work, in the first session with someone I would drop a short comment, question or idea while they are talking and 99% of people can listen, act and continue what they are doing. For some people I work with it is wonderful to watch: for example I’d speak a lengthy comment into their ear while they are talking; they would finish their input 5 minutes later and then they would act on it: they’ve clocked it, retained it and chosen to act on it at a time that suits them. They stay in charge; they are deciding if, when and how to implement the coach’s comment”.

Coaches need to engage in pre-observation agreements as teachers had very different expectations. For example some expressed the wish for only encouraging comments whilst others wanted a critique. Explaining the benefit of a clear focus for observation was important and the coachee should be encouraged to describe the kind of advice they required which makes critique acceptable. At the same time, all the coaches were keen to learn from the coachee. They advocated a non-hierarchical relationship and often volunteered to be coached by the coachee.

Other coaches explained how the relationship between coach and coachee became more relaxed over time:

- *“The more I work with someone the less formalised it is. In the middle of a sequence of sessions, the pre-meeting may not need to happen because we both know where we are in the work and what we are working on at the moment.*
- *When undertaking in-ear coaching I follow a protocol for when to talk and when not to talk to the teacher. Within this there are protocols – for example of when to talk to coachees and when not to - around principles of empathy and discernment.*
- *When I am training other coaches there is a rubric – a self-developmental and training progression. There is a progression of experiences to learn to do that and other aspects of the coaching process.*
- *The real-time in-ear comments are the scaffolding; the real-time coaching operates within the teacher’s’ potential to grow. It’s more the need of the teacher in terms of kind of experience they need to grow called a skill or will assessment”.*

Coachees were advised to give the pupils all the information they asked for about the in-ear coaching video system.

“The children ask a lot of questions – what’s that, what it is for, who is talking to you. They understand that teachers are working to help them teach better”.

However, once all the questions have been answered the pupils’ initial intense interest fades:

“The in-ear process can be almost invisible to the pupils. Watching the earlier videos, I told the pupils I am being watched by an observer via a camera and they are guiding me.

After a clear explanation the children don’t seem to care about it – especially the older ones. But it is good to include the pupils where appropriate in respecting the teacher’s enthusiasm to learn”.

One effective technique, particularly with poorly behaved children, was to ask the children with poor behaviour to sit with the coach, observe others and suggest strategies to deal with them.

“In this context the coach and I have allowed the children to do the coaching and watch the videos. The coach trained them to be the coaches and the children coached the teacher with particular concentration on which pupils were not behaving well and suggestions for what to do about this”.

Advice for coachees

Although there is no cameraperson and no coach in the classroom, in-ear coaching still has the potential to be distracting or disruptive. In this context, teachers are advised to explain the kit to the pupils at the start of a lesson and to have the kit in the room as much as possible so that it becomes unremarkable. Teachers who volunteer should be prepared to learn and be reflective about their practice and proactive in making sure the follow-up sessions are constructive. Giving feedback to the coach was important in fine-tuning the impact. The teacher is advised to see in-ear comments as a constructive learning opportunity. Being active in building feedback into subsequent lessons is the best way to ensure improvements.

Collecting evidence

Schools will be expecting evidence of improvement throughout the project, and, therefore, strategies should be developed at the outset to ensure on-going input of evidence from the programme into the school development plan and the existing CPD programme structure. Discussions are advised about how the evidence might be reported for OFSTED and Pupil Premium. In addition, where it is appropriate, setting up channels to collaborate with other schools can bring in new ideas and increase the impact of the project.

Further research

A larger study would be able to develop and consolidate what has been learnt here from these practitioners experienced in the use of in-ear coaching. We suggest three perspectives for the design of such further study.

First would be to use Guskey's five levels (2002), a model that has been successfully used in the past to evaluate and measure the impact of CPD programmes. Guskey showed that the quality of professional development is influenced by a variety of factors: content characteristics, process variables, and context characteristics.

Content Characteristics Variables include the new knowledge, skills, and understanding that are the foundation of any professional development experience or activity.

Process Variables include the types and forms of professional development activities and the way those activities are planned, organised, carried out, and followed up.

Context Characteristics Variables include the organisation system, or culture in which professional development takes place and where the new understandings will be implemented.

The results of CPD programmes can be analysed from the perspective of Guskey's multilevel framework to evaluate teacher professional development. He laid out five critical levels for the evaluation of professional development programmes in general: (1) participants' reactions, (2) participants' learning, (3) organisational support and change, (4) participants' use of new knowledge and skills and (5) students' learning outcomes.

This approach to analysing the impact of tablets had been built up in several studies about the role of digital technologies in the change process that MirandaNet Fellows have published. Their focus on professional development in digital technologies began with the government-funded programme in England and Wales intended to engage teachers in innovation and pedagogy that lasted from 1998-2003 (Preston 2004). This report was based on the evidence from two large commercial companies who were training providers and Davis, Preston, and Sahin (2009a, 2009b) re-examined the statistics from the perspective of the small local trainers. The method has also been used, again successfully, to analyse the impact of three CPD programmes designed to help teachers introduce tablets into schools (Preston and Younie 2016 in press).

A second perspective would be to investigate why in-ear coaching appears to have a more sustainable impact than other methods. Exploring the neurological and psycho-linguistic processes that are taking place as the coach speaks into the ear would focus on the uniqueness of this innovation. Questions could be asked about the kind of memory structures and behavioural structures that are taking place during the in-ear process. Coaches hypothesise that changes are occurring at behavioural, cognitive and language levels because of well-timed comments from a coach. Studying these neural pathways in the brain might reveal more about how performance changes can be affected.

A third possibility for further research has been distilled from a group of experts in the audience when this study was first presented at conference (Preston and Belogaska 2015). The audience were asked, what would be your core questions in a follow-up study about in-ear coaching? The suggestions they made were:

- What is the impact on teachers' achievements and pupils' learning?
- Is there an element of behaviourism in this approach – is the teacher a marionette?
- How many in-ear coaching sessions lead to a long-term change/impact on teaching practice?
- How is new knowledge in neuroscience relevant to in-ear coaching?
- Are there any situations where this method is more effective than other forms of CPD?
- How far does in-ear coaching close the gap between theory and practice?
- How does this CPD intervention improve professional knowledge building and self-reflection?

Judging from these suggestions there is clearly a growing body of experts who have many more questions to ask about this in-ear coaching innovation. The next few years will tell whether this innovation has the potential to transform practice if effective research designs can be funded.

References

- Beck, C. and Kosnick, C. (2000). *Associate teachers in pre-service education: clarifying and enhancing their role*, Journal of Education for Teaching, Vol. 26 No. 3, pp. 207-224.
- Blackman, A. (2010). *Coaching as a leadership development tool for teachers*. Professional Development in Education, 36(3), 421-441.
- Canter, L. (2016) Real Time Teacher Coaching®. Available at: <http://www.ct3education.com/real-time-teacher-coaching> Retrieved: April 2016.
- Charmaz, K. (2000). *Grounded Theory: Objectivist and Constructivist Methods*. The Handbook of Qualitative Research. Second edition. Eds. M. Denzin & Y. Lincoln.
- Clutterbuck, D. (2014). *Everyone needs a mentor*. 5th Edn. London, Chartered Institute of Personnel and Development.
- Coninx, N., K. Kreijns & W. Jochems (2013). *The use of keywords for delivering immediate performance feedback on teacher competence development*. European Journal of Teacher Education, Volume 36, issue 2, 2013
- Cooper, D (2004). *Professional Development: An Effective Research-Based Model: Washington Stem*. <http://www.washingtonstem.org/Resource-Hub/STEM-Education-Research#.Vx55n3CkWfs> retrieved 250116
- Cox, E. (2013). *Coaching Understood: A pragmatic enquiry into the coaching process*, SAGE, London.
- Davis, N., C. Preston, and I. Sahin (2009a). *ICT teacher training: evidence for multilevel evaluation from a national initiative*. British Journal of Educational Technology (BJET). Volume 40. Issue 1 (January 2009). Available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8535.2007.00808.x/abstract> Retrieved: April 2016.

Davis, N. E., C. Preston and I. Sahin (2009b). *Training teachers to use new technologies impacts multiple ecologies: Evidence from a national initiative*. British Educational Research Journal (BJET). Volume 40. Issue 5 (September 2009). Available at: <http://onlinelibrary.wiley.com/doi/10.1111/j.1467-8535.2008.00875.x/abstract> Retrieved: April 2016.

Dinham, S. (2013). The quality teaching movement in Australia encounters difficult terrain: A personal perspective. Australian Journal of Education 57(2):91-106

Downey, M. (2001). *Effective Coaching*. London, Texere Publishing.

Edmondson, S. (2005). *Evaluating the effectiveness of a telepresence-enabled cognitive apprenticeship model of teacher professional development*. PhD. Utah State University, Logan, UT

Feiman-Nemser, S. (1990). "Teacher preparation: structural and conceptual alternatives", in Houston, W.R. (Ed.), *Handbook of research on teacher education*, Macmillan, New York, pp. 212-233.

Franke, A. and Dahlgren, L. O. (1996). "Conceptions of mentoring: an empirical study of conceptions of mentoring during the school-based teacher education", *Teaching and Teacher Education*, Vol. 12 No. 6, pp. 627-641.

Glaser, B. and Strauss, A.L. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*, Aldine Publishing Company

Guskey, T.R. (2002). *Does it make a difference? Evaluating professional development*. *Educational Leadership*, 59(6), 45-51.

Hassel, E. A., & Hassel, B. C. (2009). *The big U-turn: How to bring schools from the brink of doom to stellar success*. *Education Next*, 9(1).

Hobson, A.J. & Malderez, A. (2013). *Judge mentoring and other threats to realising the potential of school-based mentoring in teacher education*, *International Journal of Mentoring and Coaching in Education*, 2(2), 89-108.

Hudson, P. (2010). *Mentors report on their own mentoring practices*, *Australian Journal of Teacher Education*, 35(7), 3.

IRIS Connect (2012). *A CPD model for all stages of a teacher's career* Available at: <http://www.irisconnect.co.uk/wp-content/uploads/2014/08/going-beyond-cpd-white-paper.pdf>. Retrieved: April 2016.

Imig, D. G., & Imig, S. R. (2006). *The teacher effectiveness movement: How 80 years of essentialist control have shaped the teacher education profession*. *Journal of Teacher Education*, 57(2), 167-180.

Joyce, B., & Showers, B. (1980). *Improving in-service training: The messages of research*. *Educational Leadership*, 37 (5), 379-385.

Kamens, M. W. (2007). *Learning about co-teaching: A collaborative student teaching experience for preservice teachers*. *Teacher Education and Special Education*, 30, 155-166.

Luckin, R. (2016). *Mainstreaming Innovation in Educational Technology*. *Scholarship of Teaching & Learning*, 3, 1, 2016. Available at: <http://tlc.unisim.edu.sg/research/advstotl-2016/luckin.html>. Retrieved: April, 2016)

Maguire, M. (2001). "Bullying and the post-graduate secondary school trainee: an English case study", *Journal of Education for Teaching*, Vol. 27 No. 1, pp. 95-109.

Marable, M. and Raimondi, S. (2007). "Teachers' perceptions of what was most (and least) supportive during their first year of teaching". *Mentoring and Tutoring: Partnership in Learning*, Vol. 15, No. 1, pp. 25–37.

McIntyre, D. and Hagger, H. (1996). *Mentors in schools: Developing the profession of teaching*, David Fulton, London.

Medgyes, P. and Malderez, A. (1996). *Changing Perspectives in Teacher Education*, Heinemann, Oxford.

Mezirow, J., (1990). *Fostering Critical Reflection in Adulthood: A Guide to Transformative and Emancipatory Learning*, Jossey-Bass, San Francisco.

Pachler, N, C. Preston, J. Cuthell, A. Allen and Pinheiro Torres (2011). *The ICT CPD Landscape in England. Becta*. Available at: http://mirandanet.ac.uk/wp-content/uploads/2016/04/ICT_CPD_Landscape_report.docx. Retrieved: April 2016. A section from this about good teachers who are reluctant to use digital technologies can be downloaded here.

Parsloe, E. and M. J. Wray (2000). *Coaching and mentoring: Practical methods to improve learning*. London, Kogan Page.

Ploessl, D. and Rock, M. (2014). *eCoaching: The Effects on Co-Teachers' Planning and Instruction*. *Teacher Education and Special Education* 2014, Vol. 37(3) 191–215

Preston, C (2014). *Innovation in teaching and learning: using web-enabled video technology to build professional capital through reflective practice, coaching and collaboration*. Available at: <http://mirandanet.ac.uk/about-associates/associates-research/iris-connect-research-into-web-based-video-in-professional-development/>. Retrieved: April 2016.

Preston, C. (2004). *Learning to use ICT in Classrooms: teachers' and trainers' perspectives: an evaluation of the English NOF ICT teacher training programme (1999-2003)*. Available at: <http://www.mirandanet.org.uk/tta/>. Retrieved: April 2016.

Preston C., and S. Younie (2016, in press). *Taking the tablets: has the long predicted revolution in teaching and learning finally arrived?* *MirandaNet Journal* <http://mirandanet.ac.uk/about-associates/current-mirandanet-associates/>

Rock, M. L., Schumacker, R., Gregg, M., Gable, R. A., Zigmond, N. P., & Howard, P. (2014). *How are they now? Longer term effects of virtual coaching through online bug-in-ear technology*. *Teacher Education and Special Education*. Advance online publication. 1–21

Rock, M. L., Schoenfeld, N., Zigmond, N. P., Gable, R. A., Ploessl, D. M., & Salter, A. (2013). *Can you Skype me now? Developing teachers' classroom management practices through virtual coaching*. *Beyond Behaviour*, 22(3), 15-23.

Rock, M., Gregg, M., Gable, R., Zigmond, N., Blanks, B., Howard, P., & Bullock, L. (2012). *Time after time online: An extended study of virtual coaching during distant clinical practice*. *Journal of Technology and Teacher Education*, 20, 277-304.

Rock, M. L., Zigmond, N. P., Gregg, M., & Gable, R. A. (2011). *The power of virtual coaching*. *Educational Leadership*, 69, 42-47.

Rock, M. L., Gregg, M., Thead, B. K., Acker, S., Gable, R., & Zigmond, N. (2009). *Can you hear me now? Evaluation of an online wireless technology to provide real-time feedback to special education teachers-in-training*. *Teacher Education and Special Education*, 32, 64-82.

Sanders, W.L. and Rivers, J.C. (1996). *Cumulative and Residual Effects of Teachers on Future Student Achievement*, University of Tennessee, Value Added Research Centre

Savage, K (2016). *Career Coaching for Women*. Available at: <http://www.elbowroomcoaching.com/careercoachingforwomen-1>.

Scheeler, M. C., McAfee, J. K, Ruhl, K L , and Lee, D. L. (2006). *Effects of corrective Feedback delivered via wireless technology on preservice teacher performance and student behaviour*. *Teacher and Special Education*, 29, 12- 25.

Scheeler, M. C, Ruhl, K. L., & McAfee, J. K. (2004). *Providing performance feedback to teachers: A review*. *Teacher Education and Special Education*, 27, 396-407.

Schön, D. (1983). *The Reflective Practitioner: how professionals think in action*. New York, Basic Books.

Stahl, G. et al. (2016 in press). *Real-time Coaching and Instant Feedback in Pre-service Teacher Training and Education*.

Whitmore, J. (1992). *Coaching for performance: a practical guide to growing your own skills*. London: Nicholas Brealey Publishing.

The authors

Dr Christina Preston, Professor of Education Innovation, has been at the forefront of education and technology for over 25 years. She founded MirandaNet in 1992 to research and advise clients in the impact of technology and learning. The professional organisation has become a global thought leader with over 1,000 members in 80 countries. Knowledge sharing and creation and managing the change process to ensure impact is at the core of MirandaNet's philosophy. Christina is an associate of the Research, Business and Innovation Directorate at De Montfort University. She is also the Chair of Trustees of World Ecitizens charity established by the MirandaNet Fellows in 2002 after the events of 9/11 in New York. This charity provides a web space where learners across the world can publish for an international audience.

Dr Sarah Younie, MirandaNet Research and Innovation Director, has brought her significant experience to MirandaNet projects over twenty five years since she has been involved in international research on educational technologies and teaching. She has been involved in the use of digital technologies in educational settings for UNESCO, the EU, UK Government Agencies, Local Authorities, educational charities and other funders. She has worked as a teacher and researcher in secondary schools, universities and as UK Chair of the national subject association of IT in Teacher Education (ITTE) she has conducted research, including gathering evidence for the Parliamentary Select Committee Inquiry into Education.

Sarah is a Reader in the Research, Business and Innovation Directorate at De Montfort University, where she is Programme leader for the MA in Education Practice. She has published widely on educational technologies and is the Associate Editor-in-Chief for the international Journal of Technology, Pedagogy and Education. Dr Younie's latest book published by the Open University Press is entitled 'Teaching with Technology: the essential guide'. Dr Younie is a founder member of MESH (Mapping Education Specialist knowhow) and is the Editor-in-Chief of the MESH Guides for ICT.

Appendix

Technical Description of IRIS Connect

[IRIS Connect](#) is a video-based professional development platform for teachers which enables the types of learning that research has shown to support teachers and improve pupils' outcomes by improving teaching through collaborative, experiential and evidence-based professional development.

The system has been built with ease of use, security and permissions at the heart, placing the teacher in control. It was the first system in the world to:

- Be fully cloud based
- Use time-linked notes (metatagging)
- Provide tools for analysis and review

The system comprises a secure cloud-based platform with integrated mobile video technology and support services which provide teachers with all the four elements of the Effective Professional Development Model⁶: **theory, modelling, practice and coaching**. The teachers are enabled to:

- Access and share **theory**, linked to **model** videos of theory in practice
- Record and **reflect** privately on teaching and learning
- **Share** securely with peers in their trusted network over distance
- Engage in professional discussion and **evidence-based feedback**
- Access time-shifted or **live remote coaching**

IRIS Connect have developed two different types of video technology to enable simple, easy and secure capture of teaching and learning: the LiveView camera system for remote live observations and synchronous feedback, including live in-ear coaching, and the Discovery Kit camera system for retrospective reflection and asynchronous feedback. Both camera systems are simple to set up, use and transport.

The LiveView camera is placed in the classroom and can be set up for self-recording by the teacher themselves, or they can invite a coach or a peer to observe them remotely, controlling the camera via their PC or a laptop and an Internet connection. The LiveView camera enables 360 degrees view of the classroom with pan, tilt and zoom functions and two way discreet communication between the teacher and the observer.

The Discovery Kit is based on using two mini iPads uploaded with the IRIS Connect sophisticated application for easy and secure capturing of the teachers' actions and the learners' reactions. The application enables automatic upload of the video files into the teacher's personal space on the cloud-based platform and synchronized review of the two video files alongside each other.

Each user is allocated a personal account, with their individual username and password and they are in control of all their data and video files which cannot be accessed by anyone else unless given a specific permission by the teacher themselves.

The platform facilitates focused reflection on the teaching practice through the use of time-stamped comments and analysis tools, which enable evidence-based analysis and measuring of progress.

The collaboration is facilitated via the possibility for the teachers to create online community groups within and beyond their schools to engage in collaborative learning activities.

6 Dr. J. David Cooper, (2004) "Professional Development: An Effective Research-Based Model"