A Case of Problem Based Learning for Cross-Institutional Collaboration

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Abstract: The idea of moving away from battery-type Academic Development Activities and silo modules and programmes towards open cross-institutional approaches in line with OEP are explored within this paper based on a recent small-scale, fully-online study. This brought together academics and other professionals who support learning, from different disciplines and professional areas who are studying towards a Postgraduate Certificate (PgCert) in Teaching and Learning in HE/Academic Practice during a facilitated open Problem-Based Learning (PBL) task around assessment and feedback using freely available social media. The study aimed to explore if and how online PBL can be used within PgCert provisions to provide opportunities to connect, communicate and collaborate in a community of practice beyond institutional walls. The phenomenographic methodology underpinned this research. Participants' experiences in this open Academic Development activity were captured through individual remote interviews, a series of questionnaires and reflective accounts.

Findings indicate that open online PBL has the potential to enable learners and educators to break out of academic and virtual silos. It also widens collaborative learning within Academic Development in multi-disciplinary and multi-institutional groups. Recommendations are made to Academic Developers and other tutors on how to bring learners from different programmes, institutions and countries together online using social media to create the conditions and the environment for a meaningful, rich and fruitful exchange and enable collaborative formal and informal learning.

Keywords: Open Educational Practice, Academic Development, social media, Problem-based learning, Phenomenography

1. Introduction

This paper explores if, and how, freely available Web2.0 technologies can be used effectively within Academic Development provision and other professional areas and Disciplines to create an open networked learning environment. This type of environment can enable learning beyond the institution, in the spirit of open education, bridging formal and informal learning. It also provides enhanced and extended opportunities for connectedness and peer learning.

A small-scale, fully online PBL trial with PgCert participants from seven Higher Education Institutions around the UK has been carried out to test this hypothesis. The trial was conducted over a period of 3 months. Ten individuals participated in total working in two groups of five including the facilitators. This paper describes this trial. Findings are shared and recommendations are made for other practitioners on how open online Academic Development activities could be used. Accredited undergraduate and postgraduate provision is considered, linking institutions, to create and maintain more open learning communities to share expertise, resources and most importantly bringing together learners and tutors from around the world.

The background, research methods used, results and findings of this study are discussed and recommendations are made for future implementations within and beyond Academic Development activities.

2. Background

Problem Based Learning (PBL) is an active, collaborative student-centred teaching and learning approach (Savin-Baden 2003; Hmelo-Silver et al. 2009). Boud (1985, 13) stated that "the principle idea behind problem-based learning is that the starting point for learning should be a problem, a query or a puzzle that the learner wishes to solve". Real-life open-ended scenarios, triggers or problems are used to engage small groups of students in meaning-making (Torp and Sage 2002) and the co-construction of knowledge using a PBL model. Beyond subject-specific knowledge creation and construction, PBL also enables the development of more generic and transferable skills and

introduces students to research. PBL is also seen as a self-directed learning approach. A tutor facilitates and assists learners in becoming more autonomous and discovering new thinking and knowledge through collaborative and networked learning.

PBL was introduced in the 1960s in Medical Education (Barrows & Tamblyn 1980) and has spread since then to a large number of different disciplines and institutions. Today it is used within undergraduate and postgraduate provision around the world.

Web2.0 technologies and pedagogies such as networked learning (Jones & Steeples 2002) and connectivism (Siemens 2004) are re-shaping the way educators learn, deliver and support learning (Kear 2011). Today, a variety of technologies are used in face-to-face, blended and online provisions with differing numbers of learners. These enable a more participatory and rich way to connect, interact, learn and co-create with others when and how it suits them best. Increasingly we see learners choosing digital tools and platforms, as well as digital devices for their formal and informal learning needs.

While learning online is flexible, it can also be extremely challenging. Network-directed learning (Siemens 2011) plays an increasingly important role and acts as an enabler of social learning. Social media are frequently used to connect learners outside formal learning situations, and networks of different kinds are used by learners to engage in a variety of collaborative learning activities and connect with peers and experts around the globe. Could this open networked-collaborative learning model also be useful for formal programmes to enrich the experience? Would PBL be an effective vehicle to implement such online collaborative and networked learning activities (as stated by Donnelly 2009) due to its structure and process?

The spirit of openness and sharing knowledge came to life with the Open Educational Movement. OpenCourseWare (OCW), Open Educational Resources (OER) and courses on a wide range of scales are offered already. Wiley (2006) states that “a shift towards ‘openness’ in academic practice is not only a positive trend, but a necessary one in order to ensure transparency, collaboration and continued innovation.” (online). Ten years have passed since MIT made their first OCW available and other institutions have followed. Many have joined the OCW Consortium. The interest in OER has since grown and there are now a number of OER repositories available to educators and learners worldwide, as well as opportunities to engage in open access courses of small, large and extra large scale.

Currently there is limited evidence of OEP within Academic Development and if it happens it is based on the learners intrinsic motivation and not linked to a specific programme of studies. However, a series of OER projects for Academic Practice have been funded and produced by various HE institutions which also include complete modules such as the Teaching inclusively created by the University of Wolverhampton and made available to the wider community and the one currently under development by the University of Lincoln. Both have the potential to be used as open access modules within PgCert provisions enabling the development of formal and informal cross-institutional learning within specific programmes. Academic Development units play a vital role in modelling innovative practice and enable academics and other professionals who support learning to immerse into new ways of teaching, learning and thinking aiming to transform their practice and triggering a shift in their beliefs (Mezirow 1997).

Engaging in the design and delivery of open access cross-institutional courses is something that is under-represented at the moment in an Academic Development context. PBL is also not widely used in this context (Barrett 2010). There is even less evidence of blended and fully online PBL in the same area (Donnelly 2005) and no evidence has been found of a more global, open and online or blended collaborative cross-institutional PBL application within Academic Development or elsewhere while Open Educational Resources (OER) including a small number of open modules for Academic Development have been released more recently and other ones are currently under development.

This research was carried out to explore the potential of open access cross-institutional collaboration within accredited PgCert provision in an Academic Development context and identify whether Web2.0 technologies could be used effectively for online PBL to provide an open-access, collaborative and cross-institutional learning experience that bring diverse learners together and act as a motivator for

learning. A small-scale UK trial was carried out with colleagues from the UK which is described in detail in the following section.

3. Research Settings

The current research project was carried out within the Academic Development Unit and is linked to the Postgraduate Certificate in Academic Practice and other similar accredited provision provided across the UK. Such programmes are usually developed and delivered by the Higher Education Institutions and are open to new and experienced academics and other professionals who support learning within HE and successful completion lead to a teaching qualification in HE.

The aim of this research was to explore if PBL successes in other identified subjects could be replicated within Academic Development but this time fully online, and specifically within the Postgraduate Certificate (PgCert) in Academic Practice or similar programmes. The author acted as the trial organiser but did not participate in the trial which was set up as a naturalistic study.

In the spirit of networked learning, an online PBL trial with participants from England and Scotland was conducted from September to November 2010. It was based on the model of Computer-mediated collaborative problem-based learning (CMCPBL) (Savin-Baden 2003) itself based on CSILE (Scardamalia and Bereiter 1994) in which small groups worked together, synchronously and asynchronously, to co-construct new knowledge through the application of online PBL.

Eight new academics and two academic developers participated. Two multi-disciplinary, multi-institutional groups were formed each with four participants and one academic developer assigned to each group to act as the PBL facilitator. The total number of participants is in line with Cousin's (2009) recommendation of ten as an optimum number of participants in phenomenographic studies. Virzi (1992) also explored usability problems in application development and recommends that issues can be identified by groups of four to five individuals.

Freely available Web2.0 technologies, such as a Wordpress group blog, Pbworks collaborative wikis and the Skype web-based conference tool were utilised during the trial. The trial included an initial stage to enable all participants to familiarise themselves with the technologies used and learning online. A socialisation stage with tutors and peers followed. During this participants had also the opportunity to explore the basic concepts around PBL and engage in a conversation about these. The main PBL task followed which stretched over 5 weeks and was conducted in two groups. Both groups were given the same scenario. This included issues around assessment and feedback. At the end each group shared their findings with the other group and received feedback from peers and their tutor.

Media-rich self-study materials were made available throughout the trial to help participants understand the technology used and the concepts of PBL. Participants were also given access to resources specifically linked to the PBL task to enable them to focus on the collaborative activity.

In order to study the variations of lived experiences, the research methodology was based on phenomenography (Marton, 1994). This enables one to "describe qualitative varieties in people's experience of phenomena" (Dortins, 2002, p. 207), and "focuses on student perspectives" (Boustedt, 2008, p. 28). Phenomenography was also used as the main data collection and analysis method. Patterns that emerge through the limited variations of experiences are captured in categories of descriptions. Within this paper the category of description linked to 'Online cross-institutional collaborative learning' is presented. Individual remote and in-depth interviews were conducted using the web-conferencing tools Elluminate and Skype. Reflections on the experience of participants in the trial were externalised through a series of open-ended questions. The interviews were recorded using Elluminate and MP3 Skype Recorder, transcribed manually and collated into a Microsoft Excel spreadsheet where data were filtered and analysed based on common themes that came up during the interviews. Through this process the categories of descriptions emerged. Additional data were collected through reflective accounts and initial and final surveys.

This was a small-scale study. All participants were volunteers, and busy professionals with limited time available. None of the participants had experienced learning and/or teaching online before and

only a small number were familiar with PBL. There were issues with the technologies used due to participants' unfamiliarity. These were the main limitations of this study.

4. Results

Despite challenges and difficulties, the two PBL groups worked collaboratively and successfully completed the set task. Peer-to-peer and tutor feedback was provided at the end of the trial.

Below are presented the results linked to 'Online cross-institutional collaborative learning'. These highlight how participants experienced online PBL in collaboration with colleagues from other institutions.

4.1 Online cross-institutional collaborative learning

4.1.1 Multi-institutional collaboration

Participants and facilitators found working with colleagues from other institutions both a novelty and beneficial. Many cited it as the main reason they had decided to participate in this trial. One participant for example confirmed that

> *"Communicating with people from other institutions was one of the best aspects of the trial, it was good to exchange ideas with people from other institutions [...] it was novel and exciting – this aspect kept me going on the trial really!"*

The above illustrates that individuals value opportunities to connect and learn with colleagues from different institutions. In recent years, MOOCs have become popular; attracting thousands of participants through providing individuals from across the globe and enable people to connect and form learning networks (Downes, 2010) beyond institutional boundaries or identities.

4.1.1 Multi-disciplinary groups

Overall, participants were welcomed working in online multi-disciplinary groups.

> *"It was very positive. Especially because we all came from different backgrounds. Enriching my experience a lot."*

It is most likely that working with individuals from different disciplines enabled learners to open their mind about teaching and learning practices in their own area and gain an insight into colleagues thinking and practices. However, there is an ongoing debate around multi- and mono-disciplinary academic development, McLean (2009) highlights the importance of multidisciplinary conversations; they have the potential to enrich the exchange of ideas and co-construction of knowledge. Conversely, Healey and Jenkins (2003) favour a discipline-focused academic development approach which might explain the difficulties and the frustrations expressed by one participant.

4.1.2 Community

In the words of one participant's blog entry, participants missed the *"real human contact–eye-to-eye, smile, feeling the other's real presence"*. There was *"the sense of writing into a black hole"*, and indicate that participants missed the feeling of being part of a community. This was upheld by another participant, who noted that *"I would have liked to come away feeling it was more of a community being created".*

Socialisation activities were available at the start of the trial, to enable participants and facilitators to get to know each other, but these were not fully explored.

Donnelly (2010) notes that online interaction appears more successful when there is an interpersonal and social dimension which can lead to enhanced participation, motivation and learning in an online environment. This is in line with the findings of this trial and with Wenger et al. (2011, 10) who recognise that "The formation of a community creates a social space in which participants can discover and further a learning partnership related to a common domain."

4.1.3 Group size

On the matter of group size, one participant mentioned:

> *"Actually we lost one person and that might have been a blessing actually. Just in terms 3 people are easier to organise than 4."*

This observation indicates that participants felt more productive when working in an even smaller team and this agrees with Novak (1989) and Donnelly (2009) who note that smaller groups make online communication and collaboration more effective and active.

4.1.4 Rules

Participants felt that the lack of ground rules around working practices ment uncertainly and indecision for group members at times caused delays.

One participant, for example, stated

> *"The basic manners and etiquette must be clearly communicated at the beginning; For instance at the beginning I was apologising to cut other's writing, but I later found out that it was taken for granted. I wished that we had a discussion on those very basic ethics and manners working online within our team."*

The above confirms that participants were reluctant to proceed and make decisions because working practices within the group had not been defined from the outset with other group members. Shea (1994) highlighted the importance of establishing ground rules when working with others online.

4.1.5 Facilitation

This was the theme on which participants commented most extensively. In the anonymous final survey, one participant stated that

> *"The chief thing that the trial highlighted for me was the importance of the facilitator to the success of the project. It is a lot more work doing things this way, and the facilitator needs to be pretty "hands on" in the absence of face-to-face meetings between group members."*

The above observation is echoed in a number of responses from participants who also felt disorientated and unsure, and were seeking informed support in what they were supposed to be doing. The hands-off approach adopted by the new PBL facilitators in this trial is in line with Savin-Baden's (2003, 50) observations that "facilitators new to problem-based learning often feel that it is better to say less – or even nothing – so that the students feel that they are taking the lead in the learning.".

However, reflecting on their roles and performance, both facilitators agreed an imperative need to improve facilitation; to offer the support and guidance required to participants during online PBL activities with the intent of enhancing engagement and learning. They recognised the importance of facilitation in online settings, the power it has to overcome barrier and motivate learners. Both also agreed that they learned a lot and now have a better understanding of what does and does not work in online collaborative PBL.

4.1.6 Technologies

Some participants, it was noted, felt confused, frustrated and irritated –being unsure how, and on what criteria, the collaborative tools had been chosen and how they would be used. This frustration of online participants towards technology is echoed by Hara & Kling (1999).

One participant commented

> *I was curious about the choice of tools. Were they what facilitators felt comfortable with? I am happy online. I forget how daunting people find the technology. [...] Oh!, it is really complicated. [...].*

The use of two different platforms, *"rather than having an integrated environment"* (participant) for the trial, added to the confusion. This is highlighted by the participant who noted that *"navigating through the blog, using the wiki as well, it became more frustrating as it progressed".* This is affirmed by another participant, who decries *"the irritating platforms I found the set-up very cumbersome"*, and by facilitators' comments.

Leinonen et al (2009) documented similar experiences, finding it a challenge to deliver an open course at the University of Art and Design Helsinki. They maintained that "The communication tools used in the course — blogs and wiki — were found by most participants rather confusing and sometime frustrating" (online). The complexity added to learning through the use of multiple tools and environments used for online courses is also noted by Levy (2011).

5. Discussion

The findings of this trial strongly support the notion that participants enrolled on institutional PgCerts value the opportunity to work with colleagues from other institutions. Many of them participated in the trial for this reason, and found that this more open approach enabled them to make new connections. Wenger et al. (2011) discuss the value of learning in social networks and communities of practice and, both during and after the trial, participants recognised the value and potential of online collaborative learning in this open and networked format. Many current PgCert programmes already enable individuals from different disciplines in the same institutions to come together, creating wider communication, collaboration, multidisciplinary learning and knowledge co-construction beyond academic and discipline-specific silos.

The opportunity, and perhaps the need, now exists to broaden this scope, and create more open online collaborative learning opportunities for PgCert participants beyond institutional boundaries. This trial has provided evidence that these can encourage a culture of openness, sharing and exchange and be beneficial for the institutions as well as those individuals involved. Widely and freely available social media can be used to enable and facilitate a more open educational offering within accredited and non-accredited Academic Development provision. This model can provide the space to be more explorative, creative and outwards facing. It can help develop enhanced networking, team and collaboration skills. It also immerses staff involved in teaching or supporting learning in HE into alternative more open and fruitful delivery approaches which have the potential to be transformative for their own practice and provide food for thought about potential learning partnerships.

Põldoja (2010, 2) highlights that "learning is a social process and open content is not the only way to change the educational system towards openness. In addition to open content we need open learning environments and teaching practices". In the last few years such environments and courses have been created (Põldoja 2010) as well as Massive Open Online Courses (MOOCs) a name given by the participants of the Connectivism and Connective Knowledge Course 2008 (Siemens 2008) who were around 2,200 (Downes 2010).

Responses by facilitators also indicated clearly that a multi-institutional approach is welcome and that there is a place for PBL within PgCerts to facilitate such open activities, especially if linked to assessment. Assessment should enable participants to build new knowledge and develop their contextualised problem analysis and problem solving skills through collaborative learning (Birenbaum and Dochy, 1996). Using PBL for delivery and assessment constructively aligned with the intended learning outcomes (Biggs 1999) has the potential to make PBL more effective because students "will learn what they think they will be assessed on" (Biggs, 2004, 3).

To make online PBL more effective in the context of open and collaborative education, it will be important to design and plan such activities thoroughly before implementation. Participants should be able to personalise the technologies they are using, and be provided with a collaborative platform and framework which is well supported and facilitated, has a clear focus and in which activities are scaffold (Juwah 2002) and enable peer support and learning. These activities should enable familiarisation with the technology and PBL, and lay the foundations for learning partnerships, as well as a learning community in which collaboration and learning can take place and strengthen self-directed and network-directed learning. Facilitation plays a vital part in enabling this as findings of this pilot have shown.

Therefore facilitators it is advisable that potential facilitators engage in staff development in preparation for this role to gain a better understanding of the role and its complexities in online PBL and enable them to develop appropriate and effective support strategies that maximise engagement, collaboration and lead progressively to learner autonomy.

6. Conclusions

This paper contributes new evidence to the benefits cross-institutional and open learning have for academic developers and institutions more generally. The paper is especially of value for academic developers involved in the design of staff development provision but also for those working with colleagues in the disciplines.

The overall aim of this research project was to introduce and evaluate an online PBL approach within Academic Development that would connect participants from different institutions. A small-scale PBL trial was conducted using social media.

Findings linked to the category 'Online cross-institutional collaborative learning' show that there is the need to open our programmes and create opportunities for collaboration beyond module, programme silos and institutions. Participants in this study valued the opportunity to connect and learn with colleagues from other institutions and felt that this was an enriching learning experience despite the difficulties they were confronted with a finding which is in line with Wenger et al. (2011, 12) who note that "being more interconnected often increases the sense of community, and a desire to learn about a shared concern often motivates people to seek connections."

Open learning is currently still uncommon within Academic Development. It is recommended that module and programme teams explore options for freeing their programmes of studies and working together with other institutions to promote a more open educational model based on network-directed learning using social media and enable learners to choose the digital tools they would like to use. Such a cross-institutional design and delivery model would also be beneficial for other professional areas and disciplines.

Overall, there are many benefits from such initiatives for learners, educators and institutions beyond the positive effect it has on learning and engagement such as

- Using existing resources and expertise more effectively through sharing and exchange with other institutions.
- Utilising freely available social media tools and technologies, accessible to or owned by learners, enabling enhanced connectivity, thereby increasing buy-in.
- Adapting and creating resources collaboratively, preferable as OER and sharing with other learning communities.
- Developing and delivering sessions, modules and programmes in collaboration and partnership, thus enriching institutional offers.
- Providing learners the opportunity to connect with other learners beyond module and programme level and become active members of more open learning communities.
- Using opportunities for collaboration and shared pedagogical and subject-specific research and scholarly activities to raise standards of teaching and create good relationships among institutions, transforming competitiveness into cooperation –aiming for a common good.

Open cross-institutional learning makes learners feel in charge and responsible for their learning. It has been observed that learners become in such situations more explorative and their appetite for learning increases. At the heart of cross-institutional open learning is the opportunity to connect with others and build bridges and networks for collaborative learning and knowledge co-construction. Such initiatives or open learning events have short-and long-term benefits and the authors invites others to explore some of the possibilities.

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