Organizing professional communities of practice

Ropes, D.

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In this final chapter of the dissertation I turn towards the original motivations for me starting the research, namely the problem associated with complex and continual change that polytechnics and organizations in general are going through. I also return to the purpose of this research, which is to help solve this problem associated with change for both the organization as a whole and the individual actors within them. Implementing the CoPOS was a way of coming to a set of design principles for organizing CoPs, which in turn could help solve the original problem. This chapter is actually a discussion about the conclusions I came to after the research about why CoPs are able to help organizations change and how the CoPOS can help organize these communities.

I start by explaining the benefits of organizing and supporting CoPs. What is their added value— to the organization and to the people who participated — as I have found in the research? How have the CoPs organized in this research contributed to change? I then turn towards the CoPOS itself, and look at what added value it has in regards to organizing CoPs. A large part of this concerns generalizability of the results, which is actually about transferability. Transferability in design-based research can be compared to generalizability for explanatory approached to research, but is actually more about understanding if the design is able to be applied in situations other than the ones where the research took place.

This is followed by an explanation of how this research contributes to the base of knowledge surrounding CoPs. I finish the chapter by giving several suggestions for paths of future research that were discovered but not tread during the four years of this research.

6.1 The value of CoPs to organizations

According to the model presented in chapter one, polytechnics are undergoing major and complex changes. Although this research did not really explore this model explicitly, through interacting with all the different people in the course of
the last four and one half years, I do believe complex changes are common to most organizations – at least the different ones I have been involved in. In other words, the problem I sketched out in the first chapter is a real one – there are complex organizational and environmental changes happening that demand continual learning from employees. The question here is, do CoPs help people and organizations with this change and if so, how?

Through working with members of the different CoPs, I found that in each of the organizations there were unanswered questions that employees felt strongly about, but yet the organization (represented by management) had not addressed fully, or was unable to answer using more traditional methods. I use the case studies to illustrate this.

The EAI CoP looked at combating school dropouts; government policy was starting to focus on improving the level of participation in middle vocational schools. The EA Inc. was not prepared for this. The CoP wanted to explore possibilities for new commercial interventions.

The LN CoP was a forum for knowledge to be exchanged and built around the application of new labor laws. This was needed because government had left organizations to develop the applications themselves, and most were not at all prepared for this.

The LA CoP came to the realization that there was no inventory of crucial organizational knowledge. Such a guide was needed for enhanced exchange and better utilization of organizational knowledge as well as for locating critical knowledge gaps.

The TD CoP perceived and understood the need to change the way they approached teaching but were not sure how to go about this using models from other contexts.

The TM CoP defined and addressed a problem with assessing non-traditional theses. This had been a large problematic issue in the faculty for years.

In each case, an answer to the problem was being worked on in the CoP in a way that could be eventually used by the rest of the organization. These new knowledge products and other innovations were the focus of activity within each CoP. Thus, one added value of CoPs to organizations seems to lie in their ability to
Discussion

pinpoint and explore organizational problems. These are worked on by the CoP in a way that leads to concrete innovations that in turn are introduced into the greater collective. This shows that CoPs do in fact play an important role in the organizational learning cycle discussed earlier. The crux lies in the ability of the CoP to understand not only what the problem is, but where it originated from as well. Understanding the settings of problems are important for higher levels of learning, which are needed to solve difficult problems in complex systems such as organizations (Senge, 1990).

Another benefit the CoPs might have brought to the greater organizations was a development or improvement of employee networks through raised levels of social capital. In chapter two I discussed the concepts of bridging and bonding capital. The former is needed for more radical innovations between members of different organizations or backgrounds (like in the case of the LN CoP and the TD CoPs) while the latter is important for solving complex organization-based problems and relies on deep levels of shared understandings, which was the case for the EAI CoP, the LA CoP and the TM CoP. Both types of networks are important for organizations because this is one way they gather information from their environment. CoPs are in turn important because they help translate new information and signals into concrete innovations.

CoPs seem to help organizations change through their innovative capabilities because innovation can be seen as being directly related to change (Tholke, 2007). This is also directly linked to the model presented in chapter two and also serves to underpin the research model presented in chapter three; in this sense I propose that CoPs have the capability to contribute to organizational learning in regards to spurring new innovations.

Other benefits of CoPs to the greater organization are that they support work-related learning and assure participation. Although the instruments used did not seem to show any change in specific competences, most members commented that they were exchanging knowledge and information with colleagues. As I discussed earlier, this is a sign of implicit learning, which is difficult for people to reflect on.

Participation and feedback from management has been shown in the literature (Billet, 2002; Blokhuis, 2006) to be important for workplace learning and the
CoPs organized here assured that employees are working together in order to improve the whole organization. This is one interpretation of participation. By making explicit agreements with the management about the knowledge products developed in the CoP, feedback is organized. This means that another added value of CoPs also is related to their capabilities for improving the learning potential of the workplace.

Ten Dam and Blom (2006) found that in-service teachers who worked on school innovations not only contributed to the improvement of the work conditions, but also developed their professional identity. Wenger (1998) also found this and argued that developing this identity is important to the individual as well as the organization.

6.2 The value of CoPs to the individual

The original premise of this research was that teachers in polytechnics are experiencing major changes in the organizations in which they work and that these changes affect their practice in complex ways. I thought that organizing CoPs would help teachers to make sense of their changing environment by helping them to learn in a social collaborative way. What I found is that learning at work in collaborative situations is a part of a knowledge worker’s daily professional life. Comments by members pointed this out, as did my observations - I saw that CoP members were typically comfortable in a collaborative environment (and team psychological safety was in each case at or above average).

In the formal interviews and throughout the implementation of the CoPOS, CoP members talked about their motivations for participating. On the one hand they wanted to improve their organization’s capability. But on the other hand they expressed that the CoP was a success – which was directly linked to motivation - because of the chance to exchange knowledge and to learn and develop something new with colleagues that in turn would improve the environment in which they work. Participants had thus different reasons for participating and discussed this in general terms of learning, but not in terms of improved competence. According to Nieuwenhuis and van Woerkom (2007), there are four goal rationalities for learning: preparation, which is about becoming competent; optimization, which is about learning to improve task execution; transformation, which is about innovation; and personal development, which concerns learning for personal
goals. Of these four rationales, the CoPs organized here seemed to be mostly linked to optimization and transformative goal rationales. Individuals in the CoPs were trying to improve individual performance through knowledge exchange and building and at the same time innovating in order to improve organizational capabilities. This is different than for the original conceptions of CoPs (Lave & Wenger, 1991; Wenger, 1998) in which the goal rationality was about gaining competence and thus preparing for the work situation. It seems that whereas students learn in order to become competent, professionals learn as part of their career in order to gain insight into their practice and thus solve problems quicker.

The other goal rationality that might have been appealed to is about personal development and considers that work plays a large role in employees’ affectual development. In this view, learners are seen as being self-directed and need to be facilitated, not guided in their learning. The CoP is able to do this because self-direction is a key aspect of the environment.

Learning in CoPs is probably effectual for individuals because it appeals to the different types of goal rationalities as well as by assuring that learning is done in a way that is seen as effective by the individual. This is related to the model developed for designing the CoPs presented in chapter two; if the learning that took place within the CoPs was not in accordance with the principles of CoP design shown in chapter two, then the CoPs would most likely not have been successful in the eyes of these members – which they were according to the evaluative survey.

Another value of CoPs to the individual is that participation in the CoPs allowed for expansion and or improvement of members’ networks. This was found in the qualitative data. Networks are an important way for professionals to gain new knowledge for solving problems and innovation. Studies have been shown that networks also contribute to employee satisfaction and loyalty (Buchel & Raub, 2002).

6.3 The value of the CoPOS

The added value of the CoPOS is related to two major points that came from the research. First, the CoPOS gives direction to how CoPs can be systematically organized by utilizing two intertwined factors critical to success, namely motivation
and the development of a powerful learning environment. Other added values concern the ease and low cost of implementation, and the fact that the CoPOS is in itself a mechanism for starting a CoP. I start by discussing the first two aspects.

Knowledge-intensive, service-based organizations, like the ones studied in this research, can be hectic places where time pressures play a role in employees’ daily work. However, as I discussed earlier, studies have shown that time is not an issue for participation in organizational learning activities. In the interviews this subject was not mentioned either. Some people will always participate in these types of initiatives regardless; these are the so-called self-directed learners. And some people will never participate. I observed this throughout the research. The crux then, is to design a system that appeals to people ‘in the middle’ and this seems to be what the CoPOS did — it organized environments that were motivational and at the same time effective for knowledge exchange and building.

So motivation is probably the crucial aspect to participation for all employees. What I found was that the CoPOS systematically organized CoPs in such a way as to develop a powerful collaborative learning environment while at the same time assuring participation. This was also the case for the LN CoP, which had already existed but was losing participation. The following discussion points out more specifically how the CoPOS was able to do this.

**Linking individual and organizational learning**

Perhaps the greatest value of the CoPOS lies in its ability to structure work-related learning activities in such a way as to systematically link individual and organizational learning and development. In most of the case studies, the CoPOS assured a relation between individual and organizational goals in the form of innovation, which is an important aspect of organizational development (Boonstra, 2004). The CoPOS also seemed to organize CoPs in such a way that assured motivation for participation by assuring that individuals learn and collaborate in ways that lead to concrete knowledge products in the name of the organization. The general idea behind the CoPOS is about bringing people together and structuring the meetings in a way that supports knowledge productivity and motivates for participation. The latter aspect is probably the most important one when organizing a CoP because without participation, a CoP will not continue.
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Structuring the learning environment

Collaborative learning environments are based on communication, which needs to be structured. This leads me to the next statement, namely that the CoPOS is valuable because it is not about solving the problem, it is about making sure the processes that can lead to a solution are levered by structuring the internal communication processes. For example, developing a learning agenda structured in information exchange in a way that explicated implicit knowledge so that others could ‘see’ and discuss different perspectives of a similar problem. This type of reflection is one aspect of double-loop learning, which is both an important aspect and result of a powerful social collaborative learning environment.

Low cost and ease of implementation

In the design cycle model used to design the CoPOS there were several limitations discussed. Limitations refer to the boundaries set by the designer. There are two types of limitations, namely operational requirements, which consider the ‘ease of use’ by the end user, and limiting conditions, which are related to the demands of the environment in which the design will be implemented.

In regards to operational requirements, the CoPOS needed to be explicit and uncomplicated in order to fulfill the needs of the change-agent, who needs to have a simple, yet powerful, set of guidelines to follow. The CoPOS certainly falls within this limitation. The important factors surrounding the organization of CoPs, including the underlying mechanisms of why the interventions work, have been discussed and implementation of the CoPOS has been richly described. The system as a whole does not demand an especially expert facilitator to guide the processes: I am a teacher, but not a professional facilitator. On the other hand, this might be a plausible explanation for not getting better results.

Limiting conditions are about the environmental context in which the implementation will take place. I originally proposed that three conditions needed to be met. These are discussed below.

1) The CoPOS had to be low cost. In only one of the cases was there an expense for time (in the TM CoP the dean had put hours on the duty roster of each member) – members used their own. Meetings took place internally (except for the TD CoP, which was already at an eternal location for the formal training) and used
simple office supplies. I can safely conclude then that the CoPOS met this first limiting condition.

2) The system must be flexible to meet the specific needs of the members due to pressures of the workplace. This limitation was clearly met when the separate interventions were shortened and adapted after the first iterations.

3) There must be a strong appeal to intrinsic motivation because extrinsic motivation (financial rewards, for example) is not a possibility. This limitation has also been met and the subject of motivation is discussed above.

Implicit value – starting something new
CoPs can and do organize spontaneously. However, this does not mean that they always do, or that if they do, they organize in a way that is effective. The CoPOS implicitly starts the organization process by making managers and employees aware of the possibilities of CoPs. This is explicitly done during the first intervention. In the first parts of this chapter I discussed the added value of CoPs. The added value of the CoPOS is that it actually starts the process of organization.

6.4 Critical reflection on transferability
In design-based research the goal is to come to tested design principles that can be applied in different situations, but within specific contexts. In this way, generalizability for DBR is different than from other explanatory research approaches because it seeks to achieve transferability of the artifacts within the parameters given in the original design. This was the ‘class of context’ section of the design cycle model and in my case refers to knowledge-intensive, service-based organizations.

It seems that the CoPOS can be transferred across organizations within the context it was designed for. In each of the iterations the results were very similar – there is clear indication that the data is saturated. The crucial factors for organizing CoPs and the generative mechanisms – so crucial to transferability of DBR artifacts - that were supposed to be triggered were, as seen in the results of the different tests. Threats to transferability in the form of plausible rival explanations have been mostly ruled out during their significant role as guide throughout the empirical section of this research. However, I would like to briefly revisit some of the larger threats here.
Discussion

Researh Bias
This is a large threat to this research, especially considering that there was no Beta testing done as was originally planned. My chosen methodology is inherently biased, but on the other hand I did use specific strategies to combat the problems associated with it; multiple data sources, richly describing the phenomena being researched, clearly explicating why the interventions theoretically work and being open about my role in the research.

Implementation factors
This threat is directly linked to researcher bias and asks not only was the intervention done right, but was the observed effect due to the implementation factors? In other words, would a different person achieve different results, all other factors held equal? I think the answer is probably no, for two main reasons. First, as I discussed earlier, the CoPOS is not difficult to implement. It was designed with this in mind and seems to be the case. Secondly, the CoPOS was designed to be implemented by a professional with some expert understanding of group facilitation. I use the word probably, because quasi-experiments in the messy world of reality may not be able to be replicated exactly.

6.5 Observed outcomes and the power of the data
I have already discussed several possible reasons accounting for the observed effects of the CoPOS on individuals and groups, such as the idea that professional CoPs are not strong environments for gaining competence and that learning was implicit and thus hard to measure. However, there is another question concerning the power of the data that might be of importance for understanding the results.

Quasi-experiments are a valid way of studying real-life groups in authentic settings. However, they also require sizeable numbers of participants to show significant effects. This might be one reason that several of the hypotheses were rejected. When I started this research I had thought that the core groups of the CoPs would be larger, or at least that meetings would be attended more regularly by a larger group, thus increasing the size of the population. On the other hand, there was a consistent use of data-gathering instruments throughout the whole research project, which in turn increases the power of the data.
6.6 Contributions to knowledge surrounding CoPs and HRD

This research has contributed to the body of knowledge surrounding CoPs by showing first how they can be effectively organized and facilitated in their development. CoPs have for some years been described in the popular press almost as if they are the answer to many different organizational problems, from innovation to employee learning to organizational development. What I found was that this is only partially true; CoPs do in fact facilitate employee learning, but mostly implicit learning. Furthermore, the success of CoPs is highly dependent on the domain in which they operate. The domain is made concrete in the learning agenda and thus may contain very specific ideas or problems. This specificity may exclude many potential members from participation because they are not interested in that particular aspect of the domain. Furthermore, professional CoPs are not about competence development. In other words, it seems that CoPs are an answer to a few problems for a few people, not necessarily the whole organization.

This research also serves to substantiate other research in HRD about workplace learning. The theoretical critical success factors from HRD literature (along with other perspectives) were integrated into the design of the CoPOS and in general the CoPOS worked. This gives insight into how HRD programs might be fine-tuned using concepts from the CoP theory (and obviously, vice-versa). For example, assuring that HRD initiatives are closely linked to the specific way of motivating knowledge workers to learn and collaborate in the service of the organization. Also this research contributes to knowledge about how CoPs, as human resource development trajectories, can be designed and organized in a way that leads to observable organizational learning, which is a typical goal of HRD programs.

I would also like to propose that designers of curricula and educational programs in polytechnics consider very carefully the role a CoP can play as part of the student-learning environment. I see that more and more CoPs like the ones I organized are being used in polytechnics as an addition to the content-based curriculum. However, this research shows these CoPs are professional learning environments and are not suitable for student learning communities in which becoming competent in a chosen field is the goal.
6.7 Paths for future research

One of the problems with traditional training based HRD I found in the literature was that the impact was low because of a lack of transfer from the training environment to the organizational one. In the case of the TD CoP, members used the CoP as a place to discover ways of transferring what learned in the formal training workshops to their own practice. I think that the next step in CoP research should be to see if this is in fact the case; if CoPs are coupled with more formal training initiatives, do they improve their impact by assuring learning transfer?

One of the things I found was that CoP members were of all ages. This was usually related to years in service as well. I observed that older members helped younger ones with developing alternative perspectives and increase understanding of the organizational environment and possibly with their professional identity development (ten Dam & Blom, 2006). CoP theory opens doors for looking at how implicit, expert knowledge is transferred and utilized by a group. This is different than the idea of master-apprentice learning in the first works on CoPs (Lave & Wenger, 1991; Wenger, 1998) because it is not about socialization or competence development, but rather about transferring tacit knowledge to others and guarding, maintaining and increasing the organizational store of knowledge.

Finally I think it is important to have a more complete understanding of the organizational setting in which CoPs flourish and the people who participate in them. Some questions that spring to mind are; are there specific organizational qualities that allow CoPs to flourish? Are CoP members typically self-directed learners? Are they more willing than others to take risks? The answers to these questions could help further inform the design of CoPs and contribute to our understanding of them.