

Refereed Articles

Collective Team Learning in Work Organizations

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Adult learning traditionally has been studied as an individual phenomenon with learning thought of as a process whereby behavior changes as a result of experience (Merriam & Caffarella, 1991). A view of learning as individual and experience-based also dominates how we think about learning in work organizations (Marsick, 1987; Marsick & Watkins, 1990). However, as work and work organizations become more complex, the consequences of individual decisions and actions become less clear. As they are joined with the decisions and actions of others to extend across the organization and into the future, individual experience becomes a less reliable basis for learning. Therefore, increasingly such learning tasks as improving work processes, planning organizational strategy, conducting research, and developing or improving services or products are being taken on by teams (Gray, 1989; Parker, 1990).

An extensive body of research exists on teams under the nomenclature of work group effectiveness or group dynamics. However, in critiquing this literature, several scholars have noted that future research on groups needs to be carried out within organizations rather than laboratories (Hackman, 1987; Goodman, Ravlin, & Schminke, 1990; Schwartzman, 1986), needs to distinguish between kinds of groups according to their tasks (McGrath, 1984), should link group process to outcomes rather than simply describing the process (Hackman, 1987), and should attempt to identify critical "levers" that can influence group performance (Goodman, 1986).

In spite of this large body of literature, studies explicitly addressing team learning have been rare. Based on case study data, Kasl, Marsick, and Dechant (1992) and Dechant, Marsick, and Kasl (in press) propose a developmental model of team learning. Their work differs from previous models of group development in its emphasis on developmental stages pertaining to learning effectiveness rather than a more generalized group development. In a self-reflective examination of the process of collabo-

rative group inquiry, the Group for Collaborative Inquiry (1991, 1992) began delineating some of the epistemological characteristics of the group learning process.

More concerned with the outcome of group learning than either group development or epistemology, Allen (1984); Ancona and Caldwell (1990); Austin and Baldwin (1991); Cicourel (1987, 1990); Kraut, Egido, and Galegher (1990); and Pelz and Andrews (1966) have addressed collaborative intellectual teamwork from an information communication perspective. Cicourel (1990), in particular, contributes to our understanding of team learning by introducing Schutz's (1964) notion of socially distributed knowledge as a theoretical underpinning and observing that individuals in collaborative work relationships are likely to vary in the knowledge they have (Cicourel, 1974). Consequently, individuals so involved must engage in dialogue in order to pool resources and negotiate their differences to accomplish tasks (Cicourel, 1990).

The study described here contributes to this nascent body of literature by proposing an idealized model of the collective team learning process. It also extends the perspective from which team learning is examined by explicitly examining the ways in which the team learning process reflects particular social, cultural, and historical contexts. In particular, I propose that teams reproduce the authority structure and policies of the organization, that power differences among team members constrain team learning, and that the less formal power individual team members have, the less they are able to carry out learning tasks that extend beyond team boundaries.

This study explicitly addresses concerns about future research on work group effectiveness expressed by scholars. It is carried out in an organizational rather than laboratory setting, examines the interaction between teams and their organizational context, looks only at teams with the task of constructing new knowledge, considers new knowledge to be the team's output and uses organizational and team assessments of this output to determine whether or not a team is successful, and identifies the distribution of power among team members to be a "critical lever" in influencing team performance.

Design of the Study

Theoretical Perspective

The study described here draws on the reflective learning literature to define learning as the transformation of experience into knowledge (Kolb, 1984). However, like Cicourel, I also take a phenomenological perspective

in understanding knowledge as socially distributed and constructed (Berger & Luckman, 1967; Schutz, 1964). I make a further distinction between learning as the acquisition of expert knowledge or as socialization and learning as the construction of new knowledge. The focus of this study is on the group construction of new knowledge. I take the meaning of knowledge construction in its broadest sense to include both group problem solving and the group construction of new meaning.

Study Participants

Four learning teams within the research and development unit of a high technology manufacturing company were recruited by the unit's team coordinator. The research and development unit is responsible for the design of the manufacturing processes for new products. The teams indicated whether or not they saw themselves to be successful learners by their decision about competing in an international company-wide competition for teams on the basis of their accomplishments. Of the teams studied, three competed and one did not. The goals for the teams were to contribute to the reduction in the time it takes to move a product from design to market. Employees became members of teams by volunteering, and membership ranged from between ten and fifteen people with composition changing over time. Teams selected their own leaders. Each team was assigned a "godfather" or person with managerial authority to provide support and to help secure resources. None of the teams had been formally trained in group process or inquiry skills although, historically, there had been guidelines for how the teams were to operate. For the most part teams structured their own learning with only occasional reference to those guidelines as remembered by members who had had previous exposure to them.

Procedures

The research was designed to illuminate the connections between the team learning process and socio-cultural structures in the organization. The design was influenced by Denzin's (1989) interpretive interactionist approach to data collection and interpretation in which the attempt is made to understand "how this historical moment universalizes itself in the lives of interacting individuals" (p. 139). Following Denzin's notion that personal troubles are related to problems at the societal level, my interviews and observations focused on identifying difficulties encountered by the teams. If a pattern of difficulty was pervasive across individuals and teams, I inferred that it was linked to socio-cultural structures in the

organization. If a difficulty was idiosyncratic, I reserved judgment since the difficulty might be specific to either an individual or to the team.

The research included the following elements: (1) identification of the research question, "How do teams in work organizations learn collectively?"; (2) critique of the adult learning literature and group effectiveness literature; (3) collection of data, especially personal narrative pertaining to the team learning experience, but also observations of team meetings and records and documents relevant to the teams; (4) examination of narratives and other data in order to identify recurring features and key elements and to determine how each individual and team is alike yet unlike each other; (5) classification, ordering, and reassembling of the team learning experience; (6) location of the team learning experience within the historical moment and the social structures of the work organization; and (7) writing.

Intensive data collection took place over a four-month period, although intermittent contact occurred over a longer period as a result of the continued presence on site of a research assistant who was also employed by the company in the research and development unit. Team members who participated in formal interviews were selected to achieve a broad variation in hierarchical rank, gender, age, and ethnic and racial background. Eleven team members were interviewed formally with additional informal discussions occurring over the four-month period with various team and organizational members. In addition, there were eight formal observations of team meetings. The data collection and analysis process were recursive. The recurrent interviews, observations, and participation of the on-site research assistant ensured an ongoing exchange of information and opportunities for the validation of data.

To help assure trustworthiness, the data for this study came from multiple sources (Lincoln & Guba, 1985). Field notes were kept to record all encounters with members of the organizations. Field journals were maintained to record methodological decisions, reflections on personal interaction with the research process, and emerging hypotheses about the meaning of the data (Goetz & LeCompte, 1984). Data were sorted, coded, and interpreted in an ongoing process that continued throughout the study. Additional measures employed to strengthen trustworthiness were triangulation of investigators, data sources, and data collection techniques; negative case analysis; member checks; and critical reflection on the research process by the researcher and research assistant.

The Experience of Collective Team Learning

The Organization's Authority Structure and Policies

Within the company's authority structure, individuals were perceived and interacted with on the basis of their position within the structure's hierarchy. Attitudes rooted in ascriptions of personal and professional worth based on this hierarchy determined whose problems were addressed, whose knowledge was solicited or given attention, whose attempts at meaning-making were taken seriously, and who controlled the team learning process.

Because authority was accrued first by formal position and second through technical knowledge, managers and engineers stood above technicians and operators. Managers' authority was formal, and engineers' was informal based on their technical expertise. Technicians perceived themselves as being a step above operators by virtue of their knowledge, but neither managers, nor engineers, nor operators indicated they held a similar perception.

An area in which company policy was in conflict with the intent to promote team learning was around the work role of operators. According to one engineer, the sole job of operators was to run production lots. However, according to another, they should be helping to run experiments since this was a research and development rather than a production unit. In practice, however, operators' roles as team members meant they needed to run experiments and gather data, while their daily work role required they focus on their production responsibilities. The problem, according to engineers, technicians, and operators, was that their supervisors often prevented them from attending team meetings and from running experiments: such refusal undermined their participation in team learning.

Another policy area that negatively affected team learning concerned the permeability of intraorganizational boundaries. For all teams, the ability to bring information into the teams, disseminate learning back out, and maintain a fluid membership were cited as important to team success. However, communication outside of a single work area remained difficult. Operators were trained and stayed mostly within their one area, and they had virtually no time to do anything other than their specific job. Yet, teams described needing information both about the organization and about technical matters. One way the company tried to get past these boundaries was by assigning each team a godfather, a manager high enough in the company hierarchy to help the team negotiate boundaries and access resources. Another was cross-training some of the operators.

Discussion at various teams' meetings indicated that these efforts were insufficient to overcome the lack of discretionary control operators had over the work, time, and movement characterizing their work life and that information and experience from beyond the team boundaries was cumbersome to obtain.

The Four Teams

Each of the four teams participating in this study dealt with the existing authority structure and policies in a different way.

The Empowered Team. The Empowered Team was area specific and consisted almost entirely of operators. The chair, Hal, was an engineer in the area and was guided by a clear vision of worker empowerment. He described himself as "giving the workers encouragement and helping them value themselves. I want them to see that their position can make a difference—that what they do is important. Leading this team is all contact and relationship building. If I care and they can tell I care, they do better." For Hal, the way in which he led this team was an expression of a personal mission and set of facilitation skills he had developed through his volunteer work with church youth groups. In fact, if he didn't have to work, Hal would have been happy to volunteer full-time with these youth groups.

Participants on this team spoke warmly of their leader and the way in which he expressed the value he placed on them and their contribution. One technician described his experience, "I do a lot of computer analytical work for the team. Hal imposed that on me, not in a bad way, I love it. I had thought I should drop out. I didn't feel I was a contributor. But Hal said, 'No. I won't let you.' He made me feel I was needed. He might not go that far with operators." This last statement reflects a strong and pervasive theme that emerged on all of the teams. That is, the value ascribed to each worker corresponded to their position in the company's authority structure. Attitudes based on these ascriptions of personal and professional worth determined how much value was placed on a team member's potential contribution.

The "A" Team and The Lost Team. The "A" Team and the Lost Team contrast with the Empowered Team in which Hal made a conscious attempt to overcome some of the limitations to team learning imposed by the organization's authority structure. Both were area specific teams led by engineers. Both were made up of a mix of engineers, technicians, and operators. Both were critiqued by their members as having too few operators in comparison to engineers.

The “A” Team had a reputation as “a winner,” and both the operator and the technician who were interviewed attributed this to the large number of engineers. The engineer who was interviewed also attributed the team’s success to a new, interpersonally oriented management style that had been brought into his area and shared with the engineers. It was believed that what the engineers learned about this new management style would trickle down to the technicians and operators. Team meetings were heavily dominated by engineers with input from operators and technicians only on non-technical issues such as costuming for the presentation at the company’s international teams’ competition. A technician described his team in this way: “This team is engineering heavy. It’s experienced a lot of success because of the engineers, but there’s not enough operator input. The operators need to get organized so they can get their input heard—maybe have a pre-meeting of five minutes in order to get organized. Actually, operators should chair these meetings because it is the only time for them to get their problems addressed. I’ve seen engineer leaders brush operators’ problems aside.”

The issue of the exclusion of operator input was also present for the engineer-dominated Lost Team. The Lost Team did not perceive itself as successful enough to go to the international teams’ competition. Researcher field notes indicated that the leader often argued down contributions by various team members and dominated much of the meeting time in dialogue with another engineer. A typical interchange was as follows:

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| Chair: | What other ideas are there? John. Are you awake? |
| John (an engineer): | (With embarrassment) Yeah. I’m awake. |
| Chair: | Carlos. Do you have any ideas? |
| Carlos (a technician): | (After a long pause Carlos asks a technical question which the chair answers). |
| Chair: | Do you have any ideas, Bettina, of what we can do? |
| Bettina (technician): | (Silence). |
| Chair: | Shall we . . . (Makes a suggestion which is met by silence). Maria (a technician) is the only one shaking her head. |
| Martha (an engineer): | (Offers some information which the chair argues down.) |

This behavior stood in contrast to leader behavior on the “A” Team where leadership was shared, at least among the engineers. The result appeared to be that although operators and technicians mostly were excluded from what was considered important technical learning by the engineers on the “A” Team, the mutual respect among the engineers resulted in the completion of several successful learning projects by this team.

The People’s Team. Unique among the teams that participated in this study was the People’s Team. Its uniqueness originated in the fact that its membership was not confined to one area but encompassed all areas of the research unit. It was also unique in that the membership consisted entirely of operators and technicians. Team members perceived their team as very successful and pointed to several innovations they had made that had won them recognition in the company. The team leader, Chris, was elected by his teammates. A technician studying at the local university to be an engineer, Chris was described as aggressive, tactless, and at times not well liked. But in the words of one operator, “He is very gung ho. He expects a lot out of people, and he gets the job done.” From Chris’s perspective, “People want to do a good job, so I give them a plan.” Similar to those on Hal’s Empowered Team, team members were enthusiastic that everybody’s contribution was solicited and valued.

Chris believed that management did not put aggressive enough expectations on the teams and underestimated their capabilities. The perception on the part of operators and technicians that their abilities were underestimated by management and that they were frequently underchallenged and, therefore, bored and cynical about their work was echoed several times in the interviews. In fact, engineers indirectly corroborated these perceptions with such statements as, “Technicians and operators are very bright people. They have very good insights. The team lets them shine. I don’t believe technicians and operators don’t have college degrees. They’re so organized.” These statements of disbelief regarding technician and operator intelligence and skills illustrate how imbedded in individual perception was the belief that one’s position in the hierarchy reflected the quality of contribution one was able to make.

Toward an Understanding of Collective Team Learning

Neutralizing the Authority Structure

Collective team learning appears to include a process that enacts at the systematic level of the group the reflection-action process first suggested by Dewey (1938) and later modeled by Kolb (1984) and others interested

in experiential learning (Schon, 1983; Jarvis, 1987; Marsick & Watkins, 1990). However, the organization's authority structure and supporting policies constrained both the reflective and the active phases of team learning. In the case of the teams in this study, the reflection phase included problem identification, sharing knowledge among team members, and combining and recombining knowledge. The reflective phase required that team members enter into dialogue with other team members and contribute knowledge as information as well as in the form of analysis and creative thinking. The major constraint to such contributions was the perception on the part of high-authority team members that low-authority team members' contributions would be of limited value to the team or, in other words, the higher the rank, the more important the contribution. These members used their formal power of position and informal power of expertise to limit the contributions of low-ranking members during the team meetings. Power is defined for the purpose of this study as the ability to get what we want.

The active phase required that team members interact with people outside of the team's boundaries in order to gather information and disseminate what they had learned. Low-ranking team members had difficulty enacting this phase because they could not, of their own choice, move beyond their immediate job location, choose when to work at their primary job and when to engage in team activities, nor determine how they would carry out their job tasks. In addition, these limitations meant they had a very limited understanding of the organization and how it worked as well as of their own place within it. This limited their ability to access resources and information and to figure out how to get things done in the larger organization. Thus, although an idealized process of collective team learning seemed to emerge from the data, it was profoundly affected by authority structures and policies in the organization.

Nevertheless, although these authority structures and policies were confining, they did not seem to constitute absolute constraints on team learning. Teams seemed to control the effects of the organization's authority structures and policies on the team learning process by altering the internal structure of the teams. The Empowered Team, the "A" Team, and the People's Team each controlled the power differentials supported by these structures and policies within their boundaries in different ways. On the Empowered Team, Hal imposed an ideology of empowerment by which he hoped the team members would come to see themselves and their contributions as important to the team and the company. While retaining tight control of the team's structure, he established an ethos of publicly

valuing each team member's contribution and according each team member respect. On the "A" Team, low ranking employees were mostly excluded from significant learning, leaving a group of engineers of roughly equal rank to learn together. On the People's Team, membership excluded engineers and managers, leaving technicians and operators to learn together. The Lost Team seemed to have found no effective way to counter the problems of unequal authority.

Learning in the Social Domain

Much of the learning on the three successful teams was in the service of producing new technical knowledge. Learning that resulted in innovations in the social domain seemed to require a distinctly different power relationship among team members. This relationship appeared to embody a genuine belief that other members' contributions were potentially valuable. This relationship seemed to exist uniquely among members of the People's Team. On this team, company policy that made it difficult for operators to attend team meetings regularly and to run experiments was particularly detrimental to team learning since all members were of low rank in the authority structure. No team members had the discretionary authority to organize their own work so that they could carry out team learning tasks in addition to their regularly assigned work. This effectively limited the learning that could occur on the team. Nevertheless, this team found ways to overcome these barriers. Chris explained, "We wound up dividing members into the areas they work in. They each elect their own leader. Then action items can go to the groups, not to individuals. The groups delegate and someone from each group comes to the meeting prepared. We brainstormed this idea." By creating area sub-teams, operators as members of groups achieved the power they were unable to achieve as individuals to attend meetings and run experiments. The innovation of sub-teams also benefited the company in that the goals of research and production no longer needed to compete with each other in regard to the use of operators' time.

For the People's Team in particular, learning went beyond technical learning to learning that generated new organizational forms. It is worth noting a few unique characteristics of this team. First, all members were at more or less the same hierarchical level, so there was no one who had significantly more authority than anyone else. Second, the leader relinquished authority to other members of the team. Finally, the problem required solving before learning could continue. Thus, although it appears that collective team learning in the technical domain occurred in the

absence of differences in authority among members and that this condition was imposed artificially, collective team learning in the social domain needed an authentic acknowledgment among members that the contributions of others on the team were valuable.

Summary

An idealized collective team learning process seemed to involve a reflective and an active phase, with each phase consisting of certain identifiable tasks. The successful enactment of these tasks seemed to be mediated by socio-cultural structures within the work organization. These structures manifested themselves in the experience of team members as the exclusion of low-ranking members' contributions to the learning process. Operators described finding it difficult to attend and contribute to the meetings. In contrast, engineers and managers were described by technicians and operators as "each one thinking they have a better idea" and as blocking input by others by "getting on a roll." The outcome for team learning was that only some of the knowledge that was distributed socially throughout the organization was available to the learning process. The knowledge and experience of those closest to the production process was excluded.

Propositions

The data from this study suggest three propositions and two sub-propositions regarding the nature of collective team learning in work organizations.

1. Teams reproduce within their own boundaries the socio-cultural structures of their organizations.
2. Power differences among team members constrain the dialogue necessary for collective team learning.
 - a. Collective team learning in the technical domain can occur only when power differences among team members are controlled.
 - b. Collective team learning in the social domain can occur only when power differences among team members do not exist.
3. Collective team learning cannot occur when team members have limited control over their own time, movement, and work.

Discussion of Team Learning from a Cultural and Historical Perspective

It is helpful to understand collective team learning within the cultural

and historical context from which it emerges. First of all, the cultural ideal for achieving mainstream success in the United States appears to be through competitive individualism (Tocqueville, 1963). This contrasts with the ideal of distinguishing oneself because of membership in a work group or distinguishing oneself in order to reflect well upon one's family or work group as is more the case in Japan or India (Roland, 1988). The success with team work in work organizations in Japan, for example, is not just an industrial innovation; it is rooted in the Meiji Restoration in which modern Western institutions were assimilated while retaining "traditional patterns of familial hierarchical relationships with their associated values of emotional independence, reciprocal loyalties and obligations, and high levels of performance" (Roland, 1988, p. 129). These values reward team work in terms of enhancing personal identity through successfully participating in and supporting groups and teams. Mainstream U.S. culture offers few such rewards for team work. In fact, the dream of many Americans is "often a very private dream of being a star, the uniquely successful and admirable one, the one who stands out from the crowd of ordinary fold who don't know" (Bellah, Madsen, Sullivan, Swidler, & Tipton, 1985, p. 285). Thus, the shift to working in teams in many U.S. work organizations represents not just a structural change in how work is done, but a significant cultural shift affecting how many individuals identify themselves and attempt to establish their social worth.

From a historical perspective, although such innovations as the attempt at team learning may indicate transition to a postmodern era in which the metaphor is one of relationship rather than machine, much of life in today's institutions is still imbued with the ideal of technical rationality (Schon, 1983). This ideal is expressed in how we enact learning and share knowledge. In work organizations, scientific knowledge is applied to the solving of problems by professional experts such as engineers and managers. A professional education acquired at a university in which scientists and scholars are creating basic knowledge uniquely qualifies them to address the work and technical problems of high technology manufacturing companies like the one in this study. They bring this knowledge to the work setting and use employees with less knowledge such as operators and technicians to enact it. Ideally, the work of these less knowledgeable employees should be routine and require no problem solving. Any learning about improving the practice of the organization should be done by engineers or managers. In a rational hierarchy such as this, scientists create knowledge, engineers and managers solve problems in the application of that knowledge, and semi-skilled and unskilled workers enact the

knowledge. This hierarchy effectively concentrates learning in the hands of scientists and professional practitioners, while the learning of workers is tightly controlled and prescribed by those above them.

It is within a cultural and historical milieu characterized by competitive individualism and the hierarchical control of knowledge that the notion of team learning has emerged. However, as illustrated by this study, it is those very characteristics of individualism and knowledge control that limit the contributions that are essential to dialogue in groups. Collective team learning cannot be understood outside of its cultural and historical context. In the United States, team learning is likely to be profoundly affected by the deep-rooted assumption that it is as individuals that we bring meaning to our lives and that as individuals we are in competition with each other. Even if we personally find this particular quality of the U.S. national culture at odds with our gender of local culture experiences, the institutions which dominate much of public life are structured so that it is difficult to live out and express a different cultural pattern. Similarly, many of the institutions in which we work are the manifestation of a technical-rational modern era. Even if we can see the limitations of this world view in a time of limited global resources, we are often stymied in our efforts to create more appropriate ones. Nevertheless, the appearance of more and more collective learning teams in work organizations, although problematic to enact in current organizations, seems to represent a significant attempt to move our institutions out of the technical-rational era.

Conclusion

This study illuminates an idealized process of collective team learning and helps make evident the forces interacting with the process. What may appear to be attributable to personal problems or a lack of skill in group dynamics when such teams as the Lost Team fail to learn in fact can be interpreted as the manifestation of social, cultural, and historical patterns that are not supportive of collective team learning. The technical-bureaucratic nature of the organization in which this study took place means that the authority structure and supporting policies were the prominent characteristics of the organization that were reproduced on the teams. However, what appeared to be key to successful collective team learning was either each team's control over or else the absence on the teams of significant power differences among members.

As the propositions reflect, teams reproduce different socio-cultural

patterns depending on their organizational context. However, regardless of how power is acquired or expressed in various organizations, the presence and control over power differences among team members may be an extremely significant “lever” affecting successful team learning. What this means for those of us on teams and in work organizations is that we must construct our teams to minimize these differences and seek to educate team members about the ways in which socio-cultural patterns in the organization enable some organizational members to control and contribute disproportionately to the collective team learning process.

References

- Allen, T. J. (1984). *Managing the flow of technology: Technology transfer and the dissemination of technological information within the R & D organization*. Cambridge, MA: MIT Press.
- Ancona, D. G., & Caldwell, D.F. (1990). Information technology and work groups: The case of new product teams. In J. Galegher, R.E. Kraut, & C. Egidio (Eds.), *Intellectual teamwork* (pp. 173-190). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Austin, A. E., & Baldwin, R.G. (1991). *Faculty collaboration: Enhancing the quality of scholarship and teaching*. (ASHE-ERIC Report No. 7). Washington, DC: George Washington University.
- Bellah, R., Madsen, R., Sullivan, W., Swindler, A., & Tipton, S. (1985). *Habits of the heart*. New York: Harper & Row.
- Berger, P. L., & Luckman, T. (1967). *The social construction of reality*. London: Allen Lane.
- Cicourel, A.V. (1974). *Cognitive sociology: Language and meaning in social interaction*. New York: Free Press.
- Cicourel, A.V. (1987). Cognitive and organizational aspects of medical diagnostic reasoning. *Discourse Processes*, 10, 347-367.
- Cicourel, A.V. (1990). The integration of distributed knowledge in collaborative medical diagnosis. In J. Galegher, R.E. Kraut, & C. Egidio (Eds.), *Intellectual teamwork* (pp. 221-242). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Dechant, K., Marsick, V., & Kasl, E. (in press). Toward a model of team learning. *Studies in Continuing Education*.
- Denzin, N. (1989). *Interpretive interactionism*. Newbury Park, CA: Sage.
- Dewey, J. (1938). *Experience in education*. New York: Collier.
- Goetz, J.P., & LeCompte, M.D. (1984). *Ethnography and qualitative design in educational research*. San Diego, CA: Academic Press.

- Goodman, P.S. (1986). Impact of task and technology on group performance. In P.S. Goodman (Ed.), *Designing effective work groups* (pp. 120-167). San Francisco: Jossey-Bass.
- Goodman, P.S., Ravlin, E., & Schminke, M. (1990). Understanding groups in organizations. In L.L. Cummings & B.M. Staw (Eds.), *Leadership, participation, and group behavior* (pp. 333-385). Greenwich, CT: JAI Press.
- Gray, B. (1989). *Collaborating: Finding common ground for multiparty problems*. San Francisco: Jossey-Bass.
- Group for Collaborative Inquiry [Brooks, A., Daniels, M., Kaltoft, G., Kasl, E., Loughlin, K., & Preciphs, T.]. (1991). There must be some meaning to this: Storytelling as a research method. (In M. Baskett & V. Marsick (Eds.), *Proceedings of the professionals' ways of knowing and the implications for CPE* (pp. 6-10). Commission for Continuing Professional Education of the AAACE Pre-Conference. Montreal, Quebec, Canada (October 13-15).
- Group for Collaborative Inquiry (Brooks, A., Daniels, M., Kaltoft, G., Kasl, E., Loughlin, K., & Preciphs, T.). (1992). [Collaborative inquiry: Personal journals, interviews, participant observation field notes], Unpublished raw data.
- Hackman, R. J. (1987). The design of work teams. In J.W. Lorsch (Ed.), *Handbook of organizational behavior* (pp. 315-340). Englewood Cliffs, NJ: Prentice-Hall.
- Jarvis, P. (1987). *Adult learning in the social context*. London: Croom Helm.
- Kasl, E., Marsick, V., & Dechant, K. (1992). A conceptual model for group learning. In A. Blunt (Ed.), *Proceedings of the 33rd Annual Adult Education Research Conference* (pp. 131-138). Saskatoon, Saskatchewan, Canada.
- Kolb, D. (1984). *Experiential learning*. Englewood Cliffs, NJ: Prentice-Hall.
- Kraut, R. E., Egidio, C., & Galegher, J. (1990). Patterns of contact and communication in scientific research collaborations. In J. Galegher, R.E. Kraut, & C. Egidio (Eds.), *Intellectual teamwork* (pp. 149-172). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage.
- Marsick, V. (1987). *Learning in the workplace*. London, UK: Croom Helm.

- Marsick, V., & Watkins, K. (1990). *Informal and incidental learning in the workplace*. London, UK: Routledge.
- McGrath, J.E. (1984). *Groups: Interaction and performance*. Englewood Cliffs, NJ: Prentice-Hall.
- Merriam, S. B., & Cafarella, R. S. (1991). *Learning in adulthood: A comprehensive guide*. San Francisco: Jossey-Bass.
- Parker, G.M. (1990). *Teamplayers and teamwork*. San Francisco: Jossey-Bass.
- Pelz, D. C., & Andrews, F. M. (1966). *Scientists in organizations*. New York: Wiley.
- Roland, A. (1988). *In search of the self in India and Japan*. Princeton, NJ: Princeton University Press.
- Schon, D. (1983). *The reflective practitioner*. New York: Basic Books.
- Schutz, A. (1964). *Collected papers II: Studies in social theory*. The Hague: Nijhoff.
- Schwartzman, H. (1986). Research on work group effectiveness: An anthropological critique. In P.S. Goodman (Ed.), *Designing effective work groups* (pp. 237-276). San Francisco: Jossey-Bass.
- Tocqueville, A. de (1963). *Democracy in America* (G. Lawrence, Trans.). New York: Doubleday, Anchor Books. (Original work published 1836)