

¹Constructing a Pre-service Teacher Online Learning Community

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Abstract: In an attempt to provide discipline specific pedagogical discussions an online learning community including pre-service teachers and teachers was developed. The online discussion enabled secondary pre-service teachers to explore specific discipline issues of practice, pedagogical content knowledge and technology enhanced learning with practicing teachers. In addition to providing pre-service teachers with a lived experience of and model of online collaboration which can be used in their future classrooms, students developed networks with other educators who were also passionate about their discipline. The learning community was developed for pre-service teachers and the topics under discussion were driven by the pre-service teachers.

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Introduction

In an effort to respond to an increasingly diverse student cohort many teacher education programs are utilizing online environments to support face-to-face teaching and learning. This blending of two different learning spaces frequently utilizes asynchronous online communication to develop and/or support a community of learners. Effective planning, implementation and facilitation in the online area is required if the discussions are to move beyond information and experience sharing to more worthwhile learning with deep engagement and knowledge building.

Palloff and Pratt (2005) identified the following six key elements of an effective online community:

- People: the participants within the online community;
- Shared purpose: a common reason to join the online community to share experiences, resources and information;
- Guidelines: the structure and netiquette provided by and modelled by the online teacher/facilitator;
- Technology: the interface or environment/s where the online community meets;
- Collaborative learning: the range of participant interactions which result in new knowledge for individuals and the group; and
- Reflective practice: where the participants unpack their learning from participation within the online community.

This paper describes a community of practice where secondary pre-service teachers interacted with instructors, peers and practicing teachers taking on the role of curriculum and pedagogical expert. Within the community of practice the elements identified by Palloff and Pratt and described above were embedded as part of the learning experience.

Successful learning communities require the development of social presence by all participants. This creates an atmosphere of belonging, trust and respect where participants feel free to express ideas, share experiences, exchange information and resources. Effective social presence within an online learning community welcomes the critique of multiple perspectives; it is accepted in order to frame sustained critical discourse and socially constructed meaning (Rovai & Lucking, 2000; Moller, 1998; Redmond & Lock, 2006). DeWert, Babinski, and Jones (2003) suggest that participating in an online community provides beginning teachers with “increased emotional support, decreased feelings of isolation, increased confidence as teachers, more enthusiasm for work, increased reflection, ability to adopt a more critical perspective, and improved problem-solving skills” (p. 317). Social presence is essential for establishing this type of social and cognitive support.

Online spaces enable effective and efficient access to information and multiple others. Fowler & Mayes (1999) claimed that education is “moving the emphasis of learning away from the ‘what’ we learn to the ‘who’ we learn from” (p. 7). Palloff and Pratt (1999) remind us that within learning communities “[n]o longer is there a unidirectional imparting of knowledge by an ‘expert’ on a particular topic” (p. 5). This is supported by Bonk, Angeli, Malikowsk and Supplee (2001) who claim that “(t)echnology tools can now bind students, peers, mentors, instructors, practicing teachers, and experts in an array of resources, discussions and curriculum recommendations” (p. 22). Unlike traditional pre-service teacher education courses this project encouraged pre-service teachers to look beyond the academic who was teaching the course, and located at the university, to a range of experts including practicing teachers, and also their peers. The online environment provided access to and interaction between anyone, anywhere, anytime.

Zhao and Kuh (2004) suggest that within a community of learners the “learning is deeper, more personally relevant” (p. 117). This reaffirms that the development of a community is dependant on individuals and the development of an individual can be through a community of learners. Zhao and Kuh (2004) go on to suggest that while interacting with others and academic content, learners will “further develop their identity and discover their voice as well as to integrate what they are learning into their worldview and other academic and social experiences” (p. 117).

Hudson (2002) believes “that the very basis of thinking is rooted in dialogue, drawing on a socially constructed context to endow ideas with meaning” (p. 53). Garrison, Anderson, and Archer (2000) argue that it is the “the reflective and explicit nature of the written word that encourages discipline and rigor in our thinking and communicating” (p. 90). It was anticipated that the process of writing a response within the online discussion would provide pre-service teachers with additional time to create a considered response. The further requirement to find

supporting evidence for these responses would engage the pre-service teacher in higher order thinking rather than a surface learning approach.

This learning community was established to provide a forum for authentic dialogue and learning with scaffolding, to support the development of deep knowledge and understanding at both the discipline and pedagogical areas. Taking the community to an online space: enabled access to discipline experts from varied locations; provided the pre-service teachers with models of professional online interaction; and provided participants time to make considered responses, reading, reacting, responding and reflecting at their own convenience.

The success of the community required the participants involved to take on a number of roles. For example the teacher facilitators were required to expose the pre-service teachers to different approaches and definitions of teaching and learning; to welcome them into the profession; to assist pre-service teachers in developing pedagogical content knowledge; provide information; diagnose and address misconceptions; question postings; to offer encouragement; negotiate meanings; give feedback; share experiences; be a professional role model; and to provide emotional support.

In contrast, the pre-service teachers' role was to: share and critically reflect on experiences which were memorable, inspirational or bothersome; explore and debate issues; confirm some of their preliminary ideas about teaching or re-examine their prior understandings of learning and teaching; share resources; and to co-construct pedagogical content knowledge of their disciplines.

Context of the project

The community within this project consisted of four cohorts of pre-service teachers in different courses on two different campuses, and discipline experts in different geographical locations. As part of their Bachelor of Education degree pre-service teachers from two secondary discipline courses which run for 15 weeks were required to interact in two different online discipline forums. Within these blended courses the online component replaced two hours of face-to-face teaching per week.

Each week pre-service teachers were required to respond to a starter question and to interact with at least two of their peers' posts. The online facilitators who were teacher practitioners acting as discipline and pedagogical experts, read all of the responses however only responded to those where the pre-service teacher questions or responses were insufficient or problematic. In addition these experts clarified the focus of the responses, introduced their own questions, shared their own and the pedagogical practices of others and gave different perspectives/suggestions to stimulate thinking and dialogue.

The design of the learning experience was influenced by: active learning; participation as an individual and member of a community of learners; providing an authentic audience for discussion; contrasting perspectives; authentic assessment; resources and strategy sharing; development of a deeper understanding of pedagogical content knowledge (Shulman, 1986) in a range of discipline areas; problem-based focus and exploration of the teacher's role. Moller (1998) reminds us that the "[u]se of technology does not spontaneously cause community to occur: communities of learners must be planned" (p. 120). When designing this community, and learning activities, the structured starter questions were included to stimulate discussion and enhance the pre-service teachers' intellectual engagement. In addition activities to promote social presence were introduced at the beginning of the semester.

For most of the pre-service teachers involved in the project the use of online discussion as a planned component of their course was a new element of their learning. In both courses the participation within the online project was linked to a substantial portion of their formal course assessment. This pre-service teacher response obligation required them to regularly participate in two different discipline forums (for example, maths and computing).

The assessment of the responses were constructed to move the pre-service teachers' thinking beyond initial reactions and responses, engaging them in critical dialogue with others, sharing insights, carrying out research, and reflecting back. Assessment of the pre-service teacher participation was based on the pre-service teachers' capacity to:

- Build and sustain a community of learners;
- Promote deep discussion;

- Engage in professional self reflection and metacognition;
- Demonstrate professional standards of literacy; and
- Reflect on the online community process and their personal contribution to the community.

Process

This project was interested in establishing a community of learners engaged in ongoing discussions with peers and practitioners as a means to develop pre-service teachers' pedagogical content knowledge and skills within secondary teaching contexts. One of the initial tasks was to find an online space which would allow for multiple classes, multiple campuses and a range of online guests who were external to the university. The open source tool Drupal was suggested as the best learning management tool by the Technology support group within the university. The search for online facilitators resulted in the recruitment of teachers with discipline specialist knowledge from throughout Queensland. Online forums were established for 10 different discipline areas (e.g., mathematics, computing, science) and each week each forum was populated with a starter question (e.g., Select a topic from the maths syllabus and provide 5 different ways you could introduce the topic to grab students' attention).

Sixty-four pre-service teachers consented to participate in the research element of the project. The data sources for this project included the archived online discussion threads, a survey and a reflective activity undertaken at the completion of the project. The postings from all discipline areas were available to all participants; however all pre-service teachers were obliged to interact in only two discipline areas for assessment purposes. Some pre-service teachers stated that they found it interesting to read comments from other discipline forums however over time the quantity of the postings became overwhelming. Quotes from the pre-service teacher participants are included and to protect their identity pseudonyms have been used.

Data analysis process

The key data source for the information for this paper was the survey given to all students towards the end of their participation in the project. Only those students willing to permit their responses to contribute to this research were utilised. The survey was designed to seek information about how valuable the students found the online environment and its ease of access and utility. Questions focussed on ascertaining topics of student interest, and what they perceived developed their curriculum and pedagogical learning best. For example, Comment on the value of the project in developing your curriculum and pedagogical knowledge; and During the online project what topics promoted the most discussion, interaction and peer responsiveness? There were open ended questions to elucidate student opinion on preferences of this blended method of learning. The majority of respondents were motivated to write personal and full comments to these sections. The reflective activity at the end of the course sought student comment on whether they believed their online skills had improved, whether the process had contributed positively to their pedagogical content learning, and their viewpoint on the value of the experience to themselves.

The responses were scanned for emerging themes, for agreements and contradictions. These were collated and frequency of like comments noted. Particular sentences and phrases were highlighted where they corresponded to a recurring theme and a repetitive issue.

Findings and Discussion

This project provided collaborative opportunities for pre-service and in-service teachers to exchange ideas, ask questions, and engage in dialogue within a community of learners with a focus on specific discipline areas. The pre-service teachers identified behaviour management, sharing of discipline specific resources, and discussions centring on professional workplace experience as being the most interesting and relevant. Safety issues dealing with students, advice on assessment and behaviour management rated highest in usefulness. The pre-service teachers enjoyed sharing experiences and valued the opportunity to question their own thinking. They said they benefited from the pedagogical learning and resource sharing, especially when they sourced responses from those who only had one

more year to complete their degree. Jacki mentioned that it “gave me opportunity to talk to other pre-service teachers, get feedback and extra information”.

While building new knowledge the pre-service teachers regularly acknowledged previous postings, and made connections to previous posts with their own experience. Jack commented that “the participants had well researched suggestions and our responses to questions and ideas were always positive and participants gave excellent feedback”. This view is shared by others who said: “We had to delve into our knowledge of these things to come up with ideas for our discussions”; “People have responded with enthusiasm towards some of my suggestions, others have also provided me with new and intriguing ideas”; and, “It got me thinking of things I would not usually think of”.

The pre-service teachers’ responses to the starter questions revealed more depth of understanding and integration of ideas from other sources than the responses they posted to each other. From discussions with instructors from other courses the pre-service teachers were completing at the same time indicated they were able to transfer knowledge from one university course to another. It was also evident that within the same course the pre-service teachers saw value in the online discussions as they drew on the knowledge developed within the online communities to contribute to their other assessment items.

Those pre-service teachers who did not live close to the campus revealed that the online project facilitated “flexibility of access in terms of time and place” and it “enabled collaboration with experts that would not have been possible within a traditional face-to-face course”. Angeli, Valanides, and Bonk (2003) suggest that adding an online component to face-to-face learning “makes it possible to extend discussions beyond class time and compensate for the limited amount of dialogical interactions in the classroom” (p. 32).

Within this community the participants (both pre-service teachers and in-service teachers) were limited to interacting via written dialogue which required them to ‘speak’, listen, observe, challenge, support, persuade and be persuaded via text. The wide range of perspectives, experiences and resources provided within the community enabled the pre-service teachers to reflect that their experiences were often not shared by multiple others and that their perceived reality was in fact only real for them. James stated that “I benefited from peer collaboration in learning new teaching strategies.” The collaborative and community element of the project was valued as indicated by Peter’s comment that, “I discovered that I was able to assist others in some areas. Sharing experiences was worthwhile during the process and for the future, as I gained worthwhile knowledge of difficult areas to teach and collected some good ideas for curriculum and resources”.

Pre-service teachers’ response obligation gave rise to the sharing of “air time”. Pam revealed that “I felt equal to others”. Mark commented that “the project expanded my ‘audience’ for questions, including people I would not normally talk with. It provided an environment to voice ideas and exchange views with others that we might not usually interact with”.

An analysis of the pre-service teachers’ postings revealed that they rarely critiqued postings of their peers or the experts. Walter Archer (cited in Garrison & Anderson, 2003), coined the phrase “pathological politeness” to describe this concept within online dialogue where participants statements are not challenged. The pre-service teachers felt compelled to respond positively to their peers’ ideas; very few demonstrated they were able to draw conclusions or justify their comments when responding to their peers. This aligns with the research of others, for example, Pawan, Paulus, Yalcin and Chang (2003) revealed that “interactions were often one-way serial monologues” and Angeli, Valanides, and Bonk (2003) suggest that “online discourse was mostly an exchange of personal experience and did not reflect well-supported reasoning” (p.31). If the interactions within online learning communities are to enable knowledge construction and higher-order thinking then we need to establish a “climate that supports and encourages probing questions, scepticism and the contribution of more explanatory ideas” (Garrison & Anderson, 2003, p. 50). However it appeared that some pre-service teachers were taking the time to make considered responses as Max commented that it was “a very time consuming project with having to research, read and reply; I found some topics difficult to understand and answer. Some pre-service teachers had already written what I would like to have said”.

A lack of direct contact with peers was an issue raised by both the pre-service teachers and experts. Although the pre-service teachers were required to participate in some ‘getting to know you’ type of activities Jane commented that “the people spoken to were simply a name, no face, and no personality”. This was supported by Louise’s

frustration that it was “too isolating”. She suggested that “personal interaction with fellow pre-service teachers is more professionally enhancing”. Part of this negativity could be due to the fact that both cohorts had only experienced fully face-to-face learning environments prior to this and while undertaking this online project, they also had a scheduled weekly class in a face-to-face mode. They were able to talk together face-to-face about the experience of being online, and predictably preferred more structure and explicit guidance and spontaneity provided in a face-to-face environment.

The perceived increased time needed for pre-service teachers to access the online environment and complete the tasks was evident in comments. Some of this additional time can be attributed to the lack of experience of the pre-service teachers using this mode of collaboration and also the new technological interface. They certainly noted that they felt more competent by the end of the project in handling this mode of learning. Also there was a level of fear surrounding the process, due to the assessment attached to successful completion of the activities. For example, Alexander said, “we did it because we had to” indicating that many contributions were assessment driven. Most comments were centred on the fact that this aspect of their course work represented a huge assessment in their eyes, attached to something that appeared fairly nebulous. It seemed that people were only responding to an assessment obligation, rather than interacting by choice.

Some pre-service teachers indicated their concern over the belief that they had “no guarantee that the answers we read are correct, especially if it comes from your peers”. They felt they lacked confidence in talking to peers for that reason and it was clear that some pre-service teachers held the view that authentic knowledge only comes from the academic/professional practitioner. Markus remarked, “I personally feel that at first, we were all lost and unsure of our advice and support to each other.” While Janice said, “I was scared of making a public fool of myself at first, but understanding that others were also not feeling confident helped as we went through the weeks”.

Several pre-service teachers admitted that they wouldn’t use the online environment so much if it wasn’t assessed. It appeared that they didn’t believe that teachers in schools utilised this method of professional learning. Surprisingly, a few thought it was just a novel idea the academics had come up with.

It was clear that the new interface (new to academics, pre-service teachers and in-service teachers) had implications for all participants. Further, the structure of the multiple online forums meant that questions were at times hard to locate, especially further into the semester as the number of postings grew. Jennifer stated that, “it required too much time sifting through the individual responses before we could get started on the week’s work”.

Pre-service teachers on balance indicated a preference for face-to-face teaching. They found it difficult to imagine the relevance and application of online collaborative learning for teachers. Dennis commented that “from my observations on prac, teachers do not partake in activities such as these”. In contrast, David stated, “I think it’s a very good resource for actual teachers”. He went on to say, “Talking about a profession makes it feel real. Having these discussions is vital for my development as an educator. This forum provided opportunities that suited some to do this”.

Conclusion and implications for further research

The pre-service teachers indicated that their preference was for a balance between face-to-face and online learning environments, where the online component encompassed a reduced assessment proportion. There is no doubt, that for the institution, economies of scale were gained. This online project was a means of providing access to discipline specific experts for all pre-service teachers across a range of disciplines, especially significant for those cohorts with few pre-service teachers enrolled (e.g., LOTE, Legal studies).

Although DeWert, et. al., (2003) found that “an online support community is an effective means of providing social, emotional, practical, and professional support to beginning teachers.” (p.319) pre-service teachers enrolled in on campus courses and who live close to campus prefer to have their support face-to-face. There seems to be tension between offering flexible access and the pre-service teachers’ notion that face-to-face support provides a better learning outcome. This may not be unexpected especially given this cohort had never engaged in online learning prior to this project.

Participation in this project provided pre-service teachers with a model of online collaboration to take with them into their future classrooms. It is unfortunate that during their professional experience placements they rarely see teaching and learning where ICTs are integral to the learning process. Although they are familiar with collaboration and team work within classes they have not been exposed to examples of online collaboration. There are multiple collaborative online projects occurring both locally, nationally and internationally and the experiences within this study reaffirms that teacher educators need to provide examples of learning experiences that are currently being employed in schools (for example Bookraps: an international online novel study) rather than pre-service teachers relying on their limited experiences either from their own schooling or while on professional experience placements.

This project inducted the pre-service teachers into the realm of professional online communication as a network of educators that can support their personal and professional development. Interestingly this is also not something they have seen during their professional experiences, possibly because in-service teachers tend to connect with these professional networks out of school hours.

Interpersonal trust was developed during the project and this assisted pre-service teachers to write more personally and fluently over time. They increasingly felt more secure in writing about their personal perspectives. There was the tension between those pre-service teachers who wanted to perform well in this mode and to demonstrate high level interactive skills publicly when their prior experience of tertiary learning was generally competitive and isolationist. This tension was partly relieved by the ongoing scaffolding provided by the academics in the face-to-face mode to demonstrate what higher level thinking looked like and to encourage a collegial atmosphere of sharing resources and ideas.

The next step for this type of research is to investigate the relationships between, and development of, Content, Pedagogy and Technology or as Mishra and Koehler (2008) frame it Technological Pedagogical Content Knowledge or TPACK. This provides a framework for thinking about the complexity of these three forms of knowledge and the interrelationship between all three components. The Holy Grail is at the intersection of all three elements where educators have and can integrate deep knowledge and expertise from the perspective of a discipline expert, a technology expert and a pedagogical expert. This will provide a challenge as many secondary educators see themselves primarily as discipline experts.

In the design of online learning communities the learners should be made aware of the value of peer learning and the resulting collective intelligence (where $1 + 1 = 3$) so that not only do the individuals gain an increase depth of learning but overall the community learning is enhanced. As we move through the first decade of the 21st century teacher educators should provide a range of learning experiences which will extend and enhance the pre-service teachers' expertise in planning and implementing authentic and deep learning in technological enhanced classrooms.

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