Creating learning connections via an online community of practice: A case study

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The Digital and Collaborative Learning postgraduate programme of The Mind Lab by Unitec not only provides teachers with transformational approaches to 21st-century learning, but also with opportunities to create connections with those who teach different student age groups, are from different teaching disciplines, or are from different regions of the country. More than 600 teachers from the four annual cohorts studied in this research provide a substantial pool of knowledge and practice to be tapped into. To realise this potential, we have sought to foster an online community of practice for the teachers to engage in learning and social interactions. A community of practice embodies a: shared domain, with mutual interest in transforming teaching practice via digital and collaborative learning; shared practice; and a shared community. Structured online interactions create a dynamic sense of engagement for members. A Google+ Community provides the online platform for the teachers to share their reflective practice. Our research questions centre around what impacts the online community of practice might have on participant learning. This paper presents an analysis of a survey of current students as well as alumni. The findings should provide insights for online course designers into how to effectively foster online communities of practice.

Background

Since Wenger (1998) introduced the concept of communities of practice (CoP) in his work, the concept has been developed and adopted across organisations. A CoP is characterised by three key elements: a joint enterprise, mutual engagement, and shared repertoire (Wenger, 2000). A CoP is a dynamic entity with regular exchanges among its members and in the type of knowledge and practices that define them. When online interactive platforms emerged, they expanded the potential dimensions of CoPs greatly. Online CoPs provide an alternative space for like-minded professionals to engage, without the limitation of requiring physical presence, in virtual interactions that may enhance learning. Research has shown that online CoPs offer learners a range of benefits, including deepening learners' knowledge and creating new understandings (Wang, 2010; Tseng & Kuo, 2014; Hou, 2015; McLoughlin & Lee, 2010).

One of the key ingredients of a successful CoP is mutual engagement (Wenger, 2000). Mutual engagement is the interactions the members of a CoP undertake, specifically through the exchange process whereby the members share knowledge and support each other (Wenger, 2000; McLoughlin & Lee, 2010).

Interaction is defined as "reciprocal events that require at least two objects and two actions" (Wagner, 1994, p. 8). In online learning, Moore (1989) distinguished three types of interaction: learner–content, learner–instructor and learner–learner. Learner–learner interaction is communication between students, in pairs or groups, with or without an instructor present (Moore, 1989). Research has indicated the importance of learner-learner interactions in online learning environments (Conrad, 2005; Swan, 2002).

In this study, the authors aim to investigate learner's perceptions of the impact of an online CoP with a focus on one of the three elements of CoP, the mutual engagement or in particular the online interactions within the CoP on their learning.

Methods

Background context, participants and method

The Digital and Collaborative Learning postgraduate programme of The Mind Lab by Unitec provides teachers, most of whom are in-service, with a robust upskilling programme to update their digital and leadership competencies for teaching a generation of digitally-immersed students. These teachers are from different teaching disciplines, work with different student age groups, and come from different regions of New Zealand. Of four courses in the programme, two are delivered mainly online. To foster learning experiences and sustain the social interaction of the participants, a Google+ (G+) community has been created for each cohort. All enrolled students are invited to join their relevant community (we will refer to these communities as TML G+ in the rest of the paper).

A survey was sent out to student cohorts from March 2015, July 2015, November 2015 and March 2016. Since a CoP requires three dimensions (joint enterprise, mutual engagement and shared repertoire) the survey questions were devised to ask the learners if they identified any domain of interest within TML G+ (joint enterprise), if they interacted in TML G+ in any way (mutual engagement) and if they used the shared resources of TML G+ (shared repertoire). Exclusion criteria were applied to responses that did not identify any domain of interest within TML G+, or reported no interaction in TML G+ in any way, or reported no usage of the shared resources in TML G+. The total number of responses after the exclusions was 103, about 10% of the total number of students from these four cohorts.

Results

The online community of practice

In terms of the joint enterprise element, understandably the data shows the highest response was from the combined domain that included specialist areas of practice such as early childhood education or primary education, together with digital and collaborative learning,

which is the theme of the programme itself. Regarding mutual engagement, a majority of learners chose to interact with others on TML G+ by reading and commenting on other people's posts (95.2%), or replied to other comments once a week or more (97.1%); while only 32.4% shared their assessment work. When asked about their use of shared repertoire, the responses indicate that teachers utilised different types of shared resources. Of the respondents, 32.4% identified three common types of resources: educational tools; teaching techniques and ideas; and photos, images and videos shared by their fellow students in the programme. However, 29.4% of responses identified two types: educational tools, and teaching techniques and ideas. As a result, more than 60% of the respondents utilised at least two types of resources.

Impacts of online interactions on learning

In this section of the survey, the participants were asked about their learning with regard to introducing new concepts and concept expansion; assessment clarification and motivation; challenging assumptions; and introducing new perspectives. The last question was phrased from a negative perspective as one measure of the reliability of the responses. The other questions were phrased from a positive perspective.

The first two questions looked at learning in relation to experience with assessment. Table 1 shows that 65% of the respondents agreed or strongly agreed that online interactions helped them in clarifying the assessment requirements, while only 13.6% disagreed or strongly disagreed. Additionally, 69% agreed/strongly agreed that online interactions encouraged them to work on the assessments, with 14.5% disagreeing or strongly disagreeing. This result is in accordance with other studies, which credit such social discussions with helping learners to share the challenges they face, and express support and encouragement for other students (Stepich & Ertmer, 2003); while in turn enhancing learning (Baab, 2004; Conrad, 2005). The participants in this postgraduate programme are often under pressure from work and study, which can lead to

demotivation and frustration with the amount of time and energy that needs to be invested in study and assessment. Online learning, on the one hand, gives the flexibility of time and space for the learners to self-pace their work, but on the other hand it poses certain challenges for them, especially assessment-related issues. In face-to-face mode, students can easily ask questions and seek answers from the course facilitators, but asynchronous interaction in online environments can mean delays in students receiving feedback. Therefore, promoting peer support as advocated by Vygotsky's (1978) sociocultural learning theory, in the form of online interaction is an essential feature of online courses.

The rates of responses which agreed or strongly agreed that online interactions introduce or extend new concepts were 79.6% (introduce) and 74.8% (extend) respectively, while those who disagreed or strongly disagreed were only 2.9% and 4.8%. This result reflects Lave's (1991) social learning theory, in which she argues that learning occurs in social contexts and is achieved through interaction among practitioners. Knowledge is acquired when members of the community share interesting information and resources to introduce new concepts or extend existing ones.

Being in the profession for a long time can develop one's expertise but may also simply reinforce one's existing perspectives, which can lead to a building up of assumptions about other people and situations. The New Zealand Ministry of Education's research report on effective teacher professional development programme notes that it should include characteristics such as being introduced to new perspectives and challenged with problematic beliefs (Timperley, Wilson, Barrar & Fung, 2007). Therefore, one of the questions in the survey looked at learning in terms of whether social interactions in the online environment help to challenge any long standing assumptions that teachers might have. When asked this question, 66% of the respondents agreed or strongly agreed that this interaction helps them to challenge their own assumptions.

The value of another person's perspective is one of the key learning components in constructivist learning theories (Anderson, 2003). The percentage of respondents who agreed/strongly agreed that online interactions provide a different perspective about their teaching practice was 72.8%, while only 7.8% disagreed/strongly disagreed.

The last item in the questionnaire related to the impacts of online interaction on learning. To ensure respondents' opinions were reliable, a negatively phrased question was used. With 72% responses disagreeing or strongly disagreeing that online interactions do not enhance learning, this result is quite consistent with earlier responses. Table 1 shows a summary of responses to the questions about the impacts of online interaction on learning during the postgraduate programme.

Table 1: Responses to the questions about the impacts of online interaction on participants' learning.

	Strongly agree and agree	Strongly disagree and disagree	Neutral
Clarifying assessment requirements	65%	13.6%	21.4%
Encouraging to work on assessment	69%	14.5%	16.5%
Introducing new concepts	79.6%	2.9%	17.5%
Extending concepts	74.8%	4.8%	20.4%
Challenging existing assumptions	66%	8.8%	25.2%
Providing a different perspective about teaching practice	72.8%	7.8%	19.4%
NOT enhancing learning	8.7%	72.9%	18.4%

Barriers to online interactions

Previous research shows that one of the factors that affects online interaction is time constraints (Ma, Friel, & Xing, 2014; Vonderwell & Zachariah, 2005). To reinforce this research, the results from the survey show that only around one third (34.9%) of the respondents agreed or strongly agreed that online interaction is time consuming, though a similar percentage disagreed/strongly disagreed with this statement (35%).

The strongest barrier to online interaction, according to the respondents, is feeling uncomfortable interacting online (48.5% agreed/strongly agreed). Goggins and Xing (2016) also mentioned social ability, which is the learner's capacity of being present and being connected with others in social contexts, and that this factor should be taken into consideration when designing models

for online discussions. Some of the participants in this programme may lack the confidence to engage in open dialogues on TML G+, especially those who have limited experience with virtual interaction environments. Some of the responses to the open-ended question "if you can identify any other barriers to your online interactions, please indicate these below" have revealed how they feared they would be judged by others on TML G+, as illustrated by the following comments:

"I need to grow confidence my problem with posting as I feel I will be judged and maybe look silly/dumb?!? That is my own personal issue though"

"I find it hard to share as I am not use to putting my ideas out in a forum that everyone can comment on. It has taken a bit of courage to put myself out there"

Another issue that hinders interaction is the difficulty in navigating TML G+, with 21.3% agreeing/strongly agreeing (see Table 2). Options for organising posts in G+ are relatively limited, especially when the learners are not granted the moderator's rights to create a personalised category to filter the posts in the community. Respondents commented that

"Some people post so often that the comments/posts of others are easily lost or go unnoticed"

"This is not user friendly, too hard to re-locate posts on G+".

This is aligned with Hara and Kling's (2000) and Goggins and Xing's (2016) research, which points out that the functionality of the online discussion system is one of the factors that can affect student satisfaction with online learning.

The survey included negatively phrased questions that asked if barriers to online interactions were either not relevant to assessment or to practice. Subsequently, 68.9% of the participants disagreed or strongly disagreed that they were not relevant to assessment, and 67% disagreed or strongly disagreed that they were not relevant to practice, with only 4.9% and 7.8% agreeing or strongly agreeing with these statements respectively. This result reflects some of the findings described

above, in which the learners believe that online interaction helps them in their assessment and learning.

Technical issues with posting on TML G+ were not regarded as a major problem that participants face when interacting online, with only 15.6% agreeing or strongly agreeing, and 64% disagreeing or strongly disagreeing. One reason for this could be that in the first two face-to-face courses of the programme, learners have been introduced to and familiarised themselves with the G+ platform.

Table 2: Responses to the question about the barriers of online interaction during the postgraduate programme

	Strongly agree and agree	Strongly disagree and disagree	Neutral
Time consuming	34.9%	35%	30.1%
Irrelevant to assessments	4.9%	68.9%	26.2%
Irrelevant to practice	7.8%	67%	25.2%
Technical issues with posting on TML G+	15.6%	64%	20.4%
Difficult to navigate the TML G+	21.3%	57.3%	21.4%
Uncomfortable interacting online within the TML G+	48.5%	25.3%	26.2%

Sustained engagement with online interactions in online communities

The courses have been designed with the intention of maximising participants' learning. Creating TML G+ communities and encouraging the participants to join the online dialogue is just a first step towards a continuing lifelong learning journey. It is important that online interactions continue to thrive even after the participants complete the programme. Therefore, we were interested to ask about the likelihood of the teachers intending to continue interacting within TML G+ and other online communities.

Table 3 indicates the positive response, with 66% likely or very likely to continue to interact on TML G+, and a high percentage of 84.5% are likely or very likely to extend their social exchanges on other online communities. This is positive in the sense that participants may realise the important and helpful role of online interaction in their professional learning. It is also understandable that teachers prefer to select any community that is

more relevant and suitable to their specific needs and contexts.

Table 3: Responses to the questions about sustained engagement with online interactions in online communities.

	Likely and very likely	Unlikely and very unlikely
On TML G+	66%	34%
On any other online community other than TML G+	84.5%	15.5%

Discussion and Conclusion

This research focuses on the impact of an online CoP; specifically the impact of online interactions within the CoP on participants' learning. The findings show that learners attributed positive impacts on their learning to the online interaction. Areas of learning include assessments, motivation, concept introduction and expansion, challenging assumptions and giving new perspectives. These results are consistent with previous studies (Bernard et al, 2009; Cambridge, Kaplan & Suter 2005; Castaño-Muñoz, Sancho-Vinuesa & Duart, 2013; Conrad, 2005) that have demonstrated online interactions as having an impact on student learning. It is also in line with the theorem proposed by Anderson (2003) which recommends that online interactions are among the key factors to be considered when delivering online education.

Participants in this study were education practitioners with a range of years of experience and disciplines. The online CoPs with shared learning goals have encouraged the participants to share ideas and support fellow educators in the course of their study. Collegial support is of great importance for those time-poor professionals who can be overwhelmed with the workload of study alongside full-time work. This research also identifies barriers to the online interaction with social reticence considered the most problematic for learners' online participation. This requires course designers' attention in equipping learners with necessary skills and developing their confidence to socially engage in the online space. Some of this social reticence could be attributed to G+ communities growing organically from student activity. The first community was established by a group of students in one location, and for later

cohorts was scaled up to a national community that was set up centrally. We have, over time, attempted to address the various challenges identified by the students by, for example, expanding the set of categories that they can post under, and modelling and encouraging the use of hashtags to assist them in finding relevant posts. We have also integrated more specific activities to attempt to engage interest and make students feel more confident in posting to the community.

There are some limitations to this study, including a lack of triangulation of methods. It should also be acknowledged that the findings are based on student perceptions rather than actual observation of student learning outcomes. Our conclusions in terms of impact of an online CoP on learning should be considered with caution because the survey only focused on one of the three dimensions of a CoP. A more valid study would investigate the efficacy of all three elements of a CoP on participant learning. Future studies might usefully collect data from different resources such as focus group interviews, observation of online interactions and robust tools to measure the impact on participants' learning performance.

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