

Relevant, current and sustainable digital strategies to prepare future teachers to lead e-learning

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This paper describes how one teacher education programme integrates multiple strategies to ensure graduating teachers are prepared to lead e-learning in New Zealand classrooms. Contrary to recent criticism, initial teacher education (ITE) provides strong leadership in the innovative use of e-learning and digital technologies, and emphasises the digital capabilities, knowledge and confidence students need to succeed in their teacher preparation and beyond. This paper reports on the coherent range of strategies employed by one university that model good practice in blended online learning including: a social networking strategy to develop core digital skills; peer mentoring; the use of e-portfolios and Web 2.0 tools; as well as the integration of advanced e-learning pedagogies for course work. Evidence from several projects supports the claim that initial teacher education is developing essential e-learning leadership for future teachers and providing valuable professional leadership to the wider education sector.

Keywords: preservice teacher education, e-learning, e-learning leadership.

Introduction

Initial teacher education providers are acutely aware of the need to deliver high quality programmes and to ensure graduates meet the New Zealand Graduating Teacher Standards (NZGTS) (New Zealand Teachers Council, 2007), including the expectation that, in using “professional knowledge to plan for a safe, high quality teaching and learning environment,” beginning teachers will “demonstrate proficiency...in ICT relevant to their professional role.” Demonstrating such proficiency is both broad and complex, requiring beginning teachers to understand the technological and pedagogical implications and potential of a constantly evolving field. Recently criticism has been leveled at New Zealand teacher education providers: (a) suggesting they are not preparing beginning teachers to confidently and competently embrace e-learning; (b) raising doubt as to whether ITE providers are using current technologies themselves; and (c) suggesting that ITE providers are failing in their professional and intellectual leadership in the e-learning arena (Newman, 2011). This paper refutes those three allegations and provides evidence from one university where e-learning leadership influences pedagogy and practices throughout ITE and postgraduate programmes. The authors doubt they describe an isolated example of professional e-learning leadership in Australasia and intend this paper to garner response and collaboration from other teacher education providers, and to raise the profile of e-learning in ITE and its value for schools today.

The main evidence for this paper is drawn from an award winning three-year Bachelor of Teaching and Learning degree which underwent significant redevelopment in 2010 and 2011. The deliberate, purposeful and coherent use of digital technologies and culturally responsive e-learning pedagogies (Hunt, Needham, & McMurray, 2012) are interwoven throughout the programme to ensure beginning teachers have experienced learning within a blended e-learning environment and have the opportunity to develop their own capability and confidence. After briefly considering the literature, evidence is provided from this and associated programmes.

Literature

There is no doubt that future teachers need to be well equipped with the skills, knowledge and understanding to effectively integrate digital technologies into classroom programmes to support learning and enhance student outcomes (Davis, 2010). One of the challenges facing ITE is how to develop the capability and confidence for beginning teachers to lead e-learning in pedagogically effective ways with rapidly evolving technology and

changing contextual demands (Gillard, Bailey, & Nolan, 2008). ITE students enter their studies with varying degrees of technological experience (Wassell & Crouch, 2008) and, like the general population, while most are adept at social networking and the use of mobile technologies “they may still be neophytes when it comes to understanding how to use them in purposeful and educationally oriented ways” (Wright, 2010, p. 19). Furthermore, a student cohort may display considerable diversity in their prior technology experiences, attitudes, and capabilities, and academic staff have a tendency to over-estimate students’ abilities to appropriate their digital skills and devices to support formal learning (Beetham, McGill & Littlejohn, 2009). The challenge for ITE is to recognize the diversity of prior experience and to develop, not only technological understanding and skills but more importantly, an understanding of pedagogically appropriate ways to integrate e-learning to promote student engagement and achievement (Blankson, Keengwe & Kyei-Blankson, 2010). Mishra and Koehler’s (2006) technological pedagogical content knowledge (TPACK) framework is particularly helpful for understanding and guiding the complex choices teachers face when selecting appropriate pedagogies and technologies. The application of TPACK in teacher education contexts is well accepted and well researched (for example, Abbitt, 2011; Albion, Jamieson-Proctor, & Finger, 2010).

Engaging prospective teachers with learning experiences that will enhance their skills, as well as their beliefs, perceptions and confidence in regard to applying ICT is likely to influence their technological pedagogical practice in schools (Divaharan & Koh, 2010). Therefore, it is critical that teacher educators model appropriate pedagogies (Grossman, 2005) and that technology is used in context “as a tool for learning to teach, rather than content to be learned” (Wassell & Crouch, 2008, p. 214).

Effective e-learning is central to one award winning programme

Following a comprehensive review of the University of Canterbury Bachelor of Teaching and Learning degree a redeveloped programme was launched in 2012. As Hoban (2005) advocates, the process was founded on a research-informed conceptual framework. The conceptual framework: focuses on the educational needs of children; prepares graduates to meet the NZGTS; and clearly articulates a philosophy of teaching and learning. Substantial changes were made to the structure and content of the programme, and a decision was made to replace the existing dedicated ICT strand with an embedded and holistic approach to digital technologies and e-learning. It was clear that a detailed implementation plan was required along with support strategies for staff and students to ensure that digital capability and e-learning were not left to chance. The following discussion provides evidence of the multiple ways e-learning enables the delivery of the programme in three modes for campus, regional and distance students, and the strategies employed to ensure graduate teachers are prepared to lead e-learning.

Preparing beginning teachers to confidently and competently embrace e-learning

A survey of students in their first year of study (n = 110), along with staff interviews, confirmed that generally students were confident in their ability to use email, social networking, mobile technologies, and common features of productivity software. However, they were far less confident with more advanced software features, or tools such as RSS feeds and aggregators (Mackey, Davis, Morrow, Gikandi, & Dabner, 2012). Of concern were the relatively small group of students who appeared to have little or no digital confidence. Strategies were clearly needed to ensure basic digital capability for students to successfully engage in the e-learning experiences integral to their study. In addition to a formal induction to the learning management system (LMS) and e-portfolios, three related initiatives focused on developing capability and providing support for students. These were (1) the recruitment of a peer mentor team; (2) an online self-evaluation and collaborative learning site based on social networking principles (developed within PeerWise, <http://peerwise.cs.auckland.ac.nz> with assistance from the peer mentors); and (3) the implementation of an LMS e-learning support site providing a central resource area and a Q&A forum. The focus of these initiatives is not on pedagogy per se, however responses and resources are contextualised to teaching and learning scenarios, for example how to record a mihi using podcasting or Web 2.0 tools. As reported elsewhere in more detail (Mackey, Davis, Morrow, Gikandi, & Dabner, 2012) the peer mentors provide the vital link between requests for help and the two online environments, and are largely responsible for the content and ongoing development of the PeerWise site.

Extensive use is made of the Moodle-based LMS for campus, regional campus and distance students as all three cohorts share common course sites, assessments and activities. Schools are increasingly adopting blended pedagogies and these future teachers will have valuable first-hand experience of blended learning based on collaborative and constructivist pedagogies. In 2011 the college switched from Mahara MyPortfolio (Tertiary) to MyPortfolio (Schools) to enable students and staff to use e-portfolios in the same environment and alongside

schools. This provides future teachers with experience using the same platform as many New Zealand schools, and the ability to interact with associates, provisionally registered teachers, and school leaders.

Programme initiatives using current technologies

In conjunction with the strategies to prepare students to engage with technology in their professional learning, there has been a purposeful focus on how to integrate the appropriate use of current technologies and e-learning into all courses informed by TPACK. For example, staff have been encouraged and supported through organised professional development, teaching showcase events, and one-to-one mentoring to:

- model blended e-learning pedagogies using the LMS, AdobeConnect, interactive whiteboards, and e-portfolios for students studying in three modes;
- embrace Web 2.0 tools for collaborative work, class activities and assignments;
- integrate appropriate digital content from relevant sources (eg Te Kete Ipurangi, DigiStore);
- adopt e-assessment strategies using the LMS and/or e-portfolios;
- establish virtual connections with teachers, schools, subject associations and educational leaders;
- develop learning networks that include experts from related industry and real-world contexts.

There are many examples of innovative e-learning including the use of AdobeConnect to support interactive workshops for campus, regional and distance students; Web 2.0 tools like VoiceThread for students to record and provide feedback on multimedia assignments; college iPads and personal 'bring your own devices' (BYOD) for curriculum activities; existing as well as staff and student-created video; and a specially-designed e-learning lab where up to 81 students can work collaboratively in small groups around shared computers. MyPortfolio is being used increasingly by staff and students for professional learning and development including teacher registration processes. The evidence demonstrates that teacher educators are willingly adopting emerging digital technologies to support ITE programmes and provide students with a range of e-learning experiences.

Professional leadership in e-learning

Surprisingly, Newman (2011) also suggested that there was a perception that ITE providers were not providing intellectual and professional leadership in the e-learning arena. This is difficult to understand given that members of this institution (and undoubtedly those in other institutions too) have actively provided e-learning expertise and leadership nationally and internationally in the last few years including, for example:

- Leading the Research Strand of the ULearn 2010 and 2011 conferences attended by over 1500 teachers.
- Editing a special edition of the Computers in New Zealand Schools Journal (December 2011).
- National and international conference presentations including ULearn, Distance Education Association of New Zealand; Society for Information Technology in Teacher Education, Australasian Society for Computers in Learning in Tertiary Education.
- Contributing actively to the Greater Christchurch Schools Network and associated activities for the rebuild of Canterbury education (including hosting a Think Tank for educational leaders).
- Hosting webinars to ensure that the New Zealand education sector has access to visiting world experts in e-learning (including for example in 2012 so far, Prof. Lynne Schrum, Dr Elaine Hoter, Prof. Paul Bacsich).
- Supervising and conducting research related to current issues in e-learning, virtual schooling, and related areas (for example Stevens, 2011; Zaka, 2012), including school research partnerships.
- Providing professional development and leadership to virtual schooling clusters and local schools including a Postgraduate Diploma in Education (endorsed in e-learning and digital technologies).
- Representation on national bodies for example the Tertiary e-learning Reference Group; Ultrafast Broadband in Schools Governance Board.

In addition, the academic staff teaching the BTchLn (Primary) degree were presented with the Distance Education Association of New Zealand Award in 2012 for their outstanding effort in leading learning through the earthquake interruptions of 2011; an effort which was enabled and sustained through the innovative and extensive use of e-learning pedagogies.

Conclusion

This brief discussion illustrates that ITE providers are well positioned to prepare the next generation of teachers, and that contrary to some perceptions, colleges of education are innovative, progressive leaders in their adoption

and advocacy for e-learning. The authors seek further evidence from other programmes in Australasia to raise awareness of the vital role that ITE plays in developing and leading e-learning. The presentation will invite discussion to promote research collaboration and a higher profile for e-learning leadership by teacher educators.

References

- Abbitt, J. T. (2011). Measuring technological pedagogical content knowledge in preservice teacher education: A review of current methods and instruments, *Journal of Research on Technology in Education*, 43(4), 281-300.
- Albion, P., Jamieson-Proctor, R., & Finger, G. (2010). Auditing the TPACK confidence of Australian preservice teachers: The TPACK Confidence Survey (TCS). In C. Crawford, D. A. Willis, R. Carlsen, I. Gibson, K. McFerrin, J. Price & R. Weber (Eds.), *Proceedings of the Society for Information Technology & Teacher Education International Conference 2010* (pp. 3772–3779). Chesapeake, VA: AACE.
- Beetham, H. McGill, L., & Littlejohn, A. (2009). Thriving in the 21st century: Learning literacies for the digital age (LLiDA project). <http://www.jisc.ac.uk/media/documents/projects/llidareportjune2009.pdf>
- Blankson, J., Keengwe, J., & Kyei-Blankson, L. (2010). Teachers and technology: Enhancing technology competencies for preservice teachers. *International Journal of Information and Communication Technology Education*, 6(1), 45-54.
- Davis, N.E. (2010) Technology in preservice teacher education. In P. Peterson, E. Baker, B. McGaw (Ed.), *International Encyclopedia* Vol. 8. (3rd ed.) (217-221). Oxford: Elsevier.
- Divaharan, S., & Koh, J. H. L. (2010). Learning as students to become better teachers: Pre-service teachers' IWB learning experience. *Australasian Journal of Educational Technology*, 26(4), 553-570.
- Gillard, S., Bailey, D., & Nolan, E. (2008). Ten reasons for IT educators to be early adopters of IT innovations. *Journal of Information Technology Education*, 7, 21-33.
- Grossman, P. (2005). Research on pedagogical approaches in teacher education. In M. Cochran-Smith & K.M. Zeichner. (Eds.). *Studying teacher education. The report of the AERA panel on research and teacher education* (pp. 425-476). Washington, D.C.: AERA/Lawrence Erlbaum Associates.
- Hoban, G. F. (Ed.) (2005). *The missing links in teacher education design. Developing a multi-linked conceptual framework*. Dordrecht, The Netherlands: Springer.
- Hunt, A.M., Needham, V. & McMurray, L. (2012). Exploring a culturally-sensitive blend of New Zealand initial teacher education: Online and on a regional campus with Maori. In P. Resta (Ed.), *Proceedings of the Society for Information Technology & Teacher Education International Conference (SITE) 2012*, pp. 455-462. Chesapeake, VA: AACE.
- Mackey, J., Davis, N., Morrow, D., Gikandi, J. & Dabner, N. (2012). Enhancing digital capability through self-directed learning for initial teacher education and beyond. In P. Resta (Ed.), *Proceedings of Society for Information Technology & Teacher Education International Conference (SITE) 2012*, pp. 4745-4750. Chesapeake, VA: AACE.
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A new framework for teacher knowledge. *Teachers College Record* 108 (6), 1017-1054.
- New Zealand Teachers Council. (2007). New Zealand Graduating Teacher Standards. <http://www.teacherscouncil.govt.nz/te/gts>
- Newman, E. (2011). *Paper prepared for the Commerce Commission. High speed broadband services demand side study. Demand form primary and secondary schools issues paper*. Ernie Newman Consulting Ltd.
- Stevens, K. (2011). *The distribution of instructional leadership in elearning clusters: An ecological perspective*, unpublished M.Ed Thesis, University of Canterbury.
- Wassell, B., & Crouch, C. (2008). Fostering connections between multicultural education and technology: Incorporating Weblogs Into preservice teacher education. *Journal of Technology and Teacher Education*, 16(2), 211-232.
- Wright, N. (2010). *e-Learning and implications for New Zealand schools: a literature review*. Wellington: Ministry of Education.
- Zaka, P. (2012). *Blended online schooling: a case study to investigate blended teaching and learning implementation in a New Zealand High School*, unpublished M.Ed Thesis, University of Canterbury.

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