

Online mentoring for secondary pre-service teachers in regional, rural or remote locations

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Abstract: This chapter describes a project which investigated qualitative expressions in an online mentoring community involving secondary pre-service teachers and practising teachers. The practising teachers acted as online mentors to the pre-service teachers who were personally, professionally and geographically isolated due to being located in regional, rural or remote areas. The online mentoring enabled rural and remote pre-service teachers to benefit from the ability to engage with practising teachers for both professional and academic purposes. The participants' posts hosted in an invitational online space were coded using a content analysis framework, and outcomes from the online mentoring project are provided.

Introduction

Many teacher education programs are now offered online with pre-service teachers located in many regional, rural and remote areas. Due to a range of circumstances these pre-service teachers are unable to move to locations which offer them less professional isolation. Pre-service teachers located in rural and remote locations do not have the opportunity to interact and engage in a professional learning dialogue with teaching professionals within their disciplines e.g. often there is not a specialist Physics teacher in a small rural high school. An online mentoring project was established to enable rural and remote pre-service teachers to benefit from the ability to engage with practising teachers for both professional and academic purposes. This innovative project provided online mentoring that extended beyond the traditional educational boundaries to enhance support for pre-service educators while developing partnerships with teachers in the field.

Darling-Hammond (2000, 2012) claimed that traditional teacher education programs are not responsive to present-day demands of teaching and are often distant from contemporary practice. She also recommended that the quality of initial teacher preparation and ongoing mentoring could influence teacher competence and reduce attrition from the profession.

The multiple reasons for beginning teachers leaving the profession are well documented (Ashiedu & Scott-Ladd, 2012; Buchanan, 2010; Fetherston & Lummis, 2012; Schuck et al., 2011), however, the crucial reason for leaving the profession is the lack of professional support (Buchanan, 2010; Roberts, 2004; Scheopner, 2010; Schuck et al., 2011). The lack of support is heightened for those located in rural or remote locations where there are fewer experienced teachers in their geographical proximity, and where access to teachers with knowledge in a similar discipline area can be more problematic.

Another significant reason causing beginning teachers to leave the teaching profession is the increased workload and complexity of teachers' work (OECD, 2005). There is additional pressure to gain understanding of an increased volume of knowledge and to be able to apply it in practice (Maher & Macallister, 2013), including the

expectation to modify curriculum for diverse learners' needs, and increased technology and pedagogy knowledge and practice. These increased pressures on beginning teachers are exacerbated for those located in rural and remote locations where they are expected to assume additional roles and responsibilities and often teach outside their subject area in their early years in the profession (Roberts & Lean, October, 2005).

Studies show that the key support required by beginning teachers includes mentoring and structured supervision (Buchanan, 2010; Commonwealth of Australia, 2013; Joseph, 2011; Schuck et al., 2011). In their report on attrition of recent graduates, the Queensland College of Teachers (2013) found that providing "adequate support such as structured induction, mentoring from suitable experienced teachers and resources for all graduate teachers, including those employed as casual/relief teachers and on temporary contracts" (p. 47) would have changed their experience and impacted on their decision to leave the profession.

Secondary teachers in rural and remote locations have "decreased contact and networking with teachers in the same subject area from other schools" (Roberts, 2004, p. 10). This project established discipline specific online mentoring for secondary pre-service teachers. The one-to-many discipline specific online mentoring program harnessed the potential of technology to reduce feelings of isolation and to enhance access to information and networking opportunities with experienced teachers. Pre-service teachers were able to access mentors from any location rather than solely within their local area.

Online mentoring

Online mentoring, E-mentoring or virtual mentoring has been described as the "use of e-mail or computer conferencing systems to support a mentoring relationship when a face-to-face relationship would be impractical" (O'Neil, Wagner, & Gomez, 1996, p. 39). It has been suggested by Hunt, Powell, Little and Mike (2013) that "E-mentoring also facilitates a medium of exchange between mentor and mentee that is less threatening and non-confrontational, conducive to building a community of learners" (p. 288).

Technology now makes it possible for mentoring relationships to occur between those within different geographical locations, at a time and place convenient for both parties. It can occur synchronously or asynchronously. Asynchronous mentoring provides the parties with time to create a reflective response, and an opportunity to research prior to responding rather than having an off the cuff response. Asynchronous text mentoring also provides a written and lasting record of the conversations, which can be reviewed over time.

Other advantages online mentoring has over face-to-face mentoring include (Eby, 1997; Ensher, Heun, & Blanchard, 2003; Gutke & Albion, 2008; Mueller, 2004):

- Logistical convenience due to no travel being required and no necessity to be in the same location;
- Flexibility of access as it occurs at time convenient to participants and can occur on a device such as the Smart Phone already in their pocket/handbag;
- Status difference not being obvious in e-mentoring;
- Some degree of anonymity and a less threatening environment, which can encourage mentees to ask questions they are less likely to ask in person;
- Reduced costs with no travel or time away from job;
- Scalability: infrastructure is in place irrespective of number of participants; and
- Group online mentoring has the capacity to contribute to the development of a community of learners.

Some deterrents to online mentoring include those items that are constraints in traditional face-to-face mentoring (Ensher et al., 2003; Mueller, 2004):

- Availability of suitable mentors;
- Ongoing commitment from all parties;
- Ongoing access to ICT resources: may need to re-establish relationships after a long break;
- Potential for miscommunication due to the lack of non-verbal cues; and

- The need for mentoring programs to be managed, planned and implemented, including training and ongoing contact with participants.

Many pre-service teachers study online and don't have access to a teacher with discipline expertise in their local area. The online mentoring project was established to provide all pre-service teachers access to a discipline expert, irrespective of their location. Stanulis and Floden's (2009) study of beginning teachers within the United States, found that mentoring advantages "included an opportunity to share ideas, resources, and advice; an opportunity to hear from other new teachers who were going through similar struggles; and the increased openness to try new things in their practice" (p. 119).

The mentoring in this project, included peer mentoring and group mentoring with an experienced teacher. Lateral or peer mentoring provides job related skill development rather than career related development, and can elicit emotional support, friendship, and feedback through a reciprocal relationship (Eby, 1997). The one-to-many mentoring within the group arrangement provided pre-service teachers an opportunity to hear from other pre-service teachers as well as an opportunity to access the support of an established teacher, all of whom worked in the same discipline area. Dansky (1996) suggested that an important element of group mentoring is the dynamics of the group and the collective behaviours that are not present in a one-to-one relationship. The social dynamics include "polarization, conformity, communication flows, and social networks" (p. 7), which again, are less obvious in one-to-one mentoring relationships.

Computer Conferencing and Content Analysis Conceptual Framework

Online discussions are not constrained by space, location or time. The online environment enables multiple contributions by all learners, unlike face to face environments where it would be "physically impossible for all learners to have their say" (Henri, 1992, p. 118). This adds to the richness and diversity of perspectives within the dialogue.

To understand both the social and cognitive learning processes in online discussions, Henri (1992) developed a Computer Conferencing and Content Analysis framework. This framework has five dimensions:

1. Participative: the number of statements made by participants;
2. Social: statements not related to the formal content;
3. Interactive: statements referring implicitly or explicitly to other statements or participants;
4. Cognitive: statements which demonstrate knowledge and skills related to content and learning processes; and
5. Metacognitive: statements which identify personal characteristics, knowledge and skills which hinder or enhance personal learning processes and task completion.

The cognitive dimension explores the ways people are engaging and learning within the dialogue. It includes clarification questions, making inferences or judgments, and proposing strategies or actions. Henri (1992) suggested that there are two levels of cognition: surface and in-depth. With surface processing including posts that: repeat information without offering interpretation or new ideas; concur with others without adding personal comments; and propose solutions without explanation or offering multiple solutions without judgment of their suitability. In-depth processes are more complex. They include posts that: link ideas, facts etc. to support interpretation and judgment; offer and elaborate on new information; propose solutions with justification; compare and contrast ideas or solutions; provide evidence to support claims; and look at the problem from a big picture perspective.

This framework assists educators to understand the pedagogical and learning outcomes of online discussions. In an effort to explore the depth of discussion within the mentoring relationships in this project, the online discussions have been analysed using Henri's (1992) Computer Conferencing and Content Analysis framework.

Context and Method

Teacher mentors in different disciplines were identified through the researcher's professional networks and the professional experience office. Teachers were invited to volunteer to take on the role of mentor in their discipline area (e.g. Mathematics, English, Science, Business, and Computing). The mentors were identified as effective practitioners and curriculum experts by their peers or academics and came from a range of disciplines. The mentors would either be located in rural or remote schools or have had past experience teaching in such locations. The role of the mentor would be to assist beginning teachers in the ongoing development of their discipline specific pedagogical content knowledge, to answer questions, to share their experiences of issues related to being located in rural or remote locations, and to support the mentees as beginning professionals. The teacher mentors received a small payment for their time from a grant and worked online for approximately one hour per week across two semesters.

The pre-service teacher mentees were volunteers from the Bachelor of Education (BEDU) Secondary specialisation across all year levels and the Graduate Diploma of Learning and Teaching (GDTL) Secondary specialisation, who were completing their professional experience in rural or remote areas.

Data came from archived online discussions within a Wikispace area set up for the project. The asynchronous discussions were analysed to explore the contributions from the mentors and the mentees. After the completion of the year and finalisation of results, the online discussion posts were downloaded and de-identified prior to data analysis. The data were analysed using Henri's (1992) Computer Conferencing and Content Analysis Conceptual Framework, described above. The archived postings in the community online discussion area were coded to identify the dimensions from the framework.

A second data source was interviews with participants. Three student mentees and five teacher mentors were interviewed. The research questions explored in this project were:

- How do pre-service teachers and teachers respond to online mentoring?
- What types of cognitive presence do pre-service teachers show within online mentoring?

Results and Discussion

During this project, mentees and mentors across 10 different curriculum areas generated 578 posts and 12832 views over an eight-month period. There were 10 mentors and 50 mentees, which suggests an average of 9.6 posts and over 213 views of the posts for each participant. The high number of views indicates that the pre-service teachers were very interested in the types of discussions that were occurring, however were hesitant to post their own perspectives. Figure 1 presents the breakdown of the posts over the different dimensions of Henri's (1992) framework.

The most common topics of conversation included homework expectations, student engagement and content relevance, literacy across the curriculum, classroom management, professional experience expectations, and pedagogical approaches, all of which came from the lens of a specific discipline. The topics under discussion were driven by the mentees.

Less than 1% of the posts were social in nature. Given the geographical spread of the mentees, and that the lack of prior relationships between mentees and mentors, this result was surprising. Perhaps the percentage was low because the facilitator did not establish a specific forum or protocol for this purpose. Having said that, there were elements of social activity within many of the posts coded at higher levels.

Interactive posts were those that responded to, or made commentary on other posts without having a significant cognitive element. 15% of the posts were coded as interactive rather than monologic (Gunawardena, Lowe, & Anderson, 1997) where there is no ongoing post/response cycle. This result is similar to the results of

Pawan, Paulus, Yalcin and Chang (2003) who also reported low levels of interactive posts. In contrast, McKenzie and Murphy (2000) had 74% of posts coded at the interactive dimension.

Cognitive posts have been further broken down into surface and in-depth, which are seen as different skills connected to the learning process, and which impact on understanding, reasoning, and critical thinking. The posts coded as surface processing are low-level posts, as opposed to in-depth posts, which required the learner to evaluate information, to organise it and to compare it to previous understandings. The majority of the posts (64%) were evaluated as being cognitive surface posts, which shared ideas, experiences or opinions without offering alternatives, justifications or explanations. The second most common type of posts (19%) were cognitive in-depth posts, which were more complex. Again this contrasts with McKenzie and Murphy (2000) who had 22% at the surface level and in-depth processing was three times that.

When completing the data analysis the researcher, an educator within the secondary program, noted that the contributions were at a much higher level than would normally be present within general discussion forums related to a specific course. This raises the question of whether the higher cognitive levels of interaction displayed in the space were due to the perception that participating mentors might be a more authentic audience.

Metacognitive posts made up only 2% of the total. These posts included elements that identified metacognitive knowledge of the self, task or strategies, or metacognitive skills of evaluation, planning, regulation and self-awareness. Gunawardena, Lowe, and Anderson’s (1997) also found low levels of metacognition, however McKenzie and Murphy (2000) found that 16% of the posts in their study were coded as metacognitive, perhaps because they used prompts within the online weekly activities.

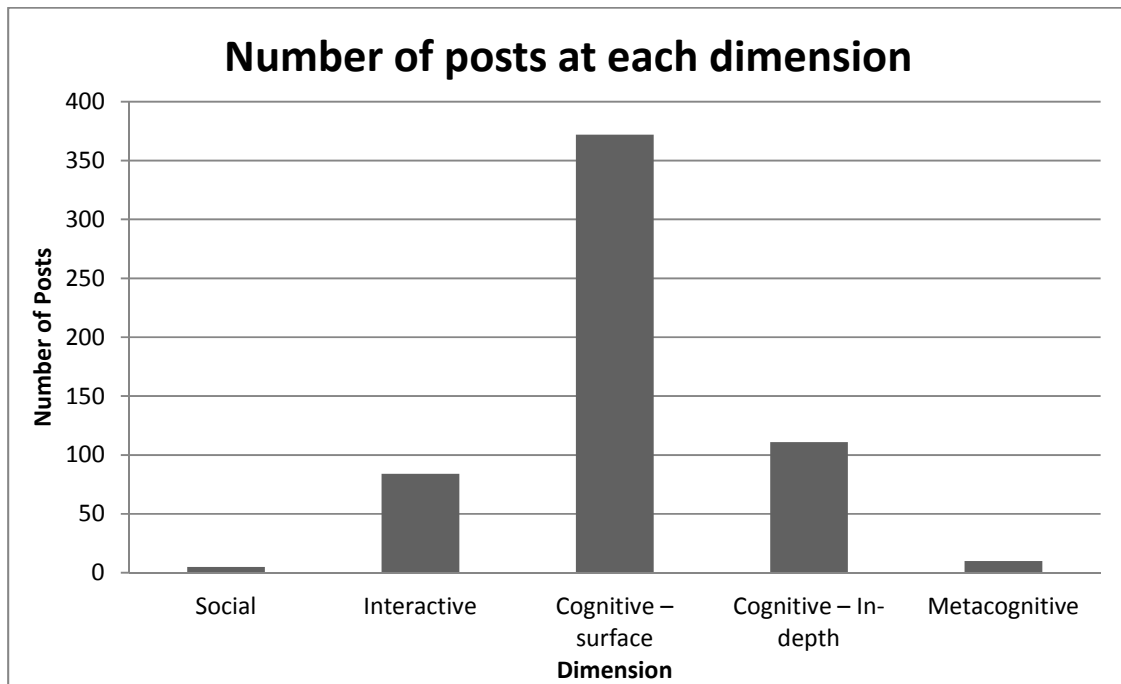


Figure 1: Analysis’s of discussion posts a using Henri’s (1992) content analysis framework

From the interview data it was clear that both the mentors and the mentees positively responded to the online mentoring. Mentor A commented *I certainly did enjoy it*; supported by Pre-Service Teacher X who stated *I thought it was a good idea*. Mentor E suggested *it was an interesting approach* however was frustrated with the number of “lurkers” and questioned how we might *get them to participate rather than observe*. The positive

comments from participants support Hew and Knapczyk's (2007) study who found that both the mentors and the mentees benefited from the mentoring relationship.

The pre-service teachers enjoyed the access to others, both peers and experts, who had the same discipline focus but were located beyond their geographical area. Student X revealed *I have been learning to appreciate the extent of experience gained from others outside my geographical area*. Mentor A found that the project was a *good way of communicating with students that you do not normally have contact with*.

The online space provided the flexibility of participation at any time, in any place. Mentor E appreciated the *flexibility of time*, while Mentor B suggested it *wasn't hard to participate but it was time consuming and required an ongoing commitment*. The pre-service teachers also commented on time, Student Y suggesting that *being too busy with assessment and other uni related tasks made me less inclined to spend what little spare time I had pursuing more computer work*.

Some pre-service teachers and mentors engaged in the process more than others. Pre-service teacher Z suggested that *I was a bit more proactive than the mentor, I think*. In contrast, Mentor C suggested that it should *be made compulsory to require an entry every week*. Having an assessment obligation would have increased the number of posts in the mentoring space. Mentor D commented that it was *good to be able to give advice and then have students try out suggestions on prac or reflect that they had seen other do similar things. Basically it was the benefit of reflection and discussion*. Mentor A was *a bit disappointed in terms of the amount of student response, adding, I expected more questions*.

The participants agreed that the depth of discussion varied and depended on the topic. Mentor D commented that *I would comment and then other students would also comment on the posts of fellow students, so the conversation became quite focused and specific*. Whiting and de Janaz (2004) also observed the importance of asking effective questions, which should be personally meaningful and open-ended to gain the most comprehensive responses.

Outcomes

A number of outcomes can be identified as a result of this study which explored online mentoring of secondary pre-service teachers. Firstly, online mentoring can occur in an open online space with one-to-many participants. Secondly, secondary pre-service teachers benefit from have access to discipline expertise throughout their program and not just during their professional experience. Thirdly, like online teaching, online mentoring benefits from focus questions or stimulus that requires the pre-service teachers to respond at high cognitive and metacognitive levels.

The results of this study exploring online mentoring are limited to secondary teacher education in one regional university in Australia and this provided limited opportunity for generalisations. Future study in this area could include consideration as to the personal and professional learning of both the mentors and the mentees, and exploration of the differences between mentoring conversations in closed spaces and open spaces.

Conclusion

In an effort to further support the ongoing learning and reduce attrition of rural and remote pre-service teachers, an online mentoring project was established. The goal was to reduce the professional isolation and to enhance the discipline pedagogical content knowledge of the pre-service teachers by providing one-to-to mentors in a range of discipline areas.

In answering the first research question, *How do pre-service teachers and teachers respond to online mentoring?*, pre-service teachers and practicing teachers responded positively to the opportunity to be involved in this online mentoring project. The mentoring questions and concerns were driven by the pre-service teachers rather than by a course, an academic, or the mentors. When exploring the second research question, *What types of cognitive presence do pre-service teachers show within online mentoring?*, it was clear that the majority of the posts by the participants within the online mentoring project were classified as cognitive at the surface level. Perhaps higher levels of participation and depth of conversation would have occurred if stimulus or starter questions seeded the discussions initially rather than having the conversation driven solely by the pre-service teachers' interests and issues.

Mentoring can be used to build pre-service teachers' capacity and to develop competence while they discuss debate, give examples and theorize about their concerns as novice teachers with their peers and experienced teachers. Secondary pre-service teachers in rural and remote areas often have limited opportunity for this interaction at a local level, and online mentoring can provide access to experienced educators, which can leverage effective growth and development for novice educators.

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