

Chapter 4.1

Communities of practice and creativity

Abstract:

In the current chapter the role of creative and innovative processes in communities of practice (Wenger, 1998) are discussed. Communities of practice require trust among their members, the use of a shared repertoire of meanings and finally a common goal. Creative processes and knowledge sharing are social phenomena among members of each community: new ideas or artifacts arise from the synergy of many sources and not only from the mind of a single person. The communities of practice are the ideal environment for the development of original and valuable ideas. The application of technologies could be a useful support for promoting the interaction and for facilitating what is called “tacit knowledge”, knowledge that is easily made in common through the narration of practices and experiences. Moreover, it is important to consider the conditions because very often creativity emerges spontaneously if the members of the community perceive that their proposals are listened to. The perception of a friendly and supportive environment where they can freely talk about their feelings and life stories, thus stimulating motivation and the pleasure to share are core aspects and conditions. Linking the subjects of community of practices and creativity could be considered valuable also for a wide context inducing outcomes that are generalizable.

Keywords:

communities of practice, virtual creativity, online innovation, knowledge management, knowledge creation

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1 Introduction

The communities of practice theory offered new inputs to education valuing the role of knowledge sharing and collaboration. Communities of practice are perfect settings for the development of innovative and helpful ideas. Knowledge sharing and collaborative creativity are social processes among members of the community of practice, where new ideas or artifacts are carried out from the interaction of many sources and the collaboration of participants.

The application of technologies could be a useful support for promoting the communication and for facilitating the exchange of “tacit knowledge”. Tacit knowledge is knowledge shared informally through stories of experiences, tools, ways of solving problems and essentially common practices. However, the simple availability of technology is not a sufficient condition for obtaining satisfactory results: very often creativity emerges spontaneously if the members of the community perceive that their proposals are welcomed and appreciated. In addition, emotional features are important: the perception of a friendly and supportive environment where participants can express their-self communicating their feelings, are fundamental characteristics.

The objective of the current chapter is to improve the understanding of the links between communities of practice and creativity by scrutinizing their main characteristics and features. Communities of practice require trust among their members, the use of a shared repertoire of meanings and finally a joint objective. We also sought to define applied indications for creativity development to improve work inside the communities of practice. The theoretical framework for this chapter refers to the theory of community of practice, online technologies and community of practice, the process of sharing experiences and the role of tacit knowledge in a community of practice. Communities of practice are discussed considering elements such as collaborative learning and knowledge management processes. In addition, issues of technologies and creativity and the role of the individual and the group in the community of practice and creativity are discussed. Finally, learning exercises are proposed.

2 Community of practice

The community of practice construct was developed over time around a conception of learning as a social, active and situated practice (Lave, & Wenger, 1991; Wenger, 1998). The community of practice is based on the term “practice” which involves sharing experiences developed “on the field”. The practice could be elaborated in several areas and with different activities and they affect the cognitive systems. Therefore, practices and

cognitive systems are not easily separable and are reproducible abstractly. Practices and cognitive systems have always been interpreted specifically in the context in which they operate. Communities of practices (CoPs) are also communities of learning because several learning processes are activated in an informal dimension. The most important characteristics of the communities of practice are summarized in the following three elements:

1. a *mutual commitment*, based on trust to share and discuss their experiences with other members of the community;
2. the recognition and use of a *shared repertoire* of languages, meanings, artifacts, stories, methods and tools, and finally;
3. *participation in a joint venture* that activates community resources, whether they are experts or beginners.

However, Wenger's definition of community is not idealized. Mutual commitment and trust have to be earned from time to time with efforts and engagement with practical activities in the field and connotations of peaceful coexistence and mutual support are not taken for granted, even if they can definitely exist in certain cases (Wenger, 1998).

From these founding elements, other characteristics highlight the complex network of relationships and identities between the experienced and less experienced members of the community. The internal processes that lead to "legitimate peripheral participation" are processes through which novices - with the time and with the help of all members - are able to learn knowledge and skills. The learning process involves the management of the transition of the novices from a "peripheral" status to a more important and "central" one, in which they become experts themselves. A strong emphasis on sharing "practices" and "reification" of concrete artefacts, located and strongly anchored to various professional contexts was considered.

3 Online technologies and community of practice

New technologies and the Internet have enlarged the potentials for social interactions extending the interactions between the members of a group or community committed to create a shared knowledge. Social networks and the flourishing of online communities of practices expanded what we could call interactive learning through community and technology growing the opportunities of sharing ideas, skills and projects (Kenny, 2013). With the support of media technologies, the emphasis is moved to the collective rather than the singular dimension and group work is one of the crucial abilities for working and developing entrepreneurship projects. Virtual communities of practice could take advantage from members from all over the world having diversity for back-

ground and cultural, social practices. Affiliates provide and obtain suggestions and help from the other members of the community of practice they participate inducing an enlargement of skills and competencies.

However, it could be argued that the use of online technologies is not an equally effective method to substitute face-to-face interactions because, for the development of the community of practice, it is important to adequately support the sharing of tacit knowledge. Tacit knowledge is knowledge that is difficult to achieve through verbal medium or only by words as it involves skills and competencies.

The degree of cohesion of a community is based to the common moments of physical presence. However, virtual communities can equally exist also if they develop online interactions. The distinction between communities of practice and networks of practice has therefore been proposed (Lai et al., 2006). Unlike those of practice, the practice networks represent a set of people who are not strictly connected where there are hardly, or never, opportunities to meet in person and are kept cohesive especially by relational flows mediated by the technologies used. The development of any community could be eased on two different connotations: it could be born as a group of co-localized people, then supported by online relationships or maintaining only virtual contacts with members that are geographically spread out.

However, online CoPs are more difficult to create and maintain than face-to-face CoPs because regular intervals and face-to-face meetings that strengthen emotional ties and trust are needed. Furthermore, online CoPs differ in other important factors, such as membership processes. For example, online CoPs are generally open, while those with strong connotations of co-localization are much less permeable and more time for their growing and developing is needed. It takes much longer for an online CoP to born and to stabilize compared to a face-to-face one. As evidence of the importance attributed by the literature on the subject, survey tools have also been developed and applied to the online CoP, including for example the Sense of Community Index (SCI, Abedin et al. 2010). SCI measures individual's sense of cohesion and awareness of others and was developed for supporting a better understanding of sense of community in computer supported collaborative learning environments. An additional tool developed for assessing the group processes is the group metacognition scale (GMS) that measure group metacognition in online collaborative learning (Biasutti & Frate, 2018). Online platforms involve collaborative learning activities and communication between participants and reflecting on the perceived images of the other member of the group is a relevant process.

4 Sharing experiences in a community of practice: the role of tacit knowledge

The members of a community are practitioners that develop a shared set of resources: stories of experiences, tools, ways of solving problems and essentially common practices. For this reason, the simple sharing of information or raw data are not practices and shared knowledge. The literature on the subject makes a distinction at the epistemological level between two types of knowledge: the tacit and the explicit (Polanyi, 2009). While explicit knowledge is easily transmitted, for example through texts, diagrams, formulas; conversely, tacit knowledge is much more difficult to communicate and share and often has to be shown concretely in the field. The bicycle is the example quoted by Polanyi: we are perfectly able of riding a bicycle with our body, but we are unable to communicate the “rules” explicitly and clearly to another person who has to learn to ride.

A huge set of skills and competences typical of every human activity are difficult to formalize in a clear and complete way. The bike example immediately gives you the idea of the specific field of “embodied” knowledge. Both types of tacit and explicit knowledge are useful for problems solving and have to be considered not separately but in a continuum of complementary interaction between them (Nonaka, & Von Krogh, 2009). Tacit knowledge, as it moves along the continuum to become more explicit and therefore more easily communicable, is enriched with new terminologies, and can become the support for action and reflection and systematization in articulated and formalized structures. This process of “conversion” (Nonaka & Takeuchi, 1995) is essentially a social and situated activity: we always acquire and exchange tacit and explicit knowledge especially when we are engaged in targeted and intentional social practices (Wenger, 1998). It is interesting to note that some of the preferred ways to communicate tacit knowledge are storytelling, written tale, oral tale, drawing or videotaped story, of personal experiences that involve both the cognitive and the emotional spheres (Orr, 2016; Prusak et al., 2012; Petrucco, 2014).

5 Community of practice and creativity: the role of the individual and the group

Learning and creative processes within a community of practice are a social phenomenon and occur when:

- concrete activities are conducted;
- all members participate;

- the meaning of the activities and the results obtained are shared among all members.

Communities of practice principles (Wenger et al., 2002)	Related creative procedures
1. Design for evolution	Initiative: imagining possibilities, novel situations
2. Open a dialogue between inside and outside perspectives	Knowledge creation: sharing and developing ideas
3. Invite different levels of participation	Knowledge creation: interactions and dialogue
4. Develop both public and private community space	Knowledge creation and creative outcome
5. Focus on value	Creative outcome: quality
6. Combine familiarity and excitement	Knowledge creation: expanding and exploring knowledge
7. Create a rhythm for the community	Creative process: initiative, knowledge creation and creative outcome

Figure 1. The creative processes in a CoP. Taken from Swirski, Wood & Solomonides (2008).

Very often creativity emerges spontaneously if the members of the Community perceive that their proposals are listened to and they can freely talk about of their feelings and life stories, not only about their problem solving skills, thus stimulating motivation and the pleasure to share. Amabile (1996) argues that creativity is understood as the production of original and useful ideas as well as creative thinking and expertise, which necessarily implies the motivation to create and share. The procedures through which the communities of practice implement creative processes are multiple. Figure 1 reports some of the most important aspects related to creative procedures.

Several activities could be relevant for developing creative processes in a CoP. For example, the design for evolution could be activated by involving procedures such as imagining possibilities and defining innovative situations and applications in specific areas. While defining the situation one issue could be to connect and establish a dialog between inside and outside perspectives activating knowledge creation through sharing and developing new ideas. Participation could be involved at the different levels of knowledge of creation such as developing interactions and dialogues, which could be composed of both public and private dimensions. There could be a focus on the value and the quality of the outcomes and internal feedback and assessment could be relevant processes.

Creativity has to represent something new, but “innovativeness” is not enough: being creative is a social fact and it means creating something perceived as “appropriate” and useful by the whole community. This therefore happens when it is the result of joint efforts: as Csikszentmihályi (2009) argues: “An idea or product that deserves the label ‘creative’ arises from the synergy of many sources and not only from the mind of a single person”. The CoPs are the ideal environment for the development of new and useful ideas. Conversely, the organizations are less flexible than the communities are and tend to suppress creative processes, blocking them within rigid hierarchies and formal structures. Figure 2 shows creativity as a product of the dynamic interaction among three dimensions: the individual, the domain, and the field (Csikszentmihalyi, 1999): the CoP is the place (i.e. field) where ideas can be understood, discussed and realized.

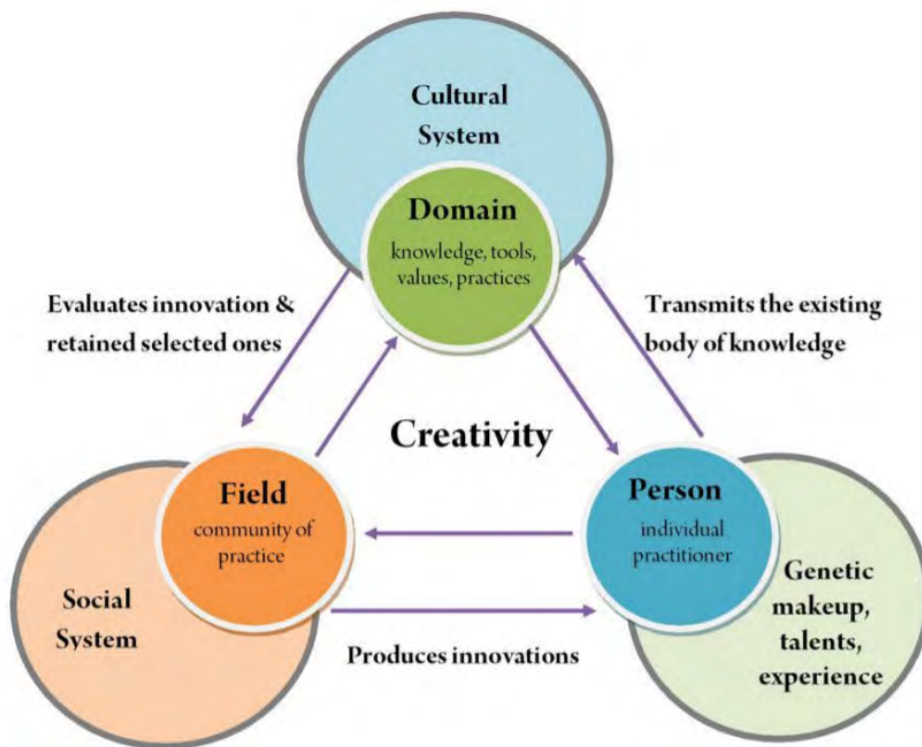


Figure 2. General Systems Model of Creativity, and the important role of the CoPs (Csikszentmihalyi, 1999).

A special focus could be done on the collective dimension. We could argue that the idea of the single researcher who alone creates innovation has always been a myth: the human mind is limited and has always the need for external support from its peers to find innovative solutions applicable to his/her community and possibly to the whole society (Hennessey & Amabile, 1999).

The most important scientific innovations have always been the result of joint efforts around a problem in a process that often lasted decades if not centuries and which involved thousands of people at various levels of participation, but nonetheless all important. We can therefore affirm with Engeström (2001) that creative processes do not take place only in people's minds but are always inserted in a specific socio-cultural context. In addition, each individual necessarily interacts in a social system that has complex cultural, ideological and historical components (Thibodeaux, 2014).

Innovative ideas need to satisfy two requirements, namely "social evaluation" and "social appreciation", in order to be accepted and implemented inside the communities of practice:

1. a "social evaluation" or a process in which several people with different backgrounds and intentions can understand them, reflect on them and possibly propose improvements, and
2. a "social appreciation" within a community, which demonstrates appreciation of their efforts and recognizes them as innovators, rewarding and motivating them to engage in new creative activities.

Social evaluation and social appreciation are relevant processes for the effective work of the communities of practice. Social evaluation involves reflection, mutual understanding in a friendly context in which all the members feel free to interact and to contribute. Social appreciation is based on respect and collaboration and is the fuel contributing to the well functioning of the communities of practice. Participation develops the feeling of affiliation in a process in which all the contributions and interventions of the participants are recognized and considered relevant.

6 Communities of practice and collaborative learning

Collaborative learning is activated inside the communities of practice facilitating the exchange of concepts, information and materials. Participants co-operate constantly with other members, and the group reach a significant level of coordination to achieve high-level learning objectives. Collaboration involves management and regulation of activities and processes such as peer review are supported. Several practices could adjust and enhance group learning because teamwork involves the use of strategies for controlling the progress of the activities and regulating the group processes. Continuous feedback during actions guarantees improvement and communities of practice participants have to be able to evaluate the strengths and the weaknesses of their collaborative work (Biasutti 2011), and to assess the abilities and the competencies of their teammates. Effective collaboration requires skills such as reflection on the group

activities and awareness about the cognitive potentialities of the group. Metacognition could be considered in a group dimension and it is a significant concept for understanding collaborative processes. Metacognition of groups could be based on their knowledge of cognition, planning, monitoring and evaluating (Biasutti & Frate, 2018). Metacognitive skills have a relevant value for controlling the cognitive dimension during the performance of a task.

7 Communities of practice and knowledge management processes

Knowledge management could be defined as the process of creating, capturing and using knowledge to enhance organizational performance (Biasutti & EL-Deghaidy, 2012). Inside the communities of practice, several knowledge management processes could be activated as reported in the model by Biasutti & EL-Deghaidy (2012) which is based on the following five constructs: knowledge acquisition, knowledge creation, knowledge internalization, knowledge application and knowledge sharing.

Knowledge acquisition regards the strategies and tools that could be applied to find information. Several tools and places could be utilized for knowledge acquisition including search engines and databases.

Knowledge creation begins with the collection of existing knowledge, ending with storage process and passing by processes of coding and classification of knowledge. The need for a networked community to help the transformation of tacit knowledge into explicit knowledge collectively is part of the community of practice activities. The production and creation processes emphasize the dynamics of transforming the tacit/explicit interplay into novel products. During knowledge creation knowledge with similar characteristics are linked and clustered which could be a stimulating point of departure for creative inspiration.

Knowledge internalization regards linking the information that has been found and accessed into previous mental schemata. Knowledge internalization refers to how knowledge is stored and organized influencing the changes in content and meaning of the individual's tacit knowledge.

Knowledge application is the stage where new opportunities for the community are created by seeking inventions, exploring and mastering the new rules. It is the process of applying what one has learned in a specific context to other situations transferring knowledge and procedures.

Knowledge sharing regards the dissemination of knowledge that can provide the necessary knowledge to a larger community. A special emphasis is posed on the social aspects such as trust, mutual respect, and community recognition that could help ‘sharing’ become effective. Communities of practice and learning communities present two of the most common examples, where the social aspects of knowledge management could happen. Within a community, members share experience and exchange tacit and explicit knowledge. Sharing and exchanging ideas are activities that push members of a community to question and make sense of their experiences.

8 Creativity and the importance of connections between different communities of practice

Communities of practice often generate innovative ideas when one or more of their members are in turn part of other CoPs. Members are often bringers of new knowledge and practices because they find spontaneous to apply them to the new contexts of other communities. For example, a dentist, who is a member of his community of dentists, but at the same time also of a community of aeromodellers, may find it natural to propose to use a micro-motor of the drill that he uses to solve the problem of weight and efficiency for fly a model aircraft at its best. The community of model aircraft finds this creative and innovative suggestion, while instead the micromotor for the community of dentists is an artifact already well known and applied in the context of drills for dental care. It is interesting to consider that in this case the micromotor is a so-called “boundary object”, that is an object that is flexible enough to adapt to the needs of different contexts but at the same time always maintaining its own specific identity (Star & Griesemer, 1989).

9 Technologies and creativity

As we have seen, the creative ideas and artifacts, that are their concretization, always arise in a social and cultural context but above all, also in a technological one: every cognitive process can be interpreted according to the concept of “distributed cognition” (Seel & Winn, 2012), in which three factors play an important role:

1. the external technological artifacts;
2. the internal conceptual artifacts;
3. the interrelationships with other people and with the culture of belonging.

Several scholars (Biasutti, 2015a; 2015b; 2018; Biasutti & Concina, 2020) suggest that

technological artifacts could provide a valuable support in the creative process by facilitating collaborative practices, such as brainstorming, developing and sharing ideas, or in facilitating communication to give and receive feedback.

Technologies are therefore useful in terms of inter-personal communication for sharing artifacts (texts, images, videos, etc.) but also for their realization. Several platforms offers support and tools, which we can range from the simplest ones, such as online forums, to more advanced ones, namely wikis or complex systems of knowledge management (Biasutti, 2017).

However, the use of technologies to share new ideas should never be taken for granted. Therefore, the availability of the technology is not a sufficient condition: as we have seen, it depends on the culture and climate that is established among people involved in any collaborative activity (Bourhis. & Dubé, 2010). In many professional contexts, sharing new ideas or solutions to problems can be perceived as a loss of a competitive advantage that you have or even arouse the fear of exposing yourself too much and being criticized by others. In conclusion, to foster creative processes it is important to be part of a community, to find the motivation to share and try to use the most suitable technologies.

10 Recommended Learning Exercise

To exploit fully the opportunities offered by communities of practices for the development of creative skills, it is important to reflect on these issues and trying to answer these questions:

1. On the basis of the definition given in the first paragraph, please think about how many and which communities of practice you have been part in your professional and/or private life. Did they meet all three requirements of mutual commitment, shared repertoire and participation in a joint venture?
2. Please, reflect on: how does this community of practice work? How does it encourage creativity between its members? Refer to the creative processes in Figure 1 for example.
3. How does the community usually evaluate and appreciate the innovations proposed by its members?
4. Knowledge about artifacts and processes is shared within each community of practice, but how is explicit knowledge shared and how is tacit knowledge shared?
5. How could you introduce the ideas about communities of practices to help develop social creativity in a group?

11 Conclusion

This chapter aimed to explore the factors and the links between communities of practice and creativity, considering their main characteristics. Several aspects emerged such as the importance of collaboration and the need to establish a friendly environment inside the communities of practices. Some features could be clarified such as how creativity could be enhanced and stimulated, justifying that further studies are needed in the context of communities of practice and creativity. Furthermore, a comprehensive examination could consider all emerging variables such as motivation, self-efficacy, beliefs about specific topics and activities, professional experience—whether professional or personal—as possibly related to the development of creativity inside the communities of practice. In addition, a model of creativity inside the communities of practice could be developed for providing inputs to educators for enhancing their pedagogical practices. Helping participants of the communities of practice to develop their creativity in a positive and genuine environment could sustain them in successfully facing the challenges of their professional lives.

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