"Networked Learning Communities – The Benefits for Continuing Professional Development of Virtual Learning Environment Teachers" A Critical Literature Review

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Abstract

This paper presents the results of a small-scale research study examining the professional practice of Virtual Learning Environment (VLE) teachers, who are encouraged to network and learn, establish on-going relationships with both their fellow teachers and those in other institutions, share knowledge, experience, resources and foster good practice for continuing professional development (CPD). It considers whether the group of teachers would benefit from the establishment of a networked learning community (NLC), supported by their educational institution for continuing professional development. Using an integrative literature review, it provides a review of existing research literature related to professional development of VLE teachers within networked learning communities. Findings indicate that although networked learning communities have positive influences for CPD including enhanced social learning processes, greater use of formal and informal learning, learning across barriers in time and space and increased levels of interaction, challenges remain that can hinder continuing professional development. It concludes that a networked learning community could be piloted with a sub-group of VLE teachers at a chosen HEI and that further qualitative and quantitative research could be conducted.

Focus of the Research

Overview

Networked learning has been accompanied by an emerging interest in approaches that use communication technologies to foster interaction, collaboration (Sorensen, 2005), and the social construction of knowledge (Edwards & Romeo, 2003). As a result, consideration has been given to exploring the potential and characteristics of networked learning communities (Garrison, 2007; Goodfellow, 2005; Henri, Charlier, Daele, & Pudelko, 2003; Henri & Pudelko, 2003; Palloff & Pratt, 2007).

A Networked Learning Community (NLC) is a community of learners "…in which information and communications technology (ICT) is used to promote connections: between one learner and other learners, between learners and tutors; between a learning community and its learning resources" (Goodyear, Banks, Hodgson, & Steeples, 2004). The networked learning community has emerged as a key continuing professional development tool for online teachers (Dron & Anderson, 2009; Haythornthwaite, 2002; Jones, 2008; McConnell, 2005; Siemens, 2004). The main reasons for this are: firstly the increased need for on-going VLE teacher development due to greater challenges faced by VLE teachers in their professional development and administrative tasks compared with traditional activities (Cirillo & Shay, 2007); secondly the need to exchange experiences and knowledge with others; to work collaboratively on projects (for example research, assignments, innovation); to offer and receive support from others and to set up working groups, discussions and conferences; thirdly the emphasis on assessing each other, finding learning resources and creating and enhancing individual professional profiles (Koper, 2009).

Lieberman and Mace (2010) discuss the potential of networked technologies and communities for teachers, highlighting the value and impact of online connections, stating "teacher professional learning is thriving online" (p. 86). Networked learning communities have the potential to enhance VLE teaching practice more effectively than traditional professional development models by extending the source of available ideas and engaging an infinite number of participants in shared and reciprocal problem solving (Little, 2005).

Exploring the role networked learning communities can have in enhancing innovative teaching practice and continuing professional development will better help us meet the specific learning needs of VLE teachers (Jukes, McCain, & Crockett, 2010; Katz, Earl, & Jaffar, 2009; Lieberman, 2000).

Research Context and Scope

This research is set in the context of an Information Communication Technology (ICT) Master of Science VLE teaching group (the Group) in an Irish Higher Education Institute (HEI). The Group was established to oversee the further professional practice and continuing professional development of ICT MSc VLE teachers. The Group deals with all aspects of the VLE teacher continuing professional development lifecycle, from preparing structured reading, developing lecture series, knowledge sharing activities, mentoring and assessment, through designing the on-going training plans for VLE teachers and follow-up and providing feedback for future professional development – see Figure 1.

Figure 1. Illustrative model of the VLE teacher CPD Lifecycle

The Group supports the VLE teachers to network and learn, establish on-going relationships with both their fellow teachers and those in other institutions, share knowledge, experience, resources and exchange good practice. This is currently carried out mainly via email exchange, Google Circles, through face-to-face meetings, attending conferences and informal gatherings of VLE teachers from other institutions.

At a recent meeting of the VLE teachers, the suggestion was made that the Group should further support them by creating a *networked learning community*. This suggestion provided the motivation for the scope of this research, which explores the literature related to VLE teachers using networked learning communities for continuing professional development, with the view to gaining a deeper level of understanding of how networked learning communities that aim to support continuing professional development have worked. As VLE teachers find themselves needing to "adapt and apply emerging technologies…it is unclear how these technologies will impact professional development" (Williams & Olaniran, 2012). For this reason the author reveals the benefits of networked learning communities for sharing and learning. Subsequently, the author reviews findings relating to VLE teacher networked learning communities and their impact on continuing professional development and professional practice. The author concludes with a discussion of the findings, including implications for the context of ICT MSc VLE teacher continuing professional development.

Ontological and Epistemological Context – Socially Constructed Knowledge

The ICT MSc VLE teacher group (The Group) is a learning community by its very nature. There is typically a core membership of at least fifteen VLE teachers and related faculty. Depending on the type of module, we may find the programme manager, module designers, teachers, trainers from one module working hand-in-hand with similar academics from other modules across the programme and other institutions with similar modules, which are all geographically dispersed. The CPD covers the complete range of VLE teacher learning support from subject specific education through to TEL. The Group work together, meet physically, use the internet to collaborate and undertake CPD courses.

The author's view of networked learning comes from an ontological position that assumes an understanding and view of the world as socio-culturally influenced and constructed. The author believes that networked learning communities offer the theory and practice for a pedagogy that is appropriate for VLE teachers to learn in a digitally connected and networked world where knowledge is created and shared in a collaborative and networked way of working (Hodgson, McConnell, & Dirckinck-Holmfeld, 2012).

The epistemology of networked learning assumes that knowledge emerges or is constructed in relational dialogue or collaborative interaction and is not a property but a social construction/way of knowing from our experience of the world. The author sees the social action and associated behaviours that emerge from networked learning as emanating from the epistemology that scaffolds the pedagogy of networked learning. This approach to knowledge generation is very much in line with the epistemological view of Hodgson, McConnell and Dirckinck-Holmfeld (2012) where the role of peers, teaching related faculty and other networked learning community members in helping learners becomes prominent. Technology is significant to any concept of networked learning as it mediates many of the connections within and between a learning community and its different actors. Wims and Lawler (2007) acknowledge that, by enabling universal connectivity, TEL is driving this move to social constructivism.

It is for this reason that there is a move towards increased use of networked learning communities for continuing professional development of VLE teachers and this is the main focus of this report (Goodyear, Banks, Hodgson, & McConnell, 2004; Haythornthwaite & De Laat, 2012; Lieberman & Wood, 2002).

Research Question

The primary research question is:

> What are the benefits of networked learning communities for continuing professional development sharing and learning?

The review does not go as far as considering the technical functionality of the virtual learning environment or technology enhanced network. Rather it lays the ground for a strategic decision on whether or not to pursue with the idea.

Methodology and Approach

Review Approach

In order to include and combine theoretical and empirical literature with a wide range of aims and concept definitions, this study was designed as an integrative review (Torraco, 2005; Whittemore & Knafl, 2005). This enabled a broader inclusion of data (e.g., quantitative and qualitative research as well as theoretical and methodological literature).

Literature Search

The review covers literature for the period from 1996 to 2018. To direct the review, the author focuses on the broad research question: "What are the benefits of networked learning communities for continuing professional development sharing and learning?" Relevant literature was obtained online by searching various HEI's electronic gateway to databases, journals and catalogues and using Google Scholar. To ensure a wide international coverage of journal articles and conference papers, the 'Web of Science' and the 'Academic Search Complete' databases were selected. The author examined peer reviewed articles and journals such as *Innovative Higher Education, Internet and Higher Education, Technology and Pedagogy and Education*. Keyword search items included "networked learning communities and teacher continuing professional development", "virtual learning communities for online teachers" and "collaboration within networked learning communities". After duplicates were removed, 73 unique references were identified. The author's concern about the low yield of appropriate documents led to manual reviewing of a number of additional journals for pertinent articles. (See Note 1 at end for details).

Evaluation of Data – Initial Screening

The abstracts of the identified articles were scrutinised to ensure that they fulfilled the criteria above. The mind mapping tool Mind Map (Buzan & Buzan, 2008) was used to help build an overview of the available literature (see examples in Figures 2 and 3). After applying inclusion/exclusion criteria, a total of 56 unique articles and papers were selected for review.
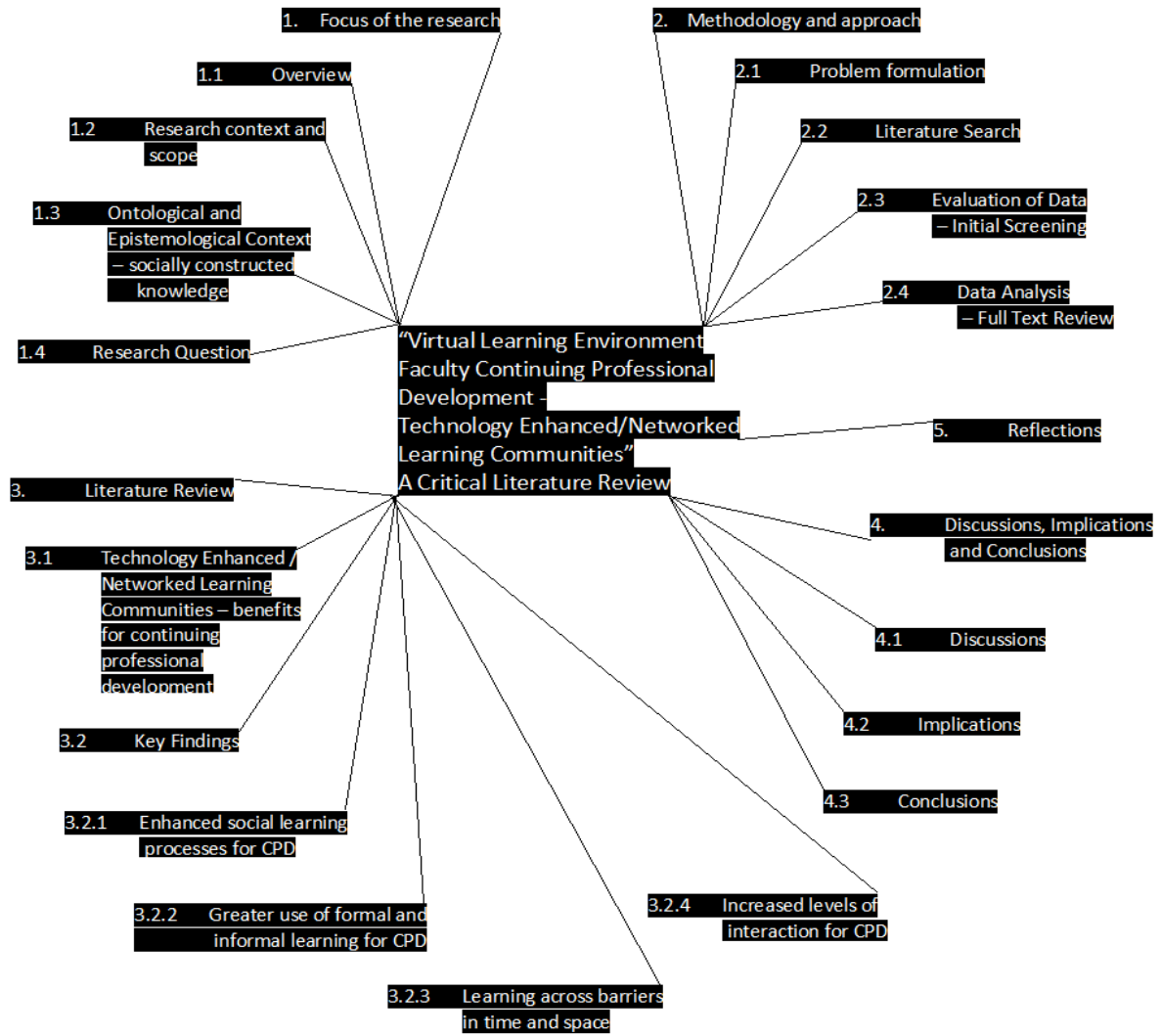
1. Focus of the research

2. Methodology and approach

1.1 Overview

2.1 Problem formulation

1.2 Research context and scope

2.2 Literature Search

1.3 Ontological and Epistemological Context – socially constructed knowledge

2.3 Evaluation of Data – Initial Screening

2.4 Data Analysis – Full Text Review

1.4 Research Question

"Virtual Learning Environment Faculty Continuing Professional Development – Technology Enhanced/Networked Learning Communities" A Critical Literature Review

5. Reflections

3. Literature Review

4. Discussions, Implications and Conclusions

3.1 Technology Enhanced / Networked Learning Communities – benefits for continuing professional development

4.1 Discussions

3.2 Key Findings

4.2 Implications

3.2.1 Enhanced social learning processes for CPD

4.3 Conclusions

3.2.2 Greater use of formal and informal learning for CPD

3.2.4 Increased levels of interaction for CPD

3.2.3 Learning across barriers in time and space

Figure 2. Mind map of available literature

"(Goodyear, Banks, Hodgson & McConnell 2004; Haythornthwaite & De Laat, 2012; Steeples & Jones, 2002)"

"(Dresner & Worley, 2006; Earl & Katz, 2007; Gellert, 2003; Lieberman & Wood, 2002; McDonald & Klein, 2003; McMahon, 1997; Moolenaar, 2010; TLINC, 2003; Varga-Atkins, O'Brien, Burton, Campbell, Qualter, 2010)"

"(Katz, Earl and Jaffar, 2009)"

"(Salpeter, 2008)"

3.1 Technology Enhanced / Networked Learning Communities – benefits for Continuing Professional Development

"(Lieberman & Wood, 2002)"

"(Lieberman, 2000)"

"(Ferriter 2009)"

"(Veugelers & O'Hair, 2005)"

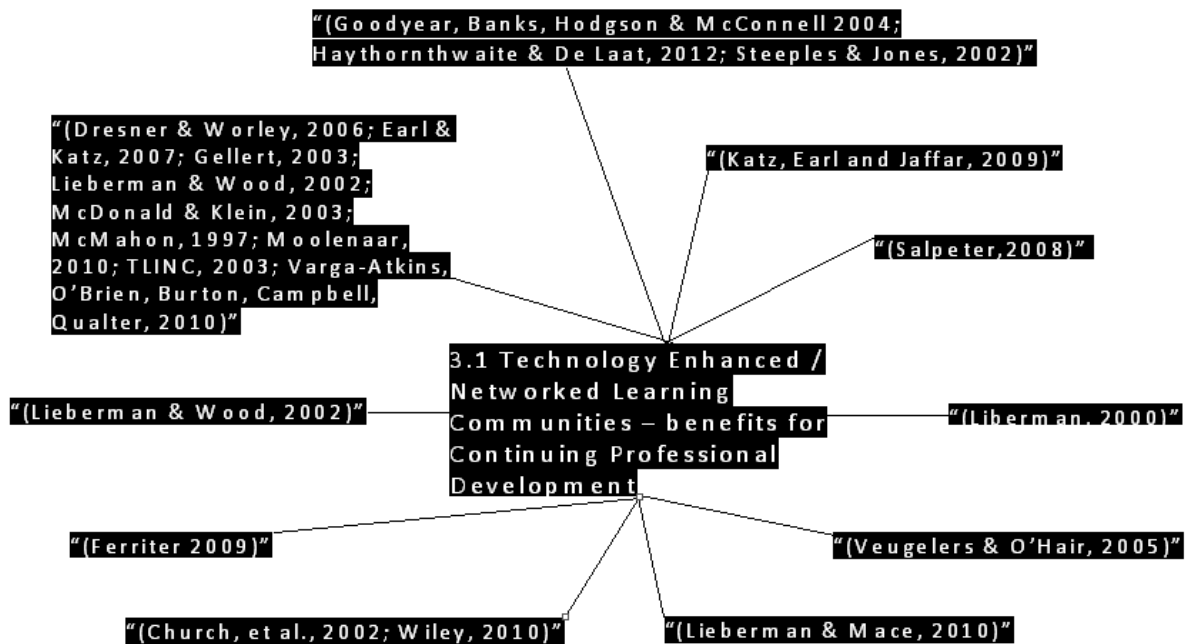"(Church, et al., 2002; Wiley, 2010)"

"(Lieberman & Mace, 2010)"

Figure 3. Extended branch of mind map of available literature with research papers

Data Analysis – Full-text Review

Utilising the integrative literature review – see Table 1 below, relevant literature was reviewed, critiqued and synthesised in order to come to a new understanding of the topic at hand (Torraco, 2005). The following questions guided the author's analysis of the full texts and enabled the author to gain a better understanding of how researchers and VLE teachers in higher education conceptualise networked learning communities in relation to continuing professional development:

- What types of networked learning communities have been connected with continuing professional development?
- How is networked learning conceptualised in relation to continuing professional development processes and experiences?
- What evidence has been used and reported by other researchers to demonstrate the achievement of continuing professional development with networked learning communities?

Stage	*Process*
1	Review Approach
2	Literature search
3	Evaluation of data
4	Data analysis
5	Interpretation and presentation of results

Table 1. An overview of the integrative research review process

Thematic Analysis (Braun & Clarke, 2006) was used for analysing the content of the articles. Each article was read several times in order to become familiar with views about networked learning communities for VLE teacher CPD and the evidence presented to support these claims. The author noted salient points relating to (1) the driver for the intervention/study, (2) the use of networked learning communities for CPD, (3) the research/evaluation approach and methods, and (4) the type(s) of evidence acquired. These points were then clustered around key themes (as described in section 3.2 below), analysed in the context of this project and used to underpin the recommendations of this report. These form the basis of interpretation and presentation of the results in the following sections.

Literature Review

Networked Learning Communities – benefits for Continuing Professional Development

The concept of Networked Learning Communities has been accompanied by an emerging interest in the area of continuing professional development which aims to comprehend social learning processes by asking how people develop and maintain a 'web' of social relations used for their learning and development (Goodyear, Banks, Hodgson, & McConnell, 2004; Haythornthwaite & De Laat, 2012; Steeples & Jones, 2002).

In the area of teacher professional development, research has shown that teacher networks add value for their development, the implementation of changes, leadership, and improved teaching practices (Dresner & Worley, 2006, Earl & Katz, 2007; Gellert, 2003; Lieberman & Wood, 2002; McDonald & Klein, 2003; McMahon,1997; Moolenaar, 2010; TLINC, 2003; Varga-Atkins, O'Brien, Burton, Campbell, Qualter, 2010). Networks create huge opportunities for continuing professional development as they provide the ability to connect and start learning with others. Lieberman and Wood (2002) determine that if teachers become part of continuing professional development communities and networks, it gives rise to useful changes in local knowledge and also leads to the exploration of solutions to problems and practices that occur in specific contexts. Teachers in this study intuitively understand this and have started to create their own informal and formal networked learning communities on the internet (Ferriter, 2009).

Evidence from the review, though not compelling, supports many commonly made assertions for networked learning communities. Strong networked learning communities bring together the knowledge and skills of teachers across departments and institutions to promote shared learning (Katz, Earl, & Jaffar, 2009). The networks create environments essential for fundamental innovations and extensive reform (Katz et al., 2009). Networked learning communities are reshaping traditional networks, allowing for increased ability to challenge embedded hierarchies and to connect teachers across different levels (Church et al., 2002; Wiley, 2010). The collaborative technology of networked learning communities now allows for VLE teachers to communicate and collaborate, regardless of location in real-time, and in a way where they can co-create new knowledge, promote new forms of collaboration and offer sustained learning much more than what single academic organisations or regions can support (Salpeter, 2008). Networked learning communities are very suited to integrating new technologies as they are innately borderless and innovating, enabling the creation of dedicated, collaborative environments (Lieberman, 2000) with much level hierarchies (Veugelers & O'Hair, 2005). Today we are seeing more and more examples of blogs,

ePortfolios and podcasts integrated into teacher professional development with networked learning communities facilitating this new type of collaboration (Lieberman & Mace, 2010).

Key Findings

Four main themes emerged in response to my primary research question. They were "Enhanced social learning processes for CPD", "Greater use of formal and informal learning for CPD", "Learning across barriers in time and space for CPD" and "Increased levels of interaction for CPD".

Enhanced social learning processes for CPD

Teacher professional development has been identified as continuous, just-in-time, collaborative and context driven (Borko, 2004; Desimone, 2009). It is effectively done and organised by professionals through their own social networks and communities (Cross & Parker, 2004; Duguid, 2005; Hargreaves & Fullan, 2012; Weinberger, 2011). Networked learning communities help participants in this study to develop their competencies by sharing information and collaboration. Here weak network links are transformed into strong community links providing a mechanism for community growth within the networks (Fetter, Berlanga, & Sloep, 2008). This mechanism of community growth is important for nurturing social learning and thus professional development in such learning networks (Chapman & Ramondt, 2005). This social learning process of a networked learning community helps to minimise the isolation that learners may have due to cultural, social or geographical reasons (Fetter, Berlanga, & Sloep, 2010). Whitehouse (2010) makes the point that social networking tools can "provide new ways of developing and collaborating on projects, and of making teaching and learning visible in ways that were never before possible" (p.8). Social learning processes such as collaborative discussions, peer-support and artefact sharing are key affordances of networked learning communities (Sinha, Rosson, Carroll, & Du, 2010).

Networked learning communities enable people to rely strongly on their social contacts for assistance and development (Jones, Asensio, & Goodyear, 2000). Recent research results have provided evidence linking the social processes of Networked Learning to a wide range of positive outcomes like increased teacher performance and department improvement (Earl & Katz, 2007; McCormick, Fox, Carmichael, & Procter, 2010; Moolenaar, Daly, & Sleegers, 2011). Here, professional development involves opportunities for teachers to share their expertise, learn from each other, and collaborate on professional practice (Vrasidas & Glass, 2004). This approach to learning embraces the participation metaphor (Sfard, 1998) where learning is seen as situated in the daily culture of shared and connected social processes and professional standards.

Greater use of formal and informal learning for CPD

Continuing professional development consists of both formal and informal learning related to intellectual, personal and social domains (De Laat, Schreurs, & Nijland, 2014), and can be seen as a "non-linear ongoing process rather than as an outcome of linear, one off training events" (Varga-Atkins, O'Brien, Burton, Campbell, & Qualter, 2010, p.42). In addition continuing professional development can be seen as "a flow of acquired knowledge, as well as participation in a learning community" (Pahor, Škerlavaj, & Dimovski, 2008). Notwithstanding the proven significance of informal learning communities, continuing

professional development of teachers is almost always approached in a mainly formal manner (Villegas-Reimers, 2003; Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009). Yet, formal learning paths are rarely designed to meet the demands VLE teachers face in professional practice. Furthermore, these demands in working practice prompt teachers to learn informally (Billet, 2004). On the whole both formal learning paths and informal learning processes are part of the learning of VLE teaching professionals (Le Clus, 2011; Billet, 2004). However, informal learning processes are rarely recognised as continuing professional development and thus do not receive sufficient consideration. De Laat (2012) believes this can be resolved by aligning formal and informal learning processes through networked learning communities where knowledge is constructed and developed both formally and informally, rather than being transferred from one person to the next (Schultz, 2011).

Communication, collaboration and learning between individuals occurs both through formal and informal networks (Carmichael, Fox, McCormick, Procter, & Honour, 2006). The transfer of knowledge related to VLE teacher professional development transpires both between and within learning organisations (Seezink, Poell, & Kirschner, 2010). Such knowledge transfer also happens cross-culturally (Ryan, Kang, Mitchell, & Erickson, 2009). VLE teacher professional learning can be formal (e.g. obtaining recognised certification from an institute), or informal (e.g. sharing a twitter feed). Research analysing the effectiveness of continuing professional development has found that collaborative approaches are more successful than personal ones (Varga-Atkins et al., 2010). Baker-Doyle and Yoon (2011) found that while teachers themselves source and collect professional development learning material, it is only through network communities that this information gains value as it is distributed, analysed and manipulated. Continuing professional development is in the norm seen as an evolving process of self-development where one learns and develops professionally in connection both with others and also events in one's professional practice (Boud & Hager, 2012; Poell & Van Der Krogt, 2014). It is clear that both formal and informal learning opportunities empower VLE teachers to develop their professional practice (O'Brien, Varga-Atkins, Burton, Campbell, & Qualter, 2008).

Learning across barriers in time and space for CPD

Online schools have traditionally been formally designed such that teachers work individually. "They have rarely been given time together to plan lessons, share instructional practices, assess students, design curriculums, or contribute to administrative or managerial decisions" (Darling-Hammond et al., 2009, p.11). Growing opportunities for communication and sharing of knowledge and learning objects across organisational boundaries is thus a crucial aspect of networked learning development. Here the objective is to connect people in order to exchange and create knowledge to support each other's learning and professional development. For example, theories can be presented for debate, various means of professional practice can be demonstrated, compared and contrasted, expert opinion can be sought and learners can collaborate on innovative ideas.

Networked Learning Communities provide the prospect for learners with a common purpose to come together across barriers in time and space (Ansari, Khan, Ahmad, & Suhail, 2012). Such communities employ technology to communicate and therefore the learning may happen and be constructed anywhere. The notion of co-construction is central to the idea of networked learning communities, as what is created by the community becomes the collective product of its widely dispersed members. Networked learning communities provide a means for

supporting the development of professional development learning communities across states and countries (Ford, Branch & Moore, 2008). They can increase the amount of professional development for VLE teachers by breaking down barriers across institutions, countries and cultures. Consequently, they can increase the number of VLE teachers participating in updating their qualifications and certifications. Those responsible for preparing tomorrow's VLE teachers should seize these opportunities and capitalise on the abundance of knowledge accessible through networked learning communities (Ansari, Khan, Ahmad, & Suhail, 2012; Ford, Branch & Moore, 2008).

Increased levels of interaction for CPD

Research results increasingly show that personal interaction and communication between learners in the scenario of networked learning can lead to improved learning (McFarlane, 2006). By cultivating interaction among CPD learners, networked learning communities support profound learning and greater levels of professional practice (Bronack, Reidl, Tashner, & Greene, 2006). They assert that learners are bound and through their interactions as members of a community in networked learning communities. It is extensively recognised that by cultivating interaction among VLE teachers, peers, learning material, and learning activities in formal, informal, and opportunistic ways, a networked learning community can help learners gain their constructive knowledge (meta knowledge), instead of cognitive knowledge (Lin, Lai, Chu, Ma, & Hsu, 2009). Networked learning communities for CPD foster interaction between learners who have never met before and have no social contact in their physical worlds. Such CPD communities create an unbounded space for continuing professional development learners, which is crucial to the requirements of constructive learning theory (Lin & Kuo, 2005). The communication and collaborative interactions that happen inside networked learning communities could help a learner share and assimilate their newly acquired professional development knowledge with members of the CPD communities, and contribute to the development of a repository of shared knowledge (Lin, 2005).

Discussion, Implications and Conclusions

Discussion
One of the biggest issues facing VLE teacher education is the provision of opportunities for networked learning professional development that meet the complex needs of such VLE teachers in today's society. The research question asked what are the benefits of networked learning communities for continuing professional development sharing and learning? The research findings indicated key benefits, as provided by the following evidence.

Studies reviewed have shown that teacher networks add enormous value for the implementation of VLE teacher improved practices (Dresner & Worley, 2006; Katz & Earl, 2010; Gellert, 2003; Lieberman & Wood, 2002; McDonald & Klein, 2003; McMahon,1997; Moolenaar, 2010). Network learning communities create vital opportunities for professional development, facilitating social connections between people to start learning with other members of the community. They enable both weak relationships, held with acquaintances, and strong connections like long-lasting friendships with peers and community memberships, which are equally important for professional development.

Considering the professional practice of the ICT MSc teaching faculty group shows that they have many of the features of a networked learning community. The group enables social learning processes where teachers who have a common interest collaborate over a lengthy period to share ideas, artefacts, networked learning tools and ways of practice (Lieberman & Mace, 2010). Integrating the collaborative aspects through a networked learning community enhanced the continuing professional development of the group, (Garrison, 2007; Goodfellow, 2005; Henri, Charlier, Daele, & Pudelko, 2003; Henri & Pudelko, 2003; Palloff & Pratt, 2007). These findings are aligned with the epistemological context and view of social constructivists such as Hodgson, McConnell and Dirckinck-Holmfeld (2012) who promote socially constructed knowledge. Here networked learning communities offer the theory and practice for a pedagogy that is appropriate for VLE teachers to learn in a digitally connected and networked world where knowledge is created and shared in a collaborative and networked way of working (Hodgson et al., 2012).

According to the literature reviewed, engaging VLE teachers in CPD that utilise network learning communities will help them think differently about the tools and context they are experiencing. VLE teachers who are engaging in networked learning are more likely to incorporate ideas and technologies to better meet the needs of their students than those who are not (Ostashewski, 2008; Ostashewski, 2009). Not surprisingly, inexperienced VLE teachers gained significant levels of improvement to their continuing professional development. However, these levels of improvement seem varied and subjective due to challenges that can prevent networked learning and as a substantial number of the studies only touched the surface regarding VLE teacher actual experiences. Many claims were made on enhancements in CPD but with no associated explanation as to how, the degree or detail on the tangible enhancement. Additional research studies are needed that can give more in-depth descriptions on the exact ways in which CPD enhancements arise in VLE continuing professional development networked learning communities.

Almost all papers reviewed explored the challenges faced by networked learning communities to some extent. These challenges are aligned with the conceptual literature and involve issues related to technology, pedagogy and governance (Laferriere, Erickson, & Breuleux 2007; Steeples & Jones, 2002). In addition, there were challenges of missing technology to support networked learning communities, educating learners about its usefulness and bringing about a change in organisational culture. If we as researchers are to focus on the 'key' issues to improving continuing professional development for VLE teachers using networked learning communities, we must examine these issues prior to establishing such a community.

Implications

This discussion of the literature review's findings has wide ranging implications for VLE teacher continuing professional development and practice. Networked Learning Communities appear suitable for ICT MSc VLE teacher continuing professional development, using scaffolding frameworks such as, for example networked learning theory and transformative learning theory. Networked learning theory suggests that the real power of networked learning communities rests primarily in "collaborative inquiry that challenges thinking and practice" based on the richness of VLE teacher professional knowledge sharing and creation (Katz, Earl, & Jaffar, 2009, p. 21) and that this type of collaborative inquiry rests on the strength of the relationships between the actors or nodes in the network (Church et al., 2002; Haythornwaite, & de Laat, 2010). Transformative learning theory advocates the importance of critical reflection to enable self-assessment and subsequently innovative ways of VLE teaching, thus

providing immense value and clarity in the following ways. Initially, by using VLE teaching experiences to develop activities that lead to deep questioning of prior assumptions. Subsequently by members moving through various modes of consciousness to growth (Merriam, Caffarella, & Baumgartner, 2007), using it to contextualise research linking networked learning communities to continuing professional development outcomes in wide ranging VLE teaching situations.

In addition, exploring professional development results, based on the application of networked learning communities across academic levels and in diverse cultural networked learning contexts may complement and increase the VLE teacher professional development theoretical literature as to how these contexts could positively enhance professional development for wide ranging VLE teachers. In particular, it has potential to enable better continuing professional development, shared research and knowledge and the building of relationships across HEI wide VLE teaching community.

Conclusions

In conclusion, there are numerous benefits to Networked Learning Communities for online teacher continuing professional development. They are, enhanced social learning processes for CPD, greater use of formal and informal learning for CPD, learning across barriers in time and space for CPD and increased levels of interaction for CPD. For VLE teacher online groups, these benefits would provide added value and enhance continuing professional development as evidenced by the implications and discussion above.

However, the above conclusion was reached with certain limitations. Although the review has elicited many advantages, it has not explored related features, such as contexts in each of the reported cases, or factors that were involved in potentially leading to those successes. Furthermore, although the significance of networked learning communities for continuing professional development has been argued, this research has not claimed what a successful one looks like.

Although the question of which specific Networked Learning Community tools should be used for continuing professional development is beyond the scope of this research, literature is now available which can guide the choice (Hodgson, De Laat, McConnell, & Ryberg, 2014).

The ultimate goal of further research in this field is to find out under what exact circumstances networked learning communities could best improve learning performance for continuing professional development of VLE teachers. But one thing is for sure: without a vibrant networked learning community, any claims of constructivism for continuing professional development cannot be fulfilled.

Note 1. The journals additionally reviewed were: Active Learning in Higher Education; ALT-J (the journal of the Association for Learning Technology); International Journal of Education Research and Information Science; British Journal of Educational Technology; Computers and Education; International Journal Adult Education and Development; Internet and Higher Education; Journal of Asynchronous Learning Networks; Journal of Computer Assisted Learning; Learning, Media and Technology; Open Learning; Journal of Online Learning and Teaching; Journal of Continuing Education and Professional Development; International Journal for Academic Development.

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