The Culture of Learning of Digital Library Professionals in Europe: A Study of Digital Libraries' Communities of Practice

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Abstract. In the context of knowledge management (KM) in the field of digital libraries (DL), communities of practice (CoPs) is one of the unexplored areas of interests for research, as compared to those in the fields of business and management, education, engineering and medical sciences. Greater importance is being placed on those communities' ability to share knowledge, facilitate knowledge transfer and most importantly, provide the proper context for learning to take place. Thus, this research sought to: (1) find out the defining characteristics of CoPs in the field of DL, (2) examine how CoPs contribute to the development of a learning culture and (3) determine the success and hindering factors in the development of such learning culture.

*Keywords***:** community of practice, communities of practice, CoPs, learning culture, knowledge management, digital libraries, digital library professionals, Europe, digital librarianship

Introduction

The phenomenon of communities of practice (CoPs) has thrived since the beginning of human history as a result of man's continued pursuit for finding meaning, identity and learning in the midst of a fast changing environment. CoPs are not a new idea as what Wenger (2000) had claimed:

> ...since the beginning of history, human beings have formed communities that share cultural practices reflecting their collective learning: from a tribe around a cave fire, to a medieval guild, to a group of nurses in ward, to a street gang, to a community of engineers interested in brake design. Participating in these 'communities of practice' is essential to our learning. It is at the very core of what makes us human beings capable of meaningful knowing (p. 229).

So, these communities are fundamentally created for a purpose and in broadening one's learning and knowledge sphere. This is the central idea underlying the emergence of CoPs particularly among professional fields and disciplines. Cox (2005) noted that the concept of "CoPs have become popular in several academic fields including organizational studies (particularly the topics of knowledge management and organizational learning) and education" (p. 527). Furthermore, Fuller et al. (2005) also found that the concept of 'CoPs' is being embraced by a range of occupational fields. Murillo (2008), however, observes that there is a rising trend of published papers on CoPs. He further explains that the concept of CoPs was originally introduced by Jane Lave and Etienne Wenger in 1991 and developed extensively by Wenger in 1998 and has attracted increasing interest in recent years.

It has been noted that CoPs are important in the functioning of any organization and in fostering the culture of sharing and learning. Wenger (2006), however, provided a number of characteristics that explain this rush of interest in CoPs as a vehicle for developing strategic capabilities in organizations:

- CoPs enable practitioners to take collective responsibility for managing the knowledge they need, recognizing that, given the proper structure, they are in the best position to do this.
- Communities among practitioners create a direct link between learning and performance, because the same people participate in communities of practice and in teams and business units.
- Practitioners can address the tacit and dynamic aspects of knowledge creation and sharing, as well as the more explicit aspects.
- Communities are not limited by formal structures: they create connections among people across organizational and geographic boundaries. (sec.4, para. 1).

It can be seen from this perspective that the creation of new knowledge is a by-product of interaction in a community of practitioners. This interaction may be characterized by collective engagement, focused on identifying and addressing commonly held issues and initiatives. Wenger (2000) argued that CoPs are basic building blocks of social learning system because they are the social 'containers' of the competences that make up such system. Earlier, Galagan (1993) opined that learning is the process of becoming a member of the CoP. The motivation to learn is the motivation to become a member. He further elucidated that a major assumption of CoPs is that learning is fundamentally situated in social, physical, and temporal settings. Learning is not simply a transfer of knowledge, but a process of building understanding.

Therefore, this investigation was conducted as a way of finding the reason(s) if learning was the very tenet of CoPs' engagement or "just an accidental outcome of member's interactions" (Wenger, 2006). The concept of CoPs is also explored and on how it essentially influenced learning to takes place among its stakeholders in the case of DL professionals.

The Problem

In the context of knowledge management (KM) in the field of digital libraries (DL), communities of practice (CoPs) is one of the unexplored areas of interests for research, as compared with those in the fields of business and management, education, engineering and medical sciences. Greater importance is being placed on those communities on their ability to share knowledge, facilitate knowledge transfer and most importantly in providing the proper context for learning to take place. There were only few studies found about the subject in the field of DL, these studies have focussed on social aspects of DL (Bishop et al., 2000, 2003), decision-making process (Oguz, 2007), collaboration (Oguz, Marsh & Landis, 2010), and community building (Worrall, 2010). Oguz citing Borgman (1999) and Marchioni (1998) notes that the role of the CoPs has not been a focus of DL research even though some influential researchers in the field have addressed this concept directly or indirectly in discussions of DLs.

Thus, this investigation sought to find out the role of CoPs in the development of a learning culture among DL professionals. This aim would be realized through the following objectives:

1. To examine how CoPs' contribute to the development of a learning culture among DL professionals; and
2. To determine the success and hindering factors in the development of learning culture in DL CoPs.

Theoretical Framework

It has been noted that the prevailing learning theories (for instance, connectivism, networked learning, activity theory and problem-based learning) are based on the primacy of experience and interpersonal exchange as the vehicle of learning. There are three main categories or philosophical frameworks under which learning theories fall: behaviorism, cognitivism, and constructivism (learning theory (education), 2011). Behaviorism focuses only on the objectively observable aspects of learning. Cognitive theories look beyond behavior to explain brain-based learning. However, the theoretical foundation of this study is based on a constructivist perspective that views learning as a process in which the learner actively constructs or builds new ideas or concepts. Thus, in a community setting, learning takes place in the situatedness of the performance of one's tasks or learning as a result of social interaction (Wenger, 1998, colophon).

However, this study is grounded not on the general notion of what a community is but rather on situatedness of learning that takes place in CoPs as the fundamental theory behind it. Luden (2009) reiterated on the foundation of situated learning theory:

> Building on the theoretical foundation that was laid by the work of Bandura, Vygotsky, and others[1], Lave (1988), however, extended the work on social learning theory by advancing the

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[1] see also Akers, Krohn, Lanza-Kaduce, & Rodosevich, 1979; Miller & Dollard, 1941; Piaget, 1969; Sears, 1951

notion that the majority of adult learning (cognition) is "situated" in the activity, context, and culture in which it occurs (p. 22).

For these theorists, learning is situated that it takes place and is embedded within the context of doing or in the performance of one's tasks. Situated learning contributes to the growing body of research in human sciences that explores the situated character of human understanding and communication (Hanks, 1991). Johnson (2001) also asserted that CoPs differ from traditional learning environments because the learning takes place in the actual situation, including the social environment. Thus, novices and experts, as well as novices movement to expertise, are important aspects of the communities. In 1991, Lave and Wenger expounded their theoretical perspective that learning is situated and occurs by means of legitimate peripheral participation within CoPs. The emphasis on "peripheral," implies that learners first exist on the outer rings of existing communities of practitioners and gradually work their way into full participation. They explained on what they mean by legitimate peripheral participation (LPP):

> By this [referring to LPP] we mean to draw attention to the point that learners inevitably participate in communities of practitioners and that the mastery of knowledge and skill requires newcomers to move toward full participation in the socio-cultural practices of a community. "Legitimate peripheral participation" provides a way to speak about the relations between newcomers and old-timers, and about activities, identities, artefacts, and communities of knowledge and practice. (p. 29)

Wallace (2007) commented that Lave and Wenger's exposition on CoPs is grounded in the principles of situated learning, which is a form of experiential learning. They note "the role played by these concepts is sufficiently significant that understanding communities of practice is, if not dependent on understanding the other concepts, augmented by understanding them" (p. 38). Thus, participation in the community life is critical to individual as well as to group learning. It is by participation that learning occurs in the context of CoPs. Situated learning is closely linked to situated cognition, which emerged in the literature of psychology and artificial intelligence in the 1980s (Wallace, 2007). For Brown, Collins and Duguid (1989) situated cognition is a new paradigm of learning, emphasizes apprenticeship, coaching, collaboration, multiple practices, articulation of learning skills, stories, and technology. They asserted that, "in a significant way, learning is, we believe, a process of enculturation"(p. 33).

Barab and Roth (2006) noted that many theorists[2] have further emphasized the reciprocal character of the interaction in which individuals, as well as cognition and meaning, are considered socially and culturally constructed. Therefore, situated learning theory serve as an analytical lens for understanding the social structure of the learning process in CoPs in which learning cannot be separated from the context within which learning takes place.

Methodology

This study was grounded in an interpretivist philosophical view - an ontological belief that reality is socially constructed (Pickard, 2007; Creswell, 2007; Merriam, 2009). Hence, the methodological approach of this study is qualitative in nature in which experiential/context-based data were collected through semi-structured interviews.

Research sampling was limited to professionals who are actively involved in DL communities. These include DL designers, system developers, system administrators, librarians, academicians in DL educational programmes, graduate students and scholars having common interests in digital libraries and its enabling technologies. The participants of the study included four males and eight females from the member countries of the European Union, namely Austria (1), Croatia (1), Estonia (4), Italy (2), Romania (1), Spain (1) and United Kingdom (2). The data were analyzed based on five steps thematic analysis of Peterson et al. (1994): (1) searching for individual themes, (2) developing each theme previously identified, (3) determining the significance of each theme; (4) searching for oppositions among themes and thematic hierarchies, and (5) comparing thematic hierarchies and oppositions across transcripts.

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[2] see Heidegger, 1996; Lave, 1993; Lemke, 1997; Leont'ev, 1978; Walkerdine, 1997; Wenger, 1998.

Results & Discussions

This section discusses the results of the study in relation to existing literature. The flow of the discussion is presented as follows: (1) modes of learning in CoPs and its learning climate; (2) DL CoPs' learning culture, and (3) success and hindering factors in creating a culture of learning.

Modes of Learning in CoPs and its Learning Climate

Johnson (2001) argued that for some reasons, "individuals are motivated to join a community due to their "dissatisfaction with traditional methods and arenas" (p. 48). In CoPs' perspective members are embracing a new form of learning through informal interaction and collaboration. However, the study revealed that formal learning also takes place in CoPs through joint summer schools, workshops, mentorships, conferences and formal meetings. But most of the time learning in CoPs usually occurs informally and primarily through information sharing, e-mail discussion lists, exchanging best practices, study tours, online discussions as well as face-to-face discussions.

In terms of the learning climate in CoPs, the interviewees indicated that there is a positive, friendly, collaborative, very accessible or open, relaxed and not competitive environment. Formal or informal learning will flourish having such a climate. Wenger, McDermott and Snyder (2002) argued that they accumulate knowledge; they become informally bound by the value that they found in learning together. More so, this formal and informal learning are characterized by four distinct cultures that foster a culture of learning: knowledge sharing culture, culture of collaboration, knowledge transfer culture and the culture of innovation.

Practices that Foster a Learning Culture in CoPs

This sub-section presents the discussion of the practices in CoPs which foster a culture of learning such as 1) knowledge sharing, 2) collaborative learning, 3) knowledge transfer and 4) innovation that emerged from this study. Learning culture has been collectively defined as "an embodiment of or a set of beliefs, norms, and behaviours of individuals and groups in a community of practitioners which nurture learning through collective discovery, sharing, and application of knowledge. CoPs as learning organizations have a culture that encourages knowledge sharing (sharing of documents, knowledge, understanding and meaning) and transmission of knowledge to workplace environment.

1. Knowledge Sharing Culture

CoPs are the "heart" and "soul" of knowledge sharing in the organization due to wealth of experiences, insights, and perspectives (World Bank, n.d.). The findings of this study revealed that knowledge sharing culture creates a practice of open sharing where there is the presence of high level professionals who are willing to share their experiences. CoPs serve as nodes for the exchange and interpretation of information. In relation to this, Wenger (1998) asserts that as a consequence, a community of practice that spreads throughout an organization is an ideal channel for moving information, such as best practices, tips, or feedback, across organizational boundaries. It preserves the tacit aspects of knowledge that formal systems cannot capture.

Knowledge sharing in some way fills in the knowledge gaps and provides opportunities for members to share something. On a related development, the interviewees also indicated that attitude toward knowledge sharing (such as motivation, open-mindedness and willingness to share, trust and professionalism) is a critical success factor in building a culture of learning. This behaviour, however, may facilitate the development of a practice that reflects a vibrant culture of learning. The results of the study reflect of what Cross, Parker, Prusak and Borgatti (as cited in Lesser & Fontaine, 2004) reiterated that there are four (4) features that determine knowledge sharing effectiveness. These include: (1) knowing what another person knows and thus when to turn to them; (2) being able to gain timely access to that person; (3) willingness of the person sought out to engage in problem solving rather than dump information; and (4) a degree of safety in the relationship that promoted learning and creativity.

2. Collaborative Culture

In practical sense, CoPs are collaborative in nature as how Wenger, McDermott, and Snyder's (2002) defined it: "groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis (p. 4). The results of the study revealed that what brought CoPs' members together was their interest on common activities and on gaining new learning experience through mutual engagement. People are working together and learning from each other by sharing information, exchanging best practices and expertise. Moreover, there is also a challenge in collaboration within CoPs which is basically caused by conflict of interests. Despite of that challenge, there is still a strong collaborative culture characterized by a strong bond of people committed to work together in their quest of achieving their goals. So, there is an active collaboration, collective learning and shared practice.

3. Culture of Knowledge Transfer

In CoPs knowledge is flowing freely in a network of people with similar interest on a topic or domain. So, knowledge is transmitted and acquired by other members who need it. The findings indicated that majority of the participants believed that knowledge is embedded in all CoPs' activities and practices, in individuals and in the community itself. Through interaction, this knowledge is communicated, acquired, and transferred.

This acquisition or the transfer of knowledge is critical in some point in generating new ideas, creation, invention or developing new product. It is a culture which is basically founded on knowledge that is freely available in CoPs and has been translated into action or what we call "learning by doing". The findings concur with the studies conducted by Retna and Ng (2001) that CoPs facilitate knowledge sharing and transfer and have positive impact on organizational effectiveness in learning and KM. In relation to KM, transfer of knowledge is one of its processes.

4. Culture of Innovation

Innovation is a by-product of an emerging need or demand for new technology, products or services. Summarily, the findings of the study indicated that DL CoPs have facilitated the development of new DL services and in developing new applications and software prototypes. These indicate that CoPs are great source of information that one could use in developing or creating new products or services. So, knowledge has to be managed, organized and put into use for creative purposes. Without knowledge nothing could be made or created.

This culture of innovation is interdependent with knowledge sharing culture, collaborative culture and the culture of knowledge transfer. Innovation is about learning to learn – whatever you have learned from the community will be put into useful endeavour or creation. Furthermore, innovation is framed on the idea of creativity – generating ideas; sharing knowledge or information; acquiring knowledge; working with group of people and fostering collaboration. These findings are supported by previous studies for example Hildreth and Kimble (2004) that this network of relationships that develop in a CoP, the inner motivation that drives them and the knowledge they produce, lead to the creation of an environment that is rich in creativity and innovation.

Success and Hindering Factors in Creating a Culture of Learning

There are many factors that greatly influence a learning culture to thrive in CoPs. The results of the study revealed that there are three critical success factors in creating a learning culture in CoPs such as: (1) human behaviour-related, (2) organizational and (3) technological factors respectively. The human behaviour-related factors include: attitude towards knowledge sharing such as motivation, open-mindedness and willingness to share, trust and professionalism. In fact, knowledge sharing depends on CoPs' members' motivation and willingness to share their knowledge to others. Knowledge sharing is possible in an environment where people feel comfortable to express their ideas, share with an open mind, and trustful on what others are sharing or contributing.

In terms of organizational factors, these include shared vision/values, sense of belongingness and leadership. In this engagement they are guided by their shared vision or values that drives them to achieve something. The findings are supported by Wenger White and Smith (2009) that CoPs' members are driven by their mission and working to achieve it. More so, the participants also indicated that a leader plays an important role in shaping the culture of learning within CoPs. This is also supported by Wenger, et al. (2009) wherein in community cultivation orientation,

the notion of a leader is given value – such leadership shall facilitate conversation, convene meetings, organize activities, collect, edit, or produce resources, connect members, keep pulse on the health of the community, and encourage it along developmental path.

On the other hand, in terms of technology factor, the interviewees claimed that efficient technology to some degree makes cooperation easier. Several studies have found that technology is a significant factor that facilitates learning to takes place in CoPs. For instance, Wenger et al.'s (2009) illucidiated that digital tools are now part of most communities' habitats and Conner and Clawson (2002) also claimed that technology enhances CoPs communication process as well as learning.

The above discussion has outlined the critical success factors in creating a culture of learning in CoPs. In contrary, there are also factors which hinder its creation. These include: (1) attitude towards knowledge sharing, (2) culture-related challenges, (3) language limitation and (4) time.

The interviewees indicated that attitude towards knowledge sharing is a barrier if there is a sort of monopoly in information or knowledge sharing in CoPs and if the member's behaviour is passive. To address this challenge, Lesser and Fontiane (2004) suggested on how organizations can break through the barriers that impede effective knowledge sharing. They have noted that communities, through their ability to foster the development of connections, relationships and common context between knowledge seekers and sources, can help eliminate many of the common knowledge sharing barriers that plague even the most successful organizations.

Furthermore, there are also some challenges with regards to culture as the result of the study revealed. These cultural barriers or challenges are caused by cultural inferiorities, biases and differences. Though culture influences knowledge sharing and learning but somehow it is also a barrier. However, some interviewees suggested that open communication counts a lot – things needs to be understood and agreed by parties. On the other side, this behaviour is somewhat a by-product of the members' professional and cultural backgrounds. The study also revealed that language is a major barrier for learning culture to thrive in the community. In fact, knowledge is communicated using language as a tool for transmitting or delivering it to other learners.

Lastly, the finding of the study also revealed that time is a significant barrier. This is also related to the above discussion on some of the reasons why DL professionals are not joining or participating CoPs. The findings of the previous studies of Retna and Ng, (2011) and McDermott (2000) support the current study on the challenges and issues related to time.

Conclusion

Through the literature review, it emerged that there have not been studies that specifically discuss the development of learning culture in DL CoPs. The findings of the study indicate that there is a strong culture of learning among DL professionals which is characterized by the four distinct cultures of practices – knowledge sharing culture, culture of collaboration, knowledge transfer culture and the culture of innovation. However, there are also critical success factors in creating a culture of learning as follows: human behaviour, organizational and technological factors. In contrast, the hindering factors or barriers include: attitude towards knowledge sharing, culture-related barriers or challenges, language limitation, and time.

Furthermore, this culture of learning once cultivated will bring forth remarkable results to both personal/professional and at organizational level. It will also lead to increase in productivity and on developing innovative products and services in the DL field. The current research has shed light on the emergence of CoPs in the field of DL and may pave the way to a new understanding on how a learning culture is created. Hence, CoPs are becoming a new means of strengthening the organizations' strategic relevance and in enhancing individuals' professional and working life.

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