

TTF @ ACU OUR STORY

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Abstract

In 2011 all Australian teacher education institutions participated in the Teaching Teachers of the Future project. Each institution introduced initiatives adapted to their particular institutional context. At ACU we adopted an approach based on providing resources reflecting authentic classroom practices coupled with providing support staff to advise and guide staff on integrating ICT into their classroom practices. This paper presents a case study of one of the units which was the focus of TTF activities and outlines future directions we will pursue as a result of the lessons learnt during the TTF.

Introduction

The Teaching Teachers of the Future project (TTF) was a national initiative aimed at equipping preservice teachers to make best use of increasingly sophisticated and ubiquitous technology in the classroom. As described on the TTF website (<http://www.ttf.edu.au/about/about-this-site.html>) –

The Teaching Teachers for the Future project is an initiative funded by the Australian Government through the Information Communication Technology Innovation Fund that will help teachers and school leaders to better utilise ICT in the classroom. The TTF project specifically targets systematic change in the Information and Communication Technology in Education (ICTE) proficiency of graduate teachers across Australia by building the ICTE capacity of teacher educators and developing online resources to provide rich professional learning. The project involves all 39 Australian teacher education institutions.

At the ACU we implemented the TTF by amongst other things

- The ICT Pedagogy Officer (ICTPO) interacting directly with select staff in units teaching English and Mathematics and through these interactions identifying areas of perceived need in the teaching of ICTE within these subjects. The ICTPO then developed a number of resources (usually edited videos of authentic classroom practice) to address these needs. The ICTPO then worked with staff to develop their understanding of current uses of technology in schools and to integrate these resources into their own teaching.
- The ICTPO meeting with broader staff groups through forums such as staff meetings on all five campuses to discuss the use of both the Australian Curriculum and the TPACK model, focussing specifically on the inclusion of technologies into units and alerting staff to the resources being developed such as the school based videos. Staff were then supported via a variety of means, including the FOE Bulletin, a TTF blog and a FOE TTF SharePoint site.
- Processes were also developed to coordinate resources across campuses. A key element in this integration is the development of a Digital Core, The *Digital Core* will be an online repository for each unit housing not only material resources such as those built during the TTF but also allowing exchange of teaching strategies and approaches and promoting a dialogue between geographically remote staff about the application of TPACK to the units they are teaching to develop a more coherent approach to the inclusion of ICT in their teaching.

Rationale

This approach was adopted for a number of reasons, initially to provide resources for staff to use as examples of authentic classroom practice using ICT in teaching but also to elaborate on these examples so they could be used as triggers for promoting discussion of innovative teaching using ICT with preservice teachers and also as exemplars to trigger preservice teachers to innovate in their own teaching. This approach was also designed to provide timely advice to staff on how to integrate these resources into their student's and their own teaching practice as a way to scaffold the use of the resources. Even more importantly it was intended that these resources and the accompanying scaffolding would provide impetus for staff to comprehensively rethink their teaching around ICT across the curriculum.

Beeman (1987) describes how the act of incorporating technology into teaching can lead staff to review their total teaching practice. In Beeman's article he describes how Brown University introduced and evaluated a new multimedia authoring software known as Intermedia as part of an early trial of the software. Two professors were chosen to develop materials and teaching strategies using Intermedia one of the two was George Landow, a full professor in the Department of English. As part of the evaluation Landow was to be observed before and after the introduction of the new technology. In preparation for the introduction of the software Landow redesigned his course materials - a web of essays and graphics on Dickens, literature, and the Victorian period.

Unfortunately the software development fell behind schedule and was not ready for use in time. So when the evaluators observed Landow for the second time he was still teaching without technology. They were surprised to observe that he had become a much better teacher, the experience of rethinking his teaching to incorporate ICT had changed Landow -- he used more graphics, he had students creating pictures of the linkages between concepts, and he put more emphasis on student participation in the seminar.

It was hoped to use the TTF project at ACU to leverage a similar rethinking in staff with the ICT components not being forced into or added onto existing unit structures but being integrated into new unit structures specifically designed to maximise the impact and effectiveness of the ICT components in the disciplinary methods units.

There is much evidence that teaching and learning of generic skills occurs most effectively when those skills are incorporated into subject focussed learning environments not presented as an add on or extra (de la Harpe and Radloff, 2006, Hattie and Biggs 1996). This seems equally applicable to ICT and technology skills (Mayo et al 2005, Painter 2001) particularly in encouraging preservice teachers to not only learn about ICT but to view it as something they might use themselves when they become teachers (Gulbahar 2008). However in teaching future teachers this embedding has added dimensions since teaching future teachers is an iterative process where good teaching needs to not just be practiced but also modelled (Collins et al 1989, Woodward 1991).

There is evidence in the literature that preservice teachers willingness to adopt technology and integrate it into their own teaching practice relies heavily on their perception of the usefulness of the technologies and their own confidence and self efficacy in using the technology (Wang et al.2004). This parallels broader research on adopting innovative technology which suggests users are constantly weighing perceived benefit of use versus ease of use in deciding whether or not to adopt technologies (Davis 1989). Hur et al (2010) suggests a number of crucial elements in improving preservice teachers confidence and perceived self efficacy in using ICT including teacher educators using technologies both to teach and to demonstrate good teaching practice or as the National Research and Development Centre for Literacy and Numeracy says practice as you preach (Casey et al 2007).

Taking this further Wood and Geddis (1999) suggest that constructing an overt narrative of teaching practice which is shared with the students makes it possible to engage them more deeply with the modelling of good practice, as it enables them to not only experience the practice in the classroom but also the thought and decision making processes behind the practice. They claim this encourages a collaborative learning environment for both the staff and students leading the students to reflect on the pedagogical and theoretical aspects of the teaching and learning experience as well as the more practical aspects. While not aspiring to as formal an arrangement as Wood and Geddis describe we hoped to make the process of integrating ICT into teaching as transparent as possible to the students to

encourage conversations about the process of creating the learning experience as well as the experience itself.

The TTF focus on TPACK (Mishra and Koehler 2006) was crucial in this, as it provided both an overarching pedagogical philosophy to guide this redesign process as well as a vocabulary that allowed staff and students to share understandings of what was happening and why. It also enabled the ICTPO and participating staff to share their understandings of the status of the unit at the beginning of the process and to usefully discuss what needed to be done and how it might be achieved and it gave parameters to help review the process at the end of semester.

The impact of this approach was evaluated in a number of ways including focus groups with staff and preservice teachers in the key Mathematics and English units which had integrated ICT into their teaching allowing us to develop case studies of the change process fostered through the TTF.

Case Study EDLA479

EDLA479 is a Secondary English Methods unit taught in second semester at the Melbourne Campus. Pre-service teachers (PSTs) in this unit are from both the Bachelor of Teaching/Bachelor of Arts (BT/BA) (4 year undergraduate degree) and the Graduate Diploma in Education (GDE) (1 year post graduate, pre-service degree). This is the second unit in a sequence of two units for secondary school teachers of English. Previously there has been no specific focus on information and communication technologies in these units apart from references to technology resources that could be included in English classes. The class was scheduled for one three-hour class per week for 10 weeks.

Carla was teaching EDLA479. She was a first year sessional lecturer who had been a primary and secondary English teacher for over 30 years. Carla had used technology in her teaching for presentation purposes, using mainly PowerPoint presentations with her VCE students. She had also used technology for administration purposes.

The PSTs experiences with technology varied coming into the unit. There were those with wide expertise of specific or various technologies in their life and/or previous workplace, to those with almost no experience of technologies at all.

Carla had strong pedagogical and content knowledge and was eager to develop her technological knowledge through personal professional learning, but also through the expertise of her student cohort. Carla had recently moved from secondary teaching to the university, partially because she felt that the way she was “positioned to deliver the curriculum wasn’t matching the way I felt young people needed to be engaged, how young people viewed the world, and how young people constructed their identity in the world”. Initially she doubted herself, wondering if she was equipped to teach this ‘new generation’ of preservice teachers. It was meaningful for Carla that she had made a change in her own environment. This allowed her to look at the education system from a different perspective. What she found, teaching PSTs and in the construction and development of this unit, was that she couldn’t have taught the unit effectively without the inclusion of various technologies.

The initial conversation with the ICTPO about what was possible with technologies in the unit and beyond was an impetus for Carla to think about ICTs and how they could influence the traditional content of the unit. She “recognized that there was a need to teach, not so much ICT skills, because they [PSTs] were proficient in this, beyond my proficiency, but to provide critical frameworks around which to harness them for the English classroom”.

This realisation, that technologies were important, began in semester one when Carla was teaching the BT/BAs in their first English Method unit. She saw that the PSTs “found it difficult to teach English and were waiting for the formula” when that wasn’t coming, they wanted “a checklist of grammar items, ways of comprehension, questions that would test students”. When Carla didn’t deliver on that either they were forced to look at what actually mattered in the teaching of English. They had to

relook at themselves and how they communicate and how they produce texts and intercommunicate with each other ... This made the ICTs obvious as something that they were using non-stop in their exchanges. So slowly but surely that had to be translated into what they were doing in the classroom because young people that they were going to teach would be using them as well.

The PSTs realised that their repertoire of personal ICT skills and knowledge was indeed useful in the classroom and could be successfully harnessed to provide a valuable resource within their teaching.

After teaching the first semester English Method unit with the BT/BA group Carla was asked to take both cohorts for the second semester. This worked well with the TTF project and Carla was enthusiastic. She redesigned the unit assessment tasks to challenge the preservice teachers to use or show the use of ICT. She expected sound pedagogical strategies that made the technologies relevant and communicated those expectations clearly to the preservice teachers. Extra readings were supplied that focused on the digital literacies, multiple literacies, entertainment and so on.

In dialogue with the class early in the semester, Carla spoke with her preservice teachers about her “limitations and expertise”. In open forum she asked the PSTs how they used technologies in their lives with the aim to enable them to make their everyday uses of technologies relevant to their teaching tapping into Ehrmann’s (1995) concept of “worldware”. They looked at the use of technologies in the context of both pedagogy and theory. The resultant discussions enabled them all to create a personal resource kit of technologies that they could use in their teaching.

Carla admitted that she sometimes felt out of her comfort zone and even felt vulnerable in this situation because she was not necessarily equipped or aware of what was available, however she knew that this was a part of her own professional learning and the preservice teachers were very accommodating. It even gave them extra impetus to want to assist her. One PST, Bruce, said that Carla encouraged discussions about the inclusion of ICT throughout the course with questions such as “what are you doing personally with ICT” and then relating it to a purpose in the classroom. This encouraged preservice teachers to think about the technologies they used and relate them to how they could be utilised in their teaching, but also to learn from each other, particularly the ‘experts’ in specific areas within the learning community. Another PST, Holly, said that a “learning *community* suggests a group of people assisting each other to learn”, and she believed that Carla facilitated this in her classes. “It wasn’t just Carla standing up the front and lecturing ideas and pedagogy at the class, but instead actively seeking out [PST] ideas and input”.

One way of broadening the use of experts was to include guest lecturers. This enabled Carla to team-teach with technology experts to show specific and practical uses of technologies in the classroom. When the ICTPO showed the PST’s a range of technologies useful for the classrooms, Carla was quickly able to translate their uses in the English classroom, giving examples from the English Curriculum that would be suited to the various technologies. This was further enhanced by the use of videos of teachers from schools that had been collected by the ICTPO. These videos showed teachers using technologies to teach, and also some of them speaking about and reflecting on their experiences. Some of these videos were confronting for the preservice teachers, such as the video of a teacher discussing her use of the concept of Twitter with her students in preparation for an assessment task. This created a spirited discussion on the place of this technology in schools.

PST Holly, who had been in the previous English Method unit with Carla, said that Carla’s enthusiasm in actively focusing on the use of technology in the English Curriculum was obvious. She “definitely saw a change in Carla throughout the unit” and felt she “grew in her references to and use of technology”. She thought that the fact that Carla was actively focusing on “going beyond the books” to seek out instances of using technology caused this change. Holly noted that “You could really see the improvement from the previous unit”.

One constraint noted by many PSTs noted that it was difficult to apply this newly gained knowledge when on professional experience practicum as technologies were often restricted in schools due to teacher and/or school issues. They found that in schools there is a reporting expectation, particularly at VCE level. This meant that PSTs had to put aside their preferences for how to teach due to constraints placed on them as a consequence of school structures in VCE. Some managed to utilize some of the new technologies discussed, but most felt very constrained in schools and looked to the future in their own classrooms where they would be able to experiment further with the use of technologies.

Conclusion

The TTF at ACU was used to trial an approach to developing the use of ICT in teaching based on providing staff with resources to include in their teaching but also providing them with an intellectual

framework in the form of TPACK to help them make sense of how to incorporate these resources into their teaching. This was in turn supported by a dedicated staff member (the ICTPO) who acted as both advisor and sounding board for staff as they rethought and redesigned their teaching to create an environment where ICT was an integrated part of the learning experience. Evaluation of this process at ACU including case studies such as the one above suggests the approach has some merit.

The case study of Carla and her students illustrates how a combination of “felt need” (in Carla’s case an awareness of the changing needs and skills of preservice teachers and a desire to use these in the classroom) coupled with the provision of appropriate resources, advice and guidance can create a “teachable moment” (Freeman 1994, Hyun and Marshall 2003) in which staff can be encouraged to not just add ICT to their classrooms but to integrate it totally into their teaching.

It also emphasises the importance of having a philosophy and vocabulary such as TPACK to scaffold the whole process so that any redesign is strategic and thoughtful and not change for its own sake.

It also illustrates the importance in these circumstances of creating a learning community in which the students become an active part of the process drawing on their own experiences and those of others in the class to provide authentic examples of integration of ICT into teaching and learning. The preservice teachers interviewed repeatedly referred to Carla’s modelling of her decision making and designing processes as key in helping them understand how they could employ ICT in their own teaching.

Similarly Carla’s emphasis on taking technologies preservice teachers were using in their everyday activities (Ehrmann1995) and finding ways to use it in their teaching increased student’s confidence and sense of self efficacy in using ICT which is likely to produce long term impact on the teaching practices of the preservice teachers when they enter the teaching profession (Albion 1999, Wang et al 2004).

The feedback from Carla and her students suggested that integrating ICT into the teaching of an English Language unit enhanced their understanding of both English teaching and the role of ICT in education. In particular the preservice teachers cited the approach of drawing on videos of classroom practice, input from external experts and the existing experience and expertise of the preservice teachers to complement the content and pedagogical knowledge of the new lecturer as beneficial. This enabled the creation of an environment in which classroom practices were not just demonstrated and observed but were also analysed, reviewed and discussed enabling all participants to further develop their skills as English teachers.

This reinforces the usefulness of exposing PSTs to theories such as TPACK to provide an intellectual framework to help understand the role of ICT in their own and others teaching and more importantly to provide a vocabulary to facilitate discussion between staff and students and between students and other students. Bruner (1996) amongst others notes the importance of having a vocabulary to facilitate discussions in particular he notes that having terms which enable us to externalise ideas is crucial not only in discussing those ideas with others but in making them clear to ourselves.

At ACU we sought to employ the TTF to impact teaching in three ways. Firstly to promote a philosophy and vocabulary through TPACK that would facilitate productive conversations about the role of ICT in teaching and learning within the faculty. Secondly to shift the perceptions of benefits and ease of use regarding ICT in teaching to create a teachable moment which would allow us to engage with staff at point when they were ready to change their teaching. Thirdly to encourage them to change their teaching so they didn’t just add ICT but integrated and embedded it in a way that modelled good practice to the preservice teachers they were working with. The results of case studies such as Carla’s are promising, the challenge is now to do it on a larger scale.

In the Education Faculty at ACU we intend to implement a number of initiatives to support staff in integrating ICT into their teaching drawing on what we have learnt working with staff like Carla. It is anticipated that there will be varying degrees of intrinsic interest and enthusiasm and we will need to expand and extend the resources on offer accordingly. Nevertheless we feel that the experience during the TTF project was sufficiently encouraging for us to use it as a model for a more widespread initiative to integrate ICT in teaching and learning in disciplinary methods units across the faculty.

References

- Albion, P. R. (1999). Self-efficacy beliefs as an indicator of teachers' prepared-ness for teaching with technology. *Computers in the Social Studies*, 7(4).
- Beeman W.O. et al (1987) Hypertext and Pluralism: From lineal to non-linear thinking *HYPERTEXT '87 Proceedings of the ACM conference on Hypertext* ACM New York
- Bruner, J., (1996). *The Culture of Education*, Cambridge, MA: Harvard University Press.
- Casey, H., Derrick, J., Duncan, S. and Mallows, D. (2007) *Getting the practical teaching element right: a guide for literacy, numeracy and ESOL teacher educators*. London: NRDC
- Collins, A., Brown, J.S., & Newman, S. (1989). Cognitive apprenticeship: Teaching the craft of reading, writing, and mathematics. In L. B. Resnick (Ed.), *Knowing, learning, and instruction: Essays in honor of Robert Glaser*. Hillsdale, NJ: Erlbaum
- Davis, F. D. 1989. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quart.* 13(3) 319 -339
- de la Harpe, B., & Radloff, A. (2006). Lessons learned from three projects to design learning environments that support 'generic' skill development. *Journal of Learning Design* 1(2) 21 - 34
- Ehrmann, S. (1995) - Asking the right questions: what does research tell us about technology and higher learning? *Change: The Magazine of Higher Learning*, 27(2) p20 – 27
- Freeman, E. (1994) Families: teachable moments in school- community practice. *Social Work in Education* 16(3) 149 - 152
- Gülbahar, Y. (2008) ICT Usage in Higher Education: A Case Study on Preservice teacher and Instructors Turkish Online Journal of Educational Technology 7(1) retrieved June 30 2012 from <http://www.tojet.net/articles/v7i1/713.pdf>
- Hattie, J., Biggs, J., & Purdie, N. (1996). Effects of learning skills interventions on student learning: A meta-analysis. *Review of Educational Research*, 66(2), 99–13
- Hur, J.W., Cullen, T. & Brush, T. (2010). Teaching for Application: A Model for Assisting Pre-Service Teachers With Technology Integration. *Journal of Technology and Teacher Education*, 18(1), 161-182. Chesapeake, VA: AACE.
- Hyun, E. and Marshall, D (2003) Teachable-moment-oriented curriculum practice in early childhood education. *Journal of Curriculum Studies* 35(1) 111 - 127
- Mayo, N. B., Kajs, L. T. & Tanguma, J. (2005). Longitudinal Study of Technology Training to Prepare Future Teachers. *Educational Research Quarterly*, 29(1), 3-15.

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