

INTERGENERATIONAL COMMUNITIES OF PRACTICE; SHEDDING NEW LIGHT ON OLDER WORKERS?

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Abstract

The purpose of this paper is to lay the groundwork for a large-scale prescriptive research project on organizing intergenerational communities of practice as a way to help organizations deal with some of the problems an ageing worker population brings with it. After a definition of the problem, a review of four seminal works on communities of practice was done to see if organizing intergenerational communities of practice might in fact be a viable solution to the problems of an ageing organizational population. Results are encouraging and lead to the conclusion that management might start to consider organizing these communities as a way to shed new light on older workers.

Key words

Ageing workers, intergenerational communities of practice, knowledge sharing, organizational generations

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1 Introduction

This paper makes up the groundwork of a large-scale prescriptive research project aimed at helping organizations deal with an ageing worker population by organizing intergenerational communities of practice. In a prescriptive research cycle, once the problem is defined a theoretical solution is explored based on a review of the literature (van Aken, 2004). This paper covers these first two steps by first developing the problem at hand to a point that can be soundly researched but maintains its complexity so as to remain pertinent to practice. Then a review of four seminal works on communities of practice is done with the intent to answer the question “Might intergenerational communities of practice, as a specific type of training and development program, be a way for knowledge-intensive organizations to deal effectively with human capital problems associated with an ageing worker population?”

The paper is structured as follows; first the problem is developed, then five sub-research questions are proposed that serve to guide a review of four seminal works on CoPs. Conclusions and a discussion including limitations and implications for management are presented at the end.

1.1 The problem

The problem addressed here is grounded in the demographic change occurring within the European Union. Recent studies in the European Union point to the fact that the population is aging (see for example, European Commission, 2009; Giannakouris, 2008). Furthermore, demographic forecasts coming from EU members point to huge gaps in employment because of the looming baby-boomer retirements and a coming lack of younger employees to replace older ones (European Commission, 2010). This change in the demographic make-up has consequences for society, for organizations and the individuals who work in them. At a societal level, governments are concerned about financing the growing older population and as a result look to raising the legal age of retirement. This already the case in some Scandinavian countries and similar measures are being seriously discussed elsewhere in the EU. The consequence of an older legal retirement age for the individual is a longer working life. This in turn means that the average age of workers within organizations will most likely rise. Alongside of this, because of fewer births, a lack of new workers will raise the demand for labor and organizations will be forced to keep older workers longer in service or lose valuable human capital. These developments lead to a higher average age of the workers in the organization. This in itself is does necessarily a problem. But the way older workers are dealt with by management is. Knowledge – intensive organizations, such as those that make up the context of this research, rely on human capital for sustained competitive advantage and will need to adjust their current human resource management policies so as to optimize use of all employees - not just the younger ones, which is current policy. Research clearly shows that while managers are aware of the demographic changes and the negative potential consequences for their organization (Kooij, 2010) - the measures they typically take are grounded in the idea of easing older workers out of the organization (what might be referred to as an human resource management (HRM) approach) instead of investing in them through training and development (what might be called an human resource *development* (HRD) approach) as a way to help assure continued productivity. But *not* investing in an employee who is about to retire makes perfect economic sense because the possibility of a low return on investment is great. Negative perceptions about older workers’ unwillingness to participate also influence management decisions on investment in older workers’ training and development

(Rosen & Jerdee, 1976). Low participation in training and development is problematic for any organization that relies heavily on human capital as means of production, because training and development of workers has a direct influence on sustained competitive advantage (Wright, McMahan, & McWilliams, 1994). According to some reports, 40% of employees between the ages of 25-34 in European work organizations took part in some form of education and training, while for the 55-64 year age group participation was less than 12% (EQUAL, 2007; European Commission, 2007). It is this last group that concerns the project and this paper.

Research shows that along with management, older workers are often unwilling to invest in themselves (Maurer, 2001), compounding the problem. One reason is that like management, older workers do not see the value of training and development if they are to retire soon. Another, possibly more compelling reason is because of poorly designed training and development initiatives that fail to motivate (Commission, 2006; Fuller & Unwin, 2005). Thus, the first problem of an ageing workforce is a combination of factors based on the idea that as the working population ages, a smaller percentage of employees participate in training and development, which in turn negatively affects the competitive advantage of the organization. Lack of participation in training and development is the first focus of this paper. The second is about the effects an older average worker age has on two critical organizational processes, knowledge sharing and organizational change and renewal.

Frictions between generations are a result of different value structures and the unique world-perspectives each generation has. This friction inhibits critical organizational processes such as knowledge sharing, innovation and capacity for change (Deal, 2007). Furthermore, ageism - defined here as systematic, negative stereotyping and discrimination - between generations decreases both efficiency and efficacy of organizational processes by negatively affecting the general climate of the organization. Evidence shows that ageism is higher in organizations with large numbers of older workers (Kunze, Boehm, & Bruch, 2011) for different reasons. For example older employees are often better paid and receive better secondary benefits, causing envy in the younger employees. Reverse ageism, which means older employees discriminate against younger ones, is also more likely to occur in organizations with older worker populations. In this paper we see ageism and reverse ageism as negatively affecting motivation to share knowledge. And in modern, knowledge intensive organizations, sharing knowledge is a crucial process needed to sustain competitive advantage.

Another reason for (reverse) ageism is that younger and older workers have different views on change and renewal. Younger workers experience the 'old guard' as maintaining the status quo while older workers on the other hand see younger ones as disrupting established practices. However, important natural changes in the organization are stimulated by new generations of workers and the different worldviews they have. Bontekoning (2007) found that it is vital for new generations in organizations to work together with older ones to create viable innovations and sustainable change and development. It seems that different generational perspectives on similar processes are a crucial factor for organizations to maintain competitive advantage but in an organization with a high percentage of older workers, these processes are less likely to occur because of lack of interaction among the generations.

1.2 The solution: intergenerational communities of practice

One way that organizations might be able to mitigate the above problems is to organize

intergenerational communities of practice. We know from the literature that communities of practice (*CoPs* from now on) can be strong environments for employee learning and organizational knowledge building (Ropes, 2010; Wenger, 2000), but we do not know if they could be used for the specific problems presented above.

While there are several definitions of CoPs, most reflect the idea of a social structure in which people mutually engage over longer periods of time in various activities around a common domain and as a result improve individual competence and build new knowledge. Learning is thus not the focus of the group, but rather a sort of byproduct of the social interactions that occur (Hung & Chen, 2002; Scardmalia & Bereiter, 2006). New knowledge related to shared practice is developed and becomes embedded in the group, which is called the community.

CoPs are modeled along the three major dimensions of domain, community and practice.

- Domain "...reflects the context and focus of the joint enterprise that is continuously negotiated, and concerns the topics of interest, ideas and perspectives that a group shares" (Akkerman, Petter, & de Laat, 2008, p.385).
- Practice "...denotes a set of socially defined ways of doing things in a specific domain: a set of common approaches and shared standards that create a basis for action, communication, problem solving, performance and accountability." (Wenger, McDermott, & Snyder, 2002, p.38)
- Community is what facilitates the different processes within the CoP. "Through mutual engagement, interpersonal relations and social capital are developed, making collaborative learning and knowledge exchange possible." (Ropes, 2010, p. 20)

As one will read in more detail below, the way in which CoPs are conceptualized has gone through several changes. Originally CoPs were portrayed as emergent and informal forums for gaining competence. In later work they are conceptualized as knowledge management instruments that could be purposefully and formally organized. At first glance, it would seem that CoPs should be able to help with the problems associated with an older organizational population, but can they really? Is there a theoretical grounding possible? This is the crux of this paper: We need to know if theory supports our idea that intergenerational CoPs can be organized specifically in order to help mitigate two of the problems associated with an older organizational population.

1.3 Research questions

Based on the discussion above, the main research question of the paper is: "*Might intergenerational communities of practice, as a specific type of training and development, be a way for knowledge-intensive organizations to deal effectively with human capital problems associated with an ageing worker population?*"

In the following section five sub-research questions are developed in order to answer the main research question and to guide the review. We start with the possibilities of CoPs being organized as training and development initiatives and then turn to the other points given above.

1.3.1 Organizing CoPs

The first question we need to answer concerns the possibility of organizing CoPs as a training and development initiative because CoPs are often conceptualized as emergent, informal, self-organizing social constructs where members are responsible for their own learning and the direction it takes. This is contrary to more typical ideas of training and development programs, which are usually intentionally (and formally) organized by management and designed and facilitated by outside experts. However, both theoretical and some empirical work on the subject suggests possibilities for intentionally organizing CoPs (c.f. Akkerman et al., 2008; Ropes, 2010; Saint-Onge & Wallace, 2003) as workplace learning environments. This leads us to the first research sub-question:

RSQ1: Are CoPs emergent or might they be intentionally organized?

1.3.2 Motivation to participate in training and development

As mentioned above, one reason is that employers are not willing to invest in older worker learning and development because the returns on investment are not clear. However, in a market where human capital is becoming more and more scarce, employers will need to create stronger learning climates that include all ages (Kramer & DePryck, 2010), which means tailoring learning and development to specific groups and subgroups within the organization. In regards to the older worker, motivating them to participate in organizational learning activities will be paramount. However, reports on training effectiveness for older employees show that they typically do not consider older workers' motivation for learning or their preferred learning style (D'Amato & Herzfeldt, 2008; Fuller & Unwin, 2005). In other words, poorly designed training and development initiatives that fail to motivate are a major reason for lack of older worker participation. At the same time, research shows that motivating older worker participation in training and development can be a challenge (Bohlinger & van Loo, 2010; Kooij, 2010), much more so than for younger workers. Older workers participate for dissimilar reasons than younger ones due to different expectations of the results. For example, older workers usually have little desire to improve their career, while younger workers see training and development as a way to gain further competence in order to 'climb the corporate ladder' (Nieuwenhuis & van Woerkom, 2007). Indeed, older workers are more intrinsically motivated than their younger counterparts who (along with their manager) see training and development as an investment in the future. This means that training and development programs need to be specifically designed that appeal to the older learner's motivation in order to assure participation. Based on these foundations, the second sub-question is:

RSQ2: What motivates participation in a CoP?

1.3.3 Older worker learning

Studies show that older workers prefer experiential learning situated in the workplace (Fuller & Unwin, 2005; Wognum & Horstink, 2010), and the chance to use previously gained knowledge in new situations. Types of learning environments that use practice-based learning and training on-the-job learning, learning from colleagues and learning from experience are more appropriate for older workers than disconnected environments based on learning completely new tasks (Skirbekk, 2004) - often the primary goal of training and development programs (Beier & Ackerman, 2005). Because older workers'

learning relies mostly on experiential knowledge - studies have shown them to be averse to learning in situations where more 'education-based' knowledge is the focus - any training and development program designed with a conceptualization of learning not fitting for older learners will probably be neither attractive nor effective.² This leads us to the third question for the review:

RSQ3: How is learning in CoPs conceptualized?

1.3.4 Organizational processes

A large older worker population can negatively affect important organizational processes such as knowledge sharing and the capability to change and renew. Each of these aspects is developed further and lead to two specific research questions.

Knowledge sharing

Barriers to sharing knowledge can be higher in 'older' organizations for two reasons. The first is linked to motivation to exchange knowledge. Some studies show that older workers tend to be more unwilling than younger counterparts to share knowledge because they fear their place in the organization could be jeopardized by doing so (Slagter, 2007). However, other research shows that knowledge sharing tendencies follow a U- shape (Lauring & Selmer, 2012): employees are willing to share their knowledge at the start of their career, but midway through, tend to become more reluctant. Towards the end of their career reluctance is no longer an issue. In this paper we take the widely accepted perspective that knowledge sharing is subject to many barriers, and that demographics probably do in fact play a role (Lauring & Selmer, 2012; Riege, 2005; Slagter, 2007).

The second barrier concerns the complexity of knowledge and the different cognitive structures novices and experts have that allow them to deal with the complexity. Experts have a cognitive ability to simplify things in ways that make it possible to use and understand in different settings, while novices do not (Hinds & Pfeffer, 2003). This means that sharing knowledge might not be fruitful for the novice and in fact makes knowledge sharing between novices and experts frustrating. Camerer, Loewenstein, and Weber (1988) call this 'the curse of knowledge'. Based on these premises, the next research question is;

RSQ4: How are knowledge sharing processes in CoPs typified?

Organizational change and renewal

According to Social Categorization Theory (SCT), individuals group themselves along similar lines in order to maintain a positive self-perception. One way people do this is to employ demographics such as age. SCT suggests that an individual has a preference for positive social self-evaluation and that this stimulates an unconscious tendency to sort others into social categories that are seen in a more negative light than the in-group (Kulik and Ambrose, 1992; Vora and Kostova, 2007). Applying SCT to the case at hand leads us to the conclusion that it predicts barriers to interaction between generations in organizations. Studies show that generations tend to group together and interact more

² Experienced based learning is not just effective for older workers. In fact, workplace learning situated in the organization is in general is more effective than school-type training and development programs (Eraut, 2000; Fenwick, 2006).

with their peers than with workers from other generation (McGuire, By, & Hutchings, 2007). This is problematic because according to social theories of change, there needs to be an interaction of generations to avoid stagnation (Mannheim, 1963). The same holds true for organizations where tension between new and old employees is in itself a source of change (Bontekoning, 2007). Put differently, without intergenerational interaction, organizational change and renewal in its various forms (such as innovation) is threatened. Based on these ideas, the final sub-question is:

RSQ5: How do intergenerational relations in a CoP stimulate change and renewal?

The following section contains the methodology used for answering the above sub-questions.

2 Methodology

In order to answer the research questions a review of four seminal works on CoPs was performed. These works were chosen because at least one of these has been cited in nearly every text written on CoPs (Cox, 2005; Li et al., 2009; Ropes, 2010), and often form the basis for complete empirical studies.

In essence, CoP theory has evolved through four stages observed in the different publications: from the original work by Lave and Wenger (1991) on how individuals in a social environment gained competence in a specific area through legitimate peripheral participation, to Brown and Duguid's (1991) piece on groups building knowledge. The next work was by Wenger in 1998. His book developed a relatively complete theory on social learning based on a longitudinal case study. The final stage can be found in Wenger, McDermott and Snyder's (2002) book, in which a managerialistic, knowledge management based perspective is taken, with an emphasis on various heuristics for organizing and facilitating effective CoPs.

The next section makes up the review, which done in relation to each of the research questions. First a short introduction to each work is given, followed by a presentation of the results.

2.1 *Situated learning: legitimate peripheral participation* (Lave and Wenger, 1991)

In this book, five existing CoPs were studied to see how learning processes took shape. The resulting theory was called LLP or legitimate peripheral participation, which was the term given to how newcomers to the group, taking part in a social learning environment, progressed from being a novice to an expert. Legitimate peripheral participation means that at first novices are allowed to marginally be a part of the CoP, but as they participate in the daily activities of it, become more and more full-fledged members and eventually highly competent experts, or what are called 'old-timers'. In this way important domain knowledge and competences are passed on between generations. 'Situated' means that learning is embedded in the context in which it takes place, which is in a CoP.

Lave and Wenger do not explicitly define a CoP, but refer to it generally as "...a set of relations among persons activity and world over time and in relation with other tangential and overlapping community of practice." (p.98)

2.2 *Organizational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning, and Innovation (Brown and Duguid, 1991)*

This work is based on a case study of copy-machine repair technicians (called *Reps*) who, due to lack of codified knowledge on how to fix the machines, develop a CoP as a way to collaboratively solve difficult problems and build new knowledge around the domain of copy-machine repair. In the case, Reps are portrayed as needing to develop what Brown and Duguid call ‘non-canonical knowledge’, which means knowledge that falls outside of the organization’s knowledge base. Learning in a CoP is portrayed here differently than in Lave and Wenger’s work in that participation in the CoP is not solely based on gaining competence, but rather mainly on developing new knowledge (i.e. innovation) around a specific domain through collective learning and social collaboration. While there is no clear definition of CoPs in this work, they are conceptualized as informal groups of workers doing the same type of job.

2.3 *Communities of practice: Learning Meaning and Identity (Wenger, 1998)*

In this longitudinal study of insurance claims processors Wenger further developed the original idea of how learning processes are formed in CoPs. The result is a rather complete theory of social learning illustrated by the daily activities of CoP members in the insurance firm, where new processes and artifacts in their daily work lives disrupt the group equilibrium and new learning is needed to restore it. An important result of this study is the observation that learning actually takes place in the relations within the group, not at the individual level. Another observation was that learning resulted in both new behaviors as well as new artifacts such as corporate stories and innovative processes. Unlike in the first two works, a CoP is clearly defined as a group of people involved in sustained mutual engagement based on a joint enterprise and in the course of social interaction develop a shared repertoire (p.73). Wenger also lists 14 indicators that point to the existence of a CoP (see pp.125-126).

2.4 *Cultivating Communities of Practice (Wenger, McDermott and Snyder, 2002)*

This last piece on CoPs differs from the others mainly in its prescriptive approach to CoPs as knowledge management instruments organized specifically for contributing to organizational learning and capabilities; individual learning is of tertiary importance. In the book the authors first discuss the added value of CoPs for innovation, problem-solving and knowledge retention, followed by specifics on organizing effective CoPs in the service of the organization (rather than the individual).

CoPs are defined by Wenger, et al 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)

3 Findings

Here the findings of the review are presented using the research questions as a framework.

3.1 Intentionality

This question derives from the prescriptive aspect of this research in that it is important to know if CoPs can be intentionally organized as forums for training and development.

Lave and Wenger (1991) make no mention of intentionality. The CoPs they describe are emergent, self-organizing and self-supporting. The community is not an explicit structure in itself but rather a set of relations that emerges through sustained mutual engagement. In this sense it is informal and unstructured; processes occur naturally and are not explicitly planned.

Both the case study and the theoretical framework Wenger (1991) develops from it point towards CoPs as informal and emergent, thus not intentionally organized. On the one hand he states that “...practice cannot be a result of design, but instead constitutes a response to design.” (p.233) On the other hand he discusses ways in which CoPs can be ‘nurtured’ in order to be more effective and that “no community can fully design its own learning.” (p.234)

Brown and Duguid (1991) portray CoPs similarly to Lave and Wenger; CoPs are informal and emergent. Members of the Rep CoP interact on a regular and ongoing basis, but they make no intentional efforts to consciously develop or improve what we call (and not them) their CoP. Furthermore, the CoP of Reps is not even recognized by the organization in which it located.

In Wenger, McDermott and Snyder (2002) CoPs are presented as knowledge management instruments that if emergent can be facilitated or if needed be organized ‘from scratch.’ The authors outline a set of heuristics applicable to both these approaches in a chapter entitled “Seven Principles for Cultivating Communities of Practice.”

Table 3.1. Outcomes of research sub-question one

Source/ Question	Are CoPs emergent or might they be intentionally organized?
Lave and Wenger (1991)	Emergent: Naturally occurring, self-organizing informal groups.
Brown and Duguid (1991)	Emergent: Naturally occurring, self-organizing informal problem-solving groups. Authors point towards detection and support, rather than creation. (p. 49)
Wenger (1998)	Emergent: Naturally occurring, self-organizing groups that can be facilitated in their learning.
Wenger, McDermott and Snyder (2002)	Emergent or intentionally organized: Groups focused on problem-solving and innovation that are partially self-organizing but need facilitation or intentional organization.

3.2 Motivation to participate

Low participation rates of older workers in training and development initiatives is partially due to the fact that program outcomes are mismatched to older workers’ needs and thus fail to motivate. The review points to the idea that being a member of a CoP is in itself motivating because it gives meaning to one’s life and work and allows one to identify with a particular group. This was especially clear in Lave and Wenger where it was explicitly stated.

Lave and Wenger discuss the idea of learning being “...motivated by the growing use value of participation and by newcomers’ desire to become full practitioners.” (p.122) For old timers, use value is replaced by exchange value within the CoP and the need for

an old-timer to identify his or herself with the community is the reason for sustained membership. Simply put, newcomers need to become competent in the field and old-timers need to belong to a group of peers who value their knowledge.

Wenger (1998) does not discuss motivation but does refer to the idea of value to the individual as being intrinsic. Wenger proposes that participation in the CoP is an important way that helps the claims processors to perform their work easier as well as deal with working in a boring environment that forces constant, unexplained changes on them (see for example, Vignette 1). Thus, the value of social ties and learning is intertwined. “Certainly, for claims processors to work together, it is difficult to distinguish between the value of a specific piece of information and the value of the atmosphere of friendliness they create...” (p.74)

Brown and Duguid (1991) make no explicit mention of either value of or motivation for participation. However, the fact that participation helps one to solve complicated problems easier is given as a reason for participation in the CoP (p.43). Sense-making and identity formation also plays a role. By exchanging stories, “...an individual rep contributes to the construction and development of his or her own identity as a rep...” (p.47)

Wenger, et al (2002) explicitly bring up motivation by presenting a table in which different types of benefits for both the organization and the individual community members are presented (p.16). The individual benefits by improving the experience of work and by fostering professional development. The former idea has social elements (for example a sense of belonging, fun with being with colleagues) as well as work elements (such as help with challenges, access to expertise). The latter idea considers among other things improved competence (skill and expertise), improved knowledge of the field and enhanced professional reputation.

Table 3.2. Outcomes of research sub-question two

Source/ Question	What motivates participation in a CoP?
Lave and Wenger (1991)	Need to become competent (newcomers) and need to belong (old-timers).
Brown and Duguid (1991)	Dealing with daily tasks and facilitates personal sense-making.
Wenger (1998)	Need to belong; need to deal with constant change.
Wenger, McDermott and Snyder (2002)	Improved work experience and professional development.

3.3 Conceptualization of Learning

Low participation rates of older workers in training and development initiatives is partially due to program design not being appropriate for older workers, and thus less appealing (and less effective) than they could be.

In Lave and Wenger (1991), learning is conceptualized as a process of becoming a full member of a CoP, and thus more competent in its the domain, through participation in social engagements. Learning is not the acquisition of propositional knowledge, but is situated in various and particular forms of engagement and social relations surrounding daily work activities where Interaction with ‘old-timers’ plays a major role. They propose that, “...rather than learning by replicating the performance of others, or by

acquiring knowledge transmitted during instruction, we suggest that learning occurs through centripetal participation in the learning curriculum of the ambient community.” (p.100)

Brown and Duguid (1991) present learning as a social and collective process based on collaborative problem solving among equals. Learning involves ‘becoming an ‘insider’ by gaining the non-canonical knowledge through exchanging stories about work.

Wenger (1998) conceptualizes learning as social participation, which refers to more than just “...local events of engagement in certain activities with certain people, but to a more encompassing process of being active participants in the *practices* of social communities and constructing *identities* in relation to these communities.” (p.4) Learning is for Wenger a constant negotiation of meaning and identity within different CoPs made up of newcomers and those with more experience.

Wenger, et al (2002) present no explicit conceptualization of individual learning but refer to ‘deepening one’s knowledge’ through participation (p.4). Here learning in CoPs is conceptualized as collective knowledge building focused on innovation and problem-solving among equal experts, rather than practice-based learning focused on gaining competence.

Table 3.3. Outcomes of research sub-question three

Source/Question	How is learning in CoPs conceptualized?
Lave and Wenger (1991)	Learning to be. Becoming increasingly competent through participation with old-timers (experts) in daily work activities.
Brown and Duguid (1991)	Collaborative problem-solving among equals. Learning involves ‘becoming an ‘insider’.
Wenger (1998)	Mutual engagement and identity forming within changing CoPs.
Wenger, McDermott and Snyder (2002)	Collaborative knowledge-building among equals.

3.4 Knowledge sharing

Knowledge sharing is problematic for motivational and cognitive reasons. This plays a bigger role when organizations are made up of large numbers of older workers – who are typically more expert.

Lave and Wenger (1991) do not explicitly deal with either motivational or cognitive issues surrounding knowledge exchange. Their perspective is that transmitting knowledge nor acquisition of skill is not possible, but is part of learning itself. (p.47) They argue that learning, which is much more than knowledge sharing, forms the basis for newcomers to become old-timers and that during sustained social interaction both change – albeit in different ways – as they co-learn (p.15). Furthermore, cognitive barriers between newcomers and old-timers are mediated by the different levels of expertise interacting together in the CoP.

Brown and Duguid (1991) underpin Lave and Wenger’s rejection of knowledge transfer and focus on the idea that collective learning and collaboration is how knowledge is spread among others in the CoP. While there is no specific mention of any barriers to

knowledge sharing due to motivational reasons, shared understandings are built by generating and sharing stories with a main criterion of coherence (p.44). Through storytelling, separate experiences converge, leading to shared understanding among CoP members.

In Wenger (1998) one finds explicit references to information and knowledge sharing. Wenger writes towards the end of his book that the “...mutual accountability derived from pursuing a joint enterprise and the interpersonal relations built over time facilitate knowledge sharing” (p.252). While motivational reasons for knowledge sharing are not explicitly discussed, again it seems that personal relations are important. Community knowledge is stored in boundary objects, stories and other artifacts produced by the CoP and this knowledge can be used by each of the members, irregardless of their level of participation (p.107) because they are a result of shared learning. So again, the idea of learning in social relations is an important way that knowledge is shared.

Wenger, et al (2002) emphasize the idea of community being a strong motivation for sharing knowledge. They refer to community as the “...social fabric of learning” and put forward that a “...strong community fosters interactions and relationships based on mutual respect and trust. It encourages a willingness to share ideas, expose one’s ignorance, ask difficult questions and listen carefully.” (p.28). The authors propose that cognitive problems concerning sharing complex tacit knowledge can only be overcome through interaction and informal processes such as storytelling, conversation, coaching and apprenticeship of the kind that communities of practice can provide.” (p.9)

Table 3.4. Outcomes of research sub-question four

Source/ Research Question	How are knowledge sharing processes in CoPs typified?
Lave and Wenger (1991)	Knowledge sharing is a part of learning between newcomers and apprentices. Mixed levels of expertise mediate learning between experts and novices.
Brown and Duguid (1991)	Generating and sharing stories and collaboration leads to shared understandings.
Wenger (1998)	Shared learning builds shared understandings. Interpersonal relations built over time facilitate knowledge sharing.
Wenger, McDermott and Snyder (2002)	‘Community’ motivates sharing. Sharing complex knowledge requires various types of interaction.

3.5 Change and renewal

Change and renewal are important to organizations but may these processes might suffer if generations are not able to interact in ways that stimulates change.

Lave and Wenger (1991) point out explicitly that tensions between newcomers and old-timers is a natural phenomenon in any social structure and that change is a fundamental property of CoPs and their activities resulting from this tension. They explain that conflict and tension between the generations is an important part of learning for both generations and that “...tension is in fact fundamental – a basic contradiction of social reproduction, and change.” (p.114) This opposition they refer to as the ‘contradiction of continuity and discontinuity’.

Brown and Duguid (1991) do not explicitly discuss intergenerational relations as a force behind change, but focus on the idea that change is due to replacement of the old guard. Canonical knowledge is hard to change, "...yet the actual behaviors of CoPs are constantly changing both as newcomers replace old-timers and as the demands of practice force the community to revise its relationship to its environment." (p.50) Tension between the CoP and the external environment are the force behind innovation (p.52) and not tension within the CoP itself.

Wenger (1998) explicitly, but briefly, discusses the idea that relationships between generations (newcomers and old-timers) are a force for change in the practice of the CoP. He writes that generational differences bring different perspectives on learning histories and "...the working out of these perspectives involves a dynamics of continuity and discontinuity that propels the practice forward." (p.101)

Wenger, et al (2002) do not discuss relationships between generations. They mention newcomers as disrupting the core members' group discussions, but make no suggestions that intergenerational relations play any role in change or renewal.

Table 3.5. Outcomes of research sub-question five

Source/ Research Question	How do intergenerational relations in a CoP stimulate change and renewal?
Lave and Wenger (1991)	Intergenerational tension is a natural part of CoPs and fundamental to change.
Brown and Duguid (1991)	Generations replace one another.
Wenger (1998)	Generational differences bring different perspectives on learning histories and "...the working out of these perspectives involves a dynamics of continuity and discontinuity that propels the practice forward." (p.101)
Wenger, McDermott and Snyder (2002)	No discussion about this.

3.6 Conclusions

According to the results of the critical review, it seems that at least theoretically it is possible to intentionally organize CoPs as forums for older worker learning and that they should prove effective due to their appeal to older workers in regards to both intrinsic motivation and the fact that learning is collaborative and practice-based. Although learning is conceptualized differently between the four texts, there are also some similarities important to this study. Namely that in each text, learning in CoPs is portrayed as a social process based on activity, situated in the specific context of work and that what is learned "...is profoundly connected to the condition in which it was learned." (Brown & Duguid, 1991, p. 48) Also, each text clearly point to the idea that learning in itself is not the primary extrinsic function of the CoP, but improving practice is; learning as such is a byproduct of the social interactions taking place among members as they engage in activities common to their field. Learning is consequently portrayed as an unstructured and informal process situated in the work organization (compared to structured formal learning such as that found typically in school settings). At the same time, younger workers should also be motivated to participate in CoPs both by the desire to become more competent as well as by extrinsic rewards management may offer for improved job performance.

CoPs are typified by sustained mutual engagement in various activities centered on specific practices. Engagement is the collaborative aspect of learning and working in a CoP, which in turn builds community. While a strict definition of community is not given in any of the texts, it seems that a good translation would be close to the idea of social capital, which is a strong motivator for collaboration and knowledge sharing among diverse group members (Borgatti & Cross, 2003). Cognitive barriers are overcome by learning together in social relations; shared understandings are built through sustained mutual engagement and can be found in community artifacts such as innovations and new insights. In this sense it seems that CoPs are able to overcome some of the typical barriers to knowledge sharing associated with demographic differences (age) and expertise and at the same time contribute to organizational change and renewal.

4 Discussion

In this section three different but related topics are handled. The first topic is based on a return to the main research question, which has direct implications for practice. This is followed by a discussion of limitations to the idea of CoPs as well as to this study.

Considering the findings, the original research question of *“Might communities of practice, as a specific type of training and development, be a way for knowledge-intensive organizations to deal effectively with human capital problems associated with an ageing worker population?”* can be answered with a cautious yes. From the review it seems that organizing intergenerational CoPs might be one way for organizations to shed new light on older workers by investing in their learning and development in a more effective way. In this sense the research also sheds new light on the possibilities of CoPs as a form of training and development that is appealing to older workers and at the same time help improve certain critical organizational processes. In regards to training and development CoPs might be effective because they are situated in the natural work environment and use daily activities as a focus for learning and development (Brown & Duguid, 1991; Schenkel & Teigland, 2008). Studies on adult learning also show informal, experiential, situated learning - such as occurs in CoPs - to be especially effective for older workers (Billet, 1999; Eraut, 2000; Knowles, 1974; Nijhof, Nieuwenhuis, & Terwei, 2006). It seems that CoPs are a natural way that people learn in organizations and are in themselves motivating (Bood & Coenders, 2004; Boud & Middleton, 2003; Wenger, 1998). Ropes (2010) found this to also be the case for older workers.

Knowledge sharing and change and renewal are important processes to firms as these help sustain competitive advantage. However, these might be negatively affected in organizations with a large older worker population due to ageism. We think that organizing intergenerational CoPs might decrease (reverse) ageism for two reasons. One is that research has shown that ageism is made less problematic by increasing interaction among different generations (Bontekoning, 2007; Konrad, 2006; Sullivan, 2008) and CoPs are social systems based on interaction. Secondly, participation in CoPs builds social capital (Lesser & Prusak, 1999; Nahapiet & Ghoshal, 1998), which has been shown to improve relations between generations (Kerka, 2003). Literature suggests that organizational renewal processes that no longer naturally occur might be fostered by intergenerational CoPs by assuring sustainable innovation (Smith & McKeen, 2003; Swan, Scarbrough, & Robertson, 2002), a major aspect of organizational renewal. This said, CoPs are not a ‘silver bullet’ for organizations; there

are limitations both to the concept of CoPs as well as this study - hence the answer of a 'cautious yes' to the main research question.

Limitations to CoPs

There are problems surrounding the idea of (intergenerational) CoPs that are not clear from the review, yet may hinder the possibility as being used for either training and development purposes or for helping with the two organizational processes addressed in this paper.

One major limitation is that organizing CoPs is complex and may be difficult or even impossible to do in certain situations. For example where a high level of organizational cynicism is present, or where the learning climate in the organization is poor (Ropes, 2010). Cox (2005, p. 533) lists eight other organizational conditions limiting possibilities; frequent reorganizations, tight management, individualized work, competitive environments that inhibit collaboration; time-pressurized environments that inhibit building shared understanding, spatially fragmented work and heavily mediated work (e.g. by computers) that moderates interaction.

Another limitation to organizing CoPs lies in the degree of self-organization allowed it by the organization in which it functions. CoPs can be a source of tension for management because they often operate at the fringes of the organization (Fox, 2000) and outside direct control of the management (Eales, 2003). Tensions occur when power struggles about community direction comes from outside (e.g. from management), and can force effective CoPs to break up (Thompson, 2005).

A limitation found in the data is directly related to organizing CoPs. One can see that there are four rather different conceptual models of CoPs, which means that for applying CoPs to a practical situation, one will need to either make a conscious choice for one specific model as a guide, or use the concept of CoP loosely – a hybrid.

Lastly, it deserves to be mentioned that although CoPs may be motivating in themselves, it is still up to the individual worker to decide whether or not to participate in one. Willingness to do so is an individual attitude and one that is reliant on many different factors, both internal (desire for recognition of one's expertise, for example) as well as external (possibilities for new learning). This is true for both older and younger workers.

Limitations to this study and future research

The biggest limitation of the study itself is that it only uses data from four theoretical works. Connected to this is the need for more empirical work on how existing intergenerational CoPs function, as well as how they are effectively organized within knowledge-intensive organizations so that they actually do what is intended. This will mean developing clear metrics for measuring impact at the individual, group and organizational level. Once this is done, our prescriptive research can continue.

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