

ONLINE COMMUNITIES OF PRACTICE AND FACULTY MEMBER PROFESSIONAL DEVELOPMENT: A CRITICAL LITERATURE REVIEW

LAS COMUNIDADES DE PRÁCTICAS EN LÍNEA Y EL DESARROLLO PROFESIONAL DE LOS MIEMBROS DE LA FACULTAD: REVISIÓN CRÍTICA DE LA LITERATURA

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Abstract

Following the success of online communities of practices (Online CoPs) in the business sector for the professional development of employees, the idea of fostering the online cultivation of CoPs in educational institutions for the professional development of faculty members has been researched and practiced. Although this topic has not achieved maturity in the literature, this study is based on contingency theory/perspective views that the fundamentals of educational institutions are different from the fundamentals of business organisations. This means the research and implementation of Online CoPs with regard to educational institutions are unique and thus different from those of business organisations. Consequently, this study aimed to highlight the research gaps regarding the methodological approaches, the limited scope and conceptualisation of online CoPs, the limitations of theoretical foundations underlying CoPs, and the benefits and barriers of online CoPs in educational institutions. A critical semi-structured review methodology was employed. The findings expose the critical theoretical limitations and highlight the distinctive barriers and benefits of using online CoPs. Four promising research avenues are successively elaborated for the contingency-based theory development of online CoPs and provide grounds for their implementation in educational institutions.

Keywords: Community of practice, professional development, higher education institutions, faculty professional development.

Resumen

Después del éxito de las comunidades de prácticas en línea (CdP en línea) en el sector empresarial para el desarrollo profesional de los empleados, se ha investigado y practicado la idea de cultivar CdP en línea en instituciones educativas para el desarrollo profesional de los profesores. Si bien este tema no ha alcanzado madurez en la literatura, este estudio desde la teoría/perspectiva de la contingencia considera que los fundamentos de las instituciones educativas son diferentes a los fundamentos de las organizaciones empresariales. Esto significa que la investigación y la implementación de CoP en línea en instituciones educativas son únicas y, por tanto, diferentes de las organizaciones empresariales. En consecuencia, este artículo tuvo como objetivo resaltar las brechas de investigación con respecto a los enfoques metodológicos, el alcance limitado y la conceptualización de las CoP en línea, las limitaciones de los fundamentos teóricos que subyacen a las CoP y los beneficios y barreras de las CoP en línea en las instituciones educativas. Se empleó una metodología crítica de revisión semiestructurada. Los hallazgos exponen las limitacio-

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nes teóricas críticas de la literatura actual y resaltan las barreras distintivas y los beneficios del uso de CoP en línea. A continuación, se elaboran cuatro vías de investigación prometedoras para el desarrollo de la teoría basada en contingencias de las CoP en línea y se brindan las bases para su implementación en las instituciones educativas.

Palabras clave: comunidad de práctica, desarrollo profesional, instituciones de educación superior, desarrollo profesional de la facultad.

Introduction

The demands and expectations of educational institutions with regard to imparting 21st-century lifelong learning skills to students make educational institutions the engines of the social growth of any economy. These demands and expectations, in turn, have pushed the organisations and faculty members to continuously foster their professional development in such a way that the educational institutions and faculty members could serve the expectations of stakeholders such as government, parents, and students (Brooks, 2010). Hence, continuing professional development is the only way to survive for faculty members and educational institutions in this continuously changing environment.

The primary determinants of professional development at the workplace include consultations, mentoring, transformation supervision, technical assistance, and CoPs, amongst others (Abigail, 2016; Brooks, 2010; Evers et al., 2016; Khalid & Strange, 2016; Sherer et al., 2003). This study focuses on the CoP as a determinant and an instrument for fostering professional development because it not only has been found to deliver personnel and organisational development and performance positively in business and educational institutions (Wenger-Trayner & Wenger-Trayner, 2015; Wenger et al., 2002) but it also correlates with the aforementioned primary determinants of professional development (Abigail, 2016; Brooks, 2010; Evers et al., 2016; Khalid & Strange, 2016; Sherer et al., 2003). This makes the CoP a promising instrument and method for fostering the professional development of faculty members. The operational definition of CoPs refers to the faculty members in any educational institution who are collaborating on a continuous basis for collective learning (Brooks, 2010).

Successful cultivations of online CoPs in the business environment for the active employees' professional development have sustained the choice of online CoP cultivations rather than traditional face-to-face CoPs in this technology-intensive and technology-enabled environment. The operational definition of online CoPs for faculty members refers to a group of faculty members who are continuously collaborating over the web/online platforms to learn from each other (Baran & Cagiltay, 2010; Brooks, 2010; Di Petta, 1998; Khalid & Strange, 2016;

Sherer et al., 2003; Vavasseur & Kim MacGregor, 2008). Online CoPs offer some unique benefits over face-to-face CoPs to individual faculty members (e.g., pedagogies, networks for research collaboration, and just-in-time knowledge collection/sharing without the limitations of geography and time/business hours) and educational institutions (e.g., human resource development and an effective knowledge management). However, the literature on online CoPs aimed at faculty professional development is in its infancy stages. It still is lacking in the following two aspects.

Online CoPs and faculty professional development literature do not account for the contextual issues or situational factors in several ways (Abigail, 2016; Khalid & Strange, 2016). First, they seem to be biased toward teachers' professional development from the teaching perspective. However, teachers are found to be involved in administrative and research activities (in Higher Education Institutions- HEIs) in addition to teaching activities (Abigail, 2016; Banasik & Dean, 2016). Hence, limiting the professional development to the teaching aspect is not theoretically or practically correct. Second, the literature seems more predisposed toward the scope of online CoPs for the professional development of teachers in schools while not considering the HEIs. HEI faculty members perform research, teaching, and administrative activities. The theory regarding the contingency perspective in business and management literature emphasises the contextual factors necessary to understand any phenomenon (Johns, 2006). Contingency perspective stipulates that situational or contextual factors moderate relationships and management practices. For example, the faculty members' job context in HEIs is different from that of high school teachers as they also carry out research and administration services in addition to teaching. Hence, critically reviewing the literature concerning the scope of professional development and online CoP concepts in a HEI context seems imperative.

Furthermore, no comprehensive study researches the distinctive barriers and benefits of online CoP cultivations in educational institutions to the best of the authors' knowledge. Different studies discuss the possibility of online CoPs designed to foster faculty professional development using the theoretical and conceptual review

approaches (Brooks, 2010; Di Petta, 1998; Sherer et al., 2003; Vavasseur & Kim MacGregor, 2008). In doing so, these studies describe the distinctive benefits and barriers of online CoPs, although very implicitly. Hence, there is a gap in identifying and assimilating the unique benefits and barriers of online CoPs (as opposed to traditional CoPs) in educational institutions. This gap could serve as the initial step for future research in conducting studies on overcoming these barriers. The unique benefits can also communicate the potential value of online CoPs to the practitioners concerned with educational institutions. One of the striking barriers to the successful cultivation of online CoPs is the alignment between the learning perspective for faculty development and student learning in educational institutions (e.g., constructivism) and the underlying theoretical foundation for online CoPs (Brooks, 2010). Hence, it seems imperative to identify and categorise the distinctive benefits and barriers to online CoPs, and their theoretical foundations.

In light of the foregoing, we set forth the research objectives of this review study.

1. To highlight the research gaps in the methodological approaches, the limited scope of online CoP and faculty member professional development concepts in terms of research and theoretical foundations.
2. To summarise the available explicit-relevant studies with particular reference to the distinctive barriers and benefits of online CoP cultivation compared to traditional CoPs for educational institutions.

The following research questions are answered by the study.

- RQ 1: What could be the key features of online CoPs in different types of educational institutions with special reference to HEIs?
- RQ 2: What are the individual and distinctive organisational benefits of online CoPs in an educational institution?
- RQ 3: What are the underlying theoretical models/theories for online CoPs in educational institutions?
- RQ 4: What could be the barriers to online CoP initiatives for faculty professional development in educational institutions?
- RQ 5: What could be the important research gaps respecting future research on the subject-matter topic?

Methodology

Consistent with other studies reported in the literature, such as Shujahat et al. (2017), this study adopts a crit-

ical semi-structured review of the literature. The initial literature review helped to understand the synonyms of the terms such as CoPs, which helped in formulating the search strings. The following search string was developed and used in Google Scholar.

Online Communities of Practice OR Online CoPs OR Virtual communities of Practices OR Virtual CoPs AND Teacher's Professional Development OR Faculty Development OR Faculty Members development

The purpose of a semi-structured literature review methodology was to write an overview of that synthesises the literature on the topic and critiques it in order to give a holistic view that advances the state-of-the-topic. Only the following papers were chosen for the review:

1. Papers that were written in the English language.
2. Papers that discussed both online CoPs and faculty professional development together, i.e., the intersection of both topics.
3. The selected papers were reviewed if they were published by peer-reviewed journals. The papers that were not part of the peer-reviewed journals were not considered.

The selected papers were reviewed with reference to the research questions. The data from the papers was assimilated into the subsections of section 3.

Findings of the review

Faculty member professional development

The operational definition of professional development refers to the practices and processes in which faculty members learn different skills, knowledge, and values that are helpful in task improvisation to satisfy the stakeholders (e.g., supervisor, student, and parents) (Evers et al., 2016). The review of faculty member professional development measurement scales, their operational definitions, and conceptual studies shows that the current literature focus is primarily centred on professional development in teaching aspects, especially in the context of schools (Evers et al., 2016). However, faculty professional development in academia can be manifested in various dimensions: teaching, administration, mentoring, leadership, and research (Banasik & Dean, 2016; Baran & Cagiltay, 2010; Brooks, 2010; Evers et al., 2016). Studies show that teachers in school are found to be involved in administrative activities in addition to teaching and learning activities (Banasik & Dean, 2016; Baran & Cagiltay, 2010). Hence, their professional development in terms of administrative tasks is also imperative.

Similarly, the lecturers at HEIs have the major portion of their duties in teaching. However, they also perform research and administrative activities. Finally, the tenured and tenure-track faculty members at HEIs perform the major portion of research-related duties in addition to teaching and administrative activities (Banasik & Dean, 2016). Therefore, the different definitions and measurement scales are suggested for different faculty members in different educational institutions to better comprehend context.

Evers et al. (2016) developed a measurement instrument for teacher professional development at work based on the data collected from primary and secondary schools. They found that there are six total dimensions of professional development. In contrast to the past literature on measuring teacher professional development, Evers et al. (2016) found and measured six dimensions of professional development in an ICT-enabled teaching context where ICTs (Information & Communication Technology) enable the six dimensions. This attention directed at the ICTs highlights the importance of online platforms in teacher professional development. The Evers et al. (2016) study drew on the Boyatzis (1982) scale for measuring faculty-member professional development. The six dimensions of the teacher professional development scale include:

1. experimentation (e.g., the implementation of new pedagogies in classrooms);
2. collaboration with other co-workers for school development (e.g., discussion about potential space for educational innovation);
3. keeping oneself up-to-date regarding work (e.g., participating in work-related training);
4. reflecting and requesting feedback for self-improvement (feedback from pupils and coworkers);
5. keeping up-to-date by reading; and
6. collaborating with coworkers for improving the lessons (e.g., discussion about content and pedagogies).

The traditional, formal, one-size-fits-all models to faculty professional development (e.g., develop-disseminate one-way model) have not delivered promisingly (Felder & Brent, 2010; Mckenna et al., 2016). The reasons include cost, spacing, and geographic issues. Around 80% of learning in the workplace for professional development is informal through means such as observations, discussion, and consultation. Informal learning approaches for professional development have proven helpful in the past.

The determinants or tools of faculty professional development may include consultation, mentoring, trans-

formation supervision, technical assistance, and CoPs that are more informal (Abigail, 2016; Brooks, 2010; Evers et al., 2016; Khalid & Strange, 2016; Sherer et al., 2003). The CoP method has proven more effective for faculty professional development because it provides an opportunity for informal learning and correlates with the aforementioned determinants such as mentoring and supervision. Past studies show that CoP cultivation offers other formal and informal approaches to learning (e.g., mentoring, and technical assistance) to faculty (Brooks, 2010).

The operational definition of CoPs refers to the faculty members in any educational institution who are collaborating on a continuous basis for collective learning (Brooks, 2010). As mentioned earlier, in developing a revised state-of-the-art instrument to measure the professional development of teachers, Evers et al. (2016) included the ICT phenomenon in each dimension used. This evidence suggests that instead of traditional face-to-face CoPs, online CoPs could be a more effective instrument to foster faculty professional development. The online CoP cultivations benefit both individual members (e.g., just-in-time assistance) and educational institutions (e.g., human resource development) (Brooks, 2010). However, with the exception of Brooks, (2010), the literature does not discuss the theoretical foundations of online CoPs.

The core theoretical foundations of Online CoPs: social constructivism, socio-culturalism, and the situated learning theory

The theoretical foundations of online CoPs for faculty development can help us if and when the online CoPs can be helpful for faculty development (Brooks, 2010). Wenger-Trayner and Wenger-Trayner, (2015) state that CoP cultivation in business organisations adds more complexity, but it does not change the strategic focus of businesses. However, CoP cultivations in the context of educational institutions entail more complexity and transformation than in the context of business organisations, as their effective cultivations require a change in the underlying learning/pedagogy model(s) that propel educational institutions. Hence, the online CoPs underlying learning model(s) should be aligned with the educational institutions' underlying learning model(s).

In our literature review, three interrelated theories/ learning models support online CoP cultivation in educational institutions: constructivism, socio-culturalism, and the situated learning theory (Brooks, 2010). The situated learning theory is the central underlying theory

of CoP initiatives. The three theoretical foundations are explained as follows:

Constructivism

The constructivist learning model/perspective is a sociological theory of knowledge and learning that views knowledge as the outcome or product of social interaction or collaboration with other human beings (Brooks & Brooks, 1999; Vygotskie, 1978; Vygotsky, 1962). This theoretical foundation contends that learning among the actors occurs through the actor's engagement with the environment. It could also be said that learning is a social process that results in knowledge construction through social interaction (Brooks, 2010). This theory is highly relative to the understanding of the CoP, as in its essence, it promotes interaction for collective learning amongst the members of the same community. This theory affirms that knowledge is not a categorical holistic object. Instead, it could be viewed as a continuum that evolves, develops, and renews itself through collaborative interaction (Vygotskie, 1978). In this established context, the constructivist learning model suggests that online CoPs could be the platforms where faculty members are able to have a shared practice as members of an educational institution in order to interact and collaborate with each other, which may result in knowledge construction and knowledge sharing (Abigail, 2016; Brooks, 2010).

Socio-culturalism

Socio-culturalism theory explains human behaviour, learning, and cognitive processes by way of the learners' socio-cultural context (e.g., gender and race) (Brooks, 2010; Knowles, 1989; Knowles et al., 1998; Merriam, 1993; Pratt, 1993; Swanson, 2012). This theory postulates that learning and knowledge construction is a social process. In the context of online CoPs, socio-culturalism postulates that on the online CoP platforms, each faculty member brings his/her own unique sociocultural identities (e.g., culture, gender, and knowledge) to the social interaction. In this process, the variation in the socio-cultural identities amongst the members impacts the processes of collaboration and the nature and degree of co-constructed knowledge (Brooks, 2010).

This theory is related to the cultivation of Online CoPs for faculty member professional development (Brooks, 2010; Brooks & Brooks, 1999). First and foremost, the central theme of the sociocultural theory is mentorship. Mentorship is crucial for new faculty members to adapt to their professional development and for their adequate socialisation. Sociocultural identities/backgrounds (e.g., power, gender, and race) hinder mentorship in traditional

CoPs. Hindrances can be manifested, as in cases where a mentor unethically exploits a mentee. For example, a faculty member from a marginalised sociocultural background may not be able to attract and engage a senior faculty member (Angelique et al., 2002; Brooks & Brooks, 1999; Cheruvu et al., 2015; Hurley, 1996; Ragins & Cotton, 1999; Ragins et al., 2000; Ragins & Scandura, 1999; Viator, 1999). However, online CoPs may overcome these barriers to both formal and informal mentorships in the online space (Alfred & Nanton, 2009; Brooks, 2010).

Secondly, Florio-Ruane (2001) states that when teachers engage with each other in conversation, it has reciprocally profound impacts. For example, they learn and explore their own cultural details as well as the cultures of others. They may unconsciously participate in the transformation of learning within their shared domain and learn each 'other's' culture. Also, the more diverse sociocultural identities a group of people have during the interaction, the greater likelihood exists for the construction of novel knowledge due precisely to the collaborative interaction of people with diverse backgrounds and knowledge.

Situated Learning Theory

The review of the two foregoing theories suggests that learning and knowledge creation and knowledge sharing for professional development require social interaction embedded in a social context. This contrasts with the behaviourist perspective (Vygotskie, 1978; Wenger, 1999). The situated learning theory, the major underlying theory for CoP cultivations, focuses on the collaborative social-situational context (Wenger-Trayner & Wenger-Trayner, 2015). Thus, this theory is inspired by the social constructivist perspective.

The situated learning theory postulates that learning is an outcome of the continuous social interaction amongst the members of a shared enterprise (a group of people having the same passion such as teaching) in a shared socially situated context. The theory was put forth by Lave and Wenger (1991). The theory delineates learning as an outcome of certain forms of co-participation. If educational institutions are interested in online CoP cultivation, then their underlying learning perspective should be the situated learning theory that is the essence of the CoP concept. According to the situated learning theory, learning is a social process whereby knowledge is socially co-constructed (Lave & Wenger, 1991).

However, according to the situated learning theory, becoming a member of a CoP does not result in a pre-ordained start of learning and collaboration. Instead, becoming an efficient member takes time and takes the

learner through different steps. This phenomenon has been referred to as the “legitimate peripheral participation” (Lave & Wenger, 1991; Wenger et al., 2002). This phenomenon highlights the process and the potential enablers that facilitate new members in becoming expert members of CoPs. At first, a new member performs the simple basic tasks that might be of importance to the collaborative goals of a community. Through these activities, novice members develop knowledge and skills and thus become expert over the time as he/she becomes acquainted with the tasks, skills, and knowledge. Some factors may moderate the participation in CoPs for inexperienced newcomers (e.g., power rotations amongst expert influential members and newcomers, and proximity amongst expert influential members and newcomers). Hence, based on the situated learning theory, in order to cultivate effective online CoPs, the role of moderating variables such as proximity with the expert member should be controlled and managed.

Communities of Practice (CoPs) and Online Communities of Practice (Online CoPs)

Communities of Practice (CoPs)

A community of practice is a group of people who share a common identity (practice such as teaching) and are collaborating for collective learning (Cheng & Lee, 2014). This operational definition suggests three characteristics of a CoP (Cheng & Lee, 2014; Wenger-Trayner & Wenger-Trayner, 2015; Wenger, 1999; Wenger et al., 2002).

1. **Domain/joint enterprise:** The members of a CoP have a basis of commonality - a shared practice (e.g., teaching) that attracts and binds them together. This commonality helps the members to develop cohesion and a common identity. The shared domain in a CoP enables value addition and its legitimisation.
2. **Community/mutual engagement:** Having a shared domain by a group of people does not reflect the community of practice until those members collaborate and interact with each other on a continuous basis for collective learning, knowledge sharing, and knowledge construction. Mutual engagement requires strong motivations, trust, and social relationships.
3. **Practice/Shared repertoire:** Not only do the members of a community of practice share a common domain and engage with each other in the process of collaboration over time but they also build and share a stockpile of shared practices/resources (e.g., work-

ing pedagogies). Thus, CoPs are the knowledge-based social structure (Wenger-Trayner & Wenger-Trayner, 2015).

Online CoPs in Educational Institutions Aimed At Faculty Professional Development

The 21st century is characterised by the adoption of intensive ICT innovations and the abundance of information resources. The availability of online spaces and ICTs has made it possible to create and maintain a shared repertoire online, ensuring just-in-time information access. However, does it mean the obviation of CoPs in 21st-century organisations?

The increase in ICTs and online space has generated the need for the CoP, especially online CoPs, because of the complexities of the online spaces/platforms and ICTs. The probable reasons, especially for the educational institutions, include information overload, the large amount of time required for knowledge acquisition, the need to be up-to-date on subject matters, and radical innovation. Overcoming these problems requires the most continuous interaction amongst the subject-matter experts that the online CoPs could optimally achieve, especially in the educational institutions (Abigail, 2016; Banasik & Dean, 2016; Brooks, 2010; Jameson et al., 2006). The information abundance has developed a need to be continuously updated with regard to the changing knowledge of subject matters (Brooks, 2010; Wenger-Trayner & Wenger-Trayner, 2015; Wenger et al., 2002). Therefore, the proposition is to set forth to acquire and utilise the proper knowledge from the right person at the right time and in the right place by way of online CoPs (Putnam, 2000).

However, examples of Online CoPs in HEIs are limited (Mckenna et al., 2016). The CoPs on online spaces employing computer-supported communication technologies can help in improving the different aspects of faculty professional development in different contexts (e.g., teaching, administration, mentoring, leadership, and research; Banasik & Dean, 2016; Di Petta, 1998). These online interactions could be made possible through webinars, online conferences, and chat applications (Banasik & Dean, 2016). Professional portfolio development and mastery of technology tools are the means of professional development on online CoPs (Sherer et al., 2003). Online CoPs could be used for different purposes (e.g., socialising, mentoring, and knowledge sharing; Brooks, 2010). Finally, online CoPs could more effectively moderate the legitimate peripheral participation phenomenon by moderating the impeding issues (Brooks, 2010).

Distinct Benefits and Barriers to Online CoPs in Educational Institutions

Framework for Categorising the Benefits and Barriers At Individual and Organisational Levels

This study adopts Johns (2006) framework to categorise the benefits at organisational and individual levels, respectively. In accord with this framework, the study of a phenomenon can be realised at three levels: the macrolevel/national level (e.g., broader socio-technological culture), the organisational level (e.g., type of HEI and organisational ranking), and the micro-level (e.g., gender, age, race, and position in the organisation) (Johns, 2006). As the review is concerned about the online CoP initiatives in educational institutions (organisational-level concept) as the instrument for fostering faculty/teacher professional development (micro-level), for this reason, the macrolevel analysis (national level) is excluded. The categorisation at the individual and organisational levels is imperative in order to understand the phenomenon in-depth. However, the framework used does not negate the intrarelations and interrelations among the individual barriers and organisational barriers, and individual benefits and organisational benefits.

Distinct Benefits

The literature review indicated that the studies discuss the distinct benefits of online CoPs that are different from traditional CoPs in educational institutions. The specific benefits may include a range of benefits including but not limited to knowledge sharing, knowledge creation, performance improvement, and personal development (Abigail, 2016; Banasik & Dean, 2016; Cheng & Lee, 2014; Evers et al., 2016; Lave & Wenger, 1991; Mckenna et al., 2016; Stark & Smith, 2016; Vavasseur & Kim MacGregor, 2008; Wang & Ma, 2017; Wellman, 2018; Wenger-Trayner & Wenger-Trayner, 2015; Wenger, 1999; Wenger et al., 2002). However, based on a utilitarian consideration, an individual faculty member or organisation would ask why should I be engaged with online CoPs instead of traditional CoPs?

Table 1 and Table 2 describe the distinct benefits of online CoPs compared to traditional face-to-face CoPs to individual faculty members and organisations, respectively. However, the review suggests that the benefits and barriers to online CoPs in educational organisations have not been confirmed in empirical settings. Hence, future studies should consider conducting empirical studies on online CoP dynamics. Only Mckenna et al. (2016) carried out an empirical design-based quantitative study on

online CoPs and faculty development to the best of our knowledge. Their findings indicated that the educational institution leaders' awareness, attitude, and adoption of research-based education and learning were significantly improved after the engagement in online CoPs.

Table 1. Distinct Individual-Level Benefits To Online CoPs For A Faculty Member

Serial No.	Distinct Benefits	Supported by
1	just-in-time access to and delivery of information	(Sherer et al., 2003)
2	Cost (grants for travelling to conferences)	(Mckenna et al., 2016)
3	Self-directed learning	(Sherer et al., 2003)
4	Social capital development	(Sherer et al., 2003; Vavasseur & Kim MacGregor, 2008)
5	Limitations from geographic and time/business hours perspective	(Mckenna et al., 2016; Wang & Ma, 2017)
6	Mentoring (sociocultural perspective)	(Brooks, 2010)
7	Spacing and communication advantages	(Sherer et al., 2003)
8	Interaction with the seasoned and adjunct faculty members	(Brooks, 2010)
9	Socialisation tool for newcomers	(Brooks, 2010; Mckenna et al. 2016)
10	Optimal knowledge sharing	(Brown & Gray, 1995; Sherer et al., 2003)

Table 2. Distinct Organisational-Level Benefits

Serial No.	Distinct Benefits	Supported by
1	Human Resource Development (HRD)	(Brooks, 2010; Di Petta, 1998; Sherer et al., 2003; Vavasseur & Kim MacGregor, 2008)
2	A tool of the organisational knowledge management strategy	(Ardichvili et al., 2003)
3	Faculty member development/HRD	(Vavasseur & Kim MacGregor, 2008)
4	Codified shared repertoire	(Mckenna et al., 2016; Sherer et al., 2003; Wenger-Trayner & Wenger-Trayner, 2015)
5	Knowledge risk management - knowledge updating by co-construction	(Ardichvili et al., 2003; Hall & Graham, 2004; Stark & Smith, 2016; Wenger-Trayner & Wenger-Trayner, 2015)
6	Short-term workshops	(Mckenna et al., 2016)
7	multidivisional and/or virtual education institutions	(Wellman, 2018)
8	Organisational social and intellectual capital development by producing effective researchers, teachers, employees, and entrepreneurs	(Wasko & Faraj, 2005)
9	HRM tool for socialisation and mentoring	(Brooks, 2010)
10	Elementary for the adjunct and experienced HR	(McDonald & Cater-Steel, 2016)

(Continued)

Serial No.	Distinct Benefits	Supported by
11	Open innovation	(West & Lakhani, 2008)
12	Radical innovation in addition to incremental innovation	(Jameson et al., 2006)
13	Sustained engagement	(Mckenna et al., 2016)
14	Geographical and cost	(Marie Cirillo & Shay, 2007; Mckenna et al., 2016; Sherer et al., 2003)
15	Open innovation through the institutions' collaboration	(Mckenna et al., 2016)

Distinct Barriers

Table 3. Distinct Individual Barriers

S.No.	Barrier	Supported by
1	Inability to provide rich/multifaced experience	(Panahi et al., 2013)
2	Power structure	(Brooks, 2010; Khalid & Strange, 2016)
3	Interactive media options for tacit knowledge sharing	(Khalid & Strange, 2016)
4	Intrinsic motivation for engagement, learning and social support	(Khalid & Strange, 2016)
5	Limited time	(Khalid & Strange, 2016)
6	Utilitarian view: potential benefits	(Khalid & Strange, 2016)
7	Weak learning orientation	(Abigail, 2016)
8	Designer's low understanding of teachers' job	(Khalid & Strange, 2016)
9	Knowledge collection but no knowledge contribution	(Ardichvili et al., 2003; Stark & Smith, 2016)
10	Fear of criticism	(Ardichvili et al., 2003; Stark & Smith, 2016)
11	Fear of obsolete knowledge	(Ardichvili et al., 2003; Stark & Smith, 2016)

Table 4. Distinct Organisational Barriers

S.No.	Distinct organisational barrier	Supported by
1	Leadership support	(Byington, 2011; Wenger et al., 2002)
2	Strategic alignment among strategic HRM, institutions' learning models, and online CoP underlying theories (situated learning theory, social constructivism, and socio-culturalism)	(Cheng, E.C.K. & Lee, G.C. 2014; Wenger, 1999)
3	Strategic alignment- integration of different levels of online CoPs (e.g., department and faculty) in educational institutions	(Brooks, 2010)
4	Power structures (anchors/platforms administrators and other 'actors' powers)	(Wenger et al., 2002)

(Continued)

S.No.	Distinct organisational barrier	Supported by
5	The transformation from traditional to online CoPs	(Stark & Smith, 2016)
6	Hybridised faculty development (blended model) discourse/alternative	(Brooks, 2010; Vaughan & Garrison, 2006)
7	E-collaboration learning culture	(Abigail, 2016; Baran & Cagiltay, 2010)
8	Technical glitches and know-how	(Abigail, 2016; Baran & Cagiltay, 2010)
9	Technical infrastructure provision	(Baran & Cagiltay, 2010)
10	Design-problems	(Abigail, 2016; Baran & Cagiltay, 2010)
11	Time/learning curve with online CoPs	(Abigail, 2016; Vavasseur & Kim MacGregor, 2008)
12	Engagement of adjunct faculty	(Banasik & Dean, 2016)
14	The provision of rich subjective experience/interaction like face-to-face interaction	(Mckenna et al., 2016)

Conclusion and Future Research Recommendations

The underlying motivation of the study was to conduct a critical review of one of the areas of technology-enhanced learning literature. The online CoP as an instrument for faculty professional development in educational institutions was chosen. The objectives of this study were twofold: to summarise the current state of the literature with respect to the distinctive benefits and barriers of online CoPs for educational institutions and to highlight the research gaps on the subject-matter topic concerning the methodological approaches, limited scope of online CoPs as well as faculty member professional development concepts in research, theoretical foundations, and the benefits and barriers to online CoPs in educational institutions.

Adapting Johns (2006) framework, the distinctive benefits and barriers were identified and categorised based on the literature at individual and organisational levels. The review of the theoretical foundations for Online CoPs (social constructivism, socio-culturalism, and situated learning theory) helped in identifying and categorising barriers and benefits based on the literature. These benefits could only be realised if the barriers are overcome. The essential and distinct benefits to the cultivation of online CoPs are as follows: individual benefits (e.g., just-in-time delivery without the limitations of time and geography, self-directed learning for the professional, and development of social and intellectual capital across the different sectors and regions), organisational benefits/outcomes (overcoming the biases to mentoring, HRM tool for socialisation and intellectual and social

capital development, and codified shared repertoire in online space for long-term use).

The core barriers that impede online CoP effectiveness are as follows: individual challenges/barriers (e.g., tacit knowledge sharing and intrinsic motivation) and organisational barriers (alignment between the educational institutions' learning model and the theoretical foundations of online CoPs (especially the situated learning theory), involvement of adjunct and experienced faculty, the choice between open vs close-ended platforms, alignment between the online CoPs' learning model and the institution's learning models, and leader support).

Future Research Avenues

The study sets forth four crucial research gaps regarding the concept of the professional development of faculty members, the scope of online CoPs in different types of educational institutions, the alignment between the institutions' underlying learning model and the learning models of online CoPs and the conducting the empirical studies. These research gaps are explained as follows. First, the studies indicate that the professional development literature is biased toward the school. Therefore, the concept and construct of faculty member professional development seem more focused on the professional development of teaching-related activities. However, teachers do not only teach in schools, they also perform administrative activities. Further, faculty members at the HEIs are overwhelmed with the task of research activities in addition to teaching and administrative duties. Hence, future studies should consider revising the construct and instruments of faculty member professional development that are able to foster professional development from the administrative and research duties perspectives as well, as per the context of different types of faculty members in different types of educational institutions (e.g., schools vs. HEIs/universities). Second, future studies should consider the scope of online CoPs for different educational institutions in addition to schools, such as HEIs or universities.

Third, for effective online CoP cultivation, the underlying learning models of educational institutions (e.g., constructivism) and online CoP models and theories (social constructivism, socio-culturalism, and situated learning theory) should be aligned. This important point needs further exploration with conclusive empirical evidence. Therefore, in exploring the viability of social constructivism as the underlying learning perspective of educational institutions, online CoPs, and situated learning theories might be explored. Finally, the literature lacks the subject-matter empirical studies that focus on

empirical data collection and are inspired by positivist epistemology (except for Mckenna et al., 2016).

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