

# MAKING THE MOST OF THE GOOD ADVICE: META-ANALYSIS OF GUIDELINES FOR ESTABLISHING AN INTERNET-MEDIATED COMMUNITY OF PRACTICE

Bronwyn Stuckey  
*University of Wollongong*  
*Wollongong, Australia*  
bstuckey@uow.edu.au

## ABSTRACT

More and more people, groups and organizations are looking to develop the Internet-mediated version of the Lave & Wenger (1991) community of practice to realize goals of reform, professional development, knowledge management and improved workplace morale. The need to reach large distributed audiences and to harness the perceived value of communities of practice with available technology is demonstrated across organizational, commercial, educational and personal contexts. The meta-analysis research described in this paper sought to determine the guidelines and/or principles such groups might follow to establish an Internet-mediated community of practice (IMCoP). A wealth of diverse advice and theory was discovered that proved highly valuable when synthesized into a framework. In the meta-analysis process theory and practice online community and community of practice became one. The framework that evolved is currently under empirical testing in multi-case case study research into successful Internet-mediated communities of practice. This paper explores the research and thinking that brought about that framework and describes its intended use.

## KEYWORDS

Internet-mediated, community of practice, meta-analysis, case study, framework

## INTRODUCTION

A community of practice is not just a Web site, a database, or a collection of best practices. It is a group of people who interact, learn together, build relationships, and in the process develop a sense of belonging and mutual commitment. Having others who share your overall view of the domain and yet bring their individual perspectives on any given problem creates a social learning system that goes beyond the sum of its parts. (Wenger et al, 2002 p 34)

A community of practice (CoP) specifically centres its interest on the practices of the workplace. McDermott (2000 p2) simply and succinctly distinguishes the community of practice from other types of communities. "But communities of practice are not just celebrations of common interests. They focus on practical aspects of a practice, everyday problems, new tools, developments in the field, things that work and don't." Can community be orchestrated? There is a great deal of debate about whether successful community can be contrived or is only effective when naturally occurring. If as many commentators proffer, community development is a natural process, how can community managers and facilitators work to build community?

If you knew how to direct them, you would not need them. These observations may lead some to argue that there is nothing one can do to cultivate communities of practice, or worse that anything organizations do will merely come in the way. We disagree. (Wenger et al 2002, p 10)

Many respected community of practice proponents support the notion that CoPs are not made but grown (Kim, 2000; Seely Brown & Duguid, 2000; Schlager et al, 2002, Barab & Duffy, 2000, Wenger et a, 2002,

Riel & Fulton, 2002). Indeed several have used the gardening metaphor to describe the way in which organisations, managers and coordinators can act to develop community (Seely Brown & Duguid, 2000; Schlager et al, 2002, Wenger et al 2002).

The research presented here is based on three basic premises. Firstly, that multiple diverse bodies of knowledge, literature and research contribute to the conceptual and practical understanding of communities of practice. Knowledge and experience in areas such as professional development, online learning, online community of practice and knowledge management are all valuable contributors to a well-rounded background for IMCoP development. Secondly that organisations or community evangelists cannot make, orchestrate or will community, but that they can provide fertile opportunity for the members to envision and build a community. Lastly, that community building efforts can be supported through the affordances of the infrastructure and tools of the Internet.

## **ESTABLISHING AN IMCOP**

Much of the existing community of practice theory, literature and indeed, case study research, examines organizationally supported face-to-face or workplace communities such as the seminally famous *Eureka* Project of photocopier engineers at Rank Xerox (Orr, 1990), the Chrysler Tech Clubs (Wenger, 1998) or the Clarica agent communities (St Onge & Wallace, 2002). On the other end of the community continuum reports and cases in more technologically oriented publications have focused on online interest, user and support groups like Slashdotcom (Kim, 2000), Cupid's Touch (Figallo, 1998) eBay (Baron 2001). Such groups do cater for broadly distributed membership but are not necessarily concerned about, nor formed around, a practice. Groups like this existing online as communities of practice have been variously described as *professional* (Kim, 2000) or *distributed* (Wenger et al, 2002).

None of the major proponents of the online community or of communities of practice directly offer guidelines for developing or sustaining Internet-mediated communities of practice (IMCoPs). The empirically based literature related to the online version of the community of practice and to those with a highly geographically distributed membership specifically, is sparse and largely untested. Emerging literature has enumerated strategies for community development, for example, the design principles in the 5Ps of Joseph Cothrel (2001), or the 9 Design Strategies of Amy Jo Kim (pp. xiii - xiv 2000), or the 7 Design Principles of Wenger, et al, (pp. 51, 2002). These strategies are presented as rules or goals rather than as conditions or guidelines applied to community. Many such authors have focused on organizational communities of practice and their business benefits. None have yet specifically focussed on the Internet-mediated community of practice (IMCoP). For the purpose of this study the Internet-mediated community of practice (IMCoP) has been defined to tightly identify one discrete type of community developed and supported over the affordances of Internet technologies. The IMCoP was required (a) to deliver professional development and support (b) to a defined but not discrete group of (c) non-organisationally related members (d) distributed such that they could not readily meet face-to-face as a whole group (e) and whose needs for this learning were not served already elsewhere. These conditions serve to distinguish the IMCoP from other online communities or professional development groups.

While it is accepted in the literature is that there is no formula, nor recipe for community development, there are a number of well-founded practical and theoretical guidelines available for us to learn from. The problem is that these guidelines run the full gamut from fine-grained practical hints and tips to meta-issues expressed at a highly conceptual level. How then can we make sense of all this advice? Does it have to compete for our attention or is there some more compatible way to explore what is being offered? The framework for meta-analysis proposed here was an opportunity to relate, evaluate, and reflect on the existing guidelines and principles from the various contributory fields relevant to the Internet-mediated community of practice (IMCoP). The framework is currently being used in major multiple case study research effort to determine the conditions sufficient for successful IMCoP development. That empirical research will refine, extend and validate the various elements of the framework, adding and reshaping conditions as they become evident across the cases.

## **2.1 What advice is on offer?**

Two major areas of research and literature have developed guidelines highly relevant to IMCoP development. These areas are *online community* and *communities of practice*. The six sets of principles examined in the meta-analysis that follows are representative of the leading thinking in the field to date. They each touch on community development from one of these related perspectives. It was important to examine each perspective and its value individually and then focus on a way to best take advantage of all they have to offer collectively. The first three sets of principles derive from literature related to online community (Kim, 2000; (Williams & Cothrel, 2000; Hung & Chen, 2001) and the last three sets spring from the community of practice research and literature (McDermott, 2001; Le Moul, 2001; Wenger et al, 2002).

### **2.1.1 The Nine Timeless Design Strategies (Kim, 2000)**

Kim presents a high-level plan for online community development. Her works and experience have been in software and design. Kim describes her approach to community design as logical and grounded in reality rather than theory. "There is certainly theory behind it, but it all came out of experience" (Kim 1999 p 1)

A key premise in Kim's work is her definition of community. "A community is a group of people with a shared interest, purpose or goal, who get to know each other better over time" (Kim 1999 p 28). She presents three underlying principles and then nine strategies to apply to many perhaps all forms of online community. They could equally be applied to gaming communities, commercial communities, organisational communities and IMCoPs. They could apply to intranet, extranet and Internet community designs. Of each of the sampled community guidelines, strategies and principles Kim's seems the most universally relevant advice. Kim describes the nine strategies as when "Taken together, these strategies summarize an architectural, systems-oriented approach to community building that I call "Social Scaffolding" (Kim, 2000 p xxii). Kim's work speaks to design for community from a clearly architectural stance. While not focussing necessarily on the technological attributes, her design principles are an articulation of infrastructure for community.

Kim describes work related communities as either *workplace* or *professional group*. Many of the online communities that she uses to demonstrate her principles and strategies are thematic, interest groups, user groups, gaming or commercial sites with large numbers (1000s) of members. Few online groups that might be construed as communities of practice were presented. There is no mention of designing for collaborative endeavour in Kim's strategies or examples. The strategies describe a scaffold for sharing but do not present a strategy to develop the deeper negotiation and collaboration expected in joint enterprise integral to the community of practice.

### **2.1.2 Twelve Fundamental lessons on establishing and maintaining online communities (Williams & Cothrel, 2000)**

Cothrel was research director in Arthur Andersen's Next Generation Research Group in Chicago that studied 15 communities facilitated over intranet (organisational employees), extranet (company and customers) and Internet technologies (open). The communities varied from corporate collocated, to global organisations, interest communities, user communities and global villages. Cothrel chose to categorise the communities by the group dynamics of a group rather than the technology used by it. For instance, employees in a single company were classified as an intranet community. This intranet, extranet, Internet classification having proven valuable for distinguishing IMCoPs from the more organisationally related communities, has been adopted in this current research.

From this substantive case-based study Williams & Cothrel (2000) selected and intensely examined four of those communities to reveal the lessons they offered. This led to the articulation of the 12 fundamental lessons for understanding how online communities can be established and maintained. Furthermore, Williams and Cothrel deduced from the lessons that three kinds of coordinator activity are critical to community viability: (1) *member development*, (2) *asset management* and (3) *community relations*. *Member development*

relates to all aspects of marketing the community to prospective members. This will include articulating the goals of the community and the value to members. *Asset management* entails not just sourcing and managing assets but to constantly offering resource value to members. *Community relations* are the social and facilitation issues required to support the group as a community. Cothrel was also to more recently distil the lessons learned into a set of five ingredients for a successful online community. Cothrel has presented these diagrammatically as a set of steps moving up from *purpose, place programs* and *process to people*. Williams and Cothrel offer advice integral to the social nature of online communities in terms of coordination and moderation and the human connections required to build and sustain them.

### **2.1.3 Four dimensions for a vibrant web-based e-learning community (Hung & Chen, 2001)**

Hung and Chen present a conceptual model for community based online learning. Their findings are based on a synthesis of the literature in social constructivist learning theory and they use the recent thinking about situated cognition, socio-constructivist views of learning and the growing theory surrounding communities of practice to develop principles for E-learning. Their research is intended to influence directions taken in mainstream web-based learning toward a community-based model. They have interpreted *community* as a sustaining factor in online learning. From the literature in the focus areas Hung & Chen draw together four main principles and develop design considerations to guide the realisation if these principles. In summary, *situatedness* is accomplished through offering meaningful authentic tasks relevant to the needs of the learners. *Commonality* is created through shared interest and problems that require a joint effort to solve. *Interdependency* can be seen in learners recognising and making use of the diverse expertise in the group. *Infrastructure* needs to include facilitation, rules, processes and accountability as part of norms negotiated a community,

These principles do all relate to learning as the development of a practice. While Hung & Chen have an arguably somewhat ambiguous focus on community-oriented E-learning, their work touches at a macro level on the rudimentary basis for community development. Offline or online the principles of *Situatedness, commonality, interdependency* and *infrastructure* are vital to all socio-constructivist learning environments. These principles represent only part if a theoretical premise on which to develop a community. While Web-based learning environments may indeed be communities of practice they may not. The advice line at [www.epinions.com](http://www.epinions.com) might be as close to a community as a talkback radio interview is. They both offer opportunity for shared repertoire (e.g. stories, actions discourse) but they lack the opportunity for joint enterprise and mutual engagement as required dimensions of practice in a community (Wenger, 1998). Participants on an advice line cannot collaborate to co-construct artefacts to reify knowledge; they cannot take up diverse roles or move from the periphery to the centre. Hung and Chen may have overly focussed on the expert novice relationship, as their principles neglect the mutuality and true reciprocity seen in a community of practice. The work of Hung & Chen serves to remind us of the basic socio-constructivist pedagogical foundations that successful experiences in online learning communities stand on.

### **2.1.4 Ten Critical Success Factors in Building Communities of Practice (McDermott, 2001)**

Based on a study of best practice in communities of practice carried out for the American Productivity & Quality Center (APQC) McDermott (2001) developed 10 critical success factors in building communities of practice. McDermott's work is rooted in both consultancy experience and major research programs in global organisations, knowledge management and communities of practice. Preceding the critical success factors McDermott (1999) developed a series of guidelines to help structure communities of practice. He then developed the ten critical success factors through a framework of four CoP challenges; *management, community, technical* and *personal*; The guidelines read as a set of issues to consider on planning and early development of the community and the success factors represent the activities to build on that community start, they complement and qualify each other.

However, McDermott writes from a purely organisational perspective. When he speaks of global communities he is talking about global organizations and enterprises whose communities of practice span their countries of operation. Many lessons can be learned about communities with distributed members in

organisational contexts but we do not yet know how and to what extent they apply to non-organisationally-based communities. Organisational communities are able to attract members and encourage participation through organizational culture, time allowances, strategic requirements and goals, mandates and extrinsic incentives. Non-organisationally-based communities cannot avail themselves of these strategies to attract members or encourage them to contribute. McDermott also focuses on face-to-face communities and internal groups in organisations most connected over high-end intranets or extranets. McDermott believes that the ease of use has more to do with design, infrastructure and reflecting the actual way members of the community would think about their field than to do with software functionality.

### **2.1.5 Ten tricks to help managing successfully a CoP (Le Moul, 2002)**

Le Moul (2002) works admirably establishes her to develop a series of lessons learned to “make a CoP fly” (Le Moul, 2002 p1). Her work and research has been in organisational contexts and most particularly the global organisation that is Siemens Information and Communication Networks U.S. She develops a series of 10 tricks to help successfully manage a community of practice as well as a set of fundamental questions one should ask before starting a community of practice and the ten classic pitfalls in community development. The work is not meant to exhaustively cover the principles of community development but to offer significant insights from successful practice and the viewpoint of the community manager.

While Le Moul’s experience is with organisational CoPs, the tips present as practical and constructive advice applicable generally to all communities whether online or offline. The tips span across the aspects of infrastructure, content, design and facilitation. The focus is largely on attracting members and direct management offerings to the community and the domain. They read as a fine-grained set of do’s and don’ts in community building. Le Moul does not attempt to describe the relationship of these community building efforts to the practice. There is no advice for developing the shared repertoire, joint enterprise or mutual engagement that gives coherence to the community (Wenger, 1998). This work therefore only offers part of the story that needs to be told about the development of successful Internet-mediated communities of practice.

### **2.1.6 Seven Community of practice design principles (Wenger, et al 2002)**

Wenger, McDermott and Snyder (2002) offer a set of seven community of practice design principles. Developed through consultative work, investigation and theory development. They present case stories and anecdotes almost exclusively from corporate and organizational contexts. The work is based and builds on Wenger’s (1998) theories of learning in communities of practice and Lave & Wenger’s (1991) introduction to the concept of communities of practice. This most recent work seeks to define and demonstrate the community of practice as dynamic growth and design process. The principles are a conceptual level frame of reference for capitalising on process already at play in organisations. “These design principles are not recipes, but rather embody our understanding of how elements of design work together. They reveal the thinking behind a design. Making design principles explicit makes it possible to be more flexible and improvisational.” (Wenger et al, 2002, p 51)

Wenger et al describe a process of *design for aliveness*, questioning the role of design in a self-directed and largely spontaneous process. In their view communities usually spring from pre-existing personal networks and are tended as gardens in their development. The authors’ choice of a gardening metaphor is carried through from the high level notion of design and development as *cultivation* through to the provision of the essentials for growth in their design principles. These design principles support establishing a vision for a CoP, which is the essential starting point for its cultivation.

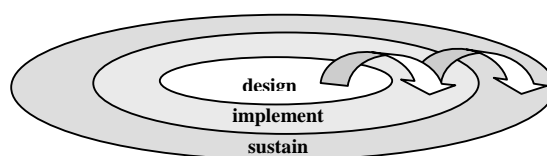
## **2.2 The framework for meta-analysis of guidelines and principles.**

It is agreed in the literature that CoPs, online or offline, are made by the people and organisations and leaders can only provide the *opportunity* for community to bloom. The overriding question became *in what ways can the organisation and its representatives provide that opportunity?* This current research sought to understand

how opportunity to build community can be provided and what hand community managers can have in providing that opportunity. To do this the researcher needed to focus on the visions, actions and perspectives of the originators of the community. The meta-analysis process needed to discern the spheres of influence within which management could provide opportunity for community to develop and draw together complementary perspectives under consideration. The literature did provide a small number of frameworks (Cothrel, 2001; IBM, 2001; Rogoff et al, 1995; McDermott, 1998). The focus being IMCoPs, groups without necessarily any organisational relationships, made several of the existing frameworks inappropriate. The remaining frameworks revealed in the literature were examined but each was found wanting in some respect when applied to the full set of advice elements on offer.

Informed by the existing frameworks and after analysing the vast array of advice, tips, guidelines and principles offered in recent literature it was deduced that three specific and interrelated waves of influence and action were available to community developers when they *design, implement* and *sustain community*.

Diagram 1 Waves of influence and action in IMCoP development



These areas are to some degree chronologically and developmentally staged. *Design* relates to the conceptualising the community. It would address and the actions in the initiating of the community; designing and defining a structure, a plan, authority, governance, regulating, management, representation of and relation to a funding body or executive body responsible for the community and control of the financial resources. *Implementation* involves creating and developing infrastructure capable of realising the vision of the community. Uppermost here is the creating and implementing of facilities, services, activities, communication, roles, selecting of technology & tools. *Sustaining* of an IMCoP is to see to the social growth and sustenance of the community. Uppermost here are the actions of applying, facilitating, moderating, conducting, sustaining achievement, providing community support and scaffolding for progress and continual improvement. Sustenance of the community begins the day it opens.

Table 1 offers the end process of the aggregation, analysis and synthesis of the elements of the six sets of guidelines offered by the literature. The guidelines were aggregated and categorised firstly into the areas of influence and action (design, implement, sustain) in which it was hypothesised they should be initiated. The elements were then banded within each category about each of the shared definitional concepts of community (Hillery, 1955) they appeared most relevant to. These appear in descending order on Table 1 as *common ties, people, social interaction* and *place or area*.

Table 1 Meta-analysis framework of elements, guidelines and principles relevant to IMCoP development

Design	Implement	Sustain
<ul style="list-style-type: none"> <li>• Situatedness</li> <li>• Concentrate on communities that matter</li> <li>• Define and articulate your purpose</li> </ul>	<ul style="list-style-type: none"> <li>• Reinforce the community's focus</li> <li>• Focus on value</li> </ul>	<ul style="list-style-type: none"> <li>• Focus on topics important to the business and community members</li> </ul>
<ul style="list-style-type: none"> <li>• Design for a range of roles</li> <li>• Get key thought leaders involved.</li> <li>• Create Executive awareness</li> <li>• Make sure people have time and encouragement to participate</li> <li>• Collect and use feedback from members</li> </ul>	<ul style="list-style-type: none"> <li>• Find a well-respected community member to coordinate the community</li> <li>• Create meaningful and evolving member profiles history and context</li> <li>• Develop an active passionate core group</li> <li>• Develop a strong leadership program</li> <li>• Acknowledge the voluntary nature of participation</li> </ul>	<ul style="list-style-type: none"> <li>• Harness the power of a personal connection</li> <li>• Play on all motives for participation</li> <li>• Build personal relationships among community members</li> <li>• Don't be too strict in judging</li> </ul>

Design	Implement	Sustain
<ul style="list-style-type: none"> <li>• Develop interdependency</li> <li>• Create a rhythm</li> <li>• Integrate the rituals of community life</li> <li>• Combine familiarity and excitement</li> <li>• Keep it fresh (first in community)</li> </ul>	<ul style="list-style-type: none"> <li>• Invite different levels of participation</li> <li>• Create critical mass of functionality</li> <li>• Provide the materials that collaboration requires</li> <li>• Make it easy to contribute and access</li> <li>• Rely on the fun factor</li> </ul>	<ul style="list-style-type: none"> <li>• Actively generate content</li> <li>• Prime the pump with communication</li> <li>• Encourage appropriate etiquette</li> <li>• Create dialogue about cutting edge issues.</li> </ul>
<ul style="list-style-type: none"> <li>• Form communities around people, not applications</li> <li>• Create forums for thinking together as well as systems for sharing information</li> <li>• Design for evolution (flexible, extensible)</li> </ul>	<ul style="list-style-type: none"> <li>• Fit the tools to the community</li> <li>• Develop both public and private spaces</li> <li>• Open a dialogue between inside and outside</li> </ul>	<ul style="list-style-type: none"> <li>• Facilitate member-run subgroups</li> </ul>

## CONCLUSION

Using the framework of *areas of influence* combined with Hillery's (1955) *definitional concepts of community* made it possible to juxtapose the six sets of guidelines identified from the literature, in a way that allowed them to be seen as complementary and developmental. The various elements of advice were positioned in the framework, not as single instances of activity, but to suggest where initiating an ongoing activity might prove most potent in the life of the community. When compared and contrasted in this way the elements of the six theories presented some redundancy while still proving highly complementary. Through analysis and synthesis, the elements were reduced to near two thirds in number. Decisions about further synthesis and reduction were passed over to the next phase, the IMCoP case study research where the elements can be reviewed under empirical conditions.

It is conspicuous, when examining the distribution of elements in Table 1, that the existing guidelines focus more attention on the development rather than sustenance of the community. When examining the elements in each wave, it can be seen that each does offer influence and action for community developers and managers, but that the weight of attention appears to have been on design and implementation. This issue may be blurred by the fact that community development is not a linear clearly staged process and that the activities of implementation continue to have a large role in the sustenance of the community. For instance to "develop an active passionate core group" (McDermott, 2002) is clearly a task with an ongoing focus in the community.

Further research is required to identify which of the design and implementation strategies continue to be influential in the sustaining of the community. Could this concentration on development account for the failure of many communities? The literature abounds in stories of web-based communities that, while well planned and resourced, did not fly.

As a next step, testing is now underway to provide empirical evidence which will validate and refine this framework. The framework has been adopted as the theoretical basis in an exploratory-explanatory multi-case case study program examining successful Internet-mediated communities of practice. The case study methodology involves ten heterogeneous exemplar cases of IMCoP drawn from a wide variety of domains and global locations. Through cross case analysis the research will determine the conditions sufficient for IMCoP development and the aspects of those conditions that community developers can influence. Rich text data has been gathered from various sources (interview, artifacts, Web site audit and publications) for each case and is being coded with the elements in Table 1, synthesized from the literature, to research the cases and interpret, evaluate and build on the framework.

The case study research program will report its findings in July 2004 and will be available online at <http://www.cpsquare.org/cases/> For now this framework offers the best of currently available advice to community buildings for developing Internet-mediated communities of practice.

## REFERENCES

- Barab, S. A., & Duffy, T. (2000) *From practice fields to communities of practice*. In D. Jonassen, & S. M. Land. (Eds.). *Theoretical Foundations of Learning Environments* (pp. 25-56), Mahwah, NJ: Lawrence Erlbaum Associates.
- Baron, D.P. (2001). *Private Ordering on the Internet: The eBay Community of Traders* [ [http://gobi.stanford.edu/researchpapers/detail1.asp?Document\\_ID=1621](http://gobi.stanford.edu/researchpapers/detail1.asp?Document_ID=1621) last accessed 03/01/2004]
- Cothrel, J., 2001, *Five Ingredients for a Successful Online Community*, Internet Executives Club: Internet Marketing Symposium June 1, 2001 [[http://technologyexecutivesclub.com/joe-cothrel\\_files/slide0045.htm](http://technologyexecutivesclub.com/joe-cothrel_files/slide0045.htm) last accessed 03/01/2004]
- Figallo, C. (1998). *Hosting Web Communities*. New York: John Wiley & Sons, Inc.
- Gray, J.H. & Tatar, D. (2004) Sociocultural Analysis of Online Professional Development A Case Study of Personal, Interpersonal, Community, and Technical Aspects In Barab, S. A., Kling, R., & Gray, J. (Eds.). *Designing for Virtual Communities in the Service of Learning*. Cambridge, MA: Cambridge University Press (in press).
- Hillery, G. (1955) *Definitions of community: areas of agreement*, *Rural Sociology* 20, pp.111-23.
- Hung, D.W.L. & Chen, D. 2001, *Situated cognition, Vygotskian, thought and learning from the communities of practice perspective: Implications for the design of web-based e-learning*, *Educational Media International*, 38, 3-12
- IBM's Institute for Knowledge Management Research Report 2001 [[http://www.kmadvantage.com/docs/km\\_articles/KM\\_CKO\\_CKM-Keys\\_to\\_Competitive\\_Advantage.pdf](http://www.kmadvantage.com/docs/km_articles/KM_CKO_CKM-Keys_to_Competitive_Advantage.pdf) last accessed 03/01/2004]
- Kim, A.J., 1999; *A conversation with Online Community Architect Amy Jo Kim*, FullCircle Associates [ <http://www.fullcirc.com/community/ajkim.htm> last accessed 03/01/2004]
- Kim, A.J., 2000; *Community Building on the Web: Secret strategies for successful online communities*, Peachpit Press, Berkeley, USA
- Lave, J. & Wenger, E. (1991) *Situated Learning: legitimate peripheral participation*. Cambridge: Cambridge University press
- Le Moul, D., 2001, *How to make a CoP fly*, Knowledge Board, [<http://www.knowledgeboard.com/cgi-bin/item.cgi?id=98480&d=1&h=417&f=418&> last accessed 03/01/2004 ]
- McDermott, R., 1999, *Nurturing Three Dimensional Communities of Practice: How to get the most out of human networks*, *Knowledge Management Review*, Fall, 1999
- McDermott, R., 2000, *10 Critical Success Factors in Building Communities of Practice*, [ <http://www.co-il.com/coil/knowledge-garden/cop/knowning.shtml> last accessed 03/01/2004]
- McDermott, R., 2001, *Interview with Richard McDermott*, Online Community Report, [<http://www.onlinecommunityreport.com/features/mcdermott> ]
- Orr, J. (1990) *Sharing knowledge, celebrating identity: War stories and community memory in a service culture*, pp. 169-189 in Middleton, D.S. and D. Edwards, eds. *Collective Remembering: Memory in Society*. London: SAGE.
- Rogoff, B., Baker-Sennett, Lacasa, P. & Goldsmith, D. (1995). *Development through participation in sociocultural activity*. In J. J. Goodnow, P. J. Miller, & F. Kessel. *Cultural practices as contexts for development*. No. 67. Spring. San Francisco: Jossey-Bass Publishers.
- Schlager, M., Fusco, J., & Schank, P., 2002, *Evolution of an on-line education community of practice*, in *Building virtual communities: Learning and change in cyberspace*. K.A. Renninger and W. Shumar (eds.). New York: Cambridge University Press, p 129-158.
- Schlager, M., Fusco, J., *Online Teacher Communities: Technology Snake-Oil or Powerful Catalysts for Professional Development?* In Barab, S. A., Kling, R., & Gray, J. (Eds.). *Designing for Virtual Communities in the Service of Learning*. Cambridge, MA: Cambridge University Press (in press).
- Seely Brown, J. & Duguid, P., 2000. *The Social Life of Information*. Harvard Business School Press, USA
- St Onge & Wallace, D., 2002, *Leveraging Communities of Practice for Strategic Advantage* Butterworth-Heinemann, Canada
- Riel, M. & Polin, L. (2004) *Learning Communities: Common Ground and Critical Differences in Designing Technical Support*. In Barab, S. A., Kling, R., & Gray, J. (Eds.). *Designing for Virtual Communities in the Service of Learning*. Cambridge, MA: Cambridge University Press (in press).
- Wenger, E. (1998) *Communities of Practice: Learning, meaning and identity*. Cambridge: Cambridge University Press
- Wenger E., McDermott, R. A. & Snyder, W. M. (2002). *Cultivating communities of practice: a guide to managing knowledge*. Boston, MA: Harvard Business School Press.
- Williams, R.L. & Cothrel, J., 2000, *Four Smart Ways To Run Online Communities*, *Sloan Management Review*, Summer 2000 v41 i4 p81