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COLLABORATIVE LEARNING: AN EXPLORATION OF ACTIONABLE KNOWLEDGE CREATION

Dr Patrice Braun
Centre for Regional Innovation & Competitiveness
University of Ballarat
POBox 663
Ballarat, Vic 3353
p.braun@ballarat.edu.au

ABSTRACT

To create competitive advantage in today's economy, lifelong learning is essential and knowledge must be relevant, applicable and actionable. This puts new demands on us all. On the side of managers it calls for collaborative learning approaches to knowledge creation and knowledge transfer between organisations. On the side of academics, it calls for engaged scholarship aimed at facilitating learning and knowledge transfer. In meeting these changing conditions, bilateral knowledge trading or the formation of interactive knowledge creation relationships between practitioners and researchers is essential. With competitive advantage embedded in collaboration, knowledge sharing has been taking place through collaborative learning environments such as communities of practice, inter-organisational networks and virtual environments. However, to satisfy the collaborative and knowledge-based expectations that typify the nature of our economic climate, favourable conditions for both face-to-face and virtual collaborative learning must be in place. Action researchers have long advocated collaborative learning processes as the way forward, despite the fact that working within an environment that aspires for knowledge to be become applicable and actionable can be complex and challenging. In discussing the concepts of collaborative learning and the creation of actionable knowledge, this paper highlights prevalent actionable knowledge creation practices and presents enabling environments that enhance conditions such as trust, reciprocity; social capital, and participation required for effective collaborative learning relationships.The paper concludes with a brief exploration of additional directions that may help to augment collaborative learning activities.

INTRODUCTION

In today's global economy, knowledge is considered a precious commodity and concepts like knowledge sharing and lifelong learning have become increasingly prevalent in business practices (Senge & Scharmer, 2001). A recurring theme in the knowledge economy is one of a complex network of interaction, whereby emphasis on collaboration between firms and cooperation with other institutions is placed as the key for new models of innovation. In this new environment, the nexus of sustainable economic development rests upon the ability of partners to learn, create and harness knowledge collaboratively and continuously (Florida, 2002).

This puts new demands on us all. On the side of managers it calls for collaborative approaches to knowledge creation and knowledge transfer between organisations. On the side of academics, it calls for engaged scholarship aimed at facilitating learning and knowledge transfer to contribute to the practical know-how of managers and organisations. In meeting these changing conditions, bilateral knowledge trading or the formation of interactive knowledge creation relationships between practitioners and researchers is essential. Action researchers have long advocated collaborative knowledge creation processes as the way forward, despite the fact that working within an environment that aspires for knowledge to be become applicable and actionable can be complex and challenging.

LEARNING COMMUNITIES

Learning conditions for organisations, managers and even academics have changed significantly in the new economy. Today learning is more and more interwoven with society; the process is conditioned by external factors (practices of society); theory and practice boundaries are blurring; knowledge and research are core forces of the new economic paradigm (strategic appropriation of knowledge for competitive advantage and innovation); and there is an (over) abundance of information, but it is not necessarily clear how to create actionable knowledge (Pålshaugen, 2004).

Generating applied knowledge with and within organisations is process and people oriented. It directly concerns the embedded typology of organisations (enactment within the organisational environment); impacts on the organisation as a social system (identification of differentiation and integration of culture); needs to be considered within upstream and downstream network dynamics; and requires broad capability (new meta capabilities such as dialogue skills, reflection and moving beyond self-interest) of collaboration (Miles, 2004). More importantly, perhaps, is the fact that entering into collaborative learning will generally be justified according to organisational value creation in terms of risk, cost, and return on investment. Thus it may be said that turning ourselves into collective communities of learning is not an easy task (Brown & Duguid, 2000). How then can and does collaborative learning take place?

Collective learning and knowledge creation are spiralling processes of interaction fusing explicit and tacit knowledge (Nonaka & Konno, 1998). Interaction creates new knowledge when actors bring their knowledge to a shared space that Nonaka and Konno (1998) refer to as *ba*. This space can be physical, mental, virtual (*cyber ba*), or a combination thereof. The socialisation, externalisation, combination and internalisation

(SECI) cycle, which represent the four characteristics of *ba* space as outlined in the SECI model described below, provide the knowledge creation platform.

1. Socialisation involves social interaction to share or exchange tacit knowledge. Thus, socialization can be a learning experience when actors share experience and know-how with other actors (tacit-to-tacit knowledge creation).
2. Externalisation involves the articulation and conversion of tacit knowledge into explicit knowledge for wider learning and use, e.g., an instruction manual; a company's intranet knowledge bank (tacit-to-explicit knowledge creation).
3. Combination involves actors adding to or combining and exchanging explicit knowledge, leading to the conversion of explicit knowledge into more complex and systematic sets of explicit knowledge, e.g., existing learning in the knowledge bank might be integrated to create new knowledge (explicit-to-explicit knowledge creation).
4. Internalisation involves actors internalising explicit knowledge into tacit knowledge (e.g., internalising and incorporating the knowledge from the instruction manual or knowledge bank), resulting in shared mental models (explicit-to-tacit knowledge creation).

The knowledge and social capital a person accumulates through networking is highly personal, tacit knowledge, and considered a valuable asset (Nonaka & Takeuchi, 1995). As a result, the utility of, and hence the literature on, social capital has flourished in the knowledge economy. Social capital can be roughly understood to mean "the goodwill that is engendered by the fabric of social relations" (Adler & Kwon, 2002, 17). Typically, firms and individual actors are embedded in a variety of formal and informal professional, social and intellectual exchange networks (Granovetter, 1973). The extent and importance of these networks usually relate to firms' and actors' horizontal and vertical relationships, network culture and strategic complementarity. In terms of social capital transaction, external network relations accentuate 'bridging' forms of social capital, whereas internal network ties focus on 'bonding' forms of social capital (Putnam, 2000). Providing a comprehensive review of social capital literature across a variety of disciplines, Adler and Kwon (2002) list trust; reciprocity; social norms and obligations; participation in relationships; and proactivity among the attributes contained in social capital.

Trust and social capital are attributes not only of organisations, but also of communities, institutions, industry networks or even entire geographic regions, which can help expedite economic development and facilitate large-scale economic activities (Fukuyama, 1995). Trust and reciprocity to resolve issues within networks and work towards collective learning and action very much depends on the individuals within the network. Trust between network partners is said to reduce fear of opportunistic behaviour and improve collective learning (Gulati, 1995). Thus the analysis of network structures requires attention to the quality of constituent ties (Adler & Kwon, 2002). Based on relationships founded on social capital and the sharing of embedded knowledge, a variety of business learning communities can evolve (Braun 2002).

One relatively new form of social capital building has emerged through a spontaneous knowledge exchange trend known as 'communities of practice' (Wenger, 1998).

Company members join a community of practice for networking or learning purposes in their field, trusting other company members in the exchange of explicit and tacit company knowledge for the 'public good' aspect and building of company assets. Most communities of practice are informal groups of people, who regularly share their expertise and experiences through face-to-face meetings, email, knowledge sharing networks, teleconferencing or video- and desktop conferencing. Exact emulation of a community of practice may, however, not be feasible in inter-organisational networks. In certain instances actors, especially if situated in different companies, may be competing in a knowledge exchange milieu. Network learning and inter-organisational learning communities may hence require different learning contexts to approximate desired community of practice outcomes (Braun 2002). Van Krogh et al (2000) emphasise the need for an enabling context for learning and knowledge sharing, based on the *ba* concept, where participants set and change their own boundaries of learning

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ACTIONABLE LEARNING

In North America, network development and the formation of inter-organisational learning networks are closely linked to Mode 2 learning (Gibbons et al., 1994) and the use of action research and action learning methodologies. Mode 2 learning entails the collaborative production of (often more practically relevant) new knowledge. Also referred to as double loop learning (Argyris & Schön, 1978), learners engage in conversation whereby they hold their underlying or governing values open to examination. If willing to alter their values, and ways of thinking, this may lead to improved personal (company or network) learning and effectiveness. Triple loop learning moves beyond the individual level of learning and change and involves the questioning of the entire organisations and their embedded social traditions and culture systems.

Revans (1982) developed the idea that managers best learned their work through the posing of insightful questions about the problems they faced in everyday tasks; through acting, that is, carrying out the solution to the problems as identified; and through combining existing knowledge with learning and appropriate questioning. The author introduced the formula L=P+Q, composed of a combination of (L) programmed learning, (P) existing knowledge and (Q) appropriate questioning *(*see Revans, 1982*).*

Action research methodologies are similarly concerned with knowledge creation in real life situations and apply a practice-oriented and constructivist epistemology. A constructivist epistemology takes the standpoint that experience is always subjective and constructed through negotiation. It changes the role of the learner from being a passive recipient of knowledge to one where the learner actively constructs and builds upon knowledge acquired from his/her earlier learning experiences (Guba and Lincoln, 1994). Mode 2 learning, action learning and action research all support reflexive learning processes and multi-dimensional levels of action taking that involves both individual entrepreneurship and collective sense-making. As Chisholm (1998) has demonstrated, using action research can be helpful as an orientation toward network development, as, ideally, the approach pervades every network member, group and activity.

Recent developments in Scandinavian action research are of particular interest in regards of their learning practices, especially in terms of collaborative work to develop learning networks and regions. Treating learning as primarily a communicative process,

with an emphasis on face-to-face communicative tools such as dialogue conferences *(ba)*, this work highlights the importance of relationship building in improving capacity within networks for learning, developing ideas and taking action (Gustavsen, 2001). It is of value to recognise how such relationship building might be undertaken and how networks might be encouraged to create knowledge and not just exchange information. Rather than getting participants to create a joint vision or shared understanding, relationship building events recognise plurality, create potential for identifying and interpreting experiences, see what visions are present, create overlapping networks, and see how different actors and actor groups can pursue their own learning needs while at the same time helping others to pursue their needs (Gustavsen, 2001). Thus, actionable knowledge creation depends on the exchange of experiences through social capital (understanding, communication, trust and solidarity between people in an enabling context) or put in the language of Nonaka and Konno (1998:47) "to participate in *ba* means to get involved and transcend one's own limited perspective or boundary".

Scandinavian approaches to learning also recognise the existence of multiple pools of knowledge. Through repeated mixing and dialogue, such pools of knowledge can be formed into partnership-based pool management, e.g. establishing relations between various kinds of practitioners and researchers in accordance with the circumstances, tasks and problems at hand (Pålshaugen, 2004). Recognising multiple pools of knowledge helps to move away from theoretical and top down approaches to distributive constructivism and meaningful new perspectives, which in turn lead to "mutual commitments to further contacts and joint efforts between the participants" (Gustavsen, 2001:21). The experiences gained by Scandinavian action researchers have revealed that general models of theory may underpin action, but it is the *interpretation* of these theories fused with the agents of local knowledge that create locally applicable outcomes (Gustavsen, 2004; Pålshaugen, 2004). Action researchers that are facilitating network learning would hence aim to create a balance between social interaction and searching for solutions, whereby the contextual point of departure determines the knowledge creation structure and productivity thereof.

Within action research approaches to network learning, the inward focus of the learning infrastructure is on creating enabling (*ba*) environments that actors can trust for high quality learning and knowledge creation. In Scandinavian projects the external infrastructure seems to typically include a so-called development or referent organisation that takes on certain functions for the network (Finsrud, 1999). As well as internal functions like initiating and facilitating learning and supporting the exchange of experiences, the referent organisation may also perform more outwardly focussed functions such as attracting or bringing (learning) resources to the domain, and establishing external links to other institutions and networks (Hanssen-Bauer, 1998).

With many university charters now reflecting a commitment to collaboration with industry in their local or regional communities (Brulin, 2001), it is possible for learning institutions to adopt a referent organisation role and progress the relationship between network building and learning processes. This position cannot be expected to be established swiftly, however, by creating sustained learning experiences through ongoing and action-oriented dialogue (Tell, 2001), learning institutions and resident action research/action learning facilitators can augment their social capital within their area and work with clients/domains on those drivers that can best lead to collaborative relationship changes. The latter may be particularly important to consider in contexts

where there may not be a strong tradition of learning for learning's sake. Where there is little social glue between actors or limited external links exist, there may initially be more affinity with a learning approach that is seen to have concrete and practical benefits – for example, addressing shared problems or opportunities. Additionally, it may not be feasible to solely rely on face to face communicative tools and processes for building network relationships and capacity for action, especially when network actors are geographically dispersed. This brings us to the use of online environments *(cyber ba)* in learning and knowledge creation processes.

LEARNING IN CYBER BA

Nonaka and Konno refer to *cyber ba* as "a place of interaction in a virtual world instead of real space and time" (Nonaka and Konno 1998:47), which can include a company intranet. Online environments (*cyber ba)* can also function as enabling contexts to engage geographically dispersed actors as well as actors from different organisations in dynamic 'learning by interacting' (Lundvall, 1992) processes. One may even view the entire knowledge economy as a huge relational *cyber ba* space in which the synergy of cooperative behaviour (in the form of collective learning) facilitates actions (Konstadakopulos, 2000).

Nonaka and Konno (1998) argue that the use of knowledge requires the concentration of knowledge resources. Explicit knowledge is indeed efficiently supported in collaborative environments such as company intranets and especially useful when dealing with spatial constraints, but it may be argued that *cyber ba* might represent more than 'the combining of new explicit knowledge with existing information and … generates and systemizes explicit knowledge (Nonaka and Konno 1998:47).

Computer technology is still relatively new to many people and it will take time before they will trust it as a potential asset. However, once actors have moved out of their comfort zone and trust technology as a resource for learning and as a knowledge repository, actors who interact and potentially socialize in *cyber ba* could do more than merely access available explicit knowledge. They might learn to utilise the explicit resources available to them and learn to understand the value of their own (firm's) embedded knowledge contribution. Thus, it may be argued, *cyber ba* is a platform for both explicit and tacit knowledge creation as actors can use *cyber ba* to learn collaboratively through online interaction and networking. In the process of growing their existing resources, actors bring experiential regional knowledge to this platform, communicate explicit regional knowledge to other actors and experience tacit knowledge creation through virtual interaction. The latter would be based on self-directed and self-paced learning in which the learner takes autonomous responsibility for finding valuable information or to be part of a learning network which is motivated to create new knowledge (Nonaka, Toyama, & Nagata, 2000).

The question must be posed, however, whether online environments can adequately provide the interface for interaction, collaboration and the processes of knowledge creation and learning between economic actors? Stahl (2000) argues that these online environments neither adequately support the nature of today's work environment nor the evolution of knowledge. Implementation of electronic knowledge systems does not automatically induce a willingness to share information and build a new intellectual capital. Malhotra (2000) argues that so-called knowledge management technologies cannot distribute human intelligence or store tacit knowledge accumulated by

individuals to guide future company action. Whereas technology plays an enabling part in knowledge creation and knowledge transfer, the notion that it is seamlessly entwined with technology or that technology can overcome any knowledge flow barriers is inaccurate (Brown and Duguid, 2000). Therefore, to support the nature of today's work environment, it is argued, online learning platforms need to not only facilitate the construction of new knowledge, but manage information and learning by serving as a collective community memory platform within constantly evolving collaborative contexts and technology transfer(Lechner, Stanoevska-Slebeva, & Tan, 2000).

CONCLUSION

This paper has discussed the essential need for lifelong learning and actionable knowledge creation for competitive advantage in a global economy. On the side of managers it calls for a commitment to either physical or virtual collaborative Mode 2 learning via trusted enabling *(ba)* environments.

The *ba* space that Nonaka and Konno (1998) refer to tends to focus on corporate or single organisational structures, rather than on inter-organisational network structures. Given that inter-organisational networks will have different learning needs, which might include overcoming spatial and resource issues, it is of interest to further explore the collaborative learning concept on the *cyber ba* level. Nonaka and Konno refer to *cyber ba* as "a place of interaction in a virtual world instead of real space and time" (Nonaka and Konno 1998:47).

In building virtual knowledge creation networks, it is essential to consider the role of technology itself. Computer-based collaborative learning environments now form an integral part of economic collaboration and hence merit further attention to optimise collaborative learning. Actor-Network Theory (ANT) recognises that a network comprises both social and technical actors, and that in practice actors take the form of associations between humans and non-humans. However, special consideration is given to social interaction, as social constructivism incorporates human spontaneity and flexibility (Latour, 1991). ANT may be useful to consider in the design of future collaborative learning environments.

In an attempt to advance both face-to-face and virtual networking and collective learning, it is further suggested that *ba* and *cyber ba* could potentially encompass context-specific interaction environments such as (virtual) communication *ba*, community of learning *ba*, and economic collaboration *ba*. While there may be overlapping interests, these environments would be designed to fit the niche and value added objectives as well as the learning needs of a network. Based on the *ba* concept, such designs might, for example, wish to take into account the concept of (potentially latent) experiential knowledge. The experiential knowledge concept might be labelled a "Nonaka Plus" proposition, but also draw on the need for an extended epistemology (Heron & Reason, 1997) which uses constructivist approaches to learning but adds experiential knowing to presentational knowing, propositional knowing and practical knowing. Experiential knowing, accumulated through a combination of interaction and intuition, constitutes "knowing through empathy and resonance" (Heron & Reason, 2001,9). In focusing on action and experience, this concept would contribute directly to the flourishing of human persons and their networks (Heron & Reason, 1997) and be an appropriate learning direction for the knowledge economy. An in-depth exploration of the Heron and Reason (1997, 2001) experiential knowing formula towards the

"Nonaka Plus" concept in both physical and the virtual settings would likely contribute to a new sociology of knowledge needed for a culture shift from an economic focus to a learning focus.

With competitive advantage embedded in collaboration, knowledge sharing through collaborative learning environments such as communities of practice, inter-organisational networks and virtual environments, holds a promising future. However, to satisfy the collaborative and knowledge-based expectations that typify the nature of our economic climate, favourable conditions for both face-to-face and virtual collaborative learning must be in place. Collaborative learning is best sustained when network social capital is high; when learning is justified according to organisational values and value creation needs; when actors are open to participation and reciprocity; and when learning it is enabled in an environment and atmosphere of high trust in which explicit and tacit knowledge can be freely exchanged.

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