Exploring the use of a community of practice to improve blended and flipped approaches to teaching and learning health sciences

Georgia Clarkson
Australian Catholic University, Melbourne, Australia
Georgia.Clarkson@acu.edu.au

Leigha Dark
Australian Catholic University, Sydney, Australia
Leigha.Dark@acu.edu.au

With technology becoming increasingly prevalent, the higher education sector is facing the challenge of implementing blended learning. Traditionally health disciplines have delivered programs using a blend of face-to-face and clinical placement experiences, taught by academic staff with considerable clinical experience. Experienced clinicians in higher education roles do not necessarily have teaching backgrounds. Therefore, learning technologies can present additional challenges for these academics. This pilot project introduced a cross-disciplinary community of practice (CoP) to support health science academics to implement blended learning strategies. Academics from thirteen health disciplines were given a small financial incentive to develop blended units, participate in regular, facilitated meetings (via face-to-face, online, phone or videoconference modalities) and communicate through a web platform. The effectiveness of the CoP as a vehicle to promulgate blended learning pedagogies was evaluated using Goal Attainment Scaling (GAS) and focus groups. Evidence indicated that the CoP produced favourable outcomes. These included improved understanding of blended learning pedagogy, improved confidence in implementing these approaches and the production of high quality learning materials. In addition to evidence of significant activity within the CoP itself, data indicated evidence of increased participation in blended learning activities at its peripheries in several discipline areas. Establishment of a CoP within a diverse faculty assisted academics to overcome some of the pedagogical, personal, and organisational barriers to implementing blended learning strategies. Use of a CoP approach may prove a valid means of facilitating good practice in blended learning, within other contexts involving diverse groups of individuals.

Keywords: Blended learning, community of practice, goal attainment scaling (GAS)

Challenges to the implementation of blended learning

The notion of blended learning is derived from the understanding that learners benefit from receiving information in a range of ways. The ways in which this information is delivered should align to learner needs and desired educational outcomes. Blended learning is not a new idea. It has historically consisted of a combination of strategies including teacher focused, face-to-face didactic style classes, student centred practical or tutorial classes and, in health sciences, clinical placements (Dziuban, Hartman, & Moskal, 2004). Since adopting information communication technology (ICT) for use in educational environments, blended learning has come to be understood as the use of a combination of electronic and face-to-face strategies (Bath & Bourke, 2010; Department of Education and Early Childhood...
Development, 2012). Effective blended learning is not just about using technology, but using its affordances to support students and teachers to improve experiences and outcomes (Bath & Bourke, 2010). It can also facilitate learning experiences not possible through the use of face-to-face teaching or technology alone (Torrisi-Steele & Drew, 2013). Well-designed and implemented experiences have the potential to engage learners in active knowledge construction and transform pedagogy (Garrison & Kanuka, 2004).

Evolution in pedagogical approaches is essential to meet the needs of consumers demanding flexible and personalised learning experiences (McLoughlin, 2013). Educational commentators have consequently promoted blended strategies as they foster engagement by aligning to student expectations whilst promoting sustainable learning (Scott, 2009). Programs that adopt blended approaches therefore have popular appeal and many universities are facing the challenge of how to ‘blend’ (Moskal, Dziubian, & Hartman, 2013). In order to respond to these demands organisational barriers need to be overcome. One of these internal struggles relates to how institutions can provide adequate support to academic staff in relation to developing the skills required to ‘blend’.

Within the literature, attempts to translate the concept of ‘blending’ into practice include sustained examination and deconstruction of blended learning and aim to develop ‘how to’ style descriptions and formulaic guidelines. While these attempts to develop more prescriptive definitions can assist with the implementation of blended learning, detailed and prescriptive guides can prove difficult to apply in practice whilst still appreciating the distinct needs of disciplines with specific learning and teaching approaches (Bath & Bourke, 2010). As such, no ‘one size fits all’ approach to developing blended learning guarantees success (Moskal et al., 2013). Institutional demands might drive formulaic approaches such as prescribing online content ratios, however such prescriptive approaches risk being hijacked by tokenism. These blanket measures also counter the goal of achieving good student outcomes as they fail to encourage the principles of good educational design, including targeting teaching and learning strategies to specific learning outcomes.

The principles underpinning all learning design apply to blended learning with constructive alignment essential for a successful ‘blend’ (Rowe, Frantz, & Bozalek, 2012). Quality approaches to ‘blending’ need to seamlessly integrate components of face-to-face and online delivery so that neither are ‘add-ons’ to the dominant method (Garrison & Kanuka, 2004). Therefore, the only option may be to accept a general definition of blended learning “as a pedagogical approach that combines the effectiveness and socialisation opportunities of the classroom with the technologically enhanced active learning possibilities of the online environment” (Dziuban et al., 2004, p 3). This allows for academics within specific disciplines to use blended learning approaches which meet unique, discipline specific needs.

Evidence indicates that minimal advancement has been made in relation to the delivery of health programs in tertiary institutions. Face-to-face methods still dominate, with emphasis on covering an ever-increasing amount of content (McLaughlin, Gharkholonarehe, & Esserman, 2014). Students are increasingly demanding higher quality learning experiences, outcomes, service and convenience, however the transformative potential of blended learning to meet such demands is not being fully utilised (Garrison & Kanuka, 2004). Students value approaches to blended learning that amount to more than adopting a “repository dump” approach (Weaver, Spratt, & Nair, 2008, p 39), however this remains common practice. Despite the availability of communication technologies that offer students opportunities to “engage in learning that enables them to construct their own meaning” and “to refine and reconfirm this meaning within a wider (potentially worldwide) community of learners” (Cooner, 2010, p 274), ‘blending’ remains underutilised.
Using a community of practice to facilitate blended learning within a large and diverse group

Evidence indicates that teachers require support with the development and implementation of contextualised blended learning (Garrison & Kanuka, 2004). It is therefore in the interests of students and education providers to support academic staff to improve pedagogical practices in blending. In order to foster sustained improvements to practice, adopting a model founded on partnership between academic staff and education providers has the potential to facilitate improved practice for academic staff whilst remaining appreciative of unique discipline needs.

A community of practice (CoP) (Wenger, 1998) is one means of forging a partnership between academic staff and those driving the strategic agenda within a higher education institution. In higher education a CoP approach is familiar means of arranging a network to develop and share information and practices across organisational 'silos' (McDermott, 1999). This approach has the potential to facilitate an innovative organisational environment in which knowledge is created and shared across structural units (Tsai & Ghoshal, 1998) to improve existing practices (Probst & Borzillo, 2008).

This study aimed to examine the effectiveness of the CoP approach to improve blended learning practices in undergraduate health programs in a large, diverse and complex faculty. The Faculty of Health Sciences at Australian Catholic University offers undergraduate health programs in fourteen (14) disciplines across five (5) campuses. Staff teaching these programs are diverse in terms of experience, abilities and confidence in teaching generally, and specifically in the use of learning technology. This diversity and complexity suggests an explanation for variance in the uptake and application of ‘blending’ within various disciplines. As a prescriptive approach to increase the use of blended approaches was seen as unlikely to elicit the desired responses from staff, a CoP approach was used as a strategy to improve staff capacity to design and deliver blended units and increase the number and quality of offerings.

A fundamental aim of the intervention was ongoing improvement of the technical and pedagogical expertise of CoP members. It was postulated that the CoP would foster collaborative relationships. Such collaborations could potentially assist group participants to overcome barriers to innovation using blended approaches, by building capacity and confidence. Beyond the immediate group, it was envisaged that the improved confidence in blended learning would develop discipline ‘champions’ to disseminate information and provide support within ‘silos’. Academics operating proximally to CoP members would therefore gain benefit by means of ‘legitimate peripheral participation’ (LPP) (Lave & Wenger, 1991).

Whilst it is acknowledged within this discussion that a CoP is not a novel approach to implementing change within higher education, evaluation of the success of such a community remains under explored. In general, despite the theoretical strengths of blended approaches to learning, they remain under researched and therefore have a limited body of supportive evidence (Abeysekera & Dawson, 2014). More pertinently, literature relating to approaches to developing and sustaining good practice and overcoming the inherent organisational barriers is more limited (Houghton et al., 2014).

This study explored the use of a CoP as a vehicle for curriculum transformation, from the perspectives of academic staff who were participants in such a CoP. The CoP was facilitated
by an academic lead. Regular meetings were conducted over the course of a full academic year in order to promote relationship development, foster collaboration and improve the confidence of participant members in relation to blended learning. The first and final meetings were conducted face-to-face and interim meetings were conducted online, by phone and videoconference, and asynchronously through a learning management system.

Evaluating the effectiveness of the blended learning community

Whilst CoPs are common vehicles for enacting change in higher education, little research has explored how CoP theory is applied in academic settings (Houghton et al., 2014). This study centres on participants’ views on the degree to which the CoP facilitated improved practice in blended learning for them individually as CoP members. Two assessment strategies were used to assess the impact of the CoP. These were Goal Attainment Scaling (GAS) (Kiresuk & Sherman, 1968) and focus group discussion. This combination was selected to assist researchers to understand the issues from a range of perspectives (Morrison, Cohen, & Manion, 2000).

GAS (Kiresuk & Sherman, 1968) is a method of outcome measurement, which has been used extensively in mental health and clinical rehabilitation contexts since the 1960s (Turner-Stokes, 2009). GAS enables comparisons of individuals' relative success in achieving goals that are individually determined and therefore different in terms of their content (Becker, Stuifbergen, Rogers, & Timmerman, 2000; Schlosser, 2004). In this project members of the CoP had very different individual goals based on their level of knowledge, skill, practice, experience and confidence with blended learning. Given the diversity of the participant group a method of measurement that would be sensitive to the incremental individual changes being observed (Becker et al., 2000) was seen as appropriate.

Participants in this study developed three (3) individual goals each, which they aimed to achieve by the end of the project. A Goal Attainment Scale was then developed by each individual for each goal. Each scale defined 5 discrete levels of achievement, with 0 indicating the expected level of achievement, +2 a much greater level of achievement than expected and -2 a level of achievement much less than expected. GAS provided an individualised approach to describing changes in performance, a structured approach to documenting behavioural change (Roach & Elliot, 2005), and a means of evaluating individualised longitudinal change (Schlosser, 2004). In addition to providing a mechanism for measuring progress, emerging evidence from within clinical contexts suggests goals are more likely to be achieved if individuals are involved in setting them (Turner-Stokes, 2009). This principle, applicable to any population (Schlosser, 2004), was seen to have the potential to increase the likelihood of participants achieving their goals.

In addition to GAS, a focus group discussion took place at the concluding CoP meeting to explore participant experiences. The aim of using an additional evaluation strategy was to provide some triangulation of, and add richness to, the data (Lambert & Loiselle, 2008). Focus group questions aimed to explore participants views on perceived gains in confidence and understanding of blended learning, associated workload issues, sustainability, and the CoP’s value in fostering relationships between members across discipline ‘silos’. This discussion was facilitated by two independent academic staff, recorded digitally, transcribed and analysed thematically (Braun & Clarke, 2006).
Impact of the blended community

The CoP began with 14 members. As the academic year progressed, two additional staff joined the group. Of these, 12 developed 3 individual goals and corresponding achievement scales. These goals provided an individualised and descriptive scale of what participants aimed to achieve through the project. An example of a participant goal and scale is provided in Table 1.

Table 1: Example of participant goal and goal attainment scale

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description of performance</th>
<th>Example of participant goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>-2</td>
<td>Much less than expected</td>
<td>I have learned about two (2) new online activities / resources and have identified how to integrate these into the design of my unit in a pedagogically sound and constructively aligned way and identified a method for evaluating the effectiveness of these strategies</td>
</tr>
<tr>
<td>-1</td>
<td>Less than expected</td>
<td>I have learned about two (2) new online activities / resources and have identified how to integrate these into the design of my unit in a pedagogically sound and constructively aligned way</td>
</tr>
<tr>
<td>0</td>
<td>Expected Level</td>
<td>I have learned about one (1) new online activity / resource and have identified how to integrate this into the design of my unit in a pedagogically sound and constructively aligned way</td>
</tr>
<tr>
<td>+1</td>
<td>Greater than expected</td>
<td>I have identified the opportunity to integrate a new online activity / resource into the design of my unit but have not yet confirmed which activity / resource will best suit the purpose</td>
</tr>
<tr>
<td>+2</td>
<td>Much greater than expected</td>
<td>I have reviewed the online activities / resources that I could learn more about but have not yet considered these in the context of designing my unit</td>
</tr>
</tbody>
</table>

At the final meeting 11 participants rated their progress against their predetermined goals, therefore 33 individual goals were measured. The self-determined levels of achievement, summed scores and t-scores for these goals are provided in Table 2 and represented visually in Figure 1.

Table 2: GAS levels of achievement

<table>
<thead>
<tr>
<th>Participant</th>
<th>Goal 1</th>
<th>Goal 2</th>
<th>Goal 3</th>
<th>Summed Score</th>
<th>Average Scale Score</th>
<th>T-score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>-1</td>
<td>-1</td>
<td>-2</td>
<td>-0.67</td>
<td>40.87</td>
</tr>
<tr>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>+1</td>
<td>0.33</td>
<td>54.56</td>
</tr>
<tr>
<td>3</td>
<td>0</td>
<td>+1</td>
<td>-1</td>
<td>0</td>
<td>0</td>
<td>50.00</td>
</tr>
<tr>
<td>4</td>
<td>+1</td>
<td>0</td>
<td>0</td>
<td>+1</td>
<td>0.33</td>
<td>54.56</td>
</tr>
<tr>
<td>5</td>
<td>0</td>
<td>+1</td>
<td>0</td>
<td>+1</td>
<td>0.33</td>
<td>54.56</td>
</tr>
</tbody>
</table>
Eight out of the eleven participants who rated their goals achieved an average scale score of 0 or above indicating an expected or higher than expected level of achievement for the majority of participants.

Thematic analysis of the focus group discussion added to the understanding of the impact of the CoP. Analysis indicated that there were significant factors that influenced the perceived value, relevance and effectiveness of the CoP. The following four themes and sub ideas highlight some of the tensions that participants identified. Both positive and negative perceptions were present within each of the themes:

- **Theme 1: Establishing the purpose and value of the CoP**
  - There was “ambiguity or uncertainty” in relation to what the CoP aimed to achieve
  - Tensions existed within group with some wanting prescriptive “top down” approaches and others feeling that a degree of ambiguity was more sensitive to individual needs
  - Members felt that a less diverse community may be more conducive to achieving goals as the disparity in skills, experience and the fact “people were doing very different things” felt too great to overcome
- Relationships were fostered which spurred creativity and improved confidence
- Blended learning “became very popular” within several discipline groups by colleagues of participants
- It took the life of the project for some to “feel in a community”

- Theme 2: Overcoming organisational barriers
  - Difficulty posed by geographical spread which can “get in the way” and temporal challenges was a central discussion point
  - Participants felt the length of the project should be extended to allow for relationships and a sense of community to further develop
  - Members felt that “face-to-face meetings were better” for fostering relationships and productivity and expressed a desire for more local facilitated meetings

- Theme 3 - Motivations to participate
  - Participants were involved in the project for reasons ranging from being “dobbed in” to having strong interest and therefore high motivation
  - Variation in motivation meant there was difficulty in establishing common ground in the early stages in order to get started

- Theme 4 - Knowing and showing the evidence
  - Some felt lack of evidence that blended learning was “proven to be associated with better learning outcomes” meant that their participation was “waste of time” and an ethical issue

Discussion

In responding to demands for blended learning, professional development is required to achieve a more effective use of educational technology (Englund, Olofsson, & Price, 2017). CoPs can be used in universities to meet the professional development needs of academics in ways that formal programmes are unable to (Green, Hibbins, Houghton, & Ruutz, 2013). Therefore in the context of a diverse faculty, the CoP model had the potential to transform curriculum by improving blended learning implementation. This potential to act as a vehicle for change was built on a foundation of appreciation of difference and diversity and promotion of collaboration (Churchman & Stehlik, 2007). Measuring the effectiveness of a CoP as vehicle for facilitating improved practice proved challenging due to its nebulous nature. Outcomes of this study showed that the majority of participants experienced improvements in knowledge, skill or confidence related to blended learning. However, participants were also candid in acknowledging the systemic challenges to both participation in the community of practice intervention, and participation in strategic blended learning initiatives more broadly.

Most participants achieved or exceeded the expected level of achievement for the goals they had set for themselves. From GAS data it is not possible to infer that participation in the community of practice and access to the resources and collaboration, were the variables that led to the perceived changes in knowledge, skill and confidence experienced by the majority of participants. However, it is likely that participation within the group, reflection on current
blended learning practices, exposure to new ideas outside of discipline specific boundaries and the opportunity to forge wider level connections influenced outcomes.

Analysis of the focus group discussion indicated there had been some inroads made into combating the resistance to change inherent within a complex organisation (Houghton et al., 2014), however significant logistical and attitudinal barriers were also evident. It was clear that whilst a sense of community did develop, it took the life of the project and the concluding meeting was the “beginning rather than ending” of the process. Organisational barriers were identified as obstacles to participants attending meetings whether conducted face to face or by remote or virtual means. There was also minimal engagement with the online interface used to facilitate asynchronous communication. Whilst this was initially a concerned, focus group discussion indicated that there had been a good deal of more organic engagement on local levels. Participants indicated that they engaged with the group to suit their individual needs sufficiently to develop learning materials relatively independently. They also indicated that engagement with the group had prompted discussion with discipline colleagues, highlighting a notable amount of activity on the part of staff peripheral to the project.

Despite the gains, participants indicated a number of opportunities for improvement and stressed that the continuance of the CoP was imperative to supporting sustained improvements in blended learning practice. As it is recognised that continuous effort over several years is required to make significant inroads in the area of blended learning (Moskal et al., 2013), a considered response to the feedback of the CoP is critical to informing any plans to support an ongoing community.

The sustained effort required to make inroads by means of a CoP is further complicated by the premise that communities are never perfectly designed from the outset, and that individual members have different expectations and performance (Chalmers & Keown, 2006). Within the participant group there was evidence of a range of views on what the community of practice aimed to achieve. Some participants indicated that they felt expectations of them were clear yet others were confused about the project’s direction. Those who indicated they were confused generally expressed a desire for more prescriptive ‘top-down’ approach whilst those expressing the opposing view felt some ambiguity was favourable as it accommodated individual needs.

Further barriers discussed included those related to the geographical spread, time issues generated by teaching and other commitments, limited project lifespan, time requirements associated with the development of new units, programs, and unfamiliar technologies. Face-to-face meetings were seen as of greater value to fostering a sense of community than other mediums. It was suggested that a network of smaller campus-based teams would facilitate more interaction.

Some members of the group felt that more could be achieved where there was more commonality between group members as this homogeneity may engender a shared sense of purpose. Participants were involved for a range of reasons with some self-nominating as they were keen to try new approaches and others effectively ‘dobbed in’. This resulted in significant variance in motivation and therefore engagement.

Several participants felt their involvement in the CoP was a “waste of time” in the absence of evidence supporting the effectiveness of ‘blending’. Some felt that they were being advised on the use of technology “for technology’s sake” and not because it was “proven to be
associated with better learning outcomes” and saw this as an ethical issue. These observations are consistent with research indicating that evidence influences practice with academics preferring to consult colleagues and academic developers (Price & Kirkwood, 2014) before putting innovative approaches into practice.

**Limitations**

This project was considered a pilot and its primary purpose was to generate preliminary information on the impact of a supported CoP as a vehicle for promoting good pedagogical practice. The perspective of students in relation to the quality of approaches developed was not captured. This would enrich the discussion.

Many stated that they were just beginning to gain traction and confidence in the area in addition to forming meaningful relationships within the community. In absence of continued support, there is a risk that the CoP foundation will dissolve. If this risk is not mitigated using an appropriate strategy, it is likely that this approach is sustainable.

**Conclusion**

Blended learning pedagogy provides an opportunity to design flexible programs which deliver high quality learning experiences. Higher education providers are faced with the challenge of how to respond to increasing demands for flexible learning experiences in an environment of increasing competition to retain students. In order to respond to this challenge, there is a “dire need for academic development and support that promotes understanding as well as the implementation of transformative blended learning” (Torrisi-Steele & Drew, 2013, p380). Whilst using blended learning has the potential to meet student needs, there are many barriers to successful implementation which need to be overcome. In order for such a community to support a sustained approach to developing blended learning practices, it must be dynamic and reflexive to the needs of its constituents.

**Acknowledgements**

The authors wish to acknowledge Professor Karen Willis, Associate Dean, Learning and Teaching, Faculty of Health Sciences at Australian Catholic University for funding this project. We would also like to acknowledge the academic staff that participated in the project.

**References**


Copyright © 2017 Georgia Clarkson and Leigha Dark. The authors assign to HERDSA and educational non-profit institutions a non-exclusive license to use this document for personal use and in courses of instruction provided
that the article is used in full and this copyright statement is reproduced. The authors also grant a non-exclusive license to HERDSA to publish this document in full on the World Wide Web (prime site and mirrors) and within the portable electronic format HERDSA 2017 conference proceedings. Any other usage is prohibited without the express permission of the authors.