

Council of Higher Education 17 February 2015

Forming Communities of Practice in Higher Education: A Theoretical Perspective

Professor Maria Jakovlevich
School of Computing, UNISA



Women in Research (WiR) Project

Communities of Practice (CoP) study is a part of the research project entitled 'Women in Research' (WiR) initiated at School of Computing, CSET, UNISA.

This comparative action research study explores and describes ways of developing communities of practice (CoP) at institutions of higher education in South Africa and an university in Europe.



Forming Communities of Practice in Higher Education: Phases

This longitudinal action research study consists of **six phases**:

Phase 1: Develop a theoretical framework for CoP

Phase 2: Explore preliminary learners' attitudes toward CoP

Phase 3: Form pilot communities of practice applying a preliminary
Communities of Practice Model (CoPM)

Phase 4: Evaluate the worth, value, use and appreciation of CoPs

Phase 5: Using action research refine and implement the full version of
of

the CoPM.

Phase 6: Apply the model of communities of practice to other
groups.



Introduction

Defining Communities of Practice (CoP):

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. A community of practice consist of:

- *The domain* (a shared competence; a shared domain of interests)
- *The community* (members build relationships)
- *The practice* (a shared practice that takes time and sustained interactions).



Introduction

Defining CoP (cont.):

- **“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” (Wenger, 2006).**
- **“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).**
- **CoPs have found a number of practical applications in business, organizational design, government, education, professional associations, development projects, and civic life. CoPs develop their practice through problem solving, requesting information, seeking experience, coordination and synergy, discussing developments, documenting project mapping knowledge and identifying gaps.**



The problem

Some identified problems:

- Academics lack a powerful connection to CoP opportunities that could contribute to improving the quality of teaching and learning (Bouchamma & Michaud, 2011).
- The current theoretical framework for communities of practice comprises a variety of models, strategies, principles and tools. However, explicit criteria have been missing. The criteria underpinning these models and perspectives must be derived.



The purpose and aims

The purpose and the aims are as follows:

- Highlight phase one of the study, that of developing a theoretical framework for communities of practice.
- This paper aims to derive criteria for judging the communities of practice in terms of the facilitation of innovative knowledge sharing in the higher educational environment.
- Furthermore, the aim is to determine which aspects are most suitable for facilitating communities of practice and empowering learners through knowledge-sharing opportunities.



Research question

The following research question has been formulated:

- *RQ1: Which criteria for Communities of Practice can be derived from existing learning theories, models and perspectives in order to facilitate the development of communities of practice in Higher Education?*



Theoretical foundation

Theoretical framework for CoP :

- The Knowledge sharing for innovation within CoPs
- *Real-world projects within communities of practice*
- *The formal and informal nature of CoP activities*
- *Prerequisites for the success of any intended CoP*
- *Principles to guide CoPs' aliveness*
- CoP knowledge sharing and agile methods and strategies
- CoP group dynamics and knowledge creation
- Knowledge sharing for innovation within CoP
- How to create an innovative climate through CoP?
- A CoP model from a management perspective
- Learning theories relevant to communities of practice.



Theoretical foundation

Knowledge sharing for innovation within CoPs

- The human inclination toward fragmented knowledge is an obstacle to innovative process and practice.
- There is a need to fulfill an innovation process from an idea generation to an innovative performance? An innovative practice in one discipline could be transferred to another discipline through homological transfer (Mende, 2006).
- A solution could be cognitive and practical apprenticeship within CoPs that indicates innovative knowledge-sharing between experts and novice learners through observation of practice.



Theoretical foundation

Real-world projects within communities of practice

- CoP include the work on real-world projects by integrating learner teams. The learner teams are connected to each other and to their supervisors in academia and practice through a community system.

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 a concentrated focus in specific learning areas. CoPs can empower learners in shaping and in tacit knowledge sharing due to its informal nature.

- ***Prerequisites for the success of any intended CoP***





Theoretical foundation

Prerequisites for the success of any intended CoP

- Learners should have the great need for collaborative activities.
- Learners 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 should be knowledgeable, credible and skilful at enabling learning and they should be able to communicate effectively.



Theoretical foundation

Principles to guide CoPs' aliveness

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



Theoretical foundation

CoP knowledge sharing and agile methods and strategies

- Highsmith (2002) states the importance of informal communication through agile group dynamics. “Communities of practice invite the interaction that makes them alive... relationship building is nurtured through informal communications and meetings” (Wenger et al. 2002).
- Agile methods and strategies (e.g. adaptive innovation, communication skills, entrepreneurial initiatives, show time, agile planning, discipline of dialogues, mapping, telling and predicting) could be successfully applied in a CoP environment. These agile methods and strategies support informal communications.



Theoretical foundation

CoP group dynamics and knowledge creation

- There are four different types of knowledge: factual, conceptual, procedural and metacognitive. Knowledge can be explicit (that exists typically in documents, databases and as part of processes) and tacit (embedded in people and their experiences).
- 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 a network of social interactions activities within CoPs.
- The organisational context focuses on creating structures, systems and roles that are the opposite of communities of



Theoretical foundation

Knowledge sharing for innovation within CoPs

- The human inclination toward fragmented knowledge is an obstacle to innovative process and practice.
- A need exist to fulfill innovation process from an idea generation into innovative performance? Mende (2006) pointed that an innovative practice in one discipline could be transferred to another discipline through homological transfer.
- Cognitive and practical apprenticeship within CoPs that indicates knowledge-sharing between experts and novice learners through observation of practice could be a solution.



Theoretical foundation

How to create an innovative climate through CoPs?

- Learners have to recognise the particular times of day that are especially conducive to focusing on a creative work. The appropriate time, familiar objects, surroundings and other stimuli are associative triggers for innovative states of mind.
- 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.
- In an innovative CoP environment, learners develop a 'personal innovation plan' (PIP) aimed at achieving a better understanding of their own creativity through self-awareness of future project challenges.



Theoretical foundation

A CoP model from a management perspective

The management and academics face the following challenges:

- finding an experienced moderator to coordinate the academic community
- ensuring that academics have time and are encouraged to participate
- building on the core values of the university
- getting thought academic leaders involved
- building personal relationships among academic community members
- developing an active and passionate core group
- creating forums for thinking together and sharing information.



Theoretical foundation

Learning theories relevant to communities of practice:

- behaviourist theory
- critical theory
- activity theory
- personality theory
- social learning theory
- situated learning
- constructivist theory
- Communities of Practice Theory (COPT).



Theoretical foundation

Behaviorist theory

- Behaviorist theory focuses on stimulus-response events and on the significance of repetition and reinforcement. It calls for detailed systematic methods and sequencing of instruction
- The sequencing of instruction and behaviour within communities of practice is shaped by peer pressure, existing events and routine activities.

Critical theory

- Recognizing the ways emotions are used to change social structures is fundamental to critical theory. 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. As CoPs are unintentional social structures, emotions and power play an important role through emotional reflections, excitement and relationships.



Theoretical foundation

Activity theory

- There are three main components of the activity system: artefacts, rules and a division of effort. Within the activity system there is a subject who performs an activity with the support of community and produces an object which leads to an outcome. An activity system is a virtual disturbance and innovation-producing machine.
- There are different levels of learning actions such as skill-based action, rule-based action and knowledge-based action (Leont'ev, 1977). At the knowledge-based level there is a need for a feedback control. With a feedback practice learners could recognise their mistakes and this improves their performance for future tasks.

Personality theory

- Personality theory emphasizes the individual features of personality and its structure in terms of discrete cognitive-affective units. Individual personalities are formed through activities and social transactions. Instruction based on an individualized approach is considered the most powerful way to guide individuals in their interactions with the environment. An individual style of performance is a critically



Theoretical foundation

Social learning theory

- The social learning theory emphasizes the importance of observing and modelling the behaviors, attitudes and emotional reactions of others. The processes underlying observational learning are as follows:
 - attention, retention, motor reproduction, self-observation of reproduction, motivation, including external and self-reinforcement motivation (Bandura,1977).

Situated learning

- Learning is a function of the activity, context and culture. 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. Situated learning is usually unintentional rather than deliberate. Situated learning theory emphasizes knowledge and skills sharing within communities of practice (Lave & Wenger,1991).



Theoretical foundation

Constructivist theory

- Learning is an active process in which learners construct new ideas or concepts based upon their current/past knowledge. The instructor and learner should engage in an active dialogue (i.e. Socratic learning). Constructivist theory of instruction should encompass the social and cultural aspects of learning.

Communities of Practice Theory (COPT)

- The COPT theory views learning as occurring through participations in social practice within communities of practice. When learning is the enterprise of the community, the social practices of the community can be expected to be developed through negotiations (Boylan, 2004). Community of practice theory is modelled and based on apprenticeship learning situations.

Criteria for CoP

No	Criteria for CoP
C1	CoP should support agile methods and strategies.
C2	CoP should develop a learner's practical skills, attitudes and values through experiential and guided participatory learning.
C3	CoP should develop a learner's reflective experiences.
C4	CoP should shape a learner's behaviour through sequencing of instruction.
C5	CoP should engage a learner in emotional reflections.
C6	CoP should empower consciousness and meaning through joint, collective activity and a feedback control.
C7	CoP should utilise the dynamics of the activity system: artefacts, rules and division of effort.

Criteria for CoP

No.	Criteria for CoP
C8	CoP should emphasise an activity which leads to an innovative outcome.
C9	CoP should pay attention to the 'individual style of activity'.
C10	CoP should acknowledge individual features of personality.
C11	CoP should support joint enterprise between management, academics and technology.
C12	CoP should engage attention, memory, motivation and retention.
C13	CoP should encourage multidisciplinary tacit knowledge-sharing between learners, supervisors in academia and entrepreneurs.
C14	CoP should acknowledge that learning is a function of the activity, context and culture.
C15	CoP should support learning through cognitive and practical apprenticeship.



Conclusions

- **Significant findings of this research are fifteen criteria that could serve as a guideline for tacit and innovative knowledge sharing within communities of practice.**
- **The criteria and the theoretical framework were used for the development of a Community of Practice Model (CoPM). The implementation and evaluation of the CoPM might inform its relevance for practice and will most probably contribute to the refinement of criteria.**
- **Within communities of practice the three forms of knowledge – research, development and practice – work in a synergy and thereby can support learners' knowledge infrastructures. A CoP is a secure environment in which the greatest threats to creativity (fear of criticism, ridicule and retrenchment) have been removed.**
- **The management at the higher education institutions in South Africa could**



The way forward: the integrated CoP Model



*South
African
experience*

*European
experience*

*Innovative
components*

*Integrated
CoP Model*



Questions

Thank you

jakovm1@unisa.ac.za





Forming Communities of Practice in Higher Education: A theoretical perspective

- **Maria Jakovlevich**
UNISA, jakovm1@unisa.ac.za
- **Sheryl Buckley**
UNISA, bucklsb@unisa.ac.za
- **Melanie Bushney**
UNISA, mbushney@unisa.ac.za