Issues involved in supporting pre-service teachers' learning in an online environment

Category:
Professional Practice

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Curtin University has offered a wholly online (apart from practicum placements) degree course in Primary Education since March 2009 through Open Universities Australia. The online Bachelor of Education (Primary) course has the same structure and units as the on-campus course. The unit construction is affected by the restriction that both the on-campus units and the online units must match in content. The challenge is to tailor delivery of unit content that is effective in a four-walled classroom to that of a virtual classroom environment, while maintaining its integrity and effectiveness. Of particular importance is the continuation of a collaborative constructivist environment when the units are taught online.

Interest in the uptake of the programme was immediately evident, attracting 876 unit enrolments in the first thirteen-week study period. Eighteen months later, in study period three of 2010 enrolments topped 5000. We attribute this phenomenal growth to a number of factors, but particularly our use of technological tools that assist our students to learn in a constructivist environment. Our commitment to this paradigm has seen the introduction of specific technology to enable a collaborative and co-operative learning mode that has unified students in a common goal.

Introduction

When the Bachelor of Education, Primary Degree was first offered to students in an online mode through Open Universities Australia (OUA), it was impossible to predict the interest that would be created. The degree is an open entry degree, meaning that students are able to enrol in any of the six 'open' first year units without having the normal university entrance requirements. This allows those who have not studied previously to 'taste' the university environment, If they successfully pass two of the open units, they are invited to enrol into the rest of the degree. The demographic range of students is varied. They live all around Australia, with some living overseas. Their age range varies from 17 year old school leavers to mature entrants in their fifties looking to give themselves new career opportunities. Some have transferred in from other universities preferring the external, flexible style of teaching, and some have done no study since Year 10 of High School. Some are stay at home mums who try to fit their study around their children, and others are working full time trying to study on evenings and weekends. Some students come feeling quite competent with technology, and others are terrified at the prospect.

Context

The university employs part-time tutors who act as a human interface between the university and its students. Each tutor is responsible for a group of around 75 students, giving content specific support for learning through a *Blackboard* site designed to encourage collaborative learning. Although recent literature discusses whether students are learning about technology or learning through technology, there is strong evidence that the integration of both is what leads to success. According to Salmon (2003), this combination needs to occur with and through interactions with other people. The teacher of any classroom, whether it has solid walls or is virtual, has much influence in shaping the learning environment and outcomes and carries the

responsibility to create the conditions that encourage a deep approach to learning that demonstrates a dynamic and interactive "community of inquiry" (Garrison, Anderson & Archer, 2001). From the teachers' perspectives this means that they have pedagogical skills and content knowledge that allow them to manage a learning environment that develops and encourages students to think critically and to learn both independently and collaboratively. From each student's perspective, this requires higher-order cognitive processing that includes critical thinking and self-direction (Garrison & Archer, 2000). The challenge is in how to support both sets of perspectives effectively.

Initial concerns discussed by teaching staff when the program was offered online, were about the integrity of "converting" on-campus units in to a format suitable for online delivery. It was recognised that, in online learning, units need to be tailored to the environment to ensure that the course delivers "well-articulated and designed learning experiences offered through tools that the instructor and the learner select" (Jafari, McGee, & Carmean, 2006, p. 58). Coordinators understood the risk that the formalised learning, encouraged by the use of *Blackboard*, might promote a focus upon learning as individual achievement at the expense of collaborative and co-operative engagement in learning. An additional risk was that students may become guarded and possessive about sharing material, perhaps because of previous experience in the competitive nature of schooling. Conversely, it was thought that the geographical, intellectual and socially isolating nature of online learning would be conducive in allowing students to value peer and tutor interaction in an asynchronous environment (Young & Norgard 2006).

The teaching staff in the online B.Ed program consider online learning to be different to traditional classroom teaching, and as such, believe that it should not be treated in the same way (Buraphadeja and Dawson, 2008). Both staff and students have to learn new skills for effective teaching and learning to occur. It is not enough that students come to the learning process with skills in the use of technology. They have to learn how to use the online environment effectively in ways that allow them to be productive and to engage in activities that encourage and require their involvement in online discussions. Although "file transfer, messaging, asynchronous messaging behaviour, and drop-box features all build a student's sense of place in the world of technology … these features alone do not guarantee deep learning or technology literacy (Carmean and Haefner 2002, p. 29). From the beginning, the B.Ed units have incorporated activities that create an environment online that is beyond a repository of documents to read. It is more a structured learning environment that involves students completing activities using online resources and texts that enable them to construct their own knowledge.

Interactive processes

In the online environment, the Tutorial Group Discussion Board replaces the tutorial discussions that occur in the on-campus units. The activities are designed round the fundamental belief that "asynchronous discussion-based learning has the potential to increase learners' levels of thinking, such as critical thinking or upper levels in Bloom's taxonomy" (Buraphadeja and Dawson 2008, p. 142), as well as supporting the practices of social constructivism. This allows the focus to be on the types of interactions that encourage learning. Moore (1989) outlines three types of interaction – learner-content, learner-instructor, and learner-learner. He labels the first type of interaction learner-content as it is "the process of intellectually interacting with content that results in changes in the learner's understanding, the learner's perspective, or the cognitive structures of the learner's mind", considering it "a defining characteristic … without it there cannot be education" (p. 2). The second interaction is where "the learner comes under the influence of a professional instructor and is able to draw on the experience of the professional to interact with the content in the manner that is most effective for that particular individual learner" (p. 3). The final interaction is considered by Moore to be a challenge to earlier ways of thinking and involves "inter-learner interaction, between one learner and other learners, alone or in group settings, with or without the real-time presence of an instructor … an extremely valuable resource for learning" (p. 4).

Curtin online units have elements of all three of Moore's interactions. The student-content interaction is evident through the structure and substance of curriculum that is provided. The student-instructor interaction is provided via the progression of the unit and the feedback provided by the tutors to the students via the discussion boards, emails, and assignment comments. The student-student interaction is apparent in the student interactions in both the unit and tutorial group discussion boards, the group tasks and assignments, wikis and similar sites. The group tasks and assignments are specifically constructed to enhance collaborative learning, which "plays a significant role in students' sense of learning community as well as students' interaction with peers and the instructor" (Hill, Song, & West, 2009, p. 98). However, although students are given a range of opportunities to engage in online discussions: as the entire unit cohort of over 1000 students; in tutorial groups of 75 students; and in smaller work/study groups of around five to ten students, it is recognised that "students still need to learn how to interact online with their peers, and inevitably the extent to which their interactions contribute to their learning and understanding will vary with their competency" (Macdonald 2003, p. 378).

Support for students

Contrary to initial expectations it emerged that many of the students who enrolled in this B.Ed course were not technologically sophisticated, and this caused staff to question why they would consider enrolling in an online course with such limited computer skills. However, it quickly became evident that these students were driven by a desire to engage in learning, to complete a degree, to fulfil an ambition to be a teacher or to have a previously impossible ambition of engaging in tertiary study satisfied.

Most students start with a full time load of two units of study. However, during their first study period, the learning requirements of the units they are studying are combined with the learning requirements of the online environment and university level study. This has resulted in some students feeling overwhelmed and requiring additional assistance to keep motivated. To help facilitate student-student interaction, an unmonitored student social area has been set up on the discussion boards in several units. In addition a B.Ed student community *Blackboard* site was also set up. Within this site students can have conversations that are mainly social or mainly unit or academic specific. They can buy and sell text books and can arrange to meet up either physically when they live nearby or virtually through social network sites such as face book. These student social areas are "an extremely valuable resource for learning, and ... sometimes even essential" (Moore, 1989, p. 4) and also provide the "powerful opportunity not only to engage the student with the social nature of learning but also to encourage the student to take ownership in the learning process" (Carmean & Haefner, 2002, p. 33).

To assist struggling students, a short training video was inserted to the *Blackboard* site, using screen captures as an interim measure to alleviate some of the anxieties experienced by both students and novice tutors. However, LMS does not determine the content nor activities any more than "chalk, chairs, and tables provide the classroom learning experience …these choices come from individual pedagogical styles, personalities, cultures and character" (Carmean & Haefner, 2002). It was felt that more was needed to support students and staff. University Web Designers and Flexible Learning Support team were asked for assistance in locating technology which would be simple enough for relative novices to use, would enhance their learning and most of all create possibilities for these online learners to come together as a true learning community.

Introduction of *Etherpad*

One of the Flexible Learning Team suggested *EtherPad*, an application created by Appjet. This is unique in offering synchronous chat within a Wiki pad, enabling instantaneous document revision, a *Time Slider* (users could view revisions over time), colour coded participants and

complete privacy. The public pad is free and extremely easy to use. The philosophy driving the wiki phenomenon appealed as it supported the constructivist view about what it was believed the students should experience: "The structure of wikis is shaped from within — not imposed from above. Users do not have to adapt their practice to the dictates of a system but can allow their practice to define the structure" (Lamb, 2004).

Students were asked to form smaller groups of five within their tutorial groups of 75. The very process enabled a quasi social engagement and students could be observed exchanging personal details and creating links with one other as well as being focussed on a common assessment task. They were given two weeks to do this and then tutors placed the remaining students, who had not placed themselves, at the end of a specified time. Again this process was enlightening for staff. Tutors were able to identify some students (those who had not managed to sort themselves into groups) as being still unsure about using the system and needing more support. To address this need, tutors set up a small group forum for each group on the *Discussion Board*, to facilitate initial contact and meeting times. Interestingly, many students advertised their location and requested people within reasonable distance to join them demonstrating a need for some notion of community that was more than that offered in a virtual environment.

Students were asked to notify their tutors of their small group formation, for one person in the group to set up a public *EtherPad*, then ask the other group members and the tutor to join the *Pad*. The first assignment was investigative and open to flexibility of presentation. Students quickly found that while *EtherPad* has a very good import/export facility, it did not support graphics of any kind. This was somewhat of a drawback for those who wished to use graphics, but all students found a parallel application which they were able to share along with their discussions and document creations on the *Pad*, with stronger students supporting those who needed additional support.

A marking rubric was created to reflect the effectiveness of the group effort, and students were asked to complete an individual and private assessment of the other participants in their group. This was placed in the (private) *Blackboard Drop Box*, whilst the group assignment was placed in the small group forum (shared) on the due date. This allowed students to easily view what groups had achieved in their presentations, so that there was a degree of transparency while the group evaluation exercise and the final, individual grade were completely private between the individual and the tutor.

Upon looking at students' individual evaluations, it was found, as expected, that some students had failed to participate in the assignment and were simply 'going along for the ride'. Their fellow group members often expressed a sense of unfairness and anger at the thought that they had done all the work while the non-participants reaped the benefits of their labour. The tutors went into the *LMS Performance Dashboard* to investigate these students' levels of participation in the course. It often matched fellow students' assessment of their effort. Then tutors went into the *EtherPad.* Here was the absolute evidence. Often students had gone on to say hello, had maybe contributed two or three lines and then disappeared. Not surprisingly, their own group evaluations revealed none of this. Tutors sent emails to these individuals asking them why they believed that they should share in the group mark and if and what they had contributed as *EtherPad* showed no evidence of any activity from them. Students who had worked hard on the group assessment felt vindicated in knowing that academic staff took their opinions and feedback seriously enough to evaluate students' contributions to the team effort.

It seems from the post unit comments on the University Unit Evaluation site that students enjoyed the opportunity to engage with one another and felt a real sense of achievement and community. The community created is so strong that students have been asking to be placed into groups with their "study-buddies" in subsequent units, and it is clear from their communications that many are discussing the structure of their course so that they can support one another in their learning journeys, enabling them to develop new skills as part of their lifelong learning

(Carmean & Haefner, 2002). There is evidence from the *Discussion Board* that many of these students have made connections, online friendships and professional associations that may well last into their teaching careers.

Where to from here?

New technology is a change agent that must be carefully introduced and constantly reviewed. It is essential that teaching staff, as deliverers of learning through new technology, ensure that those tools that are embedded in our courses are not just pretty trimming but actually do enhance students' learning. While as yet, there is no empirical evidence that this is the case as in the example given above, we do know from written feedback that many students enjoyed using *EtherPad*, and that the sense of working in isolation was diminished by its use. In trying to address the concerns of students about inherent unfairness in group work we too had developed along the way. Inadvertently, we came to understand that *EtherPad* had also made it possible for tutors to observe and reward student effort and contribution to group work in a way that satisfied conscientious students and their demands for recognition of effort. But additionally it offered opportunities to offer students recognition that their evaluation of fellow students' effort was valued and respected. *EtherPad* has become a valuable teaching tool for lecturers, far beyond the simple real-time wiki which only 12 months ago we believed was just an interesting tool for students to use in group work.

Group work online is challenging and intricate for both students and tutors but our commitment to the constructivist model of teaching and learning makes it incumbent upon us to introduce a learning setting which genuinely allows mastery and growth for both students and lecturers, so that "we see discourse production as a social and cultural practice, not a second order representation of practice" (Lave and Wenger, 1991, pp 22-23). The experience has been and continues to be, transformative.

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