

# Cultivating Virtual Communities of Learning

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**Abstract** — *The beginning of the twenty-first century heralds a shift in emphasis from learning with the focus on the individual to learning as part of a community. The concept of learning communities is currently one that is to the fore of much educational and organizational literature and discussion. Increased popularity of virtual communities of practice (CoP) and virtual learning communities reflects interest of higher education institutions to use its potential for a successful cooperation in the field of education. The concept and structure of community of practice is presented and the components of the successful virtual communities of practice are discussed. The principles for cultivating the virtual communities of practice and communities of learning are listed and discussed. The key motivators to participation in virtual communities of practice are characterized.*

**Index Terms** — *Communities of practice, environment, informal learning, virtual cooperation.*

## INTRODUCTION

Due to technological developments, academic staff and students in higher education institutions have the opportunity to operate in improved learning environments through increased communication, interactivity among participants, and incorporation of collaborative pedagogical models, specifically through information communications technologies [3]. Consequently, a new model of cooperation is established, e.g. Virtual Communities of Practice (VCoP), defined as networks of individuals who share a domain of interest about which they communicate online [11]. The practitioners share resources (for example experiences, problems and solutions, tools, methodologies). Such Communications results in the improvement of the knowledge of each participant in the community and contributes to the development of the knowledge within the domain. In relation to co-located groups the term Community of Practice is used.

## THE CONCEPT OF COMMUNITY OF PRACTICE

The Community of Practice is a term that describes a group of people who share an interest, a craft, and/or a profession [3]. The group can evolve naturally because of the members' common interest in a particular domain or area, or it can be created specifically with the goal of gaining knowledge related to their field. It is through the process of sharing information and experiences with the group that the members learn from each other, and have an opportunity to develop themselves personally and professionally [9]. CoPs can exist online, such as within discussion boards and newsgroups, or in real life, such as in a lunchroom at work, in a field setting, on a factory floor, or elsewhere in the environment [12].

The phenomenon of Communities of Practice first appeared at the beginning of the '90s. A study which investigated service technicians at Xerox revealed considerable differences between the formal description of their work and the actual procedure followed when they had to remedy defects in copying machines [10]. Whenever the service employees were confronted with a specific problems for which their manual provided no solution, they looked for informal sources of knowledge. In fact, even before consulting the manual, they would ask their colleagues for help and tell one another stores of problems that had already been solved. The result was a Community of Practice in which the employees exchanged the information with each other on regular basis. The service technicians developed specific communication structures, customs and a shared identity. The study showed that the explicit knowledge in many cases is not enough to solve specific problems and importance of social interactions for knowledge creation.

A Community of Practice represents a common body of knowledge. The members create New knowledge exchanging anecdotes about specific problem solutions. The internalized knowledge is not written down, but is exchanged directly. The exchange of knowledge in Communities can take place explicitly or implicitly, thus the distinction between explicit and implicit knowledge is crucial. The articulated, or codified form of knowledge is explicitly represented in physical or material objects. These can be patents, manuals etc. Explicit exchange involves people's own language or vocabulary, codified procedures, relevant documents and so on. Implicit knowledge is difficult to formulate and therefore difficult to communicate to others. In order to ride a bicycle, we need to know how to keep our balance. We do not think about whether we should steer to the left or right to avoid falling off and, if we were asked, we would be unable to articulate what exact knowledge is needed.

This implicit knowledge is rooted in our everyday behavior and is always connected to a specific context - a specific technology, a profession or a community. Our „know-how” - the practical skills or expertise that allow us to work efficiently and effectively and not always having to think about the detailed ways of solving a problem, but simply doing

it - has its origin in our implicit knowledge. However, implicit knowledge also has a cognitive dimension; we possess it in the form of embedded mental models, beliefs and perspectives, so that we regard it as reliable and unquestionable. This knowledge represents the invisible relationships, or glue, which keeps Communities of Practice together. The Community of Practice is thus efficient in transferring and dealing with implicit knowledge which is tied to the social context, embodied in language and behavior, and is, therefore, difficult for a company to access and make useable [2].

## **A STRUCTURAL MODEL OF COMMUNITY OF PRACTICE**

Every CoP can be described by following three key dimensions [11]:

- domain,
- community,
- practice.

### ***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. The domain is not necessarily something recognized as „expertise” outside the community. A youth gang may have developed all sorts of ways of dealing with their domain: surviving on the street and maintaining some kind of identity they can live with. They value their collective competence and learn from each other, even though few people outside the group may value or even recognize their expertise.

### ***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. A website in itself is not a community of practice. Having the same job or the same title does not make for a community of practice unless members interact and learn together. The claims processors in a large insurance company or students in American high schools may have much in common, yet unless they interact and learn together, they do not form a community of practice. But members of a community of practice do not necessarily work together on a daily basis. The Impressionists, for instance, used to meet in cafes and studios to discuss the style of painting they were inventing together. These interactions were essential to making them a community of practice even though they often painted alone.

### ***The practice:***

A community of practice is not merely a community of interest - people who like certain kinds of movies, for instance. 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 give you all sorts of interesting insights, but it does not in itself make for a community of practice. The development of a shared practice may be more or less self-conscious. The "windshield wipers" engineers at an auto manufacturer make a concerted effort to collect and document the tricks and lessons they have learned into a knowledge base. By contrast, nurses who meet regularly for lunch in a hospital cafeteria may not realize that their lunch discussions are one of their main sources of knowledge about how to care for patients. Still, in the course of all these conversations, they have developed a set of stories and cases that have become a shared repertoire for their practice.

Discussing Virtual Learning Communities it is useful to differentiate CoP from Communities of Interests (CoI).

*Community of Interest* can be characterized as follows [12]:

- A group of people interested in sharing information and discussing a particular topic that interests them.
- Members are not necessarily experts or practitioners of the topic around which the CoI has formed.
- The purpose of the CoI is to provide a place where people who share a common interest can go and exchange information, ask questions, and express their opinions about the topic.
- Membership in a CoI is not dependent upon expertise - one only needs to be interested in the subject.

*Community of Practice* in contrast [7]:

- is a group of people who are active practitioners.
- CoP participation is not appropriate for non-practitioners.
- The purpose of a CoP is to provide a way for practitioners to share tips and best practices, ask questions of their colleagues, and provide support for each other.
- Membership is dependent on expertise - one should have at least some recent experience performing in the role or subject area of the CoP.

## COMPONENTS OF SUCCESSFUL COPS AND VIRTUAL LEARNING COMMUNITIES

Following benefits are mentioned while discussing successful CoP and virtual communities [3]:

- Enhanced learning environment,
- Synergies created,
- Capabilities extended to higher level,
- Knowledge sharing and learning,
- Gaining insights from each other,
- Deepening of knowledge, innovation and expertise,
- Cyclical, fluid knowledge development,
- Feeling of connection,
- Ongoing interactions,
- Assimilation into sociocultural practices,
- Neo-apprenticeship style of learning,
- Identity development and formation,
- Practice-based usage of the Community.

For a Community to operate successfully, a basic framework is required. The absence of the following success factors usually leads to barriers which, in turn, strongly inhibit the success [4]:

- people and competencies - the members should have a strong common interest as well as expertise on the subject,
- culture and collaboration - the willingness to exchange knowledge and to collaborate requires trust and a “we” attitude,
- objectives - the better the core objectives and subject of the Community, the better the potential benefits for the members,
- knowledge content and structure - the subject of the Community should be focused and clearly structured,
- its processes, roles and organization - a committed, recognized and well organized facilitator as well as engaged, active members are the key success factors of a Community,
- information and communication infrastructure - this is a platform which supports all important communication channels.

## PRINCIPLES FOR CULTIVATING COPS AND VIRTUAL LEARNING COMMUNITIES

Wenger, Mc Dermott and Snyder [12] mentioned seven principles for cultivating CoPs, which can be applied to virtual learning communities as well:

- 1) *Design for evolution.* Allow new people to become involved and new interests to be explored. Accept that there will be different activity levels and different kinds of support needed at different times.
- 2) *Open a dialogue between inside and outside perspectives.* Encourage a discussion between those within the community and those outside about what it could achieve. For example, encourage links with communities in other organizations.
- 3) *Invite different levels of participation.* Some people will be active in the community and some people will appear passive. Accept that contributions and learning take place in different ways.
- 4) *Develop both public and private community spaces.* Relationships form during informal community events and person-to-person communication is the purpose of the community. Formal organized events and discussion spaces are needed to help people feel part of a community. Both are important.
- 5) *Focus on value.* The true value of a community may emerge as it matures and develops. Community members should be encouraged to be explicit about the value being delivered. This may initially help raise awareness. Over time, value from participating should become more apparent and more concrete measures can be collected.
- 6) *Combine familiarity and excitement.* Familiar community spaces and activities help people to feel comfortable in participating. Introducing new ideas to challenge thinking also stimulates interest and keeps people engaged.
- 7) *Create a rhythm for the community.* Regular events, paced to avoid overload, create points around which activity can converge. They encourage people to keep coming back, rather than gradually drifting away.

### Technological Aspects

Used as a communication tool, technology offers opportunities for extending learning. A virtual learning community employs technology to communicate; therefore, it can, and does, happen anywhere, and it can be constructed anywhere. The idea of construction is central to the notion of virtual communities, as what is created by the community becomes the collective product of its individual members. In order to satisfy our requirements for a virtual learning community, a technology must permit each of the following conditions [8], [1]:

- **Negotiation** - While virtual communities are often built around central themes, ideas or purposes, the organizing principles are not externally imposed. Purposes, intentions and the protocol for interaction are constructed by participants. Systems allow open and unrestricted access based on individual interests and needs.
- **Intimacy** - Participants can achieve personally gratifying levels of intimacy with other participants, and can select the level of intimacy appropriate for any negotiated relationship with another participant. Anonymity is possible, but as the sense of community develops, it is unlikely that a participant would choose to remain anonymous.
- **Commitment** - The quality of participation depends on individual and shared commitment or relevance of the substance of the community. Commitment depends on shared values in the community, where participation represents an ethical choice among those who share goals or needs. The palence of the commitment need only be strong enough to maintain participation in the group, but stronger commitment generally leads to the development of stronger communities.
- **Engagement** - Participants interact with each other and have the capacity to conduct discourse freely and meaningfully. In order to fit our definition, engagement must have immediacy—not be significantly delayed in time or space. Interaction must be effervescent, and based on influence among participants rather than power relationships.

Each of these components is necessary for meaningful communication to take place between and among individuals, and we believe that communication, in the form of legitimate discourse, is central to the notion of building learning communities. In order to examine how these components contribute to the development of virtual learning communities, we will examine a few examples of virtual learning communities, and also look at some technologies that might be mistaken for virtual learning communities.

### Motivation to Participate in VCoPs

Due to their importance the key motivators to participate in VCoPs can be ranked as follows [13]:

1. **Self-Development:** Learning skills and acquiring knowledge. Using VCoP to find people to collaborate with or participate in projects, and to get solutions to particular problems.
2. **Reputation Development & Acknowledgement:** The use of VCoP to exhibit expertise and to build or expand a reputation. Using VCoP as a means to gain acknowledgement for particular works and make quantifiable claims of expertise.
3. **Sense of Belonging:** To a particular profession or elite group. It refers to a desire to expand social networks relating to the person's interest/practice and to socialize. It involves people seeking to gain emotional support and a desire to gain confidence and progress the profession as a whole.

Motivators in the area of self-development are as follows [5], [6], [13]:

- **Value of Knowledge** - When individuals value a particular knowledge highly they may well forego the advantages of trying to build on it collectively in order to benefit from it singularly. This may better explain why academic institutions are not sufficiently represented in VCoP. Academics earn their living off formalising information. To share it freely on the internet may help increase their knowledge pool but it also depreciates the value of the knowledge assets they possess.
- **Knowledge Requirement of Practice** - The more intellectual ability and training required to undertake the community's practice, the more scope for learning and knowledge sharing exists. Hence with more scope for learning, Self-Development would become a greater motivating factor.
- **Availability of Alternative Knowledge Sources** - Newer practices, such as search marketing and social computing, are currently making great use of VCoP. One explanation would be that these new practices lack formal professional bodies to organize and legislate the professions' knowledge requirements. It is thus suspected that should a community's practice have many alternative sources of knowledge, such as well founded professional bodies and academic curriculum, people may be less likely to use the VCoP to learn since some would prefer learning from the alternative sources. The same would work in reverse, where, for example, because of the novelty of a practice, knowledge has not yet been formalized and a VCoP becomes one of the only sources for learning.
- **Specificity of Community** - if a community is very focused around a tightly knit subject it may offer increased learning opportunities. A more specific community would increase its ability to delve into deeper discussions, and offer less "amateur" interruptions such as clarifying the subjects' jargon. Hence such a community may be perceived as offering more learning opportunities. It also decreases the "noise to signal ratio".
- **Splicing** - refers to a community's ability to encourage sub-communities. Literature and some interviewees suggest that such an ability is improved by the management style and choice of the community's technological infrastructure.
- **Number of Participants** - the amount of participants operating in the community impacts upon the overall learning opportunities.
- **IT Requirements of Practice** - a person's ability to acquire tacit knowledge online must in the first instance be dependent on the person's ability to use a computer.

Motivators in the area of sense of belonging are as follows [5], [6], [13]:

- *Degree Of Solitude and Alienation of Practice* - alienation brings the community together.
- *Specificity of Community Topic* - the more specific a community is, the more opportunity for the formation of closer relationships and the greater the sense of belonging generated.
- *Splicing* - a virtual community of practice which encourages "splicing" may tend to be less specific in its root practice without risking having too much interest diversity, which may lead to a reduction in the generation of sense of belonging.
- *The Moral Consequence of Error* - helps create the community.
- *Amount of Participants* - the greater the amount of participants, the less opportunity for deeper relationship building.
- *Degree of IT requirement of Practice* - in order for the community to provide its members with a sense of belonging, a certain degree of emotions must be shared in the community.

Motivators in the area of reputation development and acknowledgement are as follows [5], [6], [13]:

- *Novelty of Practice and Information Asymmetries* - where a practice is still novel and slightly misunderstood by others, greater information asymmetries exists in the marketplace, leading to situations similar to those described by the "Lemons Principle": All services would be classified as being of average quality, as quality is indistinguishable for customers. Hence higher quality professionals may be undervalued. In such situations, the high quality professionals put reputation building as a high priority as it provides the consumer with a signal which they may understand even if they don't fully understand the practice or service.
- *Intrinsic Importance of Reputation to Practice* - some practices such as Journalism and Writing rely heavily on building a well known name. Here an individual's reputation is intrinsically important to his practice, no matter what situation the market is in.
- *Strength of Reputation Mechanisms* - the better reputation, the higher position within the community structure.
- *Degree or "Virtuality" of Practice* - practices such as Search Marketing, or Online facilitation only exist because of the existence of the Internet. It is suspected that in such practices building virtual reputations and identities is just as important, if not more, than other forms of reputations.

## CONCLUSIONS

The potential import of virtual CoPs is recognized by increasing interest in Europe in networked learning and e-learning, as witnessed by the development of organizations engaged in studying and producing data on the topic.

The concept of learning communities draws on a wide body of theory related to learning and sociology. Learning communities have much to recommend them in an increasingly complex world where we cannot expect any one person to have sufficient knowledge and skills to confront the complexities of institutions, our society and individuals and the tasks these face. They are consistent with a constructivist approach to learning that recognizes the key importance of interactions with others, and the role of social interactions in the construction of values and identity. Learning communities can minimize risks for individuals in the increasingly complex world of the twenty-first century.

The Internet offers the potential for access and interaction with a universally accessible, democratic and interactive hub of speedy, low-cost communications and resources connecting individuals, disciplines, departments and services.

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