

Developing expertise and intrapersonal practitioner reflection in a web environment

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Abstract

Web-based learning has been extensively described and analysed to demonstrate its potential for supporting and enriching the learning experience. Online learning communities are emerging as sites for building and sustaining communities of practice and for fostering reflective conversation. An analytical framework incorporating several phases of knowledge building is applied to a corpus of online discussions to reveal the emergence of meta-reflection and professional identity among preservice teachers.

Introduction

The use of Information Communication Technology (ICT) at the tertiary level has the potential to create new, supportive forums for building and sustaining communities of practice among pre-service teachers. The integration of ICT online discussion into pre-service training experience is the focus of this study. One of the challenges facing those preparing teachers for professional practice is the tension between pre-service teachers' practical learning experiences and their theoretical understandings developed in a university setting. Establishing links between these two forms of learning experiences is essential to the development of a strong professional identity for preservice teachers. Of importance also is the development of preservice teachers' deeper pedagogical understanding through dialogue with their lecturers, classroom practitioners and their peers. Increasingly synchronous and asynchronous dialogue is being used to provide additional opportunities for pre-service teachers to theorise their practice and engage in development of reflective analysis of their learning.

Context of the Study

The data collected and analysed in this paper relate to pre-service teachers studying at third year level in a four year Primary Bachelor of Education program at a national university. The subject focus is Studies of Society and Environment (SOSE) where student teachers attended a total of three hours per week in face-to-face lectures and tutorials during the twelve weeks of the semester.

Assessment items consisted of tutorial presentations and development of an online professional development portfolio for SOSE. As part of the development of the portfolio an additional assessed component required student teachers to participate in asynchronous online discussion regarding professional goals and learning experiences in the SOSE curriculum area. All student teachers were required to make a minimum of eight postings during the semester and to limit these to a maximum of 200 words each. The subject lecturer provided periodic stimulus for the discussion and there was an expectation that the postings would relate in a general fashion to the content of the course lectures, and the supportive literature and textbook chapters set for essential reading each week.

The scenario described above was the first time that the university had incorporated online discussion as a component of the SOSE course. Introducing a new type of instructional tool may have potential difficulties and stumbling blocks. However it also has the potential to have significant impact on student discussion and thought (Dutt-Doner & Powers, 2000). In acknowledging this potential it was decided that the impact

of online specific subject focused discussion engaged in by these student teachers, should become an area of interest for research.

Research on community building online

In networked learning settings, it is claimed that learners, teachers and participants form a community where conversation is purposeful, relevant and reflective. Wenger (2001, 1998) believes that an experience can be pedagogically valuable if and when it comprises complex interactions and dialogue with a shared community framework. A networked based environment can meet these requirements if participants are able to share their knowledge and contribute to each other's construction of knowledge and competence (Stacey, 1999). Ferry et al (2002) highlight the fact that asynchronous and synchronous forums can be an alternative approach in initial teacher education that results in the formation a knowledge-building community (KBC). Students working in this way are able to work with authentic problems that are linked to the school context. However they may not always use the forums in ways that are determined at the outset and this aspect was of interest to the researchers. In addition the process can develop enhanced skills of negotiation, communication and collaboration, which are transferred to the on-line situation.

Clarke (2002) found that such conferencing could also build a supportive community of practice among pre-service teachers. Analysis of the content of these dialogues suggests that the participants engaged in reflection on the topics raised and shared pedagogical understandings. They were also mutually engaged in solving problems set by the lecturer or raised by their student peers. Nevertheless, in some forums there is a tendency for students to engage in 'serial monologues', that is, long descriptive passages of teaching experiences without an effort to connect to the contributions of others (Henri, 1991; Pawan, Palus, Yalcin & Chang, 2003).

In this study the provision of opportunities for online discussion of SOSE concepts and theories by pre-service teachers was investigated for its potential to provide a variety of lens through which their views of teaching pedagogy might be analysed, justified and/or changed (Collins, 2002).

Research Questions

This study was undertaken with the following research questions in mind:

1. Did these students develop an expanded view of their professional identity during these online postings?
2. Did they engage in 'serial monologues' or two-way peer to peer interactions? (Henri 1991)
3. Did they move from content based and administrative management discussion regarding the SOSE subject to a new way of viewing this subject?

Methodology

Qualitative analysis supplemented by descriptive statistics is used in this study. In order to interrogate the online data and as a means of answering the stated research questions all postings to the threaded online discussions site were initially studied and categorised according to their designated broad subject headings. In total 389 postings were placed by 63 students.

Table 1 provides the results of the analysis of the postings and indicates the range of topics covered in the discussions.

ONLINE POSTINGS CATEGORIES /ISSUES	NUMBER OF RESPONSES
SOSE CURRICULUM Citizenship; Environmental education; SOSE and history; Subject identity; SOSE units of work.	59
VALUES Teaching values; Modelling values; Values teaching through moral dilemmas; Teaching Christian values.	55
PROFESSIONAL IDENTITY Consistency as a teacher; Demonstrating fallibility as a teacher Self assessment; Online portfolio.	55
ASSESSMENT AND SOSE Assessment; Self-assessment; Assessment and evaluation.	52
USE OF TECHNOLOGY AND COMMUNITY RESOURCES TV education; Internet resources; Australian National Museum resources.	45
HISTORY History lessons; Indigenous education 'Rabbit Proof Fence' (film).	38
INCLUSIVE EDUCATION Maintaining gender balance; Inclusivity; Social skilling and SOSE.	35
THINKING SKILLS Critical thinking	19
PEDAGOGY AND SOSE Integrating SOSE; Random lessons.	15
ROLE OF THE SCHOOL Transition primary to high school	11
NON-RELATED SOSE POSTINGS Missing disk	5
TOTAL NUMBER OF ONLINE POSTINGS	389

TABLE 1: ANALYSIS OF CATEGORIES EVIDENT IN ONLINE POSTINGS

In addition to the online postings, students' written responses to questions regarding the types of knowledge necessary to become a professional teacher were collected in the first tutorial sessions of the semester. The same questions were posed at the conclusion of the SOSE series of lectures and tutorials. Utilizing this pretest/posttest component provided additional illuminative information to that derived from the online postings.

Garrison, Anderson and Archer (2001) have developed a 'practical inquiry' model that provides a useful theoretical framework for assessing outcomes of collaboration in online discussions at the tertiary level. The model consists of four phases of critical thinking and cognitive development.

The *initiation phase* is termed a triggering event and initiates dialogue about a specific issue. This may be followed by entering into an *exploration phase*, where the online contributions move between individual reflection and social exploration, and information is exchanged about the issue being discussed. The *integration phase* sees contributors beginning to 'construct meanings' or solutions to the issue at hand, and in the *resolution phase* the proposed solution is 'vicariously tested' (Garrison et al., 2001). It was determined that this 'practical model' inquiry provided a suitable schema to analyse the data as collected in the online postings.

An expanded adaptation of the four phases of the model was used to interpret the SOSE online postings as follows:

Phase 1. Triggering Events

These postings reflected responses to the questions set by the lecturer or to those raised by the students themselves. They were often related to the set readings but as the semester progressed ranged across an expanded variety of topics.

Phase 2 Exploration of the Issue

Initially further discussion online of the triggering event by each individual student tended to draw on prior knowledge and earlier practicum experience.

Phase 3 Integration

Here the students engaged in reflection on each other's postings, asked questions and constructed new meanings, which synthesised this growing corporate knowledge.

Phase 4 Resolution

Online discourse in this phase moved to a deeper pedagogical level where there was evidence of application of the issue the ‘real world’ and development by the preservice teachers of an expanded view of professional identity.

Figure 1 below shows an adaptation of the ‘practical inquiry’ model to the study in question and is a subject specific application (SOSE)

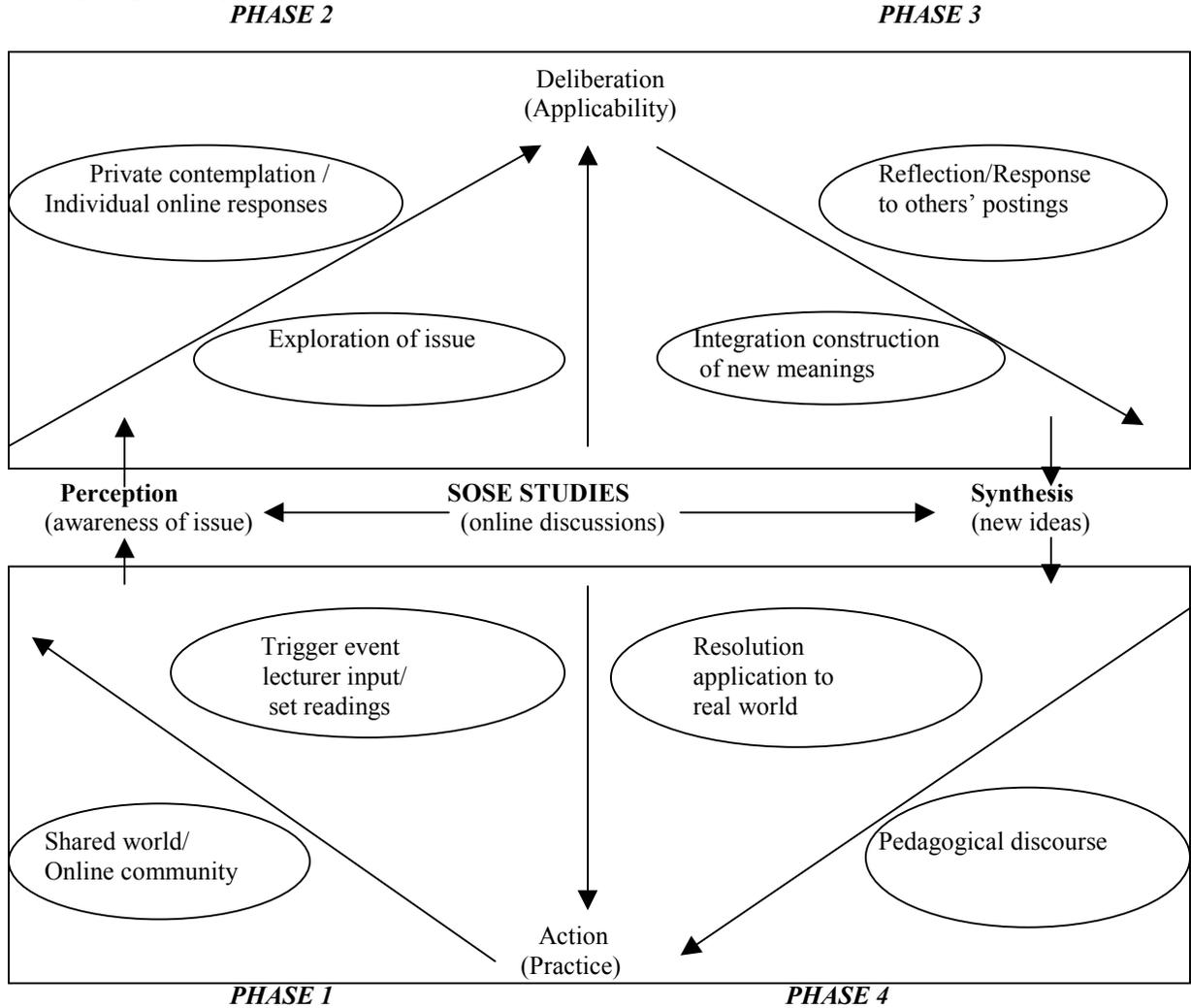


Figure 1 (adaptation of model from Garrison et al 2001)

Analysis and Discussion of Students’ Postings

Participants’ dialogues were analysed in order to ascertain the extent to which there is evidence of the four phases outlined in Garrison’s (2001) model of ‘practical inquiry’ Preliminary analysis of all the postings revealed that the pre-service teachers’ on-line discourse consisted of messages that at times intertwined the four phases in Garrison’s model. The following section focuses in turn on each of the four phases with examples from the students’ postings cited as evidence of their use in context. Students’ names in the postings have been changed to provide anonymity.

Phase 1. Posing of issues and problems

Discussions were started by the lecturer’s first posting which welcomed students to the site. Administrative structures were defined and suggested subject foci for further postings were discussed. Students were advised to link discussions of each topic to the set readings and to identify assumptions that they might make regarding classroom practice in teaching the SOSE subject. Consideration of the ways that their findings might assist or hinder learning for students was also suggested.

The first topic for discussion was ‘critical thinking’ for which there were 19 responses. These postings showed early stages of response to the triggering event (lecturer’s posting) with establishment of tentative beginnings of on-line mutual sharing and support:

Dear Miss Sal, it was great to receive some feedback to my posting (I didn’t think anyone read them). So well done - you got me thinking outside my little square. (Ronny)

Another student wrote:

You have contributed many wonderful discussion points to ponder. Keep up the good work. I’d love to hear from you guys how you feel about critical thinking and the way we have to assess our peers. (Suzanne)

As each subject for discussion was raised either by the lecturer or the students the triggering phase was further evident. This is clearly seen in one of the lecturer’s postings:

Following is the next question for online discussion. The question relates to information presented in Chapter 7 of the class text. What are some key aspects of current social change which have implications for citizenship? What significance do they have for curriculum planning and teaching in education for citizenship? (SOSE lecturer)

Phase 2. Exploration of the issue, private contemplation and online response

Phase 2 takes the initial discussion further by exploring the issue in the light of the individual’s prior knowledge, personal learning and shows their resultant online response. An example of a Phase 2 response is evident in Stephanie’s posting:

Chapter 7 begins by saying that education for citizenship has become a key concern recently because young people are confused, cynical, indifferent or unwilling to be involved in politics due to lack of knowledge. I agree completely and suspect that this is why there has been very little discussion on this topic so far. Who thought, “Ooh, I didn’t understand the chapter or question enough to write anything for this discussion!?” Don’t worry, that was my initial thought too, but that’s what made me realise just how important it is that we educate our students in this area, (Stephanie)

Phase 3. Integration – construction of meaning in relation others’ online postings

This phase sees students engaged in reflecting on the differing ideas raised by others. They construct new meanings that integrate the issues raised by their peers and collectively engage in developing new knowledge. In most cases Phase 3 discussion was evident towards the closing stages of postings on a particular subject. The contribution by Roger illustrates this phase:

Hi everyone .I agree with many of your comments. Your discussions are very informative and you seem to have many resources to reference. I enjoyed your input. My view like yours is that ‘Rabbit Proof Fence’ is an up to date account of the story and should be used as a vital resource for students.... Considerations should also be taken especially for Aboriginal students within the classroom The fact that the film shows intolerance and violence to Aboriginals should not deflect from the fact that white Australian children face intolerance and violence within environments. There are many issues in this movie that are just to be discovered in the ‘now’. The film is a wonderful resource, it is a visual recount of our past, through this media we can use it as a springboard for issues our children silently deal with daily. (Roger)

Phase 4. Resolution – Engagement in pedagogical discourse and application to the real world

During Phase 4 students engaged in translation of their new combined knowledge to the classroom situation and spoke about defending their solutions to the problem raised.

Alan’s online response on the subject of ‘assessment’ provides an example of a Phase 4 focus:

The ultimate aim of education in my opinion is to produce lifelong, independent learners. An essential component of autonomous learning is the ability to assess one's own progress and deficiencies. Student assessment should be incorporated into every evaluation process. Its specific form may vary with the developmental levels of the students, but I feel even the younger student can begin to examine and evaluate their own behaviour and accomplishments. I believe the best way to teach students the ability to self-assess it to model it ourselves. Although we might find it hard and daunting, the benefits of doing so will not only be rewarding for ourselves but for our students as well.

(Alan)

Major Findings: Development of professional identity

In answering the first research question there was clear evidence that the students developed an expanded view of their own professional identity and responsibility as teachers. Analysis of two weeks discourse on the issue 'consistency as a teacher' (18 responses) shows their growing knowledge of the importance of teacher consistency rather than concentration on SOSE subject content alone.

Sebastian's questions elicited a lengthy discussion on consistency being linked to effective communication. He draws a distinction between teachers who communicate to others but rarely communicate effectively. His questions included: *Am I clear to the students? Is what I am saying exactly what I want to say? Can people hear what I am saying or are they simply listening?* These resulted in vigorous analysis of the need to be consistent while still trying out what works and what does not work. Students drew on their previous practicum experiences to show that consistency and change can work together. By writing about moving away from the associate teacher's routines these pre-service teachers demonstrate growing development of their professional identities. Jessie's posting on this issue highlights her confidence to develop her own personal professional identity and style:

What I have personally discovered is that I believe that in the first day or so we MUST be consistent with the associate teacher, however, if introduced in the correct way then a change can be fantastic for the students. By making change fun and exciting we can cater for our own developmental needs and also cater for the student's need for a routine. Initially they will resent the change, however once you begin to develop a relationship with them, by all means try something new. Just make sure that you clearly map out what you want to do and what you expect from the class to make sure things run smoothly. This way we can all attempt new teaching styles and still have a successful and enjoyable prac. Do you guys agree with me?

(Jessie)

Prevalence of serial monologues and peer-to-peer discussion

To answer the second research question regarding the prevalence of serial monologues compared to peer-to-peer interaction, descriptive statistics of participation levels for all of the postings were calculated. In total 389 postings were made to the SOSE discussion site. Of these six entries were generated by the lecturer with the last entry in that category being posted as number 74. Only 68 of the postings were not clearly linked to previous entries. Several in this category were postings of new subjects for discussion raised by individual students rather than serial monologues on the one subject.

All the remaining postings (321) were closely linked to prior discussions and identified with headers such as [Branch from no. 114]. It is of note that in addition, many of these threaded postings also identified those who generated earlier discussion by name and made explicit comment on their contribution to the discussion. The responses in this category usually were addressed to an individual as this posting indicates. It also clearly identifies the pre-service teacher's move from teaching content to teaching professional identity.

"Jane, once again you prove what a formidable intellect and beautiful heart you have. You have the 'goosebump factor' and it only goes to support the power of teaching with passion and from the heart. What child will leave your classroom with wishy-washy views on racism or any other big issue topic you wish to explore and teach!?! This is where our values and beliefs will out....To do that, we need to consider our own development as people and not merely concentrate on the product of a portfolio, listing accomplishments or certificates gained. We need to be constantly thinking, questioning and challenging (as Sarah was by Joan – bravo both of you for your courage

and honesty) our notions of self. This will be the most powerful 'teacher' for our children – our true 'selves' shortcomings and all.
(Sharon)

Some postings combined several differing viewpoints from a range of individuals in their response, although this was not as prevalent as an individual response to a designated posting.

Moving from administrative/content issues to new views on the subject

Because these pre-service teachers met face to face on a weekly basis and were asked to address set topics and readings in their postings to the SOSE discussion, the content of these moved quickly from content/administrative issues to reflective analysis. In the first two weeks the postings were usually shorter and fewer in number than later in the semester and were more concerned with questioning, clarifying and expressing views of a general nature on new conceptual issues. There was evidence however that they wrote expansively at this early stage and revealed their feelings clearly. This aspect differs from a study by Moody (2000) who found that students engaged in online conferencing in the United Kingdom (UK), Australia and Ireland are somewhat inhibited and less likely to write openly than those in the United States.

Other Findings

Anderson (2001) and Clarke (2002) highlight the expansion of online communication as a vehicle for the development of a new community of practice particularly among preservice teachers. Their findings are similar to those regarding the students in this study, who found that asynchronous communication open 24 hours a day and 7 days a week provided a high degree of flexibility. The use of a 'threaded discussion' format was also beneficial in that it allowed easy access to making a reply on the topic under discussion. Students were also involved in what Wenger (1998, p.95) terms 'learning in practice' where they were:

- a. evolving forms of mutual engagement
- b. understanding and tuning their enterprise
- c. developing their repertoire, styles and discourse.

The role taken by the lecturer in this study can be described as one of covert facilitation and seeding of the discussions. A total of six postings was made by the lecturer during the first four weeks of the online discussion period. Following this, students then generated their own topics for discussion within the theoretical framework of the SOSE Unit guide. After the last posting by the lecturer, the preservice teachers raised 27 different topics that in turn elicited a total of 237 responses from members of the group. This decision by the lecturer to limit facilitation is similar to that of a teacher who senses when to pull back in a classroom from a leadership role, so as to encourage student contributions and the development of a community of self directed learners.

The decision to limit input by the lecturer is also in accord with a study by Galanouli and Collins (2000) who examined whether computer conferencing without tutor moderation could be successfully implemented between preservice teachers. They found that ongoing tutor moderation was not essential in establishing online discussion and that the program in their study was successful in all areas.

While online discussions in this study were generally focused on topics related to the SOSE lectures and workshops, there was also evidence of students using online communication for other purposes; eg. finding a lost disk, seeking assistance with the development of portfolios, and sharing of feelings about the impending exam paper.

Conclusions

This study has provided evidence that online asynchronous discussion is an important means to develop and nurture an online community of learners at the undergraduate level. In this case it allowed preservice teachers to explore issues and be challenged by the multiple perspectives presented by other students participating in the online discussions. Students' access to the growing expertise of their peers in an increasingly supportive and nurturing environment proved effective in facilitating meaningful professional learning and growth.

The requirement to complete a number of focused discussion postings, which were an assessable part of the SOSE unit, provided a degree of structure to the online activity. This may have resulted however in some

students engaging in this process as merely a 'means to an end' in order to meet unit assessment requirements. While this study analysed students' responses related to the development of an online professional community within their SOSE curriculum unit, a number of further questions have emerged. For example was there a lack of spontaneity and missing additional information due to the asynchronous nature of the communication? Did the use of technology provide opportunities for a different type of professional conversation for these preservice teachers ?

These questions and further analysis of the content of the online contributions, and the use of focus group interviews, to ascertain overall perceptions regarding online discussions as an alternative avenue for professional learning will be fruitful areas for future study.

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