ICTs and Professional Learning Pathways: Stories of Effective Professional Development

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Abstract

Among the five research priority areas for 2003-06 identified in the Research Strategy Learning in an Online World (MCEETYA, 2003a) was teacher development. Stories of successful teacher development supported by research forms the basis of this account meant to stimulate conversations about effective preservice teacher education and the continuing professional development (CPD) of teachers. This presentation, in building upon the assumption that there is a nexus between the professional development of teachers focused on improving teaching and learning using ICTs and student use of ICTs, portrays the metaphor of teacher professional development as an ICTs journey. A case study of the design and implementation of a preservice teacher education course called Learning with ICTs highlights an effective e-Portfolio approach whereby future teachers develop personal stories of learning. Subsequently, effective features of a continuing professional development model implemented at the Burleigh Heads Learning and Development Centre – ICT (LDC-ICT) are summarised. Finally, specific reference is made to Education Queensland’s recently released Smart Classrooms initiatives (Department of Education and the Arts, 2005) as they relate to teacher professional development, including the ICT Continua, ICT Curriculum Integration Short Course, and the ICT Pedagogical Drivers’ Licence.

Introduction - ICT Research Priority Area – Teacher Professional Development

This paper assumes that there is a nexus between the professional development of teachers focused on improving teaching and learning using ICTs and student use of ICTs. That assumption reflects the rationale that has justified and continues to justify the investments and energy we’ve witnessed over more than two decades and continue to witness in our schools to make ICTs integral to learning, and more recently, reflects the discourse theorising the transformational potential of ICTs. Among the more recent reports generated by the MCEETYA ICT in Schools Taskforce (see, for example MCEETYA ICT in Schools Taskforce, 2002; MCEETYA, 2003a; MCEETYA, 2003b; MCEETYA ICT in Schools Taskforce, 2005) has been the Research Strategy Learning in an Online World (MCEETYA, 2003a) which stated that ICT research priorities were

- The changing nature of schooling;
- Student learning;
- Equity issues;
• Teacher development; and
• Monitoring progress. (MCEETYA, 2003a, p. 3)

This contribution to the AARE Symposium focuses on teacher development, however, this is done within a context of understanding and emphasising that the various dimensions overlap, interact and influence each other. For example, in undertaking any professional development, fundamental questions should be asked – professional development for what?; what is the relative advantage of using specific ICTs in specific ways?; and, what needs transforming and why? The ICT research related to ICT use and impact in each of those areas, including teacher development, according to the research strategy (MCEETYA, 2003a) should consider the:

• Conditions for learning – providing the conditions necessary for effective student, staff, and community engagement;
• Learning possibilities – exploring how to transform, enrich and extend learning;
• Educational effectiveness – ensuring effective, curriculum, pedagogy, student learning, assessment and school transformation; and
• Equity – providing appropriate student, staff and community access, participation and satisfaction as well as improving achievement. (MCEETYA, 2003a, p. 5)

The Pedagogy Strategy Learning in an Online World (MCEETYA, 2005) also provides strength to the argument for the importance of teacher professional development in the section of that report titled Realising Possibilities (MCEETYA, 2005, pp. 8-9), which presents encouragement for teachers to experiment with pedagogies that connect to collective professional experience, and create new learning environments and models of schooling. Similarly, the Content Strategy Learning in an Online World (MCEETYA, 2003b), in its vision for 2005-2010 aligns with both the research and pedagogy strategies through the development, use and increased accessibility of online curriculum content for students, teachers, regions and communities throughout Australia and New Zealand.

Stories of successful teacher development, as well as some challenges, supported by research forms the basis of this account meant to stimulate conversations about effective preservice teacher education and the continuing professional development (CPD) of teachers. This presentation portrays the metaphor of teacher professional development as an ICTs journey. A case study of the design and implementation of a preservice teacher education course called Learning with ICTs highlights an effective e-Portfolio approach whereby future teachers develop personal stories of learning. Subsequently, effective features of a continuing professional development model implemented at the Burleigh Heads Learning and Development Centre – ICT (LDC-ICT) are summarised. Finally, specific reference is made to Education Queensland’s recently released Smart Classrooms initiatives (Department of Education and the Arts, 2005) as they relate to teacher professional development, including the ICT Continua, ICT Curriculum Integration Short Course, and the ICT Pedagogical Drivers’ Licence.

Professional Development for Preservice Teacher Education: Summary of the Design of the Course Learning with ICTs

Underpinning my teaching portfolio of responsibilities is the work I do with preservice teacher education students, or whom I refer to as the teachers of the future, and with
postgraduate students, who are usually practising teachers, and a range of consultancies with schools and school systems. While it’s not the responsibility of my Faculty to have a formalised ongoing interest in those students following graduation, I use the metaphor of an ICTs journey with my students. Therefore, I attempt to indicate to students that there’s more required than ‘doing the course’. For example, students enrolled in the Bachelor of Education (Primary) undertake a course which I convene called Learning with ICTs in their first semester of their first year of a 4 year preservice teacher education program. In designing this course, a mediated learning environment (MLA) is theorised which utilises Albon and Trinidad (2001) notion that the MLA “revolves around the learner and the technology, which drives the model” (Trinidad, 2003, p. 106). In addition, the eLearning promoted using ICTs adopts Roffe’s (2004) sophisticated definition of e-learning whereby he rejects eLearning being equated with electronic learning and emphasises the human purpose of learning but including additional ‘e’ words such as engagement of the learner, enhancement of learning, ease of use, empowerment of the learner to control the learning schedule, and the execution of the learning program (Roffe, 2002, pp. 40–50). Subsequently, in designing courses for students in higher education programs, the design capitalises upon the use of ICTs, but this design process needs to be driven by the conceptualisation of a model of an ICT-rich learning environment. The ‘e’ words are reflected also in Trinidad’s MLA advocacy, whereby “There becomes a sense of empowerment and engagement for the learner… …where they are no longer dependent on the specific and often limited knowledge of their educator, but work within the community of learners mediated by the educator.” (Trinidad, 2003, p. 105)

In this model, according to Trinidad, ICTs become the vehicle for communication, collaboration and the framework for mediated learning which provides for interactions to assist the development of new and self-sustaining communities of learners to exist alongside established, traditional approaches. Subsequently, not only ICTs are utilised, but multiple information sources are used, ranging from traditional text materials in the form of books through to the online resources of Internet. In this model, ICTs are used as interactive technologies which enables learning communities “that transcends the four walls of classrooms but is not restricted by traditional class timeframes” (Trinidad, 2003, p. 106). It becomes essential then that educators design courses which provide learning experiences using forms of communication and facilities to access information at a time and place of the learner’s choosing, beyond and in addition to the traditional timetabled face-to-face lectures and tutorials.

In MLAs, the ICTs which drive the design of learning are complemented in the design approach by the assessment for learning, rather than assessment of learning. Assessment is seen as more than knowing the content, but becomes integrally interwoven into stories of learning whereby students collect and select authentic and diverse evidence, drawn from a larger archive representing what a person or organization has learned over time, and on which the learner has reflected.

Figure 1 below builds substantially upon the model developed by Trinidad to theorise the importance of assessment for learning and highlights the transformations occurring within the learning journeys of students within a course, but also articulates the connections between other formal and informal learning and also with future learning. Too often, we see courses developed as stand-alone courses within higher education.
programs. Rather, we need to see ICTs and assessment for learning drive course design to assist students to synthesise learning among the courses they are studying within a specified study duration (for example, within a semester) as well as throughout longer learning journeys (for example, from learning over 3-4 years of a formal University program through to lifelong learning). In addition, the model attempts to acknowledge the learning experiences which students bring with them to the specified course.

Guided by this model, students in Semester 1 of 2005, commenced eportfolios to use as a platform for further journeys. The theorising of ePortfolio approach was informed by Barrett (2005) who advocates that a portfolio should be more than just a collection of data and recommends that the role of reflection in the portfolio is important for promoting deep learning. She states that

...an educational portfolio contains work that a learner has collected, reflected, selected, and presented to show growth and change over time, representing an individual or organization’s human capital. A critical component of an educational portfolio is the learner's reflection on the individual pieces of work (often called "artefacts") as well as an overall reflection on the story that the portfolio tells. (Barrett, 2005)

Students were provided with a suggested structure included the homepage titled “Who are we as Learners?”, and pages called Personal Learning Journeys, Why Teach?, What makes a Good Teacher?, and Our Professional Futures. Artefacts in the form of assignments from the other courses, as well as additional information using a variety of media were collected as ‘assets’ by students. Students then selected and organised those assets for inclusion in the websites.

Figure 1: The Mediated Learner Approach (MLA)
(Note: This model builds upon the model provided by Trinidad, 2003)
The traditional portfolio process which involves collecting, selecting, reflecting, direction and celebration is enhanced through the use of ICTs, according to Barrett (2004) through the use of multimedia and hypermedia to enable archiving, linking and thinking, storytelling, collaborating and publishing. This extends the ability to communicate the stories of learning from the restrictions of a predominantly paper or print publication to multimedia, digital stories using video, audio, graphics and text in a web-based portfolio. The use of hyperlinks through hypermedia can be a powerful means to demonstrate the connections and links shown in Figure 1. While there’s insufficient space here to fully report the development of the student ePortfolio successes and student evaluations of this course (see Finger et al., in press) students designed their websites in ways which enabled a range of artefacts to be archived in an assets folder, together with images of their personal histories in an images folder, and those assets and images were linked to their webpages to create their personal stories of learning. Importantly, the ICTs became background enabling technologies to powerful stories presented by many students related to becoming inspired to teach from the learning experiences provided in this course and through their reflections on - why teach? Underlying these reflections were often messages of the importance of the human dimension in teaching the course and the relationships between the lecturer, tutors and the students.

I have learnt that anyone can dictate information to students and say learn this, but good teachers inspire deeper learning. They encourage students to explore what they know, explore the unknown and explore what their peers know.

…[lecturer] and my tutor should be commended for their fabulous work and their inspiring stories…I don’t know what everyone else thinks…BUT I AM INSPIRED…

What has been the deep learning for me this Semester? It has been making the connections with the various course contents, with the tutors and lecturers, the students, and how I can use these experiences in my future role as a primary school teacher. But above all, it has been about connecting with me and the deep personal reasons for wanting to enter the profession.
…[lecturer] you have been so approachable and friendly and many of us have spoken of what a great example of what teachers should be you are, you are interested in more than the surface, thank you!!

I would like to thank [lecturer] and [tutor] for their fantastic teaching efforts this semester, your passion for teaching reminds us all of why we chose to study this course and head in the direction we are going, thank you.

Some students suggested that the success related to the narratives, and sometimes the associated humour, provided by the lecturer to illustrate theoretical perspectives. The following reflections are indicative that there is a powerful human dimension required to inspire students. The use of ICTs can assist in achieving this, but are insufficient by themselves to ensure success. Passion, enthusiasm, modelling commitment, and the building of authentic relationships with students were seen by students as contributing to their commitment to teach.

My tutor should be commended on her kind approach to teaching… I feel inspired by her and [lecturer]… here’s a pat on the back. Your stories have also inspired me…

And [lecturer] you mentioned how impressed you were with the tutorial attendance, I think you can take credit for that – your passion and enthusiasm overflowed the lecture theatre and infected all of us.

I could not see how anyone, no matter how gifted, would be able to make computers and keyboards and hard drives exciting. But! All credit to [the lecturer], he pulled it off marvellously! Not only did he make these mundane electrical pieces seem interesting but explained in his always polite humour, how technology has, is and will affect us. One thing that I constantly noticed throughout the semester was [the lecturer’s] passion for his course. This came through not only in his lectures, but even when greeting me in the hallway. It was great to meet someone who so obviously enjoyed and loved his career with children, and has made me much more aware of my desire to enter this profession too. So thank you [the lecturer] :-)

Continuing Professional Development for Practising Teachers: Summary of the LDCICT Professional Development Model at Burleigh Heads State School

Education Queensland established a Learning and Development Centre for Information and Communication Technology (LDC–ICT) at Burleigh Heads State School along with other LDC’s–ICT in Queensland to provide hands-on, face-to-face professional development sessions in the form of a 3 day practicum model for teachers (for details of the practicum model, see Education Queensland, 2003; Finger et al., 2002, pp. 112-113).

The LDC–ICT at Burleigh Heads aimed to build confidence and competence in teachers who were expected to transfer their ICT knowledge and skills back to their students and their peers in their various school contexts. During 2002 and 2003, three Honours students undertook research into various research questions relating to the LDC-ICT at Burleigh Heads State School. The following summary relates to one of those student’s research (Pugh, 2003) which investigated whether or not the Burleigh
Heads LDC–ICT as a strategy for continuing professional development (CPD) had been effective in providing practising teachers with adequate ICT knowledge, skills and attitudes to effectively transfer this learning to improved integration of ICTs in their classroom practices.

This study used a mixed-method design in which both qualitative and qualitative methodologies were used. The sample for the study included the teachers who had attended this LDC-ICT practicum since it was established in March 2001 through to March 2002. Of the 170 surveys posted, 83 surveys were returned and collected, representing a response rate of 48%.

The results gathered from this study demonstrated that the desired outcomes of the LDC-ICT practicum with all participants, in varying degrees, were met through transferring their ICT knowledge and skills back to their schools and classroom settings. Principal issues identified elsewhere in previous research continued to emerge especially access to and lack of resources, and the important issue of time to collaborate, enhance knowledge and skills to be able to integrate ICTs. Among the key findings reported, it was reported that although the practicum was invaluable to their professional development of integrating ICTs in the classroom, teachers suggested that it shouldn’t be an isolated professional development opportunity. It was noted in Pugh’s study that to assist with the notion of continuing professional development, the LDC-ICT coordinator had continued to communicate with practicum participants after they had completed the practicum, and had also offered optional follow up or return practicums to share their progress. Pugh (2003) also examined the connections between participants’ preservice teacher education and the CPD provided by the LDC-ICT at Burleigh Heads State School. Through case studies of LDC-ICT participants who were in their first 3 years of teaching, and who had attended the Gold Coast campus of Griffith University, Charleston found that all case study teachers reported the importance of connecting their preservice teacher education through a CPD opportunity which enabled them to continue with the ICT journey metaphor of the ICT Continua (Education Queensland, 2003a), discussed later in this paper. For all of the case study teachers, the LDC-ICT had been invaluable as a formal strategy for making those connections during their early years in the teaching profession. It should be noted that the LDC-ICT at Burleigh Heads State School finished operating at the end of 2004.

The following section provides a brief overview of Education Queensland’s Smart Classrooms strategy’s professional development initiatives.

**Smart Classrooms Strategy - Professional Development**

The Department of Education and the Arts in Queensland launched the Smart Classrooms A strategy for 2005-2007 (Department of Education and the Arts, 2005) in mid-2005. This strategy builds upon the previous 3 year ICTs for Learning strategy which commenced in 2002. Central to the new strategy is a vision to build “the classroom of the future: the Smart Classroom” (Department of Education and the Arts, 2005, p. 2). It continues to use the 6 key ICT drivers – Teaching, learning and the Curriculum; ICT Infrastructure; Connectivity; ICT Support; Innovation; and Learning and Development – as the foundation for the new strategy. The key driver Learning and Development refers to the professional development of teachers, and according to the strategy “Smart Classrooms will deliver a suite of professional development and targeted innovation opportunities for schools, teachers and students” (Department of
Education and the Arts, 2005, p. 2). The professional development initiatives listed include the continuing use of the *ICT Continua*, developed as a self-reflective ICTs journey for teachers to move through minimum, developmental, innovator, and leader phases. The minimum phase was initially developed as a mandatory requirement for all Queensland teachers in government schools to have achieved according to the requirements set out in the *Minimum Standards – Learning Technology*. Subsequently, the developmental, innovator and leader phases were developed largely as a response to the question – what next, after achieving the minimum standards? No formal certification accompanied the development of those phases. Proposed in the *Smart Classrooms* initiative is the acknowledgement of teachers who innovatively use ICTs through the *ICT Pedagogical Drivers’ Licence*, which is to be launched in Term 2, 2006. While specific detail of the implementation of this acknowledgement has yet to be made public, the title certainly suggests the importance of pedagogy using ICTs in innovative ways.

The *ICT Curriculum Integration Course* (visit [http://education.qld.gov.au/smartclassrooms/strategy/tsdev_integration.html](http://education.qld.gov.au/smartclassrooms/strategy/tsdev_integration.html)) is an online program which teachers can undertake and utilises a model whereby teachers design, implement and evaluate a program of study undertaken with students. Assessment tasks have been developed in consultation with academics from Universities in Queensland, and those assessment tasks will be marked by University academics. This approach constitutes a component of the *Professional Learning Pathways* as a cooperative partnership project between Education Queensland and participating Universities, resulting in the potential for the teachers who undertake the *ICT Curriculum Integration Course* to receive credit towards Masters level education degrees.

In 2004, the *Intel® Teach to the Future* (visit [http://www97.intel.com/education/teach/](http://www97.intel.com/education/teach/)) professional development program was initiated and this has expanded using a Train the Trainer approach. The professional development provides classroom teachers with hands-on experience in integrating ICT into the curriculum to develop students’ higher order thinking skills and enhance learning, using Microsoft Office software. It claims to help “teachers use the power of ICTs to spark student imagination, and ultimately move toward deeper learning – includes evaluation tools to guide the expansion of possibilities for learning by using ICTs for research, publication and communication” (see Candau et al., 2004). Similar to the thrust of the *ICT Curriculum Integration Course*, it aims to assist teachers develop planned unit/s of work which will be implemented, evaluated and shared with other members of the cohort undertaking the program. Anticipated products of the *Intel® Teach to the Future* professional development program include the development of a Unit Plan aligned with relevant curriculum, student samples – multimedia presentation sample, publication sample, and website sample, evaluation tools - multimedia evaluation tool, publication evaluation tool, and evaluation tool, a teacher presentation to support the Unit, handouts, templates, or tests to support the Unit, a Unit implementation plan, classroom management documents, and a work cited document.

**Conclusion**

In conclusion, this paper has adopted the metaphor of teacher professional development seen as an ICT journey aligned with the developing conceptualisation of the challenges
of a dynamic ICTs environment as we move forward in the 21st Century. Professional development needs to enable teachers to share and be supported in their development of personal stories of learning. From the myriad of activities, accountability tasks, planning and implementation of learning experiences with their students, this paper has suggested the importance of theorising, drawn largely from Barrett’s work, of an ePortfolio approach to using ICTs in an integral and transformative means for collecting, selecting, reflecting, directing and celebrating that ICTs journey. What has become very clear is the need for long term commitments by education systems to professional development which support lifelong learning journeys of teachers.

References


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