

Building an online teachers' community of practice

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ABSTRACT

Online communities of practice (OCoPs) is a very promising tool in education with the potential to support knowledge sharing and promote teachers' professional development. A systematic literature review was conducted to examine a) the strategies that are used for the establishment, development, and evaluation of teachers' OCoPs, b) the theoretical framework that underlines these processes and c) the factors affecting implementation of OCoPs.

KEYWORDS

Online communities of practice, virtual communities of practice, systematic review

RÉSUMÉ

Les communautés de pratique en ligne constituent un outil très prometteur pour l'éducation, susceptible de favoriser le partage des connaissances et de promouvoir le développement professionnel des enseignants. Une revue systématique de la littérature a été menée pour examiner a) les stratégies utilisées pour l'établissement, le développement et l'évaluation des communautés de pratique en ligne des enseignants, b) le cadre théorique qui sous-tend ces processus et c) les facteurs affectant la mise en œuvre des communautés de pratique en ligne.

MOTS-CLÉS

Communautés de pratique en ligne, communautés de pratique virtuelles, revue systématique de la littérature

INTRODUCTION

This systematic review refers to teachers' OCoPs' formation, development, and evaluation. OCoPs are social learning systems with complex dynamics and processes while various types of interactions take place. The Web 2.0 technology has had a drastic impact on their formation by offering environments which facilitate participation and collaboration as well as construction and sharing of knowledge.

Empirical evidence on how communities work is still limited (Lantz-Andersson, Lundin, & Selwyn, 2018). Issues related to their establishment, evolution, and maintenance are connected

with a plethora of theoretical strategies and design principles which need more empirical examination.

THEORETICAL FRAMEWORK

Communities of practice (CoPs)

Defining CoPs is not an easy task. A widely accepted definition is that of Wenger, McDermott & Snyder (2002, p. 4): “CoPs are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly”. Through mutual engagement and joint enterprise communities’ members produce a collective practice (shared repertoire). When interactions happen online with Web 2.0 tools then the community is called Online CoP.

There is an uncertainty whether an OCoP is emergent or created by design. Many researchers are concerned over whether CoPs have lost their authenticity and spontaneity (Lee, 2018). While initially Wenger and his colleagues (Lave & Wenger, 1991) considered CoPs as a spontaneous phenomenon, they later (Wenger et al., 2002, p. 51) underlined that “designing communities of practice is a matter of shepherding their evolution than creating them from scratch”. Johnson (2001) also argues that virtual communities are designed and CoPs emerge within the designed environment as the participants interact.

It is accepted that there is no recipe or formula for OCoPs’ formation (Stuckey, 2004). Some design strategies include technology, participants’ needs assessment, time for the CoP to grow, encouraging diversity and providing different roles (Lai, Pratt, Anderson & Stigter, 2006). There is also an agreement that online communities evolve in stages, which vary in numbers without being a linear process (Stuckey, 2004). Many authors recommended lists of stages and described CoP’s lifecycle (Iriberry & Leroy, 2009; Lai, Pratt, Palloff & Pratt, 1999 cited in Ke & Hoadley, 2009; Wenger et al., 2002;) despite the fact that CoPs’ developmental stages, have rarely been researched empirically (Marques, Loureiro & Marques, 2016).

The evaluation process of OCoPs is crucial for running effective and successful communities. The literature suggests a variety of methodological approaches, purposes, measures and techniques in evaluating learning communities (Ke & Hoadley, 2009; Lee, Suh & Hong, 2010). There are many indicators to show an OCoP’s success: quantitative metrics, like size (number of members), contribution (posts, messages), participation (duration of membership) or qualitative metrics like members’ satisfaction and quality of relationships (Iriberry & Leroy, 2009; Preece, Abras & Maloney-Krichmar, 2004).

This systematic review was conducted in order to examine and understand the creation, development, and evaluation of teachers’ OCoPs. Primary studies on this topic were located to answer the following questions:

- what strategies are used for the formation, development and evaluation process of teachers’ OCoPs?
- what theoretical framework underlines these processes?
- which factors affect the implementation of OCoPs?

METHODOLOGY

The review took the following steps:

- development of a review protocol for the specification of the questions they were asking, the approach and the methods used to address them (Gough, Oliver & Thomas, 2013),
- description of the purpose of the study, the keywords, the databases to search,
- creation of a list of keywords, related terms, and databases to search,
- specification of the inclusion criteria screening,
- reviewing the articles and reporting of findings (Institute of Education Sciences, 2013).

Key words and inclusion criteria

Literature was collected between August and November 2017 from Scopus, Proquest, Science Direct and Google scholar databases by using the terms “Online Communit* of Practice” OR “Virtual Communit* of Practice”. The inclusion-exclusion criteria regarded primary researches published in English peer-reviewed journals or conference proceedings, between 2004 and 2017 which focused on establishment, development and evaluation processes of teachers’ OCoPs. The year 2004 was chosen as a milestone date because of the popularization of Web 2.0 in the 2004 International Symposium (https://en.wikipedia.org/wiki/Web_2.0).

RESULTS AND DISCUSSION

The databases search resulted in 806 potential papers. 787 of them were excluded because either they did not meet the inclusion criteria or were duplicates. The 19 retrieved papers (15 journal articles and 4 conference papers) presented studies from different countries reflecting the international community’s increased interest in the topic. The classification of the studies according to the research questions is shown in Appendix A.

Related to the first research question and especially the strategies used for the formation of OCoPs eight studies were found. These strategies concerned issues relevant to usability and sociability as the identification of the member’s needs, the different online tools for communication, storing and collaboration, the support of different roles. This finding is in line with the existing literature. “Design for evolution” and “invite different levels of participation”, the first and third principles suggested by Wenger et al. (2002) to guide CoPs are the most popular principles in the examined studies.

Relevant to the processes of development no strategies were mentioned. Two studies evaluated the development of an existed OCoP using Wenger’s theory. This finding confirms the rare appearance of the developmental stages in the research (Barrett, Ballantyne, Harrison & Temmerman, 2009; Marques et al., 2016).

Evaluation seemed to be an integral part of OCoPs’ formation. Some studies evaluated every step of the OCoP. Most studies gauged the formation of CoPs through analysis of discussion threads, posts, interaction analysis, and social network analysis while others addressed questions about the factors which affect the successful implementation of a CoP. Specifically, twelve studies either designed an online environment or used an already existed one and then examined the formation of a CoP. Seven of them analyzed the collected data using Wenger’s theory, one through activity theory, two combined CoPs’ theory either with a community of inquiry model or system theory. All the above studies used mainly qualitative approaches, without exploiting the analytics from the online environment. Only three studies used quantitative measures like participation variables from the activities log and social network analysis. Four studies used an OCoP’s evaluation method or model.

As it is revealed the dominant theoretical framework was Wenger's theory, one of the most cited theoretical frameworks of social learning the last decades (Smith, Hayes & Shea, 2017; Zhao & Bishop, 2011). The majority of the examined studies used the main features of Wenger's theory (joint enterprise, mutual engagement, and shared repertoire) by qualitative analysis either to confirm the existence of an OCoP or to foster it. The rest of the articles used also sociocultural frameworks. Generally, sociocultural models are the most popular frameworks used with qualitative research methodologies (Macià & García, 2016).

Regarding the third research question, five studies examined the factors that affect teachers' OCoP. These factors were categorized as interpersonal, personal and environmental (Baran & Cagiltay, 2010) and referred to the social, personal and online environments and tools features, respectively. Examples of the two first categories were either internal motivation or reputation, and recognition, collaboration, coordination (Zhao & Bishop, 2011), trust (Dzunic, Stoimenov & Dzunic, 2011), task orientation (Deris, Koon & Salam, 2015), supporting of different roles (Al-Shahrani & Mohammad, 2014). Relevant to the third category design factors mentioned (Sun, Li, Shi & Chen, 2012). Barriers were also found: lack of time, trust and anxiety (Thang, Hall, Murugaiah, 2011).

Summarizing, this review showed that the research on the domain of teacher OCoPs development is limited. The aforementioned studies showed some common designing elements like identification of members' needs and supporting different roles. The highlighted point was technology use. In many cases a web-based environment was provided promoting the collaboration of the members. Then examined through the lens of Wenger's theory if an OCoP had emerged. This finding is in line with the views in the literature that OCoPs initially can be built in terms of technology and then will bloom.

The creation of a CoP is a complex process affected by multiple factors. It is based initially on the technology with implications for designers and members, their roles and responsibilities. Multi-method approaches should be used for its evaluation. Interviews and reflection reports exploring the perceived value of participation should be combined with web-based analytics to measure what members actually do besides the social network analysis to find out the dynamics of the communication. These aspects should be addressed in future studies.

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APPENDIX A

Classification of the studies according to the research questions

Authors and country of the study	Design/ establishment	Develop- ment	Evaluation	Framework	Factors
Al-Shahrani & Mohammad (2014) Saudi Arabia			X	X	X
Baran & Cagiltay (2010) Turkey			X	Activity theory	
Barrett, Ballantyne, Harrison & Temmerman (2009) Australia			X	Wenger	
Deris., Koon, & Salam, (2015) Malaysia	X		X	Online learning approaches (Pallof & Pratt)	X
Dzunic, Stoimenov & Dzunic (2011) Serbia	X		X	Wenger	X
Marques, Loureiro, & Marques (2016) Portugal			X	Wenger	
Sun & Chen (2012) China	X		X	socio-technical systems	X
Thang, Hall, Murugaiah & Azman (2011) Malaysia	X		X	Wenger	X
Zhao & Bishop (2011)				Wenger	X