TWG 3: Teacher professional development

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**Introduction**

This brief paper has been prepared for the researchers, practitioners and policy makers attending the EDUsummIT at UNESCO in Paris (8 – 10 June 2011). Its purpose is to inform discussion about how those responsible for the professional development of teachers may ensure that teachers are better prepared for the challenges of using ICT to promote 21st century learning.

This EDUsummIT is intended to extend the work begun by EDUsummIT 2009 which emerged from work on the Handbook of IT in Primary and Secondary Education (Voogt & Knezek, 2008) and issued a Call to Action for IT in school education. The specific element from the Call to Action 2009 addressed in this brief paper is:

- To develop and use models for teacher professional development on technology use in schools and classrooms at the pre- and in-service levels

**Research update**

The relevant section of the Handbook (Voogt & Knezek, 2008) included seven chapters. They addressed teacher learning for pedagogical innovation, benchmarks for teacher education relative to pedagogical use of ICT, factors affecting teachers’ use of ICT, models for teacher education related to ICT, multimedia cases in teacher education, communities of practice for teacher professional development, and teacher learning for educational renewal with IT. This brief survey of the relevant research will focus on relevant work that has appeared since the publication of the Handbook and the 2009 EDUsummIT.

In the Handbook, Law (2008) acknowledged the value of the TPACK framework (Mishra & Koehler, 2006) but argued that teachers needed to be prepared with knowledge beyond what was required to operate in classrooms so that they could engage in pedagogical innovations. Research in teacher preparation programs that promote use of ICT for active student learning continues to find that ICT is used mostly for productivity and information presentation (Graham, Tripp, & Wentworth, 2009). Other research that directly addressed the question of innovation with pre-service teachers found that their understandings of pedagogical innovation and capacity to deal with it varied (Davis, Hartshorne, & Ring, 2010) with the implication that programs need to consider readiness for change when promoting unfamiliar pedagogical approaches.

The second chapter in that section of the Handbook discusses the pedagogical characteristics of effective teacher education and proposes benchmarks for teacher education programs (Kirschner, Wubbels, & Brekelmans, 2008). The authors proposed nine benchmarks related to the pedagogical use of ICT and pointed to the need for additional benchmarks for relevant policy development and assessment using ICT. They suggest that the time may come, but not yet, when ICT will be sufficiently well embedded in other learning that it will not require special attention.
A substantial body of research has identified teachers’ beliefs as critical factors in the adoption of ICT (Ertmer, 2005). Somekh (2008) argued in the Handbook that, although teachers’ beliefs are important, they are necessarily connected to broader socio-cultural factors that affect teachers’ adoption of ICT. More recently, Belland (2009) used the sociological concept of *habitus* as an alternative basis for explaining teachers’ apparent reluctance to adopt ICT. In that view, twelve years of primary and secondary schooling, in which ICT was either not present or not integral, leaves prospective teachers with understandings of how education is practised that are difficult to change in a four year teacher preparation program, especially if that program also fails to make ICT integral. The consequence is that unless teacher preparation programs change in ways that make ICT integral it is unlikely that their graduates will embrace new approaches to teaching. The importance of models of good practice in teacher preparation, including in the use of ICT, has been recognised and it appears that the way forward depends upon teachers, and teacher educators, adopting a mindset that teaching is not effective without ICT (Ertmer & Ottenbreit-Leftwich, 2010) and embracing associated practices.

In her Handbook entry, McDougall (2008) argued that the importance of ICT for education and the constant development in technology makes it imperative that we have effective programs for teacher preparation and ongoing development and that they include IT skill development as well as addressing transformation of curriculum and pedagogy. She noted that there were few published evaluations of programs and that more research was needed to document the effects of teacher development efforts on classroom practices. More recently researchers have reported that the PT3 initiative in the USA achieved gains in pre-service teachers’ ICT knowledge and frequency of use during field experiences through approaches such as mentoring and creating ICT-rich instructional materials (Polly, Mims, Shepherd, & Inan, 2010). Continuing professional development using approaches such as video clubs in which teachers collaboratively review video of their own teaching (Gamoran Sherin & van Es, 2009) and immersion in technology-rich classrooms (Shapley, Sheehan, Maloney, & Caranikas-Walker, 2010) have resulted in increased use of ICT by teachers.

Multimedia cases for teacher development were addressed in a Handbook chapter (van den Berg, Wallace, & Pedretti, 2008) with the conclusion that research in the area was active but in early stages characterised by advocacy and limited evidence of effectiveness. Further research in this area has been reported, including the use of video clubs (Gamoran Sherin & van Es, 2009), video annotation tools (Rich & Hannafin, 2009), and “digital exhibitions” of practice (Hatch & Grossman, 2009).

Teaching is often experienced as an isolated profession (Lortie, 1975). Communities of practice (CoPs) and professional learning communities (PLCs) have been proposed as approaches to reducing isolation and encouraging professional growth. The Handbook chapter addressing this topic (Looi, Lim, & Chen, 2008) describes work with CoPs in traditional and online modes, arguing that new technologies offer new opportunities for professional growth and identity formation for teachers but that there is need for further study of how such communities can be built and sustained. Hur and Brush (2009) investigated self-generated online communities of teachers and reported that reasons for participation were most often related to experience of personal support. In a more structured approach with a focus on technology integration teachers progressed through mentoring to a teacher-led CoP that supported more student-centred use of technology (Kopcha, 2010). Other researchers have argued, on the basis of experience with teacher communities, that making practice public using new media and social networking approaches can transform teachers’ practice (Lieberman & Pointer Mace, 2010).

The final chapter in that section of the Handbook argues for an ecological perspective on the contribution that teacher learning can make to renewal of education with IT (Davis, 2008). It concludes that many studies of diffusion of ICT in education have ignored the complexity arising from multiple simultaneous innovations and that there is a need for research that can better account for the complexity.
Issues, unresolved questions and concerns

The challenge of preparing teachers to integrate ICT is exacerbated by the instability associated with the rapid development of technology (Borko, Whitcomb, & Liston, 2009). The ICT knowledge and skills needed by teachers are never fixed and learning must be continual. Although new recruits to the profession will have grown up with a variety of ICT applications, even they will need to engage in constant professional learning about both the technology and its pedagogical applications. Hence, pre-service preparation must contend with the habitus developed through twelve years of schooling (Belland, 2009) and this presents a significant challenge for teacher educators who must find ways to keep their programs at the leading edge of changes in technology and pedagogy.

The importance of models of good practice seems clear. Using ICT to support CoPs in which practice can be shared as a basis for mutual professional learning seems to offer the best hope for providing teacher educators and teachers in the field with opportunities for continuing development. However, there is still much to be learned about how best to initiate and support such learning communities and the change to the professional culture that is needed to facilitate their success.

Brief bibliography


