

GROUNDING INTERVENTIONS THAT FACILITATE INTERNAL PROCESSES OF
COMMUNITIES OF PRACTICE

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1 Introduction

Communities of Practice (CoPs) are social learning systems that can be, to a certain extent, designed. Wenger (1998) proposes the following paradox; “no community can fully design the learning of another, but at the same time, no community can fully design its own learning” (p:234). My interpretation of Wenger’s statement is that learning environments such as CoPs need to be facilitated in their learning processes, but not their specific design. Approaching CoPs this way allows for the design of interventions that facilitate learning processes within a CoP rather than regulate them. However, empirical studies on facilitating internal processes of CoPs are sparse – most work is anecdotal. This means that one needs to look to other fields for guidance in order to discover how to facilitate CoPs in their learning.

This paper describes part of a larger research project that asks the question whether communities of practice can be instituted in higher professional educational organizations as an effective method to facilitate participant learning (professional development) and stimulate new knowledge creation in the service of the organization. Using a more pragmatic approach to cultivating CoPs (Ropes, 2007) opens the possibility to use different theoretical perspectives in order to find and ground interventions that can facilitate learning in CoPs and which are typically used in organizational development trajectories based on learning (de Caluwe & Vermaak, 2002).

In this paper I look at how theories of human resource development, workplace learning and social constructivism conceptualize learning and what type of environments promote this. I then map out community of practice theory along these fields in order to come to a synthesized conceptual framework, which I will use to help understand what specific interventions can be used for designing CoPs. Finally I propose several interventions based on the work done here.

The main question I consider here can be formulated as follows; ‘what insight can Human Resource Development theories, Workplace Learning theories and Social Constructivist learning theory give in order to design interventions that facilitate internal processes of communities of practice?’

2 Human resource development (HRD)

Human resource development (HRD) literature points out that while there are many different interpretations of the concept HRD (Gibb, 2004; Walton, 2003), recent literature points towards a trend of moving away from a training based conceptualization of HRD to a learning based one (Doornbos *et al.*, 2004; Zahn, 2001).

Kuchinke (1999) defined three paradigms that modern HRD use in the design of interventions; person-centered, which is aimed at self-realization of the individual; production-centered, which focuses on attaining organizational goals, and lastly ‘principled problem-solving’ which considers individuals need to develop, but in social contexts within larger collectives. Principled problem-solving, Kuchinke argues, is based on the concept of good work, which is oriented to democratic self-direction and

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responsibility to self and others and does not focus solely on economic returns (1999: p.156). According to Kuchinke, this view is closely tied to the concept of a learning organization (Argyris & Schön, 1996) in the sense that “... good work will benefit not only the individual, it can also result in smart workers who have the intellectual, moral, and social fortitude and vigor to confront the social and technical problems of the workplace and arrive at innovative solutions that cannot be found in the current system. Employees in this post-formal workplace are learners and researchers, as well as producers and co-workers” (1999:p156). From a principled problem-solving view, competences are developed through experimentation and contextual learning in social settings, and work becomes more stimulating, meaningful and productive.

Gibb (2004) considers there to be both realist and constructivist conceptions of HRD. A realist conception is based on a social-positivist paradigm and is strictly concerned with using HRD in order to achieve definable goals. From a social-positivist viewpoint, HRD is purely utilitarian, and attention to commonsense functionality assumes good HRD programs. A constructivist paradigm on the other hand, does not discard functionality, but supplements it by adding an aspect of imagination and creativity – what Gibb refers to as aesthetics - to the HRD process. Thus, although good HRD can be directly linked to functionality, there seems to be other factors such as creativity and imagination that play a role. Gibb argues that a design approach to HRD program development – based on regular, cyclical iterations between research, application and assessment - is needed due to the high levels of complexity and change in the work environment. A constructivist approach, in which one facilitates the processes of HRD, rather than define the outcomes - fits with a concept of design quite well. Furthermore, a constructivist approach to HRD is important for understanding how to support the individual in the pursuit of continuous learning, an important issue facing modern organizations (Medina *et al.*, 2005). Gibb sees a constructivist HRD conception, and the ensuing HRD program designs rooted in such a paradigm, as a rising challenge to the dominant social positive based conceptions apparent in many current HRD programs.

Accounts of HRD more clearly and strongly emphasize the practical, social, and affective contexts of HRD, requiring an understanding of people that is grounded not in the lives of solitary individuals but in communities of practice. This reflects an understanding of a changed work and employment environment with different material and psychological demands. People seek collectively, and value, participation in various kinds of activity in work organizations and in life that involve continuous development, rather than trading stocks of knowledge acquired independently during formal discrete learning events. They see themselves as members of and contributing to the existence and functioning of communities of practice, rather than being individuals and accumulating private possessions (Gibb, 2004: p.67).

Similar to Kuchinke’s idea of principled problem-solving, Harrison and Kessels (2004) maintain a view of HRD as “... an organizational process (that) comprises the skilful planning and facilitation of a variety of formal and informal learning and knowledge processes and experiences...in order that organizational and individual progress can be

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enhanced...” (pp. 4-5). Effective corporate education is based on situated learning, which is the key to assuring that knowledge workers are capable of prospering in a work environment that demands continual improvements and innovations (Kessels, 2001). This means that for HRD programs to be effective they need to be supported by the learning processes inherent in the daily course of operations (Kessels 2001, p.501).

Dimensions of effective HRD programs

Adult pedagogy

I consider communities of practice to be groups of professionals that come together in order to learn and innovate from and with each other. Approaching community participants’ learning from a pedagogical viewpoint based on childhood learners may not be effective because adults learn in different ways than children (Bransford *et al.*, 2002). Knowles (Knowles, 1978) argues that adult education should be a field in itself because pedagogy can not explain the way adults learn, nor the motivation that plays a role in adult learning. Knowles’ theory is a guiding factor in both the HRD field and the adult education sector (Terehoff, 2002)

Andragogy is based on five assumptions that differ from pedagogical assumptions: (1) changes in self-concept, (2) the role of experience, (3) readiness to learn and (4) orientation to learning. Knowles (1978) proposes that adult education has the following six key characteristics;

1. adults are capable of self-directed learning and should be guided in this process
2. adults have an ever-increasing reservoir of experience that is a rich resource of learning
3. people are ready to learn something when it will help them to cope with real-life tasks or problems
4. learners see education as a means to develop increased competence.
5. adults need to know the reason to learn something.
6. the most potent motivators for adult learning are internal, such as self-esteem.

The guiding notions of andragogy are closely related to a social-constructivist perspective on learning in the sense that both understand adults to learn together in a self-directed way, developing the learning environment as they go (Mergel, 1998; Terehoff, 2002) .

Ongoing processes

In his work on teacher development trajectories, Guskey (2000) comments that HRD in education is often seen as a few days of (ineffective) training on a specific topic that happens off-site. According to Guskey (2000), “...(successful) professional development is not an event that is separate from one’s day-to-day professional responsibilities. Rather, professional development is an ongoing activity woven into the fabric of every educator’s professional life. Professional development is an indispensable part of all forms of leadership and collegial sharing” (p:14).

Linked to organizational goals

In order for management to support HRD programs – a critical success factor for any trajectory including CoPs - there needs to be a clear link to the goals of the organization (Guskey, 2000). And while life-long learning is important for personal empowerment and affectual development (Commision, 2000) learning and innovating in the workplace is in the service of the organization as a whole (van Woerkom, 2003). From an Andragogy perspective, learners are motivated by the need to solve problems occurring in their daily practice (Knowles, 1978).

CoPs and HRD

The instrumentalist perspective I use in my conceptualization of CoPs (see Ropes, 2007) can be closely related to the HRD perspective sketched out above. According to CoP theory, the variables that lead to effective CoPs are (Thompson, 2005; Wenger, 2000; Wenger *et al.*, 2002): strong community engagement, situated learning, focus on practice, clear links to the organization, self-direction and links to organizational learning. The literature on effective HRD trajectories clearly shows many similarities to effective CoPs. Firstly, CoPs are based on long term, social-constructivist learning situated in professional situations. From an andragogy perspective, participation in a CoP is implicitly motivated partially by a desire to learn in order to become more competent in one's field and partially by extrinsic rewards such as status given by the CoP itself (Gibb, 2004). Finally, an emergent design of CoPs must take self-direction into consideration. In CoPs, members, rather than others such as managers, are responsible for their own learning and the direction it takes.

2.1 Effective workplace learning (WPL)

Communities of practice function in a professional environment and are as such linked to professional practice. A CoP is situated within a larger collective that can be understood as a work-based activity system (W. L. D. Hung & Chen, 2002). One example of a work-based activity system is the workplace. The workplace is often presumed to be an inherently powerful environment for learning (Nieuwenhuis & van Woerkom, 2007), but some current studies are questioning this. For example, studies have shown that workplace learning is problematic because the workplace is based on performance, not learning, and thus has different goals (Nijhof *et al.*, 2006; Portman *et al.*, 2006). According to Reenalda, et al (2006), interventions in the form of new work organization and processes are needed to enhance workplace learning because of pressures to perform.

Blokhuis (2006) found eight factors promoting WPL, of which participation, support, and communication are the most relevant to CoPs. *Participation* refers to the ability to take part in the organization's activities. Participation also enhances individual motivation. *Support* considers help and encouragement and the ability to learn from mistakes in a trustful environment. *Communication* refers to access and availability of information that facilitates and forms the interaction of the individual with the environment. Explanations of organizational processes, feedback, exchanging experiences and questions about the processes are important examples of communication (Blokhuis, 2006 pp.30-33).

Finally, Nieuwenhuis and Woerkom (2007) found that independence, empowerment, feedback and recognition were four factors that lead to innovative behavior.

Workplace learning and CoPs

Communities of practice are an activity based collective (D. Hung & Nichani, 2002) situated in a larger, performance based organization and have clear links to the workplace. Variables such as participation, task autonomy and variation, and the possibility to learn from mistakes are inherent in well-functioning CoPs. Giving feedback and support are also part of participating in a CoP, but may be dependent on participant's interpersonal and group skills. The availability of information within the group depends on the willingness of participants to share information with each other. However, sharing information can be problematic due to cognitive and or motivational barriers (Camerer *et al.*, 1988). Cognitive barriers are, among other things, linked to difficulties in explicating tacit knowledge (Nonaka & Takeuchi, 1995), while motivational barriers are associated with such things as the effort it takes to share knowledge and perceived threats to personal advance – a knowledge as power idea. However, high levels of social capital within CoPs can help overcome these barriers (Brown & Duguid, 2001) by establishing common understandings as well as establishing trust. Finally, information from outside the CoP is also important for its functioning because it is needed as a link to the greater collective (Wenger 1998).

2.2 Effective learning environments from a social constructivist view

The original works on CoPs by Lave and Wenger (Lave & Wenger, 1991) and Wenger (Wenger, 1998) as well as other, later work (Argyris & Schön, 1996; Breu & Hemingway, 2002; Schwen & Hara, 2003; Swan *et al.*, 2002) clearly establish communities of practice as a social constructivist learning environment (SCLE). This means that an understanding of how effective social cognitive learning environments are designed can inform CoP design and specific interventions in order to facilitate their cultivation.

According to social constructivist theory, knowledge resides not in individuals, but in the community itself (Hakkarainen *et al.*, 2004). In fact, a community of practice is “an intrinsic condition for the existence of knowledge” (Lave & Wenger, 1991) because knowledge is built through the interactions of individuals.

Sfard (1998) discusses a participation metaphor of learning in which it is an ongoing process occurring during interaction in communities of practice. Participation means learning by and through becoming a member of the community of practice (Portman *et al.*, 2006).

In his theory, Illeris (2002) also sees knowledge being built during processes of interaction. Learning is a result of both cognitive (internal) and social activities surrounding interaction. Of the six dimensions of interaction defined by Illeris (2002), two are especially important for this work; ‘activity’, defined as “goal-directed behavior within a certain context” and ‘participation’ (pp.120-121).

Illeris (2002) argues that only through different types of interaction can there be what he calls ‘accommodative learning,’ a concept similar to Argyris and Schön's (1996) ‘double-

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loop learning'. One extreme form of accommodative learning, termed 'transformative learning' by Illeris, actually changes the learner's self. Wenger (1998) refers to this as 're-negotiation of identity', an important aspect of participation in a CoP. Transformative learning is demanding on the individual because it requires a complete restructuring of one's cognitive and emotional streams (Portman et al., 2006). Transformative learning places strong demands on psychological resources and requires safe, motivating and trustful learning environments for it to occur (Blokhuys 2006).

The strength of learning environments based on social constructivist theory lies in their ability to foster adaptation and flexibility (see Blokhuys 2006 p.36). This can be explained by the fact that in a social constructivist learning environment there are no pre-determined learning outcomes. Jonassen (on-line, undated) argues that constructivist-based learning environments are less controlled than say, behavioral-based ones, because the outcomes of knowledge building are not always predictable. This means that a learning environment must foster the learning process, rather than (as in a behavioral approach) control it.

According to Jonassen, constructivist-based instructional design needs to focus on supporting the construction of knowledge. In order to do this, Jonassen explains that powerful learning environments need to;

- Foster reflective practice
- Enable context- and content-dependent knowledge construction
- Support collaborative construction of knowledge through social negotiation, not competition among learners for recognition
- Be based on internal negotiation - a process of articulating mental models, using those models to explain, predict, and infer, and reflecting on their utility
- Be based on social negotiation - a process of sharing a reality with others using the same or similar processes to those used in internal negotiation
- Be facilitated in the exploration of real world environments and intervention of new environments - processes that are regulated by each individual's intentions, needs, and/or expectations
- Result in mental models and provides meaningful, authentic contexts for learning and using the constructed knowledge
- Be supported by case-based problems that have been derived from and situated in the real world, with all of its uncertainty and complexity and based on authentic real-life practice
- Have an understanding of its own thinking process and problem solving methods - problems in one context are different from problems in other contexts

Finally, Johnson and Johnson (Johnson & Johnson, 1975) - perhaps the best-known authors on the topic of collaborative learning (SCO report, p.43) - describe five important characteristics of a learning environment that fosters both cognitive and social competences. These are;

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- positive interdependence – group members need to feel linked to one another and give commitment.
- interaction - preferably face-to-face, and shared activities
- individual and group accountability – feeling responsible for the group and oneself
- interpersonal and group skills - leadership, decision-making, trust-building, communication, and conflict-management skills
- favorable group processing – reflecting on the processes going on within the group.

SCLE and CoPs

The original work on CoPs was based on social constructivism (Lave & Wenger, 1991). Later, Wenger (1998) expanded the concept of CoPs as a social learning environment by defining three aspects belonging to a social learning system such as a community of practice entail; engagement, imagination and alignment. These notions are linked to what Wenger refers to as “modes of belonging” and form the basis for learning. Wenger (2000) explains that engagement is an outcome of doing things together such as solving problems, participating in a meeting, or producing new artifacts; imagination means constructing an image of ourselves, of our communities and of our world, in order to reflect on our situation and explore our possibilities. Finally, alignment is about checking to see if our local activities are aligned enough with other organizational processes in order for them to be effective outside of our local engagement (pp. 227-228). Wenger actually uses the three modes of belonging as a guide to the design of CoPs (Wenger, 1998).

3 Synthesizing the frameworks

At this point I have established clear conceptual links between CoPs and frameworks from the fields of HRD, WPL and SCLE’s. Understanding these frameworks helps one come to a deeper comprehension of the internal processes of a CoP that contribute to its cultivation as well as to its effectiveness, and how these processes can be stimulated. Table1 below summarizes the salient points from the literature.

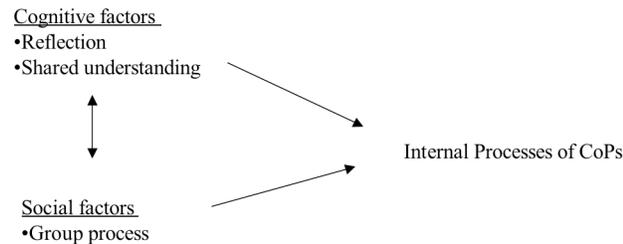
Table 1: Characteristics of Effective Environments from Different Perspectives

Effective HRD initiatives ...	Effective CoPs
Have elements of adult pedagogy	Are based on strong community
Are based on ongoing processes	Consider situated learning
Are situated in nature	Focus on practice
Have a process orientation	Are linked to the organization
Are linked to organizational goals	Are emergent
Are supported by management	Lead to organizational learning
Depend on self-direction	Have varying degrees of engagement, alignment and imagination
Allow for experimentation	Are coordinated efforts
Effective social-learning environments....	Effective workplace learning is fostered by...
Rely on shared understanding	Empowerment
Depend on common goal orientation	Feedback
Are based on different types of interaction	Communication
Require individual and group accountability	Participation
Are facilitated by interpersonal and group skills	Support
Have favourable group processing	Independence
Fosters group and individual reflective practice	Recognition
Are centered on real-world problems	

Table 1 shows three main perspectives; those associated with cognitive processes, those with social processes and those connected to external factors. Cognitive factors are those that influence the processes directly associated with learning, such as shared understanding and reflective practice. Social factors influence collaborative processes, such as interaction and common goal orientation. External factors regard management support, ability for self-direction, communication, and external coordination and, while important, are not part of the scope of this paper. Using these concepts as a guide, I

propose the following conceptual model for understanding and designing interventions.

Figure 1. Conceptual Design Model



4 Design parameters

Cognitive and social factors

Learning in collaborative environments depends on a certain degree of shared understanding between the participants. Coming to a shared understanding means first an individual must externalize his thinking by objectifying it into tools that others can appropriate, adjust and refine (Baker *et al.*, 1999; Nonaka & Takeuchi, 1995). However, barriers such as different discourses or thought patterns might impede the processes. Palinscar (1998) discusses the impact divergent participant backgrounds can have on the functioning of a collaborative environment, arguing that language forms the basis for interaction and thus learning. Coming first to a shared language, and then to a shared understanding, is both part of the learning process and a result of it. Baker, et al. (Baker *et al.*, 1999) refer to this process as ‘grounding’, which “...is the name given to the interactive processes by which *common ground* (or *mutual understanding*) between individuals is constructed and maintained” (p.32).

Furthermore, shared understanding is not just about the specific meaning of words. It also implies an understanding of the context in which the words are uttered (Clark and Scheefer, in Baker 1999) as well as some sort of diagnosis and feedback. Interventions that lead to mutual understanding need to consider these points.

Another aspect of cognition considers the ability to reflect. Reflection is a metacognitive concept seen repeatedly in the literature on learning (Boud & Middleton, 2003; Hatton & Smith, 1994; Kwakman, 1999) and is considered crucial for (transformative) learning (Lin, 2001; Lin *et al.*, 1999). Reflection is also important for alignment and imagination (Wenger 1998), as discussed above.

Interventions that promote regular intervals of group reflection should contribute positively to both the learning and creative process (Nonaka & Takeuchi, 1995), as

multiple perspectives and feedback promote both collective and individual understanding (Lin et al., 1999).

Group and interpersonal skills play an important role in collaborative learning environments (Kwok & Khalifa, 1998; Pritchard *et al.*, 2006) and can be developed apart specifically or included as one dimension of other interventions. Enhanced group processes can help lead to strong community, as can a common goal orientation (Bunderson & Sutcliffe, 2003; Button *et al.*, 1996). Strong community is also related to psychological safety (Edmondson, 1999), which means members of the CoP must experience it as a safe place for experimentation where there is room to learn from mistakes. The CoP should be emphasized as such a place.

5 Interventions for facilitating internal processes of CoPs

The following section describes specific interventions and their link to the theories discussed above. The interventions are given in a specific order that contributes to the cultivation of CoPs, as discussed by Wenger, *et al* (Wenger et al., 2002).

5.1 Presenting the business case to participants.

Potential members of a CoP need to know what it is that participation can bring in terms of learning (Knowles, 1978). For my research I developed two separate PowerPoint presentations, one for management and one for potential members. The presentations are nearly identical and include explanations of:

- How a community of practice works
- The costs of participating in one
- The benefits of participating in one to the individual and the organization
- Examples of interventions that could take place during the meetings

Along with a PPT presentation, participants receive a short written explanation of CoPs.

5.2 Intervention two (first official meeting); Kick-off meeting for a CoP (based on *Handreiking Startbijeekkomst CoP from the ProCoP project*¹)

The purpose of this intervention is to influence social-cognitive factors in the group. After introducing one's self to the others, there is a discussion about what it means to be a part of a CoP. The second part of the intervention starts the development of a common learning agenda for the community (supporting self-direction). Participants are asked to speak to one another about what problems or concerns they have. This activity helps to explicate implicit knowledge (Nonaka & Takeuchi, 1995; Stahl, 2000) and facilitate

¹ See www.procop.du.nl for details.

grounding (Baker et al., 1999). Next, the group decides upon what items will make up the learning agenda. The processes involved here concern coming to a shared understanding and developing a common goal orientation.

5.3 Intervention three (second meeting); workshop on storytelling (based on the like-named intervention from ProCoP)

This workshop focuses on creating a shared understanding as well as stimulating reflection. Storytelling in organizations has been shown to be an effective way for individuals to reflect on their own practice while at the same time giving insight into that practice so that others can understand it better (Swap *et al.*, 2001). Boyce (1996) argues that storytelling is an important tool for organizational renewal and participation, while Boje (2001) sees storytelling as a way to construct organizational reality. In her critical review of storytelling literature, Boyce (1996) found research indicating that storytelling is a valuable instrument for; expressing the organizational experience of members; problem-solving and action research; confirming shared experiences and meanings; orienting and socializing new organizational members and co-creating vision and strategy (p.19) Abma (2003) found an important aspect of a storytelling intervention is that a problem common to the group is presented in a different context, enabling others to reflect on their own practice.

5.4 Intervention four (third meeting); workshop on using deBono's Six Thinking Hats

The Six Thinking Hats system has been used in organizations for improving group process (Belfer, 2001), promoting creativity (Foulds, 1997), defining group roles (Jensen *et al.*, 2000; Wang, 1999) and helping individuals to find a role in the group suitable to both the individual himself group, which is a major problem for new entrants Schein, 1988 in Wang, 1999). Ego defense, a problem common to group discussions, is also lessened due to the role-playing aspect of the system (de Bono, 1985).

The artificial and "...deliberate action of wearing the six hats creates useful contexts to be free to think in the mode of feelings and emotions (red hat), critical thinking (black and yellow hat), creative thinking (green hat), objective thinking (white hat), thinking about the process itself and to coordinate the other modes (blue hat)" (Carl, 1996)

5.5 Intervention five (fourth meeting); external case presentation

This intervention focuses on linking the local practice of the CoP participants to broader (global) practices (Wenger, 1998). A CoP is a forum where practitioners can overcome the gap between research and practice by understanding the links between their everyday work and new developments in the field (Wesley & Buysse, 2001). Furthermore, reflection on the implications of social, political and cultural forces on one's actions – and vice-versa - is one of three types of 'reflection-on-action' that should take place as part of professional development (Hatton & Smith, 1994).

5.6 Intervention six (fifth meeting); evaluating the CoP (based on *Handreiking Tussentijds Evaluatie*²)

This intervention introduces a tool that helps members reflect on different aspects of a CoP, namely; its right to exist and the place it has in the practice of the members and the organization; the social fabric that binds the community; the identity of the community in the larger, global sphere; operational considerations such as basic facilitation (time, space, etc.); the results of the community – seen in new knowledge for the practice and the field in general and finally the currency of the learning agenda. Members are stimulated to consider all aspects from both a single-loop perspective (are we doing things right?) and a double-loop one (are we doing the right things?) (Argyris & Schön, 1996).

6 Conclusion

Communities of practice can be seen in their entirety as an organizational intervention based on learning. In order to stimulate the effective internal processes, interventions can be done that focus on specific aspects of the CoP. Using the framework developed above, interventions can be developed in a more systematic way, or existing interventions can be chosen and implemented based on a theoretically grounded standard.

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² ibid

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