

Communitising in online gatherings

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Abstract: : Computer-mediated Distance Education, DE, is in many aspects a social practice. Through web-technology students (and instructors) can engage in various joint activities that shapes a shared and emergent community. Drawing on Wenger's (1998) work on communities-of-practice, this paper summarizes the findings of a longitudinal action research project, conducted at a Swedish distance education program. The paper argues that such communities could be understood as energies of attention that are charged and energized through actions and utterances rooted in the participants understanding of themselves as members of the community. Such communitising behaviour can aid the participants in managing frustration, and making collective sense of both technology and the shared educational situation.

Key-Words: - Distance Education, Communitising, Online Gathering, Learning Centre, DisCo, Community

1 Introduction

The rapid increase in use of Internet technologies is dramatically changing the practice of distance education. This change is to some extent relating to the new and efficient tools and structures for cheap distribution of hypermedia course material, but perhaps more important is the way in which communication technologies has the potential to create new social landscapes of interaction (Sproull & Kiesler 1991). Meyrowitz (1985) makes a similar point, stating that the use of electronic media changes and restructures the social situation with respect to the available social information, the audience and the different roles that defines the situation. The ease, at which informal contact can be initiated amongst students and teachers, is in strong contrast to the demand of structure and planning, necessary in distance education based on correspondence or teleconferencing. Internet based distance education then has the potential of being more social than individual, and more emergent and flexible than controlled and static. In such a context communities of distance education can evolve. The objective of this paper is to present and discuss important concepts that aids in understanding such communities of distance education. More specifically these concepts try to address the following questions: (i) What are the specifics of on-line communities in an educational setting? (ii) What are the signs that spells out - this is the discourse of a community?, and (iii) how and for what reasons does the strength of a community change over time? The concepts has been derived from the experiences of a longitudinal research project conducted at a Scandinavian distance education project (1998 - 2002), and are labelled gatherings, communitising and communities as energies of attention

2 Theoretical Background

2.1 Online Communities

The term Virtual Community has traditionally been used to describe a variety of aspects where a social dimension is present in computer mediated communication. The fact that scholars from many disciplines (e.g. Sociology, Cultural studies, Informatics etc.) give attention to social aspects of cyberspace contributes to the heterogeneous image of what this concept encompasses. Many of the definitions depart from how communities are perceived in real life and typically include elements such as 'people', 'social interaction', 'belonging', 'membership', and 'trust' (Kapoor, 2001). A frequently cited definition, covering a wider spectrum of social activity is provided by Rheingold (1993) Virtual communities are social aggregations that emerge from the Net when enough people carry on those public discussions long enough, with sufficient human feeling, to form webs of personal relationships in cyberspace.

Many prefer to talk about online (rather than virtual) communities. Baym (1998) focus on how the nature of computer mediated communication in online communities is shaped by factors such as external context, temporal structure, system infrastructure, group purposes, and participants' characteristics. She states that these factors together influence the way the online community emerges, and the way participants imagine themselves as members of that community. Others avoid the blurred contours of the community concept and replace it with other notions such as online discourse (Erickson, 1997).

2.2 Computer-Mediated Social Interaction in Educational Settings

In previous research on interaction within an educational setting, the focus is often set on interaction processes directly relating to the technology-mediated collaborative learning activities themselves. For instance, Baker, Hansen, Joiner and Traum (1999) explore how students need to engage in processes of grounding, i.e. the interaction necessary to establish a sufficient common understanding to complete a collaborative task. Wasson and Mørch (2000) present collaborative patterns expressed by small groups of students using various types of groupware. Leh (2001) concludes that existing research on computer-mediated social interaction in educational settings can be divided into two categories. The first category consist of researchers advocating that the lack of social cues in text-based interaction is profoundly problematic in terms of mediating social, emotional and personal information. As a consequence, text-based interaction becomes less personal and more task-oriented (e.g. Cummings et al., 2002). The other category provides research that demonstrates how participants' activities can compensate for this lack of non-verbal and contextual cues, resulting in communication that is perceived as personal and beneficial for learning. Such perceptions of being socially present (Gunawardena, 1995) in mediated communication can increase over time, supported by a use of so called para-language and emoticons as means of verbalising social information that is non-verbal in face-to-face communication (Utz, 2000). Krejns and Kirschner (2001) focus on the role of the IT-artefact in this context. They advocate that IT-mediated social interaction must never be taken for granted merely because it is technically possible. Instead they argue for the need of systems with social affordances that stimulates participants to engage in social interaction, and that subsequently complement and support general awareness and group cohesiveness in an educational community. Rovai (2002) argues that the building of a sense of community in a DE-group, to a large extent can be promoted by teachers through for instance creating small size communities, designing small group activities, and carefully attending issues such as social equality, group facilitation, social presence and dialogue. Oren, Mioduser & Nachmias (2002) also stress that the teacher's behaviour should be facilitating, rather than dominating, in order to create a relaxed social climate with rich student-to-student interaction.

2.3 Communities of Distance Education

Wenger's (1998) deconstruction of the concept of a community-of-practice provides the fundamental analytical perspectives for studying DE as a social practice. In addition to focusing on the collective nature

of DE, this also points to the multitude of activities and processes within educational institutions. Such a community must not be understood as inherently harmonious, but rather as harbouring both consensus and conflicts (Wenger, 1998). Furthermore, in order to unfold the true nature of a community one must attend closely to the details of the practices of that community. By focusing on the situated activities, i.e. what participants actually do over time, behavioral patterns (or genres) can be detected (Orlikowski & Yates, 1994), and the mere existence of such typified patterns/genres can be interpreted as analytical evidence of the existence of a community (Wenger, 1998). The fact that communities of distance education to a large extent are IT-mediated is also important since the properties of the medium itself restage the social situation it is mediating, through changes in audience and participants' roles (Meyrowitz, 1985). Meyrowitz sees social situations as information-systems consisting of all information that we can find out about ourselves and others in acts of communication (verbal and non-verbal communication, pace of activities etc.), and he states: To include mediated encounters in the study of situations, we need to abandon the notion that social situations are only encounters that occur face to face in set times and places. We need to look at the larger more inclusive notion of 'patterns of access to social information' (pp. 37) In summary, a community of distance education is a collection of people that are mutually engaged in understanding and participating in a rich fabric of processes and activities within the frames of shared DE practices through constantly ongoing negotiations of meaning. In doing so the community develops typified behavioral patterns that shapes, and are shaped by, the properties of the technology that mediates them. In any given DE setting such communities are likely to exist on several levels ranging from smaller groups of students to larger more global communities which may or may not include teachers and tutors.

3 Emirical Background

Sydub 98 was a distance education project that was run in co-operation between the University of Trollhättan Uddevalla and six municipalities in the Northwest of Sweden. The project was partly financed by the European Union (Structure funds 2 and 5B) and ended after two years in December 1999. The project enabled 58 students in the six municipalities to do the first two years of a bachelor program in Systems Analysis via distance. The project was partly triggered by the fact that the participating municipalities are all located in a region of Sweden with poor traditions of higher education. Furthermore the project aimed at developing sound educational methods and IT-support for a new generation of computer-mediated distance education.

At the University a system called DisCo provides the possibility to publish course material and to communicate student(s) to teacher(s) and student(s) to student(s) on the web. It offers the possibility to publish text-based material and tutor students and is designed to overcome obstacles such as lack of computer/technology skills. The teachers can put in elementary course information in this system such as description of the course, its content, goals and methods for examination, presentation of involved teachers and help for students on how to configure their browser. The interaction between all users is primarily facilitated through an email function and a threaded bulletin board. For collaboration the system provides possibilities to share files and hyperlinks within project groups, supporting the collaboration since they often are geographically dispersed, or just having difficulties to find the time to meet – face to face. In DisCo, all course-site maintenance is done with standard browser software. The technology used for the lectures is multiparty videoconference sessions. These are mostly dominated by lectures but sometimes also by student presentations of project work and group assignments and sometimes tutoring in a connection between the teacher and one learning centre at a time. The videoconference sessions are voice controlled and the groups take turns in speaking, the last group spoken is the one seen on the television screen by the teacher. There are striking differences on size and quality regarding the equipment and the media space supplied at the different learning centres. The equipment used during the sessions is; monitor, camera, microphone, document camera and a so called "codec" (coder/decoder) that compresses and codes the digital sound and the images during the transmission and accordingly decodes the information at the recipient's end.

4 Research Approach

To study the practices of distance education, using a broad approach, involves some profound methodological challenges. Perhaps the most fundamental challenge derives from the fact that the practice was geographically (and temporally) distributed, not only with respect to the learning centres, but also in terms of students and teachers "working" at other sites (in their homes, on the bus, in the library etc.) and at different times. This volatile nature of distance educational practice calls for innovative ways of doing qualitative and interpretative research. What is accessible for the researcher in this context is first and foremost the persistent digital traces of student and teacher activity that are left in log-files and in public discussion forums. Similarly, if resolving questions of research ethics and personal integrity, access to participants email archives can contribute to a richer picture of the practice.

Understanding a practice from the persistent reifications that these text messages constitute (Wenger, 1998) is connected with both weaknesses and strengths. Experiencing a practice through reading text-entries places the researcher in a similar situation as the participants. In this respect, it is important to "live" the discourse while it is happening, rather than relying only on transcripts from message archives. These temporal aspects of a discourse are important and cannot be fully grasped simply by having access to the time-stamps of an entry. However, understanding a practice or a phenomenon from interpretations of digital reifications alone is problematic. Wenger (1998) states that practice as meaning involve a dual relationship between reification and participation. Consequently, analysis of digital reifications needs to be complemented with other data collection techniques that maps the "offline"-participation of the practice under study. To understand the nature of computer-mediated activities through qualitative analysis of electronic data is sometimes referred to as net-ethnography or netnography (e.g Wittel, 2000). Like ethnographical methods applied in physical spaces the fundamental task of net-ethnography is to give meaning to the observed phenomenon (Harper, 1993), and in addition to the type of electronic participant observation described above, net-ethnographies often involves online interviews. However, given the fact that the participating actors (students as well as members of staff) could quite easily be contacted for face-to-face meetings, this data collection technique was not used. Wittel (2000) argues that both interviews and participant observations in net-ethnographies runs the risk of having low validity due to the increased possibility for participants to fake their identity (see also Turkle, 1995).

4.1 Data Collection and Analysis

In total, five different classes (240 students) have started on the SYDUB programme. Together they have taken 54 courses resulting in approximately 7000 entries to the DisCo discussion forums. The total number of VC-lectures adds up to approximately 2000 hours, and the 20 different learning centers have been visited for observations and interviews on 42 different occasions. Two basic approaches to collection of data have been dominant in the studies underlying this paper Firstly, the observation of emergent use-patterns were primarily based on text-entries made to various asynchronous applications of the DisCo system. In addition to the information obtained through reading the texts, the understanding of use-patterns are also informed by structural properties of the discourse, such as how messages are interrelated and organized in threads. Furthermore, the information available in log-files on how posting and reading these messages are distributed

over time added to the understanding of how IT was being used. Secondly, as a complement to observed behavior, students and teachers have reported their experiences, attitudes and activities through semi-structured interviews, questionnaires, workshops, focus group sessions and study journals.

4.2 Reflections on Method

The context of the SYDUB case contains a number of characteristics that makes it interesting with respect to both the rigour and the relevance of the research. Rigor is promoted by the fact that each year a new group of students has entered the program, thereby offering possibilities for reflections on the stability of observed phenomena and behaviours. As argued in the introduction, the scale and duration of the project enhances the relevance of the research, especially with respect to issues and concerns that are less likely to surface in short term pilot projects. Furthermore, all studies involved actual students attending courses, as opposed to voluntary participants of simulated settings. With the exception of the course site analysis, the research has not contained any comparative elements where the SYDUB programme is contrasted with the corresponding campus-based programme. It is possible to argue that such comparative research designs would have informed the understanding of emergent behaviors and aspects, and thereby strengthened interpretations of how they related to the computer-mediated practice. However, throughout the duration of the SYDUB-project there were frequent examples of how experiences, teaching methods, use of technology and course material were exchanged between distance and campus programs. This "symbiosis", which to some extent is directly linked to the action-oriented nature of the research project, makes it harder to conduct rigorous comparative studies. The SYDUB case could be argued to qualify as a critical case, thereby enhancing the possibility to generalize from the results (Rolland & Herstad, 2000). A critical case is characterized by highlighting some important aspect of the phenomenon being studied, and in the SYDUB case this was clearly the case with respect to the interesting mix between small clusters of co-located students, and the larger distributed and computer-mediated class community. The mixed-mode design (Campos et al., 2001) of the education therefore ensured that the public discourse that emerged on the discussion forums did so in spite of the fact that all students had access to co-located peers.

5 Towards Useful Community concepts

5.1 Gatherings

It is clear that the discourse of a DE-community is shaped by temporal conditions such as being restricted in time and having predetermined times for start and end. Also, the community is closed, in the sense that potential members of the community are restricted to a certain number of students and staff-members. These designed restrictions make a DE-community more of a gathering, fundamentally different from other social aggregations described in early literature on virtual communities (cf. Rheingold, 1993; Gallagher et.al. 1998). The term gathering is here used in a somewhat different way compared to Goffman (1963) who uses this concept to encompass—"any set of 2 or more individuals whose members include all those who are at the moment in one another's immediate presence", whereas my use of the term merely stresses the designed and restricted frames of interaction. Conclusions on interactional behavior are in previous research based on studies of long lasting communities (early examples such as the Well) where socialization is the central process. Then a newcomer's authority and legitimacy must be proven to established members in order to be embraced by the community (Gallagher et al., 1998). Instead of socialization, gatherings are dominated by initial forming of typified and shared interaction repertoire that promotes collective sense-making of the new situation. The findings point to collective negotiations as a central element in the forming of such interaction genres or use-patterns. Furthermore, the establishment of social relations in a gathering presupposes a process of getting acquainted in order for the discourse to mature into fruitful learning experiences. Similar to dinner-table conversations in a small party of acquaintances the discussion is dominated by entries that are one-to-all rather than one-to-one, i.e. each posting is addressed to the whole community rather than a particular member. Wenger (1998) discusses how shared artifacts, or boundary objects (Bowker & Star 1999), can support encounters between separate communities or individuals. The discussion forums clearly constitutes such boundary objects, and its public nature is a vital property that, through visualization of the discourse, supports and facilitates the emergence of a joint community, the fact that all participation in such asynchronous text-based communication is persistent rather than ephemeral further underlines this. The archived discourse documents the shared history, and can easily be accessed and interpreted by all participants. Goffman (1959) argues that knowledge of 'who can hear' is wanted and needed in all human communication, and as a consequence humans will engage in presenting impressions of themselves, as well as being audience to

similar performances of others. On the discussion forum this is accomplished through posting and reading. In addition to boundary objects Wenger (1998) also advocates that communities can interact through so called brokers, i.e. people that move between the peripheries of two communities and participates in both. The behavior of the most active posters on the board most likely had such a brokering effect. If using the analogy of a dinner party, their activities were those of the hosts, constantly contributing to the establishing of a joint community through encouraging discussions and suggesting new topics for discussion. Orlikowski et al. (1994) argues that this type of technology-use-mediation has the effect of meta-structuring the way open-ended technology is being used. Being designed by someone (in this case the teachers), a gathering has one (or more) pre-existing purposes, that can be more or less visible to the participants. Such pre-set objectives could be argued to influence the way students perceive what is expected of them in the new and unfamiliar situation. However, the results from our study imply that this was probably restricted to influencing the point of departure for the collective negotiations of how to behave, and what to achieve through participation. The behavior that emerged, in many ways took on forms and contents that was not part of the original objectives. This understanding of the gathering as informal and casual, rather than strict and regulated was of course promoted by the deliberate strategy for the teachers to keep a low profile, and not to exercise any unnecessary regulation or moderation of the discourse. Defining the social situation is not restricted merely to an initial negotiation-phase, rather it is subject to constantly ongoing collective processes of re-interpreting the social situation-- in that sense negotiations are also interwoven with the maturity of the discourse over time.

5.2 Communitising

An underlying question that spans all elements of this study concerns how we can determine and detect the existence of a community? What are the signs that spell out – this is a community? One way of answering this question is to state that all activities (verbal as well as non-verbal) that to some extent attract attention to the notion of a community are indeed the very signs that such a community exists or is in the process of being established. In order to collect all such activities under one term the notion of ‘communitising’ is. Using Wenger’s (1998) terminology, communitising can be defined as the participation and reifications that aids in enforcing the various modes of belonging to a community, (engagement, alignment and imagination). Communitising could also be seen as activities that adds to the social presence of communication (Leh, 2001). Studying communitising, (rather than community), is an

analytical approach that focus on the emergent processes rather than the result (product) of these processes. In the postings to the public discussion forums several instances of communitising can be detected. The most obvious example of such communitising behaviour is the use of notions such as ‘we’, ‘us’ or ‘they’ when referring to the inside or outside of the community. Similarly, communitising could be to enact the shared genres of interaction, (i.e. behave like a member of the community). Other, perhaps more subtle, ways of communitising could include making references to the community history (e.g. commenting or quoting other authors), or to tell private jokes that can only be understood by an insider with access to the community’s shared history. In the same manner, the willingness to adopt the barometer application must be understood as communitising. Only then does it makes sense to express how you feel, and take interest in being aware of the feelings of other members of the community. The indirect effect of communitising can hopefully improve the quality of student learning — not only in relation to an increase in engagement, motivation and social presence of the communication (Leh, 2001; Gunawardena, 1995), but also through mechanisms of improved performance that comes from being aware of others working with similar tasks (Ackerman & Star, 1995). The notion of communitising points to an understanding of a community as something that needs people’s attention in order to exist. The next subsection discusses how this points to an energy metaphor for communities.

5.3 Communities as Energies of Attention

At any time we as individuals are participants in a large number of communities (citizens of a country, fans of a hockey team, members of a church, a family or project team at work etc.), and over time this set of communities changes as we leave some and enter new ones. Most of the time such changes are gradual rather than abrupt, and involve trajectory movements from periphery to centre or vice versa (Wenger, 1998). Living in such a nexus of multimembership (Wenger, 1998) implies that the extent to which an individual perceives herself as a member of a certain community must vary in time and space. Even if movements along community trajectories are gradual, we certainly frequently experience dramatic shifts where our perception of ourselves as members of a certain community can be triggered by an event or a verbal reference. In other words, these conjunctures and variations are regulated through communitising activities that triggers our community awareness, thereby reinforcing our perception of ourselves as members. Given these fluctuations and how they are connected with others and ours perceptions, it seems fruitful to view communities as energies that are charged by the

situational collective attention it receives. This is a metaphor that captures the way in which group identities that do not receive attention diminishes in the mind of the individual, but can be sparked when being reminded of the membership. It is also a notion that could be stressed to encompass both internal attentions from members of the community (insiders), as well as external attention awarded the community by people on the outside. The reasons for not using the terms community building and community maintenance are twofold. Firstly, these terms seem to refer to the same types of activities where building is the initial activity, at some point in time replaced by maintenance. Communitising should be understood as including both these notions. Secondly, the metaphor of 'building' a community is weak since it indirectly suggests an uni-directional development process where the community can only be strengthened over time (or perhaps static if no community building is done), but as argued above the energy of the community is constantly changing as a function of communitising activities. If no communitising is accomplished the energy of the community will diminish. In terms of building, the rapid erosion of a community that receives no attention from its members resembles a house of snow in the desert. In terms of design of IT-applications for communities, the energy metaphor could hopefully inspire to innovative ways of visualising community activities that enhance the social awareness through rich possibilities to express and experience communitising activities.

6 Conclusion

Understanding the role of technology, as a mediator of social processes, in relation to distance education must constitute a strong argument in favor of research where relevance is favored in the trade-off with rigor (Moody & Buist, 1999). Only by paying attention to all activities and processes in the educational context can we interpret and analyze what we observe. This also implies that studies of students' online behavior should be complemented with studies of how work is organized offline. It seems reasonable to assume that there exists interesting relationships between on the one hand pedagogical and instructional design, and on the other hand students' activities, attitudes and motivators. Such a broad research approach points in the direction of qualitative research designs where ethnographical studies (complemented with field experiments and surveys) of real students in realistic educational settings are the major focus of attention. IT is also vital to acknowledge that students' way of using technology changes over time. It appears natural to assume that such a development runs in a direction towards more mature use, which is an argument in favour for longitudinal studies where changes in use and understanding of

collective use can be observed and analysed. The relation between technology and learning is complex, and it is important for research in this area not to presuppose too strongly, and to direct relations between quality of technical systems and quality of learning. Assuming that "good learning" is a consequence of "good systems", is in a sense comparable to a belief that good novels are the result of good technology for writing, and as hard it is may be to argue in favour of quills or typewriters in comparison to modern word-processors, we must still acknowledge that many a great book has been created using the less sophisticated technologies. The challenge when trying to understand the relationship between use of technology and learning is consequently to avoid a narrow focus, where important contextual processes are being lost, or in the words of Brown and Duguid (2000): "*the light at the end of the information tunnel is merely the gleam in a visionary's eye. The way forward is paradoxically to look not ahead, but to look around.*"

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References:

- Ackerman, M. & Starr, B. (1995). Social Activity Indicators: Interface Components for CSCW Systems. In *Proceedings of the ACM Synopsium on User Interface Software and Technology*, ACM, New York, pp. 159-168
- Baker, M. & Hansen, T. & Joiner, R. & Traum, D. (1999). The role of Grounding in Collaborative Learning Tasks. In *Collaborative Learning: Cognitive and Computational Approaches*, Amsterdam, Pergamon, pp. 31-63
- Baym, N. K., (1998) The Emergence of Online Community. In *Cybersociety 2.0: Revisiting CMC and Community* (Jones ed.). Sage, USA, pp. 35-68.
- Brown, J. S. & Duguid, P. (2000). *The Social Life of Information*. Boston, Harvard Business School Press, pp. 40-57.
- Campos, M., Lafferière, T. & Harasim, L. (2001). The Post-Secondary Networked Classroom: Renewal of Teaching Practices & Social Interaction. *Journal of Asynchronous Learning Networks*, 5, pp. 36-52.
- Cummings, J., N., Butler, B. & Kraut, R. (2002). The Quality of Online Social Relationships. *Communications of the ACM*, Vol. 45, No 7, pp. 103-108

- Erickson, T. (1997). Social Interaction on the net: Virtual Communities as Participatory Genre. In *Proceedings of the HICSS 30* (ed. Nunamaker, & Sprague, Jr.) Vol 6, IEEE Computer Society Press: Los Alamitos, CA, pp. 23-300
- Galagher, J & Sproull, L & Kiesler, S (1998). Legitimacy, Authority, and Community in Electronic Support Groups. *Written Communication* Vol. 15 No 4 Oct 1998, Sage Publications, pp. 493-530
- Goffman, E. (1959) *The Presentation of Self in Everyday life*. Doubleday Company Inc., New York, USA
- Goffman, E. (1963) *Behaviour in Public Places: Notes on the Social Organization of Gatherings*. The Free Press, New York, USA.
- Gunawardena, C. N. (1995) Social Presence Theory and Implications for Interaction and Collaborative Learning in Computer Conferences. *International Journal of Telecommunications*, 1 (2/3), pp.147-166
- Kapoor, R. (2001) Open Source Communities as Communities? An Exploratory Study. Summer Dissertation, *London School of Economics and Political Science*, UK.
- Krejns, K. & Kirschner, P. A. (2001) The Social Affordances of Computer Supported Collaborative Learning Environments. *31th ASEE/IEEE Frontiers in Education Conference*, Reno, USA
- Leh, A. S. C. (2001) Computer-Mediated Communication and Social Presence in a Distance Learning Environment. *International Journal of Telecommunications*, 2001 7(2), AACE, USA, pp. 109-128
- Meyrowitz, J (1985) *No Sense of Place: The Impact of Electronic Media on Social Behaviour*. Oxford UP
- Moody, D. & Buist, A. (1999) Improving Links Between Information Systems Research and Practice: Lessons from the Medical Profession. In *proceedings of 10th Australian Conference on Information Systems*, ACIS, pp. 645-659
- Oren, A., Mioduser, D. & Nachmias, R. (2002) The development of Social Climate in Virtual Learning Discussion Groups. *International Review of Research in Open and Distance Learning*, 3 (1)
- Orlikowski, W. & Yates J. (1994). Genre Repertoire: The Structuring of Communicative Practices in Organizations. *Administrative Science Quarterly* 39, pp. 541-574.
- Rheingold, H. (1993). *The Virtual Communities*. New York: Addison-Wesley
- Rolland, K. H. & Herstad, J. (2000). The 'Critical Case' in Information Systems Research. In *Proceedings of the 23rd Information Systems Research Seminar in Scandinavia* (Svensson et al. eds.), Uddevalla, Sweden, pp. 213-223
- Rovai, A. (2002). Building Sense of Community at a Distance., *International Review of Research in Open and Distance Learning*, Vol. 3, No. 1
- Sproull, L. & Kiesler, S. (1991) *Connections: New ways of working in the networked organization*. The MIT press, Cambridge, Massachusetts, USA
- Turkle, S. (1995). *Life on the Screen: Identity in the Age of the Internet*. Simon and Schuster, NY, USA
- Utz, S. (2000). Social information processing in MUDs: The development of friendships in virtual worlds. *Journal of Online Behavior*, 1 (1).
- Wasson, B. & Mørch, A. (2000). Identifying collaborative telelearning scenarios. *Journal of Educational Technology & Society*, 3 (3)
- Wenger, E. (1998). *Communities of Practice: Learning, Meaning and Identity*. Cambridge UP
- Wittel, A. (2000). Ethnography on the Move: From Field to Net to Internet. *Forum: Qualitative Social Research* [Online Journal], 1(1). Available at <http://qualitative-research.net/fqs>