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Using Emerging Technologies to Develop Professional Learning

Edited by
Jean Murray and Warren Kidd

ROUTLEDGE

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Warren Kidd and Jean Murray

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Jennifer Charteris and Dianne Smardon

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The ‘trainer in your pocket’: mobile phones within a teacher continuing professional development program in Bangladesh

Christopher S. Walsh, Tom Power, Masuda Khatoon, Sudeb Kumar Biswas,

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Professional learning to support elementary teachers’ use of the iPod Touch in the classroom

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Research capacity-building with new technologies within new communities of practice: reflections on the first year of the Teacher Education Research Network

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Pushing the envelope on what is known about professional development: the virtual school experience

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National models for continuing professional development: the challenges of twenty-first-century knowledge management

Marilyn Leask and Sarah Younie

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INTRODUCTION

Using emerging technologies to develop professional learning

This special issue locates teachers' professional learning within an 'emerging' or 'new' technologies framework. We define such technologies as including digital, Web2.0, social media, mobile and information technology tools. In compiling the issue, we recognised that, whilst some research on the adoption of such tools and technologies in teachers' professional development has been produced, this is still an emerging area of practice. Also, the forms and effectiveness of such provision in promoting teacher learning at various career 'stages' are decidedly under-researched areas. The value placed upon technologies by teachers and teacher educators and their potential in professional learning are therefore often ambiguous and in need of a (re)new(ed) focus of attention.

Internationally, there is a growing body of research (and speculation) about adult learners' responses to and uses of emerging technologies. But much of the literature on teachers' professional development still conceptualises teachers as playing 'catch-up' with the world outside schools in terms of their use of technology. Consequently, some professional development courses essentially focus on developing and auditing the technological competence and skills of teachers. Other types of professional development provision prioritise the adoption of e-learning pedagogies or the deployment of specific types of new technologies in schools, often in superficial ways. Ironically, these types of provision often ignore the roles these very same technologies can play as the conduits for teacher – and teacher educator – development and learning.

This special issue aims to contribute to developing knowledge about the roles that new technologies can play in the creation and implementation of good-quality professional development programmes. It draws on papers from both national and international perspectives, bringing together papers from Bangladesh, Canada, New Zealand and the USA, as well as the United Kingdom. The issue explores issues for professional learning through and with technologies, whilst centring on issues of professional development, rather than just on the technology itself. Its unique contribution to the field of teacher education lies in analysing ways in which emerging (and established) technologies may – or may not – have the potential to facilitate 'effective' or 'deep' professional learning for pre-service and in-service teachers.

We focus first on the benefits of specific technologies and tools, considering how they might aid teacher learning and enable professional development, often across time–space boundaries. The contributions cross in-service and pre-service distinctions and include a focus on teachers from all sectors of the school system and on into the lifelong learning and higher education sectors. Questions we would wish to pose here include: Can emergent and older technologies facilitate 'deep' and long-lasting professional learning? Are technologies positioned to allow for in-depth reflection by practitioners? To what extent do teachers feel that they 'own' professional development mediated through technology? How might the use of new

technologies bridge time, space and distance to support continuing professional development for diverse groups of teachers? And how are the perceived benefits of technology for teachers' learning perceived by organisations, educational leaders and teacher educators and, of course, by teachers themselves?

We start this issue with a contribution by Jennifer Charteris and Dianne Smardon in New Zealand, which evaluates the outcomes of a case study using video to develop professional learning. Video technology is not a new tool, of course, but it has often been used in superficial ways in the past. This research employs a fresh way of using video to develop 'deep learning' during peer coaching sessions. Here the study findings indicated that teacher participants were able to 'see' themselves thinking, in the process becoming explicitly aware of their peer coaching role and personal learning processes. This opportunity, to have a 'second look, second think', allowed the teachers to think further and more deeply on the learning dialogue, affording additional insights to their practices.

Examples of mobile phones being used with teachers to provide continuing professional development, particularly in emerging economies and at scale, are largely absent in the research literature. But our second paper by Christopher Walsh and his co-authors explores a large-scale programme in Bangladesh using mobile phones. Here those phones are part of English in Action's model for providing teachers across this vast and under-developed country with professional development to improve their communicative language teaching. The paper describes how, in the current part of the programme, low-cost mobile phones are used as 'the trainer in the pocket' for numerous teachers in remote locations. Based on their findings, the authors argue that such use of mobile phones for the provision of teacher development at scale is highly effective, timely and replicable in both developed and developing contexts.

The next paper by Katia Ciampa and Tiffany Gallagher considers how teachers in an elementary school (ages 5–13) in Canada learn about mobile multi-media devices in order to extend and enhance their classroom practice. In this example we see how teachers are supported to learn about the iPod Touch as a classroom tool and to gain confidence to integrate the technology into their pedagogy. Interestingly, here the iPod Touch is the designated learning medium for both teachers and children. This paper proposes a framework that outlines particular characteristics for supporting teachers' effective integration of mobile multimedia technology into classroom practice. It also raises the important issues of leadership and management, particularly in the creation of strong e-cultures for teaching within a school.

The fourth paper is written by Grant Stanley, Zoe Fowler and the founders of the Teacher Education Research Network (TERN), a large-scale capacity-building programme funded by the Economic and Social Research Council in England to strengthen research in and on teacher education. As the authors note, there is significant interest in how new technologies support learning across higher education. In this case, the TERN project used virtual research environments, with somewhat mixed results, to facilitate communication, networking and learning by the researchers, all of whom were teacher educators. Using the theoretical lenses of situated learning and socio-cultural approaches to literacy, the paper analyses the participants' ways of engaging with this technology. In conclusion, the authors outline a range of factors that they believe are important for successful engagement with new technologies in future academic communities of practice.

This is followed by a paper from Nancy Fichtman Dana and her co-authors, which explores a case study in the USA focusing on professional development for

teachers working in virtual schools. Virtual school teachers teach completely online courses and do not reside or work within proximate geographical locations or time zones in the USA. The professional development programme for such teachers that this case study designed was therefore supported by the use of various synchronous and asynchronous technology tools during a year-long collaborative action research endeavour. This paper provides insights into what constitutes powerful professional learning for this unusual group of teachers, as well as looking at the ways in which synchronous and asynchronous technology tools can be utilised to scaffold that learning. The questions posed here include: What does the use of these new technologies add to the action research design of the programme and what additional benefits did the teachers gain from learning in a virtual world?

In the next paper Warren Kidd considers the use of Web2.0 tools and platforms in the education of beginning teachers on pre-service programmes in England. He argues that the use of technological tools during pre-service supports the development of teacher competence and reflective practice, alongside generating essential learning about e-learning practices. Through both learning to teach and – eventually – teaching their own pupils using new technologies, e-learning pedagogies come to form an essential part of the ‘craft repertoires’ of these new teachers. This is particularly important since these teachers are starting their careers in the rapidly expanding technological environments of twenty-first-century schools and colleges. Kidd also suggests that technology might offer a counter-point to prevalent performativity cultures and neo-liberal discourse in debates about pre-service teachers’ professional learning in England.

Taken together, the examples of teacher learning in this issue present different technologies as effective tools to enable synchronous and asynchronous ‘deep’ professional learning over distances and for sustained periods of time. Like many conventional forms of professional development, the programmes described here all privilege the importance of communication, interaction and dialogue for teachers’ professional learning, but offer new and sometimes more effective ways of achieving those key touchstones through the use of technology.

The final paper considers possible ways forward in terms of using new technologies to enhance and strengthen teachers’ professional knowledge bases. The paper by Marilyn Leask and Sarah Younie, drawing on their work over many years and in many varying contexts, poses the starting question of why so little attention is drawn to the knowledge bases available to support teachers in improving the quality of their professional knowledge. The paper argues that the quality of these knowledge bases and teacher access to them is often taken for granted in research on professional learning and is rarely acknowledged in the discourses of school improvement. It then goes on to examine the unacknowledged problem of providing a sustained approach to improving the quality of and access to the evidence bases underpinning professional development programmes. Finally, the authors outline opportunities that exist for low-cost, interlinked national and international e-infrastructures to be developed to support their ideals of knowledge sharing and building across teaching communities.

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Second look – second think: a fresh look at video to support dialogic feedback in peer coaching

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This case study, concerning peer coaching for sustainable professional practice, utilised video to enable teachers ‘deep learning’ during peer coaching sessions. While the use of video is not a new tool for continuing professional development, this research employs a fresh way of using it. Teachers reflected on their learning process by watching video footage filmed during group peer coaching sessions. The study explores how this reflection with peers influenced the teachers’ thinking and decision-making. Findings indicated that teacher participants were able to ‘see’ themselves thinking, becoming more explicitly aware of their peer coaching role and their own professional learning processes. This paper links strongly to the theme of this special issue, advancing that the use of video can enable teachers a unique opportunity to review and reflect on their positioning in their professional learning. The research recommends ongoing exploration of practices that afford teachers opportunities to develop metacognitive awareness and an agentic role in their own learning.

Introduction

In this paper we argue that digital tools can afford teachers new ways to promote deep learning during peer coaching situations. It is our contention that teachers can go beyond superficial learning in collaboration with their colleagues to grow sustainable practices through the use of information technologies. In this research paper we address how a collaborative community of inquiry can be enhanced through the use of video as a tool for reflection. In the New Zealand teacher professional learning context, video has been utilised predominantly to examine teacher classroom practice. The teacher participants in this study use video to reflect on their learning from previous collaborative peer coaching sessions. This opportunity, to have a ‘second look, second think’, allowed teacher participants to think further and more deeply on their learning dialogue, affording additional insights. This is a fresh approach to the use of video. While classroom video footage has been used for stimulus recall in teacher peer coaching (van Es 2010, Cutrim Schmid 2011, Stover *et al.* 2011), the specific use of video in the development of teacher peer coaching skills is less prevalent. In this study, video is an integral tool that enables teacher participants to reflect on the process of peer coaching, their roles in it and, at the

same time, have a further chance to engage with their professional learning inquiry. Through viewing peer coaching video footage, teachers became more aware of their own professional learning processes. This opportunity to have a second look supported the teachers to think further and more deeply on their learning dialogue, affording further insights and realisations. The use of video supported and strengthened the teachers' communities of inquiry.

Situated in a New Zealand context, the writers from The University of Waikato Assess to Learn team have been involved in providing 'assessment for learning' continuing professional development (CPD) for teachers over the last nine years. Here, students are positioned at the heart of the assessment process where they actively collaborate with their teachers to develop their capability to assess their own learning (Absolum *et al.* 2009). While many definitions of assessment for learning prevail, we draw upon a short, second-generation definition where:

Assessment for Learning is part of everyday practice by students, teachers and peers that seeks, reflects upon and responds to information from dialogue, demonstration and observation in ways that enhance ongoing learning. (Klenowski 2009, p. 264)

In our work with teachers we have observed that the use of a dialogic process to interpret and make sense of student voice and teacher talk data has potential to enhance teacher engagement, stimulate a careful and thorough analysis of the data and support practitioners to identify next steps in their professional learning. As CPD providers we assist teachers and school leaders to develop cohesive school-wide assessment practices and processes, give effect to the New Zealand Curriculum and develop their expertise with 'Teaching as Inquiry' (Ministry of Education 2007, p. 35). These practices and processes include a peer coaching model that we facilitated as in-service teacher educators.

We are concerned with teachers' perceptions of what deliberate actions support their professional learning processes. Teachers are often positioned as the passive consumers of research that will assist them to make decisions. As educators strive to 'get it right' in a performative culture, they are marketed research that defines quality and shapes their practice. Embedded in a technical rational approach to schooling improvement and reform is the mantra 'what works will work'. However, research can only show us what has been possible; it can only tell us what has worked but cannot tell us 'what works' generically (Biesta 2007, p. 8). According to Wiliam:

... researchers have underestimated the complexity of what it is that teachers do, and in particular, have failed to understand how great an impact context has on teachers' practice. That is why 'what works?' is not the right question, because everything works somewhere, and nothing works everywhere. (2006, p. 8)

In this paper we share the findings of our research into how reflections with peers influenced teachers' thinking and decision-making. While these findings relate specifically to this research situation, it is our hope that our readers can make connections to other contexts. We observed that through the use of video teachers became explicitly aware of peer coaching as a dialogic process that enhanced their professional learning. The teachers engaged in metacognitive reflection, 'seeing' themselves thinking and noticing their decision-making processes. They recognised

when they determined their next-step actions for their teaching. Through videoed peer coaching footage the teachers were able to transform what previously been subjective into an object for examination. Furthermore, the video allowed the teacher participants to have a 'second look' and 'second think'. The video as a mediated tool afforded the teachers additional insights into their previous dialogue and thinking. They were able to think further about both peer coaching as a learning process and their actions for their own classroom practice.

The research suggests that there is value in the use of video to support a dialogic feedback process, where teachers are agentic co-learners and co-constructors of knowledge. This contrasts with a position in which teachers are 'absorbers' or passive recipients of knowledge constructed elsewhere, which has been described as a transmission process or training model of CPD (Kennedy 2005, p. 237). We acknowledge that there is an inherent complexity in teachers identifying and recognising what is at the forefront of their colleagues' thinking and this research positions itself within a transformative model of CPD. This is a teacher-centred, context-specific model of CPD with a focus on communities of inquiry, a step beyond the traditional communities of practice notion. It draws from coaching and mentoring, communities of practice and action research models for the CPD as a transformative approach to professional learning (Kennedy 2005). The transformative model is at the opposite end of a continuum to the transmission model of CPD with its focus on teachers as agentic inquirers.

When we think about the notion of active learners we consider Mezirow's (1997) theory of transformational learning, which as a process of exploring assumptions enables practitioners to become more reflective and critical, being more open to the ideas of others and accepting of ideas, which is the foundation of deep learning as conceptualised in this study.

Dialogic peer coaching

According to Robbins (1991), collaborative peer coaching is a confidential process in which two or more professional colleagues work together to reflect on current practices, expanding, refining and building new skills, sharing ideas, teaching one another, conducting classroom research or solving problems in the workplace. Peer coaching has nothing to do with evaluation. It is not intended as a remedial activity or strategy to 'fix' teachers (Robbins 1991). Rather than giving 'how to' advice, we view this 'sharing' as a peer coach to be more like active listening, a stance that enables peers to struggle to make sense of their own practice. McArdle and Coutts (2010) critique individualistic notions of reflective practice, advocating for the added dimensions of shared sense-making and collaborative engagement for professional renewal. This idea of shared sense-making for action and change is a self-monitoring and self-monitored social process that extends the concept of reflective practice.

Dialogic peer coaching relationships can support teachers' reflective dialogue where they co-construct new ideas, ways of thinking and new learning. In these dialogic relationships it is possible to see things from at least two perspectives at once (Wegerif 2008), one's own and a peer coach's. Teachers can take time to explore and ponder ideas with their peers as a resource (Carnell and Lodge 2002). Nehring *et al.* (2010, p. 400) define reflective dialogue as, 'reflection with others characterised by careful listening, active questioning and an openness to potentially profound

change to one's beliefs'. Active listening is central to reflective dialogue. Freer (2003) describes four behaviours integral to reflective dialogue. These comprise suspending judgment, voicing issues, listening actively and respecting others. An active listening process is one that enables participants to risk take in disclosing their own views:

Listening means allowing what the other says to break through one's own preconceptions and prejudgments. And speaking involves risking one's own ideas by offering them to the group as a potential way to interpret truth or right action. Quality conversation is a dialogue in which each participant risks changing one's mind or attitudes in the process of working towards mutual understanding. (Deakin Crick and Joldersma 2007, p. 92)

Through dialogue, teachers can reflect on their own experiences through the lens of others and, in doing so, engage in cumulative talk. Borrowing from Alexander's (2005) classroom-based notion of cumulative talk, we use this term to describe how teachers' thinking connects with the thinking and ideas of their peers.

The most promising forms of professional development engage teachers in the collaborative investigation of genuine problems over time, in ways that significantly affect their practice (Lom and Sullenger 2011). According to Wiliam (2008), teacher learning communities appear to be the most effective, practical method of changing day-to-day classroom practices. A process of collaborative inquiry can enable practitioners to critically reflect on the evidence they gather, enhancing their own and their students' learning. A key feature of this collaborative inquiry is the use of video to stimulate this reflection. The peer coaching approach outlined in this paper is embedded in the socio-cultural environments of classrooms, schools and communities.

A critical aspect of reflection can be integral to teachers' learning. We draw from Brookfield (1995), who suggests that by utilising different lenses on our thinking we can critique our assumptions. Collaborative critical reflection enables a dialogic community of peers, who share a commitment, to explore their assumptions. This process is based on personal experiences. It involves imagining and exploring alternatives to current assumptions. Those who reflect critically are self-aware and often become more sceptical of the world around them (Franz 2007). Wagenheim *et al.* describe the impact of transformational inquiry for teachers:

Through a regular cycle of reflective inquiry – surfacing and challenging assumptions – teachers seeking improvement seek transformative change; change in their 'way of being' as a teacher, not just in their 'way of doing.' Becoming a better teacher is about reflecting on and questioning deeply held assumptions in an experiential cycle of inquiry, developing new strategies, testing in action, and learning. It is through reflection and resultant self-knowledge that one can leverage greater awareness of others and course content in the journey toward becoming a better teacher. (2009, p. 504)

Video is a tool that can support peer coaches to grow in their role. Peer coaches need to know when and how to pose questions (Robertson 2005) that may assist reflection. Through viewing videoed footage, peer coaches can observe how they question to promote thinking and engage in active listening. This process of active listening and questioning is a form of dialogic feedback that contrasts with the frequently adopted collegial role of 'advice dispenser' and 'solution provider'.

Feedback as advice serves as an external evaluation and can be described as a that may be neither wanted nor acted upon. This often uninvited form of feedback may not necessarily be the learner's focus. Watkins (2000) suggests that at times the responsibility of the two parties in the feedback process can become distorted, with the peer giving feedback taking responsibility for the other person's development, setting targets for the other person to achieve while the recipient is positioned passively. The use of video can enable teachers to construct their own feedback utilising primary data rather than receiving feedback through the lens of another. In this way the traditional power relationship of giver and receiver of feedback is destabilised.

In contrast, Game and Metcalfe (2009) view every response and every recognition in a dialogue as feedback. This form of symbiotic feedback where learners engage in reciprocal peer coaching is meaningful because it is a simultaneous process where people are learning from each other. Askew and Lodge (2000, p. 13) take a 'co-constructivist' view of feedback, describing how it can be constructed through loops of dialogue and information exchanged between peers. Orland-Barak (2006) highlights that any one utterance may encompass not only the 'voice' of the person talking, but also the voice of the person the utterance is directed to, the voice of the addressee, as well as other voices gained from previous life experiences, from our history and our culture. The presence of another person can surface ideas as the speaker considers the perspectives of their audience.

By capturing the peer coaching dialogue on video, the co-constructed meanings of utterances have the potential for greater visibility for those participating in the process. Teachers can be open to new possibilities within the liminal. Somerville (2007) describes the liminal as a space of becoming in between one state of being and another, where one is working at the limit or the edge of self. Ravenscroft *et al.* (2007) consider that the boundary between participants in a dialogue is not a demarcation line, or an external link between self and other, but an inclusive 'space' within which self and other mutually construct and reconstruct each other. This can be described as a liminal space that can afford what is unseen to become seen.

In order to think about a concept and shift it from being 'taken for granted' to the forefront of thinking, there is a need for reflective practitioners to re-view and re-position. Kegan and Laskow (2009) assert that if we want to increase mental complexity, we need to move aspects of our meaning-making from subject to object. Hence our way of knowing or making meaning becomes a kind of 'tool' that we possess and can control or use, rather than something that controls us. What is subject is invisible. This is what we look through, the way we view the world. When we move from subject to object, what was once an unconscious lens now becomes something that can be seen and reflected upon (Garvey Berger 2006). Citing Kegan (1994), Garvey Berger writes that:

'We have object; we are subject' (p. 32). Things that are Object in our lives are 'those elements of our knowing or organizing that we can reflect on, handle, look at, be responsible for, relate to each other, take control of, internalize, assimilate, or otherwise operate upon (1994, p. 32)'. (Garvey Berger 2002, p. 36)

This change of focus allows teachers to see with fresh eyes.

In teacher CPD, video is most commonly used to record classroom episodes for stimulus recall purposes. This study positions video as a feedback tool that assists



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