

Embedding Change in Organizations: Communities of Practice and HRD

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Abstract

This paper proposes a framework for designing human resource development interventions that facilitate change in professional organizations through promoting learning at the individual and group level. The framework proposed is based on a theory of organizational learning developed by Etienne Wenger (Wenger, 1998) that proposes learning takes place in the context of communities of practice. Communities of practices (CoPs) are groups of professionals that come together in order to build knowledge and practice in their specific field (Wenger, McDermott & Snyder, 2002). At first glance CoPs might appear to be like other, more traditional groups found in organizations, but this is misleading (Bood & Coenders, 2004; Wenger, McDermott, & Snyder, 2002). The major differences between traditional groups and CoPs are that the latter are self-organizing and self-governing (Dekkers et al., 2005; Saint-Onge & Wallace, 2003).

In the private sector, CoPs are recognized as an exceptional human resource development (HRD) method for organizations wishing to stimulate learning, promote innovation and facilitate change processes among its employees (Davenport & Prusak, 1998). In this paper I lay the theoretical groundwork for developing CoPs generally, using the case of higher educational organizations as an example where they could be initiated. In order to design these interventions, I propose a model that employs a multi-disciplinary, theoretical approach that bridges the context of the public and private sectors. Furthermore, I report on some preliminary observations of two communities of practice; one that formed during a HRD project specifically centered on communities of practice, and one that was formed as a result of an organization-wide initiative to stimulate employee empowerment during a merger.

1 Change; what and why bother?

Organizations of all types are in a continuous process of change. While there are many different definitions for the word 'change', I turn to one from Bennis, Benne and Chin that states that change is a continual process of trying to consciously improve the workings of a social, cultural or individual system through applying scientific knowledge. (1989)

Organizational change is not always easy to set in motion. Employees may be wary of change depending on their previous experiences or that they do not support the reasoning behind it. However, pressure to change, which can originate internally or externally can be enormous. For example, organizations need to change due to a growing complexity of the environment in which they operate; maybe internal forces, such as an aging workforce, are exerting pressure to change. Or, perhaps change is brought on because of a recent merger. Often, an organization needs to change in order to remain competitive. For whatever the reason, organizations often perceive pressures to change, which starts the process in motion.

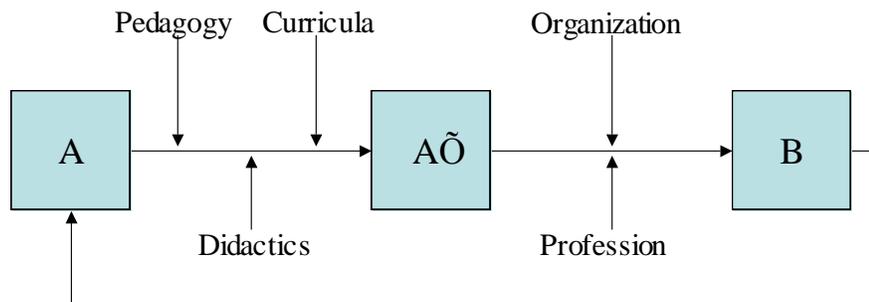
1.1 For Example: Change in Higher Professional Education

In this section I would like to focus on one sector that is undergoing drastic changes, namely the higher vocational education sector, known in the Netherlands as universities of professional education.

Universities of professional education (UPE's), which in the Netherlands are in the domain of the public sector, are just as susceptible to the internal and external pressures to change as organizations in the private sector.¹ More specifically, UPE's are undergoing drastic change in two dimensions (Ropes, 2005b). The first dimension considers the structure of the organization and how it views its environment. Due to a new government lump-sum financing scheme which stimulates competition among the 50 or so institutes in the Netherlands, UPE's are starting to have business plans that entail strategies which, until recently, would only be considered by firms operating in the private sector. This external pressure from the environment, which is actually market pressure, has led to mergers for increasing economies of scale, major reorganizations and a search for new models of efficiency.

The second dimension of change effecting UPE's considers the UPE's approach to didactics (the science of education) and its approach to pedagogy (the science of teaching). The following model illustrates these changes.

Figure 1. Change in Universities of Professional Education



The model's starting point 'A' represents the UPE before any changes have occurred. The first change is in the pedagogic approach of the Netherlands pertaining to UPE's. There is now a trend for UPE's to institute what is known as *competence based education*.² Because competence based education is quite different from traditional

¹ UPE's in the Netherlands can be likened to polytechnic institutes in other European countries.

² Briefly, this means students no longer acquire knowledge or skills alone, but that now they work on developing the knowledge, skills and attitude that a professional in his or

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knowledge based education, both changes in the didactic approach and the curricula of the school must also be introduced. These two changes lead to what I have noted as A', which represents a change in how UPE's perform their educational functions, i.e. teaching students. The next step, from A' to B, denotes a change in the organizational structure of the UPE. This could be due to a merger, a reorganization, or other internal or external factors. The model reflects a cyclical approach to change, which coincides with the definition I used above.

One interesting aspect of the model considers that the staff of UPE's is affected mostly by changes occurring from A' to B, while faculty is affected by those of A to A' to B. Finally, I need to remark that this model shows a linear process, moving from A to A' to B. This is somewhat misleading in that it illustrates but one situation. Changes represented by a move from B to A' to A is also possible, as is a concomitant change as well.

This example serves to illustrate the complexity of change that an organization can undergo. Such changes require that members of the organization learn to innovate rapidly in order to deal with new problems. One way to facilitate this process is to embed CoPs into the organization as forums for learning.

2 CoPs and Change Strategies

Bennis, Benne, & Chin (1985), in their seminal work on change in organizations, propose that there are three basic change management strategies;

- *Empirical – Rational*; where intelligent individuals make intelligent choices in their own interest. In this model communication and incentives are the focus.
- *Normative – reeducative*; people are social and follow cultural values and norms. This model is based on bottom-up change and looks at redefining the existing norms and values and committing to new ones.
- *Power-Coercive*; people need and want authoritative control. This top-down strategy works on the basis of power and sanctions.

De Caluwe and Vermaak developed a system of developing change strategies based on five different colors (de Caluwe & Vermaak, 2002), each one representing a certain approach to change. For example, the color yellow represents the power of the sun, and reflects a power-coercive approach. A strategy that uses a red approach – red symbolizing the blood running through the veins of humans - is situated in an empirical-rational approach and employs strong HRM tools to achieve change. The color green represents growth and learning. In this model, change is closely linked to learning, at both an individual and organizational level. A change strategy based on a 'green' approach is thus situated in a *normative - reeducative* strategy. According to de Caluwe & Vermaak (2002), a 'green' approach has the following characteristics;

her chosen profession is expected to have. Faculty is expected to guide students more than instruct them and assess their simulated professional products.

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- Results are difficult to plan, cannot be guaranteed and depends mostly on the intrinsic motivation of the employee and his or her learning capabilities. Results can be measured in behavioral changes, positive changes in learning and development capabilities and increases in collaboration.
- The central concept of the change manager focuses on developing a (permanent) learning organization through creating and facilitating a learning environment. This type of trajectory is not always manageable – learning is a very personal and individual process.
- Examples of methods employed by the change manager are; gaming, coaching and teambuilding.

The processes involved within communities of practice and those prescribed by the 'green' approach to organizational change have many similarities. Both are based on learning, collaboration and intrinsic motivation. Also, CoPs may or may not produce the results desired by the organization (Wenger et al., 2002).

In the following section I explain the theoretical framework of communities of practice and then make the link directly to organizational learning.

3 CoPs and Organizational Learning

The definition of 'community of practice' I use in this paper comes from Wenger, McDermott and Snyder (2002), who define them as "...groups of people who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise in this area by interacting on an ongoing basis" (p.4). The term community of practice has a longer history however. Wenger and his colleague Jean Lave had already used the term 'community of practice' in 1991 in a slightly different context, which was in a study of five groups and how they learned (Lave & Wenger, 1991). Learning forms the center of a CoP. In 1998, Wenger wrote book entitled *Communities of Practice: Learning, Meaning, and Identity*, in which he describes how practice is the focus for learning, which is a constant negotiation of meaning and identity between individuals and actors in a group.

Thompson (2005) approaches CoPs in a slightly different manner. He looks at CoPs as having a "...political and participative dynamic present in all CoPs: a *virtuous circle*, where the more people participate, the more they learn, and the more they identify with and become prominent within a group, becoming more motivated to participate even further, and so on" (p.152) Without these interactive characteristics, a group situated in an organization cannot be considered a CoP, as originally defined by Lave and Wenger (Thompson, 2005).

A Communities of practice is based on a shared practice, surrounding a common domain, as evident in what Wenger calls *boundary objects* (Wenger, 1998). These boundary objects form the basis for interaction and may be documents, shared language, concepts, terms, etc. (Wenger, 1998 p. 105).

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CoPs are typically informal, self-organizing groups which determine their own learning path. This level of informality is in contrast to formal groups such as project groups and other types of informal groups, such as communities of interest (Wenger et al., 2002). Whereas project groups are instituted by management with a specific starting date, ending date and a list of expected deliverables, CoPs are made up of voluntary actors who decide what is important to the group and what direction the group will take (Dekkers et al., 2005). It is this aspect of self-guidance and organization that makes it especially difficult for many organizations to effectively cultivate a CoP. Knowing the differences between CoPs and other organizational groups is quite important for the success of CoPs because of its organic nature (Smith & McKeen, 2003). In fact, it is often the case that through too much intervention, an organization actually leads a CoP to its demise (Thompson, 2005).

For Wenger, learning is an ongoing social process that has four specific elements, which are interdependent and intertwined. These elements of learning are explained in figure 2 below.

Figure 2. Elements of Learning

Meaning	A way of talking about our (changing) ability-individually and collectively- to experience our life and the world as meaningful.
Practice	A way of talking about the shared historical and social resources, frameworks, and perspectives that can sustain mutual engagement in action
Community	A way of talking about the social configurations in which our enterprises are defined as worth pursuing and our participation is recognizable as competence.
Identity	A way of talking about how learning changes who we are and creates personal histories of becoming in the context of our communities.

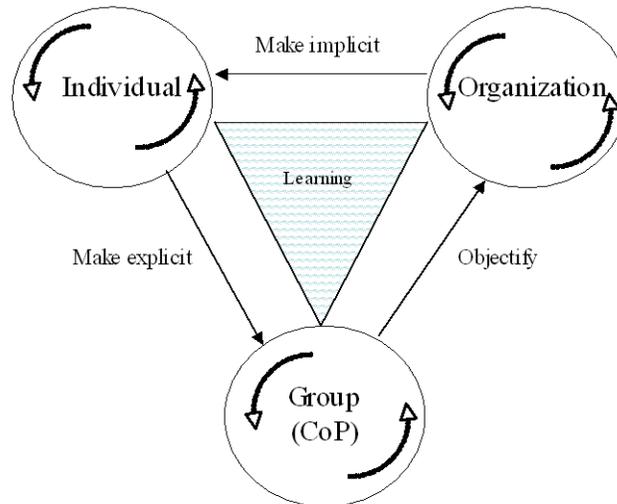
(Wenger, 1998)

Once again, we can see close similarities between the aspects of learning in a community of practice, and change management strategies based on a normative-reeducative approach; both are based on renegotiating new norms, values and practice in a social situation.

Wenger and his colleagues (Lave & Wenger, 1991; Wenger, 1998; Wenger et al., 2002) link the concept of communities of practice directly to organizational learning. For them, organizations are made up of communities of practice, and so, if organizational learning is to take place, then learning in communities needs to be stimulated. The following diagram frames this part of the paper by serving two purposes; it portrays the conceptual link learning has with all three levels in an organization; individual, group – a CoP in our case - and the general organization. It also proposes a model for learning

within an organization. Organizational learning models may focus on different domains as well as different ways of looking at how organizations can learn (Crossen, Lane, & White, 1999). It is my opinion that the point behind learning at the individual and the group level is to lead to organizational learning, which in turn stimulates individual learning. I frame the discussion below using this model pictured in figure 3.

Figure 3. The Organizational Learning Cycle



The first stage in the cycle begins with an individual's personal understanding. This is a cyclical process that begins with an idea that knowledge is in fact part of the persons understanding, which is also called tacit knowledge (Nonaka & Takeuchi, 1995). This tacit knowledge is somehow made problematic by outside forces. For example a change in the organization that affects a work process. If the problem can be solved by reflecting and reinterpreting our situation, in other words personal learning takes place, then the problem disappears and that new knowledge is internalized (Stahl, 2000). When a new problem arises, the cycle starts over. This cycle is represented by the dashed arrows located in the circle entitled 'individual'. However, not every problem is able to be solved internally and the individual must then turn to the group for further learning in order to solve the problem.

The individual forms the trigger for innovation, change and group learning by bringing their tacit knowledge into a social setting in order to learn (Hakkarainen, Palonen, Paavlova, & Lehtinen, 2004). The theoretical perspective I am proposing here considers that learning is a cognitive and behavioral process associated with negotiated learning through social interaction. In other words, knowledge is socially constructed by individuals working together. Expansive learning theory, which considers learning to be a change in cognition or behavior, proposes the idea that equilibrium in a group's social and (social-cognitive) structure is disturbed in some way - such as by the introduction of new knowledge from an outsider to the group - and new learning is needed to bring the

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group back in balance (Hakkarainen, Palonen et al., 2004). Once again, we see that learning is needed in order to bring the system back into equilibrium; in this case the CoP, in the previous case the individual.

In a group situation, problems are discussed in regards to established practice and previously generated artifacts. These are questioned as to their validity and applicability in other contexts. This eventually leads to new concepts being developed, which are then in turn critically discussed and integrated into the community, finally becoming part of practice. This is one learning model that considers the group process that results in new knowledge for the group and individual, but not necessarily for the organization.

Another theory states that knowledge is *intentionally* created within communities, resulting in new conceptual artifacts that become available to the whole group involved in the process (Hakkarainen, Paavlova, & Lipponen, 2004). This, according to (Hakkarainen, Paavlova et al., 2004) leads directly to organizational knowledge.

According to Wenger (1998), social learning is the collaborative negotiation of new concepts or artifacts (*boundary objects*) that are introduced into the community of practice. These boundary objects serve as the focus for new learning that results in a shared understanding surrounding practice. According to Wenger (1998), learning is a social act that cannot be separated from social situations.

Propp (1998) approaches group learning from an information processing perspective. Her model of collective information processing can be enlightening when trying to understand the information exchange process among members of a group. This process begins with individual actors coming together and exchanging knowledge³. The group then goes through a three step process when finally it has a new, collective knowledge base. Propp's work is significant for this paper because knowledge exchange plays a crucial role in the success or failure of learning within CoPs.

Other than knowledge exchange, group learning has several obstacles linked to cognition and motivation that communities of practice can help mitigate. One barrier is called the 'curse of knowledge' and refers to the problem that experts have when explaining a complex situation to a novice (Camerer, Loewenstein, & Weber, 1988). In a CoP, where members with different levels of knowledge and expertise interact, this problem can be mitigated (Hinds & Pfeffer, 2003).

Motivational factors such as reluctance to share knowledge can be overcome within a CoP due to the high level of trust and social capital that is built up in a CoP. Social capital, the concept that shared norms, values, language, trust and informal ties enables groups to work more effectively, aids group learning through promoting better peer relationships (Karsten, 2006).

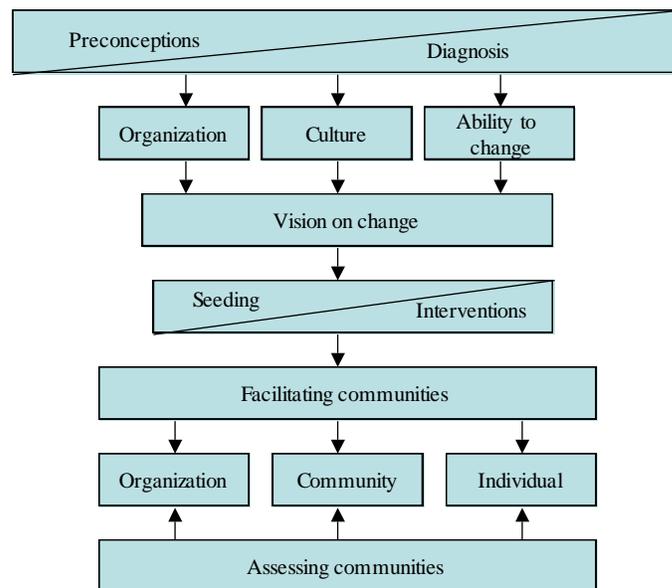
In my model, the learning processes within the CoP result in a new shared understanding of practice and new artifacts. New knowledge is objectified by these artifacts, which may be a new protocol or a design for a new product. Artifacts like these serve as the object for learning by the organization as they are introduced and absorbed into the organization as a whole and subsequently lead to new understanding for the individual. In other words, made implicit.

³ Propp explains that she uses the term 'information' instead of 'knowledge' for purposes of delineating the processing steps of the model (p. 248).

4 A Model for Developing CoPs

In this section I would like to explain the model I propose for developing communities of practice. This model follows some standard conceptions of structuring change processes in that it starts with diagnosis and ends with assessment (Cozijnsen & Vrakking, 2003; de Caluwe & Vermaak, 2002). In this part of the paper, I would like to explain the model and give some insight into how it can help to structure interventions that will facilitate the forming of CoPs as agents of change.

Figure 4. Developing Communities of Practice



4.1 Preconceptions / Diagnoses

Here one needs to consider the question whether CoPs are a possibility at all. In other words, can they fit into the organization considering the structure?

This beginning of the model considers that the change manager has a preconception of how organizations work and what is needed in order for them to change. Predisposition towards a familiar or theoretically attractive manner may play a role. In this case, a predisposition towards a normative-reeducative strategy for change might lead a change manager to look at the possibility of CoPs as a way to facilitate the change process.

The actual diagnosis can also be influenced by the consultant's preconceptions. For example, when looking at the range of diagnostic models available, if the notion of CoPs is already part of the consultant's understanding, then models that lean towards a normative-reeducative strategy might be chosen. These preconceptions are present, and

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influence, literally each step in the model and of course will differ for each consultant. For purposes of illustrating the model, I will assume a preconception of CoPs as a way to embed change.

I also take for granted an important step in the change process, namely looking at the need for change. I assume here that the need for change is present – whether it is real or imagined matters little. Another assumption is that change in modern organizations due to external pressures is a constant factor, but that CoPs are able to deal with change in different dimensions, as seen in the example of UPE's in section 1.1.

4.1.1 Diagnosing the situation

I base the situation analysis on four aspects; the organization, the culture within the organization, the ability of the organization to change and finally the need to change. In this section I use three different diagnostic models to illustrate in which situations CoPs would be a viable alternative to other change management trajectories. Although there is no specific order in which the diagnosis needs to follow, a general organizational one serves as a first and filtering step. Also, the division of concepts is artificial and done for purpose of illustration – in reality each is linked to the other.

- *Organizational analysis.* Morgon (1997) describes eight types of organizations by using metaphors which relate to how that organization functions. For example, an organization with a highly structured system of control is referred to as a machine organization. Mechanistically structured organizations have great difficulty adapting to changing circumstances because they are designed to achieve predetermined goals; they are not designed for innovation. Another metaphor is that of the organization as a brain. This type of organization is based on learning and self-organization, which mirrors the concept of a CoP, and can thus could form a solid basis for starting communities. However, It demands that organizations lessen their bureaucratic controls and allow space for collaboration and which is difficult to do (Morgon, 1997).
- *Cultural analysis.* De Caluwe and Vermaak (2002) describe organizational culture as "... the actual behavior of employees in an organization that results from a system of implicit and explicit beliefs, values and norms" (p. 170). The authors discuss a diagnostic model based on oppositions; *power* opposite from *roles* and *tasks* opposite from *people*. This last type of culture can be linked to concepts proposed earlier that point to a normative-reeeducative change strategy and thus towards the possibility of CoPs.
- *Ability to Change.* Cozijnsen and Vrakking (2003) developed a model for diagnosing an organization's ability to change. For them, change and innovation are the same. This opens up new dimensions when assessing the capabilities of an organization in this respect. Their model considers the relationship within an organization between knowledge and its accessibility, technology its speed and broadness, and people and their motivation and involvement. Research has shown there to be a positive correlation between these three structural factors and the ability of the organization to innovate (Cozijnsen & Vrakking, 2003).

4.2 Vision on Change

The three diagnosis discussed above can help the change consultant to develop a vision on change. Theoretically, organizations that are organic, with an open culture and strong internal capacities in the way of people, technology and knowledge will be more conducive to the cultivation of communities. On the other hand, bureaucratic, machine-like organizations with a culture based on power and a low level of change capacity, will not be conducive to CoPs.

Once a vision of change is established, and it includes the possibility of cultivating CoPs, a decision needs to be made on whether to search out existing CoPs or to attempt to create them artificially. Theoretically, in an organic organization based on learning, the probability of CoPs already existing in the organization is high. However, this does not mean that they are effective or aligned with the organization's goals. The next section looks at creating CoPs through a term called 'seeding', which can be applied to either artificially stimulate the formation of CoPs, or improve the effectiveness of existing ones.

4.3 *Seeding Communities and Designing Interventions*

Thompson (2005) discusses two aspects of what CoPs need in order to function. One aspect relates to the epistemic characteristics of a CoP, which I discussed previously. Another of these concerns boundary objects, which are important structural elements within a CoPs. He contends that "...if boundary objects are such important structural raw materials for the growth of CoPs, it follows that there may be opportunities for organizations to encourage CoPs by creating initial boundary objects..." (p. 152). This act of creating boundary objects is referred to as "seeding" CoPs (Thompson, 2005). Once created, boundary objects act as objects for members of the community to congregate around.

Thus, the design of interventions should start with concentrating on developing these boundary objects. The next step is to promote the epistemic functioning of the CoP by developing a learning environment in which the boundary objects can be centered. Wenger's (1998) indicators that a CoP has actually formed, can serve as a guide when developing boundary objects and interventions for stimulating a learning environment. They can also help to locate existing CoPs.

Figure 5. Indicators That a CoP Has Formed

Boundary Objects	Epistemic Functions
Specific tools, representations, and other artifacts	Sustained mutual relationships - harmonious or conflictual
Local lore, shared stories, inside jokes, knowing laughter	Shared ways of engaging in doing things together
Jargon and shortcuts to communication as well as the ease of producing new ones	The rapid flow of information and propagation of innovation
Certain styles recognized as displaying membership	Absence of introductory preambles, as if conversations and interactions were merely the continuation of an ongoing process.
A shared discourse reflecting a certain perspective on the world	Very quick set up of a problem to be discussed
	Substantial overlap in participant descriptions of who belongs
	Knowing what others know, what they can do, and how they can contribute to an enterprise
	Mutually defining identities
	The ability to assess the appropriateness of actions and products

(Wenger 1998; pp. 125-126)

4.4 Facilitating Communities

Once interventions are designed and implemented, a CoP needs to be facilitated at three levels; individual, group and organizational. The following chart (Figure 6) gives examples of what should be considered when trying to operationalize facilitating communities (Ropes, 2005a). As one can see, these are based on both epistemic and practical considerations. One aspect that should not be overlooked is the involvement by management. Thompson (2005) studied a group that was increasingly controlled by management and turned from a creative, productive CoP to one that was mired in frustration and eventually disseminated. There is thus, a fine line between facilitation and control.

Figure 6. Facilitating Communities

Organization	CoP	Individual
<input type="checkbox"/> Funding <input type="checkbox"/> Recognition <input type="checkbox"/> Involvement by management <input type="checkbox"/> Culture <input type="checkbox"/> Infrastructure	<input type="checkbox"/> Keeping interest/sense of community <input type="checkbox"/> Management and coordination <input type="checkbox"/> Group process facilitation <input type="checkbox"/> Internal Communication <input type="checkbox"/> Life-cycle	<input type="checkbox"/> Motivation to share knowledge <input type="checkbox"/> Cognitive barriers

(Ropes 2005a)

4.5 Assessing Communities of Practice

Assessment of communities of practice can have two dimensions; procedural (did we do it correctly?) and results-based (did it do what we wanted?). In this paper, we are trying to develop CoPs in order to enable change. In other situations where it is desirable to stimulate them, such as for improved innovative or collaborative abilities, other questions than the ones presented here can be asked. Once again the three levels maintained throughout this paper can serve as a framework for assessment.

- At an organizational level, we can ask the question ‘did the formation of CoPs actually help to embed change into the organization?’
- At a group level we can ask the question, ‘were we successful in seeding and facilitating CoPs?’
- And finally, at the individual level, we can ask ‘did we create a learning environment for the employee which enabled change?’

The measures for these results are not easily established. Community of practice theory is still in its infancy and gives few operationalized measure constructs. However, one can turn to other disciplines in management science, such as Intellectual Capital (IC). Although IC theory is also quite young, there are some instruments developed that can give high quality indicative measures (Andriessen, 2003).

5 Theory in practice; two cases

In this section I briefly discuss two examples of organizations that stimulated the formation of CoPs. To frame the discussion I will use the model presented in section four, although not each case will highlight each part of the model. Although the cases are

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based on real groups in real organizations, they have been made anonymous. The first case I present takes place in a University of Professional Education while the second one looks at a group that comes from several different UPEs.

5.1 Case One; InCoP

The International Community of Practice was started by a group of international faculty who were disenchanted with the merging of the institution in which they worked with other UPEs. In many of the international programs, faculty and staff come from widely different cultural backgrounds. For them, learning to deal with a new educational concept in a changing organization can be quite daunting and often leads to frustration with the system.

Thus, there was a need for change in practice needed due to a merger. Several members of faculty wrote a project proposal asking for funds to start a CoP to help with the problems they were facing. Funds were granted and the faculty members started emailing other international faculty in the institution with an invitation to start a CoP. Of the ±40 invitations sent, about 25 people came to the first meeting. This meeting was guided by people experienced in group facilitation and familiar with CoP theory.

A preliminary review of the case points to several interesting developments. Looking at figure 5, we can see that there were already several boundary objects within the group; international curricula and the language of ex-patriots. The group facilitators used these objects to form discussions on what problems the group was experiencing and to set a learning agenda.

Facilitation from the organization came in the form of money; there is no recognition, but there is also no involvement of management. At a group level, the learning environment is facilitated by a community page on the institutions intranet, as well as face to face meetings. Coordination is unofficial and can be problematic at times.

There has not been any assessment of this CoP. However, signals seem to indicate a commitment from a core group to ensure the continuation, even after official funding has expired. There are plans to approach the management for further funding as well, as the CoP is now entering its second year.

5.2 MetaCoP

The MetaCoP is made up of members of a project group within the Digital University that was working on developing CoPs in higher education. The group was started by the project manager in order to discuss and learn more about how CoPs function. This knowledge could then be applied to the project as well. Members come from several different UPEs as well as research universities. The core topic of the MetaCoP is now internal communication processes and how to promote group learning.

Funding for the MetaCoP comes from the Digital University (DU), which is a consortium of universities formed to promote ICT in higher education. There is also a professional coordinator and facilitator who structures the meetings around new meeting forms. Face to face meetings take place about four times per year. There is a virtual platform that has been developed by the DU and is available to the members - who use it only minimally.

The MetaCoP is recognized by the DU as a valid source of new knowledge about CoPs. Members regularly present the work done within the MetaCoP at both national and

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international conferences. Artifacts that have been developed by the group are made available to the public via the website.

6 The Future

What is the future of CoPs as HRD instruments of change? I think by looking at history we can have a deeper understanding of the future: Learning has always been a process that helps humans make sense of the world they live in and to adapt to changes in it. Without learning, there would be no innovation. This is applicable for individuals as well as whole organizations. In this paper, I looked at learning as a social process situated in practice, and how both aspects of learning – social and epistemic – can be stimulated and facilitated.

If we look at organizations through a CoP perspective, then we will see that organizations are actually made up of a myriad of communities (Fox, 2000; Kulkarni, Stough, & Haynes, 2000). And if we take the perspective that change is most effectively assisted by stimulating a learning organization, then it makes sense to understand how CoPs function and to promote their growth and effectiveness; in other words, to 'cultivate' them (Wenger et al., 2002).

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