

## FORMING COMMUNITIES OF PRACTICE IN HIGHER EDUCATION: A THEORETICAL PERSPECTIVE

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### **Abstract:**

Communities of practice 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. The current problem is that there is no specific guidance to form communities of practice (CoP) in higher educational institutions to guide learners' practical and theoretical knowledge and learning experiences.

This comparative action research study will investigate, explore and describe ways of developing learning communities at institutions of higher education in South Africa and Europe, as well as determine the feasibility of doing so. In this research project entitled 'Women in research' the team of researchers who are predominantly women will focus on how learner learning can be stimulated through learning in communities of practice. Communities of practice recognise the diverse needs of the increasing numbers of learners entering university with different academic and cultural backgrounds and with varying social expectations and experiences.

This study consists of six phases: developing a theoretical framework for communities of practice; exploring preliminary learners' attitudes toward communities of practice; forming pilot communities of practice; evaluating pilot communities of practice groups; implementing action research to pilot communities of practice; and applying the communities of practice model to other groups.

The aim of this paper is to highlight phase one of the study, that of developing a theoretical framework for communities of practice. This paper also aims to derive criteria for judging the communities of practice in terms of the facilitation of innovative knowledge sharing in the higher educational environment.

This paper takes the form of a literature study to determine theoretical constructs and those that are most suitable to shape a framework to support communities of practice. A significant finding of this study is fifteen criteria for evaluating communities of practice.

*Keywords: communities of practice, communities of practice model, communities of practice theoretical constructs, higher education, action research, knowledge sharing, online learning, entrepreneurial initiative*

## 1. INTRODUCTION

The movement toward including communities of practice as a dominant component in various educational systems has gained momentum since the 1990s (e.g. Wenger, 1999; Wenger, Fox, 2000; McDermott & Snyder, 2002). Communities of practice have constantly posed challenges to higher education institutions (HEIs), in particular those engaged in open distance learning.

The concept of a community of practice (CoP) has found a number of practical applications in business, organisational design, government, education, professional associations, development projects, and civic life. These communities develop their practice through problem solving; requesting information; seeking experience, coordination and synergy; discussing developments; documenting project mapping knowledge; and identifying gaps (Wenger, 2006).

Although academics have experienced success in developing their instructional methodology in many fields, they lack a powerful connection to CoP opportunities for supervision that could contribute to improving the quality of teaching and learning (Bouchamma & Michaud, 2011, p. 404).

New learning outcomes such as the development of creativity and innovation have become major driving forces and educators are required to facilitate these new learning outcomes. The quality of higher education is important to its stakeholders (Cavan, 2007; Mishra, 2007; Bouchamma & Michaud, 2011). Presumably communities of practice would be a relevant vehicle to establish this quality. Thus, communities of practice are generally accepted as a crucial tool for addressing the above issues.

The current theoretical framework for communities of practice comprises a variety of models, strategies, principles and tools. However, explicit criteria and a widely acceptable theoretical framework have been missing. Fox (2000) discusses the possibility of integrating Community of Practice Theory (COPT) and Actor-Network Theory (ANT) but the underlying criteria for this integration have not been clarified.

A variety of perspectives and models on CoP exist (e.g. Wenger, McDermott & Snyder, 2002; Denscombe, 2008; Bouchamma & Michaud, 2011). Buckley and Giannakopoulos (2012) provide a model for higher education (HE) that highlights the active role of management in creating communities of practice in the academic environment. These authors point out that management's and academics' challenges, needs and prerequisites need to be built into the development of communities of practice. However, the criteria underpinning these models and perspectives are not explicit.

The main purpose of this article is to draw criteria for evaluating CoP through an analysis of learning theories, and theoretical and practical perspectives in different educational settings. Furthermore, the aim is to determine which aspects of CoP are most suitable for facilitating communities of practice and empowering learners through knowledge-sharing opportunities. Based on the discussion above, the paper aims to answer the following research question:

*Which criteria for CoP can be derived from existing learning theories, models and perspectives for facilitating the development of communities of practice in HE?*

The paper takes the form of a literature study to determine which learning theories, perspectives and models are relevant and which aspects are most suitable for facilitating communities of practice. In the course of the article we discuss several different learning theories, models and perspectives and their implications for the design and evaluation of CoP opportunities.

## 2. THEORETICAL FRAMEWORK FOR COMMUNITIES OF PRACTICE: LEARNING THEORIES, PERSPECTIVES AND MODELS

### 2.1 Defining communities of practice

Definitions or descriptions of what a learning community is are generally vague. "Communities of practice (CoP) are informal self-organizing groups of individuals interested in a particular practice. Members are not often conscious and they are involved in disputes, provide insight and advice in relation to a problem or tasks in the practice: A de facto community gradually emerges from their discussions and interests" (Wenger, 1998 cited by O'Hara, Alani & Shadbolt, 2002, pp. 1-2). CoPs may act as corporate memories, mechanisms for situated learning of practice, and foci for innovation.

CoPs are essential knowledge resources and they are difficult to identify in organisations (Wenger, 1999).

“Communities of practice are voluntary; what makes them successful over time is their ability to generate enough excitement, relevance and value to attract and engage members” (Wenger et al. 2002, p.1).

## 2.2 The main features of communities of practice

A community of practice is characterised by the existence of a joint enterprise, mutual engagement in social practices and as a consequence of such engagement the development of a shared repertoire of practices, understandings, routines, actions and artefacts (Wenger, 1998). *The domain, the community and the practice* are the three characteristics that are essential in creating a community of practice.

- a) *The domain*: A community of practice is not merely a club of friends or a network of connections between people. It has an identity defined by a shared domain of interest. Membership therefore implies a commitment to the domain, and therefore a shared competence that distinguishes members from other people (Wenger, 2006).
- b) *The community*: In pursuing their interest in their domain, members engage in joint activities and discussions, help each other, and share information. They build relationships that enable them to learn from each other.
- c) *The practice*: Members of a community of practice are practitioners. They develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems — in short a shared practice. This takes time and sustained interaction. A good conversation with a stranger on an airplane may provide you with all sorts of interesting insights, but it does not in itself make for a community of practice (Wenger 2006). Communities of practice are also known as learning networks, thematic groups or tech clubs (Wenger, 2006).

It is by developing these three elements in parallel that one cultivates such a community (Wenger, 2006).

### 2.2.1 The work on real-world projects within communities of practice

Rohde, Klamka, Jarke and Wulf (2007) proposed the work on real-world projects by integrating learner teams into the communities of practice. The learner teams are connected to each other and to their supervisors in academia and practice through a community system. The initiative provided learning opportunities to learners, companies (local start-ups) and academia. The researchers evaluated the work on real-world problems and the collaboration in teams together with partners from start-up companies as very positive, although design flaws, and cultural and professional diversities limited the success of the first instance in 2001 (Rohde, Klamka, Jarke & Wulf, 2007).

### 2.2.2 The formal and informal nature of CoP activities

CoP activities include both formal and less formal processes. Formal processes such as mentoring and coaching are designed to enable communities of practice activities (with teaching supervisors) that provide a concentrated focus in specific learning areas (Bouchamma & Michaud, 2011; Gola, 2008). Team-teaching and rotating of responsibilities are also used to cultivate CoP activities. The informal nature of CoP processes includes those activities that happen during the normal study life. CoP can empower learners in shaping and in tacit knowledge sharing. Thus, CoP endeavours to develop content knowledge, practical skills and attitudes (Wenger, McDermott & Snyder, 2002).

### 2.2.3 Prerequisites for successful guidelines on CoP

No clear guidelines about the duration and time of ideal CoP opportunities exist, but successful CoP takes place over a long period of time. It is, however, clear that CoP which takes place over time has a better effect than once-off CoP opportunities.

It is important for successful CoP groups that the guiding material be developed to address some general functionalities and it is imperative to leave room for the learner's own creative interpretation and adaptation.

It is possible to draw the following prerequisites for the success of any intended CoP:

- Participants should have the greatest need for collaborative activities within a CoP context.

- Participants must be aware of the importance of the proper environment to enable effective learning to take place, and to ensure the right time of study and smooth administration.
- Good CoP leaders are knowledgeable, credible and skilful at enabling learning and can communicate effectively with their CoP members.
- It is necessary to review the success of a CoP intervention to improve the quality of activities and learning for future CoP activities.(e.g. Wenger, McDermott & Snyder 2002; Denscombe 2008)

#### *2.2.4 Principles to guide CoPs' aliveness*

Organic growth, aliveness, character and energy are paramount for communities of practice (Wenger et al. 2002). These authors developed seven principles to guide natural, spontaneous and self-directed communities of practice: design for evolution, open a dialogue between inside and outside perspectives, invite different levels of participation, develop both public and private community spaces, focus on value, combine familiarity and excitement, and create a rhythm for the community.

Bouchamma and Michaud (2011, p.405) propose a guided approach by following these principles: socioconstructivism as the learning theory, reflective practice and metacognition to guide this reflection, and accompanying leadership in the form of a process that supports change (Eckert & McConnell-Ginet, 1992).

#### *2.2.5 CoP knowledge sharing and agile methods*

Highsmith (2002) states the importance of informal communication through agile group dynamics. "Communities of practice need to invite the interaction that makes them alive... relationship building is nurtured through informal communications and meetings" (Wenger et al. 2002).

Jakovljevic (2012) highlights some effective agile methods and strategies (e.g. adaptive innovation agile strategies, communication skills, entrepreneurial initiatives, show time, agile planning, discipline of dialogues, mapping, telling and predicting) that could be successfully applied in a CoP environment. CoPs are fruitful environments for learning in-depth conceptual and procedural knowledge (McCormick, 1997). These agile methods and strategies could be applied in a CoP environment as they support informal communications.

### **2.3 CoP group dynamics and knowledge sharing and transfer**

There are four different types of knowledge: factual, conceptual, procedural and metacognitive. Real-world problems may require procedural, factual, theoretical and metacognitive knowledge. Evans (2003, p.17) classifies knowledge as explicit (that exists typically in documents, databases and as part of processes) and tacit (embedded in people and their experiences).

There are different areas of learner knowledge (i.e. tacit knowledge, school knowledge, innovative construct knowledge). Over time successful CoP activities can influence learners' personal innovation construct.

Knowledge creation is a process of communication between explicit and tacit knowledge. The strength of learners' knowledge activities lies in the transfer and integration of tacit knowledge through activities within CoPs. Tacit knowledge can be shared and integrated through a network of social interactions, for example communities of practice.

The organisational context focuses on creating structures, systems and roles that are the opposite of communities of practice. However, good community design can invite participations to group discussions, watching experts duel over cutting-edge issues (Wenger et al. 2002). CoPs provide opportunities for knowledge sharing and the development of metacognitive skills and creativity. However, there is no systematic approach to the sharing of knowledge in a CoP environment.

Especially interesting is learning in professional contexts because it is predominantly informal and may represent a metacognitive process about teaching practice and teaching activities in the classroom (Gola, 2008). Through social networks within CoPs as professional contexts the individuals receive, evaluate, reflect and return knowledge.

## 2.4 Knowledge sharing for innovation within CoPs

How does one approach CoP planning and guide the cognitive, emotional and creative aspects of the learners within CoP groups? How does one support experiential inquiry and guided participatory learning within CoP groups?

The human inclination toward fragmented knowledge, caused by information-processing incapability, is an obstacle to innovative process and practice (Jakovljevic 2002). The innovative process is a set of steps and activities focusing on the transformation of an innovative ability into innovative performance (Drucker 1993). Mende (2006) pointed that an innovative practice in one discipline could be transferred to another discipline through homological transfer. This can be solved through cognitive and practical apprenticeship that indicates knowledge-sharing between experts and novice learners through observation of practice (Collins, Hawkins & Carver, 1991; Brown, Collins & Duguid, 1989; Bredo, 1994).

Thus, CoPs provide opportunities for innovation but these perspectives tell us little about how members of CoP change practice or innovate (Fox 2000, p.860), and about how members share and transfer knowledge.

Managing the creative process of learners is also critically important as a CoP leader or a academic supervisor should have a role to play in both sensing and signalling to where creative attention should be focused.

## 2.5 How to create an innovative climate within CoPs

Learners have to recognise the particular times of day that are especially conducive to focusing on creative work. The appropriate time, familiar objects, surroundings and other stimuli are associative triggers for innovative states of mind, but these differ among learners (Buckley & Jakovljevic, 2012). It is necessary to pay attention to key elements to unlock creative inspiration, such as discipline, routine for creative work, one's own efficiency/construction system and spontaneity (McGuinness, 2011; Allam, 2008).

A CoP is a secure environment in which the greatest threats to creativity (fear of criticism, ridicule and retrenchment) have been removed. In an innovative CoP environment, learners should develop a 'personal innovation plan' aimed at achieving a better understanding of their own creativity through self-awareness of future project challenges (Jakovljevic, 2012).

## 2.6 A CoP model from a management perspective at a higher education institution in South Africa

Buckley and Giannakopoulos, (2012) created a model and a theoretical framework to assist in the development and improvement of new and existing CoPs at an institution of higher education in South Africa. There are multiple inputs into the CoP system, management, academics, advisers and subject associations.

The authors applied a questionnaire consisting of the various categories: active CoP members, reasons for preventing a member from participating in a CoP and willingness to participate in a CoP. These were further grouped into three main themes, namely domain, community and practice (Buckley & Giannakopoulos, 2012). Domain has been linked to management with community and practice has been linked to academics. It can be argued that the domain can also be linked to academics. However, these researchers felt that management needs to play an active role in the development of CoPs if CoPs are to be successful.

Without the support and approval of management, nothing can be created. Management therefore needs to create awareness among the academic community, as well as educate, encourage and provide support (financial and technical). Academics develop, use, support, mentor and evaluate CoPs. Finally CoPs are integrated to form global societies of CoPs by academics. The management and academics face challenges that must be met in order to develop a full functional network of CoP. Thus, the management challenge is firstly to

- focus on topics important to the academic community
- find an experienced moderator to coordinate the academic community

- ensure that academics have time and are encouraged to participate
- build on the core values of the university

Secondly, the academic challenge needs to

- get thought academic leaders involved
- build personal relationships among academic community members
- develop an active and passionate core group
- create forums for thinking together and sharing information (Buckley & Giannakopoulos, 2012).

Thirdly, the technological challenge is to make it easy to contribute to and access the academic community's knowledge and practices and to create real dialogue about cutting-edge issues. To achieve this, the management at the higher education institutions (HEIs) in South Africa could start off by encouraging and investing in an Academics' Community of Practice Network (ACPN) by meeting a variety of dimensions and requirements. The original notion is that CoP should be managed by the HEIs who would ensure that the planning, presentation and material are of a high quality (Buckley & Giannakopoulos, 2012).

There are other models for communities of practice. For example, Hanna and Robinson (1994) identify three basic models of community empowerment: traditional social change, direct action social change and transformative social change.

## **2.7 Learning theories relevant to communities of practice**

The origin and primary use of the concept of a community of practice has been in learning theories. There are several learning theories applicable to CoPs' educational settings. Each theory is discussed briefly in the following sections. The paper argues that CoP theories, particularly social learning theories, work in synergy and could supplement one another. Perspectives on CoP together with learning theories' constructs have a substantial impact on our understanding of communities of practice in higher education.

### *2.7.1 Behaviourist theory*

Learners' behaviour stems from their adaptation to external events in the physical world. Behaviourist theory focuses on stimulus-response events and on the significance of contiguity, repetition and reinforcement leading to conditioning. It calls for detailed systematic methods and sequencing of instruction aimed at the shaping of behaviour (Curzon, 1993).

The sequencing of instruction and behaviour within communities of practice is shaped by peer pressure. It is also shaped by existing events and routine activities that are necessary for communities of practice as Wenger, McDermott and Snyder (2002) indicate.

### *2.7.2 Critical theory*

Critical theory is a useful vehicle for illuminating the ways that we can use emotions both to recreate and to change social structures in any educational setting (Clair & Sandlin, 2004, p.76—77). Exploring the factors of emotion and power as social phenomena in society are significant topics for critical theorists and the object of study in a critical classroom.

The application of critical pedagogy in a classroom elicits a host of emotions for both learners and educators. Recognising the ways emotions are used to reproduce and change social structures is fundamental to critical theory (Clair & Sandlin, 2004, p.77). Thus, the application of critical theory to a learning experience is about engaging in emotional reflection, finding the joy of learning and creating the satisfaction of freedom (Clair & Sandlin, 2004).

A primary goal of critical theorists is to empower the oppressed to transform the inequalities and injustices inherent in current social systems and structures (Geuss, 1981; Dahms, 2008). As communities of practice are unintentional social structures, emotions and power also play an important role through emotional reflections, excitement and relationships that could make powerful the oppressed in current social systems and structures.

### 2.7.3 Activity theory

There are three main components of the activity system: artefacts, rules and division of effort. Within this system there is a subject who performs an activity with the support of community and produces an object which leads to an outcome (Colston, 2007).

There is constant construction and renegotiation within the activity system. There is also incessant movement between the nodes of the activity. What initially appears as an object may soon be transformed into an outcome, and then turned into an instrument, and perhaps later into a rule (Engeström, 1996 cited by Colston, 2007). Collective activity is connected to object and motive, of which the individual subjects are often not consciously aware. Individual action is connected to a more or less conscious goal. Below the collective activity and individual action, there is the level of automatic operations.

Activity theory differentiates between internal and external activities (Bannon, 2007; Nardi, 1996; Klimov, 1969). An activity system interacts with a network of other activity systems. For example, it receives rules and instruments from certain activity systems (e.g. management), and produces outcomes for certain other activity systems (e.g. academics). The activity system is constantly working through contradictions within and between its elements. In this sense, an activity system is a virtual disturbance-and innovation-producing machine (Engeström, 1996; Colston, 2007; Bedny & Karwowski, 2001).

Leont'ev (1977, 1978) pointed out three different levels of learning actions throughout the completion of a learning task such as skill-based action, rule-based action and knowledge-based action. However, at the knowledge-based level there is a need for feedback control. With a feedback practice learners could recognise their mistakes and this improves their performance for future tasks. The author explained the crucial difference between an individual action and a collective activity.

### 2.7.4 Personality theory

Personality psychology emphasises the description of individual features of personality and its structure in terms of discrete cognitive-affective units that include goal-oriented feed-forward and feedback components (Bedny & Seglin, 1999). These are differentiated into the following four levels:

- social orientation, i.e. assumptions, ideas, tendencies, values and interests
- individual performance, i.e. habits, knowledge and skills
- specific psychic processes governing volition, affect, perceptions and cognition
- neurobiological features, i.e. temperament and neuropsychological and psychiatric predispositions (Bedny & Seglin, 1999)

Individual style of performance is a critically important notion that links an individual to his or her performance (Bedny & Seglin, 1999). The "individual style of activity" is one of the more dominant ways of adjusting to and adapting to the environment. This is especially pertinent in work and educational settings (Bedny & Seglin, 1999). Developing activity strategies permits a particular person to efficiently perform job duties and tasks (Bedny & Seglin, 1999). Thus, individual personalities are formed through activity and social transactions. Instruction based on an individualised approach is considered the most powerful way to guide individuals in their interactions with the environment (Bedny & Seglin, 1999).

### 2.7.5 Social learning theory

The social learning theory of Bandura (1977) emphasises the importance of observing and modelling the behaviours, attitudes and emotional reactions of others. The component processes underlying observational learning are as follows:

- attention, including modelled events (distinctiveness, affective valence, complexity, prevalence, functional value) and observer characteristics (sensory capacities, arousal level, perceptual set, past reinforcement)
- retention, including symbolic coding, cognitive organisation, symbolic rehearsal and motor rehearsal
- motor reproduction, including physical capabilities, self-observation of reproduction, and accuracy of feedback
- motivation, including external, vicarious and self-reinforcement motivation

Because it encompasses attention, memory and motivation, social learning theory spans both cognitive and behavioural frameworks (Bandura, 1997).

### 2.7.6 *Situated learning*

Lave and Wenger (1991) argue that learning as it usually occurs is a function of the activity, context and culture in which it takes place. This contrasts with most classroom learning activities which involve knowledge which is abstract and out of context. Social interaction is a critical component of situated learning — learners become involved in a community of practice which embodies certain beliefs and behaviours to be acquired. Furthermore, situated learning is usually unintentional rather than deliberate. Lave and Wenger's (1991) situated learning theory emphasises knowledge and skills sharing within communities of practice.

Other researchers have further developed the theory of situated learning (e.g. Watson, 1998, 2003; Walkerdine, 1997; Rogoff, B. (1984, 1990). Brown, Collins and Duguid (1989) emphasise the idea of practical and cognitive apprenticeship: "Cognitive apprenticeship supports learning in a domain by enabling learners to acquire, develop and use cognitive tools in authentic domain activity. Learning, both outside and inside school, advances through collaborative social interaction and the social construction of knowledge."

### 2.7.7 *Constructivist theory*

A major theme in the theoretical framework of Bruner (1966) is that learning is an active process in which learners construct new ideas or concepts based upon their current/past knowledge.

As far as instruction is concerned, the instructor should try to encourage learners to discover principles by themselves. The instructor and learner should engage in an active dialogue (i.e. Socratic learning). Bruner (1966) states that a theory of instruction should address the following four main aspects:

- predisposition toward learning
- the ways in which a body of knowledge can be structured so that it can be most readily grasped by the learner
- the most effective sequences in which to present material
- the nature and pacing of rewards and punishments

In his more recent work, Bruner (1966, 1971) has expanded his theoretical framework to encompass the social and cultural aspects of learning. Bruner's constructivist theory is a general framework for instruction based upon the study of cognition. The social constructionist perspectives in particular are prominent (Palincsar, 1998; Kafai & Resnick, 1996; Crotty, 1998).

### 2.7.8 *The theory of community of practices (COPT)*

The theory of community of practices is an important contribution to the development of socio-cultural perspectives on learning (Lave, 1996; Lave & Wenger, 1991; Wenger, 1998; Linehan & McCarthy, 2000, 2001; Hodges, 1998; Fox, 2000). The theory views learning as occurring through, and indeed being, participation in social practice within communities of practice. A learning community can be considered to be a particular form of ecology of practice that places learning at the centre of its practices. When learning is the enterprise of the community, the social practices of the community can be expected to be developed through consensual negotiation (Boylan 2004).

Community of practice theory is modelled on apprenticeship learning situations. Community of practice theory was developed by considering a wide range of apprenticeship learning situations, from traditional tailors through to participation in communities. Firstly, it shifts the focus from teaching to learning and the practice the learner engages in (Adler, 1998). Secondly, it characterises the role of the academic as not primarily being a holder of knowledge but an expert in the practices of the community.

It is important to explore the nature of enterprise, engagement and shared repertoire, and more crucially participation in learning communities in which learning is placed at the heart of its enterprise (Wenger 1998 cited by Boylan 2004). It might appear that this is true for any group of learners (Boylan, 2004). The learning practices themselves are subject to negotiation and change. There are different qualities of participation, which Boylan (2004) terms "engaged participation", as qualities of presence and care. The academic's primary role is not as expert in the particular subject but as a model of a co-reflective learner.

### 3. DISCUSSION

In an attempt to answer the research question, an analysis of the theoretical framework for CoP was undertaken. The analysis yielded crucial criteria that underpin the CoP of learners in different educational contexts.

CoP for learners should aim to develop learners' knowledge with regard to generic knowledge, subject knowledge and practical skills, attitudes and values. The development of these different kinds of knowledge should ultimately develop and enhance the learner's innovation construct knowledge. This is accomplished through a combination of activities within communities of practice. Table 1 summarises the criteria that underpin CoP:

**Table 1:** Criteria for CoP

No.	Criteria for CoP
C1	<i>CoP should support agile methods and strategies.</i>
C2	<i>CoP should develop a learner's practical skills, attitudes and values through experiential and guided participatory learning.</i>
C3	<i>CoP should develop a learner's reflective experiences.</i>
C4	<i>CoP should shape a learner's behaviour through sequencing of instruction.</i>
C5	<i>CoP should engage a learner in emotional reflection.</i>
C6	<i>CoP should empower consciousness and meaning through joint, collective activity and feedback control.</i>
C7	<i>CoP should utilise the dynamics of the activity system: artefacts, rules and division of effort.</i>
C8	<i>CoP should emphasise an activity which leads to an innovative outcome.</i>
C9	<i>CoP should pay attention to the 'individual style of activity'.</i>
C10	<i>CoP should acknowledge individual features of personality.</i>
C11	<i>CoP should support joint enterprise between management, academics and technology.</i>
C12	<i>CoP should engage attention, memory, motivation and retention.</i>
C13	<i>CoP should encourage multidisciplinary tacit knowledge-sharing between learners, supervisors in academia and entrepreneurs.</i>
C14	<i>CoP should acknowledge that learning is a function of the activity, context and culture.</i>
C15	<i>CoP should support learning through cognitive and practical apprenticeship.</i>

The criteria can serve as part of the predetermined framework for a Community of Practice Model (CoPM). The evaluation of a CoPM against the identified criteria might inform its relevance for practice and will most probably contribute to its refinement as well. The authors believe that research findings from the next phase of the WiR project "exploring preliminary learners' attitudes towards communities of practice" will complement the theoretical perspective on the criteria for CoP.

Within communities of practice the three forms of knowledge – research, development and practice – work in synergy and thereby support a knowledge infrastructure. The use of all three forms of knowledge furthers the quality of communities of practice as a possible solution to a question raised by Fox (2000, p.860). "COPT tell us little about how, in concrete practice, members of a COP change practice or innovate."

Within communities of practice learners are eager for new challenges and relationships that are self-initiated and supported by practicing peers in order to work collegially and collaboratively through knowledge sharing. Thus, to equip learners with the necessary knowledge, skills, attitudes and values, they need effective CoP groups that should focus on tacit knowledge sharing; innovation constructs knowledge and co-operative learning facilitation

Researchers of this study are of the opinion that a well-planned CoP programme is the key to successful implementation of communities of practice. For this purpose, it is necessary to investigate and connect the practical, theoretical and reflective experiences of learners. It is also necessary to trace learners' willingness to share knowledge, their learning abilities and strategies and their cultural and social backgrounds.

CoP encourages an individual activity system toward a goal and an action toward a specific goal and operation. Individual members learn by participating in a shared activity. The CoP activity system is complex and it must be monitored internally or externally in order for CoP to fulfil its function. The activity is socially mediated: consciousness and meaning are always formed in joint, collective activity (Leont'ev, 1978; Hacker, 1994) through knowledge sharing within communities of practice.

#### 4. CONCLUSION

This paper comprised a literature study to determine which CoP theoretical perspectives and models exist and to use these theoretical perspectives and models to compile criteria for developing CoP applicable to HE contexts.

The authors discussed several theoretical and practical perspectives for depicting the CoP process through which knowledge-sharing and innovative opportunities for learners exist in the HE arena. A significant finding of this research is fifteen criteria for developing CoP that serve as a guideline for tacit and innovative knowledge sharing within and between communities of practice.

This study is only the beginning stage and therefore the second stage will give us further insight into learners' thoughts and feelings about CoP. Using the information that will be gathered from learners will assist in creating a network of innovative CoP groups in African and European HE context. The researchers of this study encourage research on Cop aliveness and concrete Cop practices.

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