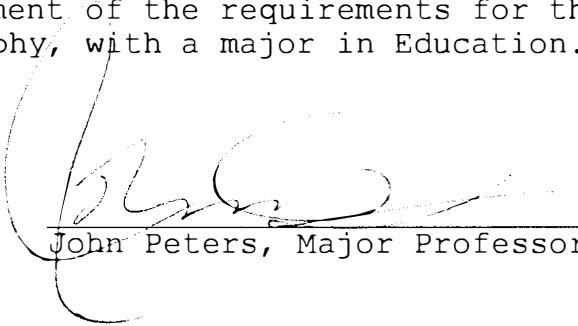


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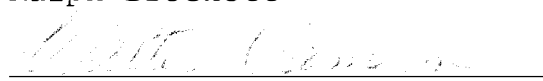
I am submitting herewith a dissertation written by Joseph L. Armstrong entitled "Collaborative Learning: A Study of Two Classes." I have examined the final copy of this dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy, with a major in Education.



John Peters, Major Professor

We have read this dissertation
and recommend its acceptance:



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COLLABORATIVE LEARNING: A STUDY OF TWO CLASSES

A Dissertation

Presented for the

Doctor of Philosophy Degree

The University of Tennessee, Knoxville

Joseph L. Armstrong

August, 1999

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DEDICATION

This dissertation is dedicated to my wife, Sheri. Without her eternal love and patience this project would have never been completed.

ACKNOWLEDGMENTS

As with any project of this size, I did not complete this dissertation alone. I had tremendous support from a number of people and I would be remiss if I did not acknowledge their support here. First, I would like to thank the eighteen participants whose experiences are documented in these pages for their willingness to participate in this study. The openness with which they allowed me into their respective groups to observe their actions, and the articulate manner in which they verbalized their experiences in their interviews made my work as researcher infinitely easier.

I must thank my major professor and advisor, Dr. John Peters, for his wise counsel, guidance, and support during not only on this dissertation, but my entire doctoral program. His work with me went above and beyond the call of duty for an advisor and became that of a trusted mentor and friend. My debt to him is immense.

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I want to thank my parents, Harriet and Virgil Armstrong, for instilling in me a desire for learning and education.

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ABSTRACT

This study described and documented collaborative learning by students in two sections of a graduate education course. Ethnographic observations were made of the two groups and participants were interviewed about their experiences in their respective groups. Analysis of fieldnotes from the ethnographic observations and interview transcripts revealed three categories of themes that described the process of collaborative learning in the two groups: 1)group process, 2)learning process, and 3)group facilitation. Each category had multiple themes. The group process category contained the themes of cohesion, trust and respect, confusion and frustration and conflict; the learning process category contained the themes of discourse, engagement, and questions; the group facilitation category contained the themes of facilitator actions and participants as facilitator. Participants in the course described their experiences in terms of the interaction of these themes, such that the themes created a patterned gestalt of the process of collaborative learning.

The findings describe collaborative learning as a multifaceted, complex process that can be understood in

terms of knowledge construction, relationships, and participants' role in facilitating their own and others' learning experiences. Knowledge construction involved knowing that, knowing how, and knowing from within conversationally developed contexts created by the participants. The findings indicated that the participants were able to observe their own learning experiences in terms of relationships formed in their respective groups. Their ability to see themselves learning from within these relationships contributed to their overall learning experience and learning outcomes.

The results were discussed in terms of implications for future research and practice. For example, the results suggest that facilitators of collaborative learning attend to the relationships formed by participants and to the role that these relationships play in the knowledge construction process. Researchers also need to study such influences of collaborative learning, especially as they are exhibited in diverse environments.

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Chapter One

Introduction

The purpose of this study is to describe and document collaborative learning in a graduate education course. The need for such a study is defined by recent claims made by writers in adult education and related disciplines who describe collaborative learning as a special type of learning in need of greater clarity and explanation. A related concern has been raised by practitioners in education who have expressed a need for information about the collaborative learning process and how it can be facilitated in a variety of settings. Although results of this study will not satisfy all of these needs, they do contribute to a small but growing literature about collaborative learning. Perhaps equally important, this account of the experiences of people actively engaged in collaborative learning may be of interest to educators who desire examples and illustrations of the collaborative learning process.

Conceptual Framework

For purposes of this study, collaborative learning is defined as two or more people laboring together to construct knowledge that is more than, and other than, the individuals involved could have known otherwise. Peters and Armstrong (1998, and forthcoming) have identified three types of teaching and learning, one type being collaborative learning. A brief description of each follows.

Type I teaching and learning is "Teaching by Transmission, Learning by Reception." In Type I, information flows from the teacher, who transmits information, to individual students, who receive the information. Lecture is the mode of discourse most commonly associated with this type of teaching and learning.

Similar to Type I, Type II teaching and learning defines the teacher as a transmitter of information. But Type II acknowledges that students can also transmit information to one another. Thus, Type II teaching and learning is called "Teaching by Transmission, Learning by Sharing." Information flows from teacher to student and from

student to student. Students' prior knowledge is recognized as potentially relevant to the learning experience although the goal of Type II teaching and learning is that students develop knowledge already held by the teacher or some other outside source. Lecture followed by group discussion is the most common mode of discourse in Type II teaching and learning.

Type III teaching and learning is "Collaborative Learning." In Type III the teacher becomes an equal member of the group. The teacher may, and usually does, have special subject matter knowledge, although students' knowledge is equally valued and becomes part of the context within which new knowledge is constructed jointly by members of the group. This constructed knowledge is thus more than, and other than, any of the participants could have developed on their own. Dialogue is the principle mode of discourse associated with collaborative learning. Information flows from member to member, member to group, and group to member. A particular case of Type III teaching and learning is described in this study.

Problem

Type I teaching and learning is the predominate type used in formal educational settings. It also has the largest research and theory base of all the types of teaching and learning. Though not as widespread, Type II practice has grown significantly in recent years, and there has been a concomitant increase in research activity related to Type II teaching and learning (e.g., Kagan, 1997; Slavin, 1991).

Type III teaching and learning practice appears to have gained increased currency among practitioners and scholars in adult education (Brookfield and Preskill, 1999; Cranton, 1996; Imel, 1996;). Writers in higher education (e.g., Bruffee, 1999; Hamilton, 1994), corporate training (e.g., Isaacs, 1993; Watkins and Marsick, 1993; Senge, 1990), and community education (e.g., Vella, 1994, 1995) have all addressed one or more aspects of collaborative learning as defined in this study. Some writers in adult education have also developed conceptual frameworks intended to clarify differences in types of learning (e.g., Mezirow, 1991, 1996), or to sort out competing claims made about the

nature of learning (e.g., Jarvis, 1987, 1992). These writers usually address a broad audience of educators who practice in a variety of organizational and community settings.

While the number of publications about Type III teaching and learning is increasing, the bulk of published works consists of models, typologies, and "how to" discussions. Few are based on empirical research, although the models and concepts put forth in such writings have served as background for studies, especially dissertation and action research undertaken by educators interested in improving their practices. These studies, however, tend to focus on specific features of a particular theory, subject area focus, or the needs of a particular practice. For example, Mezirow's theory of transformative learning has spawned studies that seek confirmation of his ideas about communicative learning (e.g., Group for Collaborative Inquiry, 1994). Some researchers have studied the teacher-student relationship, in a subject area, usually from the viewpoint of the teacher (e.g., a study of teaching in the arts by Sgroi, 1998). An example of action research is

Tisue's (1999) study of how her role as facilitator influenced the use of dialogue and collaborative learning in a business setting.

Given all this literature on collaborative learning and related topics, I found only one study that focused on the collaborative learning process. Gonzalez and Macaulay (1994) interviewed 26 students and 20 faculty members from four institutions of continuing higher education and asked them to describe their positive and negative experiences with collaborative learning in various classroom settings.

Gonzalez and Macaulay defined collaborative learning as

A process in which facilitator and learners work together in identifying and exploring perceptions, beliefs, opinions, and understandings, including but not limited to developing curriculum, determining methods, carrying out activities, and selecting evaluative criteria. (p.164)

The researchers reported that in collaborative learning faculty and students experienced "common barriers" and that most of their experiences with the process were negative experiences. Gonzalez and Macaulay concluded that their

results "...did not offer unqualified support" to claims in adult education literature that collaborative learning is "an underpinning of adult learning" (p.167). While their results would not encourage most educators to adopt collaborative learning strategies for their courses, a close reading of Gonzalez and Macaulay's report reveals that collaborative learning, as they defined it, did not take place in the courses involved in their survey. The actual experiences amounted to team assignments involving out-of-class projects. In-class activities apparently were not collaborative activities. Most students found that the out-of-class assignments were too time consuming and that commitment to task varied greatly among their peers. They also were frustrated with lack of directions given by faculty and with unclear connections of out-of-class projects to classroom activities and other assignments. Faculty members were frustrated with lack of cooperation by students and how to evaluate the students' experiences.

Collaborative learning (Type III) is a process in which the teacher or facilitator is a member of a group, on equal ground with students. The definition also locates learning

in the group as well as in individual members. The faculty in Gonzalez and Macaulay's study apparently perceived collaborative learning as an adjunct to what they otherwise did as Type I activities in their classrooms. The faculty combined Type I teaching and learning activities, Type II teaching and learning activities, and Type III expectations, resulting in a clash of philosophy and classroom realities. Thus, it is arguable that the "barriers" to collaborative learning experienced by faculty and students were in part due to the confusion surrounding the use of different strategies and philosophies in the face of conflicting expectations.

In sum, my review of literature identified several conceptual and theoretical writings and a few studies that focus on some aspects of collaborative learning. No studies were found, however, that focused on the overall process of collaborative learning as defined in this study. To say that more research is needed is to understate the situation. A more accurate assessment is that certain types of research are needed in the beginning stages of building a research base in collaborative learning.

One route to development of a research base in areas of professional practice is through descriptive studies (Jarvis, 1998). This is the area of greatest need in collaborative learning. The present study falls into that area of research, as it is descriptive of a particular case of collaborative learning.

How descriptive research is to be carried out is another matter. Surveys and case study research are modes of inquiry frequently employed to describe phenomena of interest in most areas of educational research and practice (Merriam, 1998). There is also growing interest in methodologies that describe the viewpoints of people directly involved in educational activities. Thus, ethnographic and phenomenological methodologies are gaining in currency among researchers, as are qualitative analysis techniques.

Research Questions

The need to design and conduct baseline research on the collaborative learning process led to this study, which was designed to answer the following two questions:

- 1) What is the nature of the collaborative learning process in a formal classroom environment?
- 2) How do students who engage in collaborative learning experience the process?

Significance and Scope of the Study

The primary significance of this study lies in its contribution to the emerging literature of collaborative learning. Although it is difficult to generalize results of case study research beyond the particular situation, and no predictive claims are made here, the findings may prove informative to scholars and practitioners interested in collaborative learning in higher education settings.

Practitioners and researchers in other areas of education and training may find results useful to the extent that the

collaborative learning process defined in this study fits their own definitions and contexts.

Organization of the Study

This chapter has provided an overview of the nature of the problem and the purpose for the study. A review of literature related to collaborative learning is presented in Chapter Two. Chapter Three describes the methodology of the study, including a description of the research participants and data collection and analysis procedures. The findings are presented in Chapter Four, and these findings are discussed in Chapter Five.

Chapter Two

Literature Review

This chapter situates the present study in the literature of adult education as well as in the literature surrounding collaborative learning in fields outside adult education. The first section presents collaborative learning and related literature within adult education. The second section reviews collaborative learning in fields of study other than adult education.

Collaborative Learning and Adult Education

As cited in chapter one, Peters and Armstrong (1998, and forthcoming) identified three types of teaching and learning. Type I, "Teaching by Transmission, Learning by Reception" is what many think of when thinking of adult education. The teacher possesses knowledge of a particular topic and transmits it to the learners who receive it. All of us are familiar with Type I learning, as this is the model upon which our formal educational systems are

predominantly based. Schooling is Type I teaching and learning, as is much adult education.

Type II teaching and learning, "Teaching by Transmission, Learning by Sharing," acknowledges that learners can learn from one another as well as from the teacher. The teacher is still a transmitter of knowledge, and the learners are still primarily receivers of knowledge, but in Type II learners can also transmit knowledge by sharing what they know with other learners. Group discussion and other small group work are examples of adult education designs that fall into the category of Type II teaching and learning situations.

Type III teaching and learning, "Collaborative Learning," goes beyond transmitting knowledge to constructing knowledge. The teacher and learners labor together as equal co-participants to construct new knowledge. In a recent publication, Peters and Armstrong (1998) described knowledge construction:

When two or more people collaborate, each collaborator contributes something to the effort, and the parties jointly contribute something to the effort. There are

individual contributions, and there is a group contribution. In a collaborative learning experience, individuals bring their knowledge and their actions to the table, and as members of a group, individuals contribute their collective knowledge and actions to the experience. Thus, in a collaborative learning experience, individuals learn and the group learns. The group learning experience isn't simply the sum of the individual learning experiences, however; it is more than and other than the individual experiences. (pp. 75-76)

In collaborative learning knowledge construction occurs as a result of shared inquiry into knowledge of individuals in the group and the collective knowledge of the group. The flow of information and inquiry is from member to member, member to group, and group to member. The primary mode of discourse involved in collaborative learning is dialogue.

Cranton (1996) identified three types of group learning: cooperative group learning, collaborative group learning, and transformative group learning. She defines cooperative group learning "a structured process that

requires learners to work together on a task, share information, and encourage and support each other. The emphasis is on cooperating to get a task accomplished" (p. 26). For Cranton, in collaborative group learning participants "work together to construct knowledge rather than to discover objective truths" (p.27). She goes on to describe the balance that a facilitator of collaborative learning must maintain:

There must be a democratic environment in which people respect and listen to each other. The educator is to be an equal participant in the shared inquiry, yet also responsible for facilitating and maintaining the process. Authority and power over the group need to be given up, yet the educator is relied on to help group members work collaboratively. (p.29)

Cranton bases her description of transformative group learning on Mezirow's theory of transformative learning. Transformative learning occurs when someone changes his/her frames of reference, or worldview. Mezirow (1991) proposes that this transformation often occurs in response to a "disorienting dilemma" that causes the learner to reconsider

the assumptions that underlie his/her meaning perspective. Cranton proposes that transformative learning may also be "stimulated by new perspectives encountered in a learning group" (p. 29). Cranton's descriptions of collaborative and transformative group learning are consistent with the definition of collaborative learning that guides this study.

Drawing on the work of Habermas, Mezirow's (1990, 1991, 1996) transformation theory suggests that a major purpose of adult education is to help adults change their personal frames of reference. Frames of reference consist of "two dimensions: a meaning perspective (habits of mind) consisting of broad, generalized orienting predispositions; and a meaning scheme which is constituted by the cluster of specific beliefs, feelings, attitudes, and value judgements that accompany and shape an interpretation" (1996, p.163). A more fully developed and functional frame of reference is one that is "more inclusive, differentiating, permeable and integrative of experience" (p. 163).

Mezirow also discusses two other domains of learning. Instrumental learning is "learning to control and manipulate the environment or other people" (p. 163), and communicative

learning is "learning what others mean when they communicate with you" (p. 163). Each domain has its own unique purposes, logic of inquiry, and modes of validating beliefs, although Mezirow warns against trying to dichotomize the two domains as most learning situations contain elements of both. While instrumental learning and communicative learning are both present in collaborative learning, communicative learning, or learning what others mean when they communicate with you, is closer to collaborative learning in terms of intent and process.

Mezirow's approach is essentially a theory of how individuals learn. One of the primary criticisms of Mezirow's theory is that it decontextualizes adult learning by not fully considering the social context in which adults learn (Clark and Wilson, 1991; Collard and Law, 1989). In contrast, collaborative learning, as defined in this study, involves both individual and group learning.

Susan Imel (1991 & 1996) is another adult educator who has addressed collaborative learning. In her 1991 monograph she describes collaborative learning in terms of social construction of knowledge and shared inquiry. She proposes

three important elements in the facilitation of collaborative learning: 1) structuring the environment, 2) changing the role of the facilitator, and 3) encouraging new roles for learners. By structuring the environment Imel means creating an environment open to exploration of ideas and free from debate and competition. She describes the role of the facilitator in collaborative learning as surrendering normal classroom authority and responsibility for the learning process and joining the other participants as a co-learner. Moreover, learners, are expected to be willing to move from listeners, observers, and note-takers to contributors, problem-solvers, and discussants.

Imel is one of the few authors writing about collaborative learning to acknowledge the way in which collaborative learning alters the traditional roles of facilitator and learner. She describes situations in which facilitators and learners ideally become equal co-participants in the learning process. Unfortunately, she does not stop there; she ends her description of the role of facilitator with this warning:

In planning for collaborative learning, the facilitator must consider where and in how much of the learning activity collaboration is appropriate; establish and communicate clear objectives; use suitable techniques; prepare content materials, including developing meaningful questions or problems for group work; structure groups; and provide a clear sense of expected outcomes of group work. (p.3)

Imel thus seems to be contradicting her own definition of collaborative learning as the social construction of knowledge and shared inquiry when she places so much traditional authority in the hands of the facilitator.

Watkins and Marsick (1992 & 1993; see also Kasl, Marsick, and Dechant, 1992; Marsick, Dechant and Kasl, 1991) are adult educators who have contributed to the literature on learning organizations and organizational learning. Working principally in the context of business organizations, Watkins and Marsick (1993) have developed a model of team learning that, in its later stages, looks quite similar to what is defined in this study as

collaborative learning. They view participants in team learning cycling through four phases: 1) fragmented learning, 2) pooled learning, 3) synergistic learning, and 4) continuous learning. In fragmented learning individual members learn, but they do not share learnings with others in the group, and, consequently, the team is often ineffective. In pooled learning individual participants begin to share personal perspectives with others in the group although there is no attempt to reconcile differing viewpoints, and the team ends up choosing between competing views. In the third phase of team learning, synergistic learning, "the team jointly constructs shared meanings, assumptions, and language, which leads to consensually developed solutions, positions, and recommendations" (p. 107). In continuous learning "synergistic learning becomes so much a part of the team's nature that the members export it to other parts of the company" (p.107). The third and fourth phases of team learning, as described by Watkins and Marsick, are similar to features of collaborative learning as defined in this study.

All of the literature reviewed thus far describes collaborative learning from either a facilitator's or a researcher's point of view. Brookfield (1994) conducted research with 311 adult education graduate students in order to document a learning process similar to collaborative learning from the participants' point of view. Participants in his study were students in a graduate program where they were encouraged by their professors to become "critically reflective" learners. Brookfield analyzed data from four sources: 1) learning journals that students wrote over their years of study in the graduate program, 2) his personal conversations with students, 3) in-class discussions with students, and 4) educational autobiographies written by students. The analysis revealed five significant themes that reflect what Brookfield calls the "dark side" of critical reflection. These themes reflect students' perceptions of their participation in a graduate program that encouraged critical reflection.

The first theme, "Impostorship," was the sense that "at some deeply embedded level they [the students] possess neither the talent nor the right to become critically

reflective" (p. 205). Early in their programs of study students also reported a sense of inauthenticity in that they felt they were just going through the motions of critical reflection without truly understanding what they were doing.

"Cultural Suicide," the second theme in Brookfield's research, is "the threat critical learners perceive that if they take a critical questioning of conventional assumptions, justifications, structures, and actions too far they will risk being excluded from the cultures that have defined and sustained them up to that point in their lives" (p. 208).

Brookfield calls the third theme "Lost Innocence." The innocence that is lost is an epistemological innocence, a belief that if students "study hard and look long enough they will stumble on universal certainty as the reward for all their efforts" (p. 209). The students had begun their graduate studies and their critical reflection in pursuit of universal truth, but finished knowing the folly of their thinking.

The fourth theme is "Roadrunning." Brookfield takes the name for the theme from the roadrunner/coyote cartoons. This theme is,

a rhythm of learning which is distinguished by evidence of an increased ability to take alternative perspectives on familiar situations, a developing readiness to challenge assumptions, and a growing affective tolerance for ambiguity, but it is also one which is characterized by fluctuating moments of falling back, of apparent regression. (p.211)

In other words, these students experienced their learning as taking the proverbial two steps forward, one step back.

Brookfield's final theme is not as dark as the first four. It is the sense of "Community" that developed among the students. Many of them described their peer group as "a second family" and found that this support group was invaluable to their success in the program. This importance of the peer group came from the fact that they were experiencing the same things. They had the same fears and doubts and faced the same challenges outside the classroom. Thus Brookfield's description of collaborative learning adds

to our understanding of collaborative learning by giving voice to the perspective of the participants.

Peter Jarvis (1992) sees adult learning as an interaction between individuals and the socio-cultural milieu around them. "The process of learning is located at the interface of people's biography and the social milieu in which they live, for it is at this intersection that experiences occur" (p. 17). This characterization of learning is important to consider when studying the collaborative learning process because all learning in a collaborative learning group occurs within the social milieu that participants themselves create. The experiences they have in the group in turn shape subsequent learning that occurs within the group.

Jarvis (1987) also argues that adult learning is a social phenomenon and as such needs to be studied from a sociological perspective rather than strictly from an individualistic psychological perspective as has been the case in most adult learning research. He writes,

[L]earning is not just a psychological process that happens in splendid isolation from the world in which

the learner lives, but it is intimately related to that world and affected by it.... Hence, it is as important to examine the social dimension of adult learning as it is to understand the psychological mechanisms of the learning process. (p. 11-12)

This study examines collaborative learning, from within the social context in which the learning occurred. The learning is not considered in isolation from the other experiences the group participants experience, thus meeting the challenge that Jarvis issued to researchers in adult education.

"Participation Training" (Bergevin and McKinley, 1965) is a group learning technique developed by adult educators working at Indiana University in the 1950s and 1960s. Since their technique addresses group problem solving and individual learning in a group setting, it provides some insights for this study. Participation Training makes two primary contributions to an understanding of collaborative learning. The first is its acknowledgment--indeed even requirement--that all group participants, not just the facilitator, be responsible for the group process. In order

for a group to accomplish what it sets out to accomplish all participants must assume responsibility for its functioning. The technique's second contribution is that learning the process of learning is just as important as learning content. The how of learning is as important as the what of learning. These two ideas are quite consistent with the definition of collaborative learning that guides this research project.

There are, however, some important differences between collaborative learning as it is defined in this study and Participation Training as Bergevin and the others at Indiana University describe it. In collaborative learning a group is allowed to form its own structure over time, and participants assume various roles within the group as they are comfortable. The group also chooses its own topics for discussion and directs its own discourse. In Participation Training there are specific roles, such as group leader or recorder assigned to various participants by the facilitator. Participants carry out their roles in a specified manner until group members arrive at a consensus on the topic being discussed. Consensus is an explicit goal

of Participation Training. Although the topic of discussion can be generated by the participants themselves, it most often is externally chosen, either by the facilitator or by some other authority figure.

Because of these differences, this study of collaborative learning is not an extension of Participation Training, but it is related, and is built upon the foundation of group-oriented learning within adult education begun by Bergevin and his colleagues at Indiana University more than 40 years ago.

Collaborative Learning in Other Fields of Study

Authors in fields of study other than adult education have also used the term collaborative learning, which they define variously--ranging from small group activities to knowledge construction and shared inquiry. The present review is limited to those authors who define collaborative learning as knowledge construction through shared inquiry, in keeping with the definition of collaborative learning that guides this study.

Jean MacGregor's (1992) work is illustrative of this definition when she writes,

knowledge is socially--rather than individually--
constructed by communities of individuals.

Knowledge is shaped, over time, by successive
conversations, and by ever-changing social and
political environments. The knowledge business
should not be just the territory of competing
scholars and experts; the shaping and testing of
ideas is something in which anyone can
participate. (p. 38) [Emphasis in original]

Kenneth Bruffee (1992, 1993, & 1999) is one of the most
recognized authors of works about collaborative learning.
His writings about the topic have shed a great deal of light
on the nature of knowledge construction and the role
collaborative learning can play in that process. In his 1993
book, he calls collaborative learning a "reacculturative
process" that helps students become members of a knowledge
community. Because Bruffee is an English professor, his
interest is restricted to teaching students in higher
education. He calls collaborative learning "a process by

which students become members, to one degree or another, of the knowledge communities to which their teachers belong" (p.3). Bruffee's intention appears to be the construction of a particular *kind* of knowledge--knowledge in the image of the teacher's knowledge. Bruffee claims that "[t]he job of college and university teachers is to represent the knowledge communities of which they are members in a way that will most effectively reacculturate potential new members" (p.3). Bruffee seems to be saying that his purpose for collaborative learning is to produce a particular kind of knowledge, academic knowledge.

Tomasello, Kruger & Ratner (1993) are cognitive psychologists who speak to the tie between culture and learning. They view learning primarily as a means of transmitting or generating culture, and have identified three different types of what they call "cultural learning:" 1) imitative learning, 2) instructed learning, and 3) collaborative learning. Imitative learning is when a learner simply imitates a behavior they see another perform, much as when a child imitates an adult's behavior. Imitative learning moves to instructed learning when a teacher is

involved, and the learner internalizes the instructions of the teacher to self-regulate future behaviors. For Tomasello, Kruger, and Ratner collaborative learning "does not involve transmission from mature to immature organism in the classic sense because, by definition, the situation consists of peers collaborating to construct something new that neither had before the interaction began" (p.497). These authors view collaborative learning as a process of construction, although they focus on the construction of culture rather than on the construction of knowledge.

As noted above, many authors use the term collaborative learning to refer to a variety of learning activities and situations. Hamilton (1994) has written an article that illustrates this point. She writes that the term collaborative learning refers to a "dramatic range of perspectives representing a variety of methods, strategies, tactics, and techniques" (p.93). Drawing on work by John Trimbur, Hamilton attempts to clarify the confusion surrounding the term by identifying three models of collaborative learning: 1) the post-industrialist model,

2)the social constructionist model, and 3)the popular democratic model.

She calls the post-industrialist model of collaborative learning the most amenable to traditional pedagogy. In this model groups of students work together to "solve common problems formulated by an instructor whose curricular agenda determines group structure, time on task, goals, and anticipated outcomes" (p.94). This description does not fit the definition of collaborative learning that guides this study but is actually type II learning. It is what Cranton (1996) and Kagan (1997) call cooperative learning.

The social-constructionist model of collaborative learning, as outlined by Hamilton, relates to the definition of collaborative learning used in this study because it is grounded in ideas of social knowledge construction. Teachers operating from the social-constructionist model guide students to work together at discipline-specific problems and issues. In the context of higher education, the primary focus of the learning experience in this model is on helping students "understand the salient and dynamic ways of thinking and making meaning within a particular discipline"

(p.95). This particular focus brings the social-constructionist model in line with Bruffee's (1993) definition, as it also stresses the need for students to think as their professors do.

The popular-democratic model, as defined by Hamilton, comes closest to the definition of collaborative learning that frames this study. While the social-constructionist model is based on discipline-specific problems and assumes similarities in learners, the popular-democratic model assumes differences in learners and acknowledges that learners will come to these disciplines through their own individual differences. Hamilton writes,

Who we are and how we have lived give each of us different orientations to these disciplinary areas so that the very ways of how these subjects come to mean something in our lives is open to examination and discussion. (p.96)

In the popular-democratic model not only is the topic or content of learning open for examination and discussion, so too is the way in which each learner comes to know the topic. The learning experience not only involves what

students learn, but how they learn. In the popular-democratic model learning about the collaborative learning process is as important as learning the content.

Isaacs (1993) also describes a learning process quite similar to collaborative learning as defined in this study. He focuses on dialogue as the principle mode of learning, which he describes as "a sustained collective inquiry into the processes, assumptions, and certainties that compose everyday experience. Dialogue can thus produce an environment where people are consciously participating in the creation of shared meaning" (p.25-26). While it can be argued that the creation of shared meaning falls short of actual knowledge construction, shared meaning is constructed and the result can be new to participants in the dialogue process.

Isaacs describes a four-phase model of learning: 1)instability of the container, 2)instability in the container, 3)inquiry in the container, and 4)creativity in the container. The term container refers to the group and the "atmosphere" of inquiry experienced by the group. Instability of the container is the uncertainty and

sometimes chaotic nature of the group's activities.

Instability in the container is the phase when the group negotiates norms of interaction. Inquiry in the container is the phase when the group begins to examine the thoughts of individual members as well as the work of the group itself. And finally, creativity in the container is the phase of learning in which Isaacs' shared meanings are created.

Moving through these phases can take a group from invitation through conversation, deliberation, suspension, and dialogue to metalogue, which for Isaacs is a state where the group itself is meaning. He states,

Metalogue reveals a conscious, intimate, and subtle relationship between the structure and content of an exchange and its meaning. The medium and the message are linked: Information from the process conveys as much meaning as the content of the words exchanged. The group does not "have" meaning, it *is* meaning. (p. 38) [emphasis in the original]

Metalogue, for Isaacs, is a goal of dialogue.

Summary

The guiding framework of this study is based upon a definition of collaborative learning that sets it apart as a distinct type of learning. An underlying assumption is that knowledge is socially constructed and that collaborative learning occurs through shared inquiry. This view of collaborative learning is consistent with definitions and models developed by writers whose work represent a variety of disciplinary viewpoints.

Chapter Three

Method

To fulfill its purpose as outlined in Chapter One, this study used two different qualitative research methods. One was a modified ethnography of two University of Tennessee, Knoxville graduate classes; the other involved phenomenological interviews of class participants. This chapter describes the details of both methods. It also provides a profile of the participants in the study, describes data collection procedures, and discusses the process of data analysis.

Research Participants

Participants in this study were eighteen members of two sections of a graduate course taught during the fall semester of 1994 at the University of Tennessee, Knoxville, entitled Psychoeducational Studies 513, "Reflective Practice in Education and Psychology". The objectives of this course, as stated in the course syllabus, were "to have participants

critically reflect on their own practices", "to enhance understanding of their own practice," and "to do both of these in a collaborative group while learning about collaborative learning." Each class met weekly for approximately two hours and 40 minutes for a period of fifteen weeks. All class participants voluntarily agreed to participate in the study and signed a consent form, a copy of which is in Appendix A.

The following demographic information about participants is available:

Group One Demographics

- 8 Participants
- 5 Female, 3 Male
- 3 Ph.D., 1 Ed.D., 3 M.S., 1 earned Ph.D.
- 5 Full-time students, 2 Part-time students
- 3 employed Full-time, 4 employed Part-time (GA's)
1 unemployed
- 4 with prior group experience
- 4 with counseling experience

4 with psychology backgrounds

Group Two Demographics

- 10 Participants
- 6 Female, 4 Male
- 1 Ph.D., 9 MS
- 1 Full-time student, 9 Part-time students
- 9 employed Full-time, 1 employed Part-time
- 2 with prior group experience
- none with counseling experience
- 1 with psychology background

Research Questions

Two research questions guided the data collection and analysis:

- 1) What is the nature of the collaborative learning process in a formal classroom environment?
- 2) How do students who engage in collaborative learning experience the process?

Data Collection

Data from both research methods were used to answer both research questions. However, data from ethnographic observations were primary in answering the first question, and data from phenomenological interviews were primary in answering the second question.

Ethnographic Observations

Following the ethnographic research model of Glesne and Peshkin (1992), I was involved in all class sessions of both groups as a participant observer. These authors characterize ethnographic observation as lying along a continuum from total observation to total participation. My task was principally that of observation.

Anthropologists describe two different strategies that can be taken during ethnographic research, emic or etic (Headland and Pike, 1990). An emic approach creates conceptual strategies that explain phenomena in terms meaningful to those being studied, whereas an etic approach

explains phenomena in terms meaningful to the observers. Since I also conducted phenomenological interviews with participants to get their perception of the experience, I limited the ethnographic observations to an etic approach.

During each class session I logged my observations in fieldnotes which were later transcribed. This resulted in approximately 50 pages of fieldnotes for each group. These notes were observations of occurrences in the classroom, such as who spoke and when, transitions in the discussion and what seemed to precipitate the change, and any other events that seemed to influence the course of the group's activities.

Additionally, all class sessions, except the first, were audio tape recorded, resulting in approximately 70 hours of recorded class time. The first class session of each group was not recorded since participants had not yet agreed to participate in the research project. Beginning with the second class for each group all sessions were recorded.

Phenomenological Interviews

To describe the participants' experiences of collaborative learning, after the semester ended I conducted 30-60 minute phenomenological interviews with each of the 18 participants following the model presented by Kvale (1983). According to Kvale a phenomenological research interview can be characterized in the following twelve aspects:

- 1)centered on the interviewee's life-world;
- 2)seeks to understand the meaning of phenomenon in his life-world; it is
- 3)qualitative;
- 4)descriptive, and 5)specific; it is
- 6)presuppositionless; it is
- 7)focused on certain themes; it is open for
- 8)ambiguities, and
- 9)changes; it depends upon the
- 10)sensitivity of the interviewer; it takes place in
- 11)an interpersonal interaction, and it may be a
- 12)positive experience. (p. 174)

Phenomenological interviews incorporated these twelve aspects. They were focused on the participants' experience with and in their collaborative learning groups. The

interviews allowed participants to describe their experience in their own words. And at the conclusion of the interviews many participants expressed that the interviews were a positive experience, helping them to bring closure to their collaborative learning experience.

For Kvale (1983) the phenomenological interview also moves through phases that ultimately combine pure description of the phenomenon with interpretation. In the first phase, the interviewee describes his or her life-world. During the second phase, the interviewee describes new relationships and meanings in what he or she experiences and does. The interviewer enters the conversation in the third phase and condenses and interprets what the interviewee has said. At this point the interviewee has the opportunity to confirm or disconfirm the interviewer's interpretations. In the fourth phase interview results are interpreted by the interviewer and/or another person. A fifth phase involves a follow-up interview based upon the results of the previous interview and analysis. The sixth phase allows the interviewee to form new insights from the interview results and possibly to take some action based on

his or her new insights. The first four phases of Kvale's interview process were followed in this study, with each participant being interviewed only once. All interviews were audio-tape recorded and later transcribed.

Another researcher, Donal Crosse, also used transcripts of the phenomenological interviews from Group One of this study as data for his dissertation. Although he used a data set that overlapped mine (the interview transcripts from Group One participants), the focus of his research was different from mine. The purpose of his study was to examine the content of what participants in Group One learned during their collaboration. Not to overburden participants with twice the number of interviews, each researcher interviewed only half of the participants. Because both of us were conducting phenomenological interviews about participants' experiences of the collaborative learning phenomenon, the resulting interviews were shared and were seen as pertinent to both research projects. To ensure that the method of interviewing by both researchers was consistent, three practice interviews with volunteer participants of prior reflective practice courses were conducted. In each practice

interview Crosse or I interviewed a volunteer while the other observed. After each interview we discussed the interview process until we were comfortable with the other's interviewing style.

Personal Bias

One recommended action for a qualitative researcher is that of "bracketing" one's own thoughts, assumptions, and beliefs about the phenomenon under study. The term comes from Husserl, a founding father of Phenomenology, and means to "suspend one's beliefs about the natural world in order to study the essential structures of the world" (Van Mannen, 1990, p. 175). Van Mannen explains the bracketing process as not forgetting what one knows, but as holding one's knowledge at bay:

If we simply try to forget what we already 'know,' we may find that the presuppositions persistently creep back into our reflections. It is better to make explicit our understandings, beliefs, biases, assumptions, presuppositions, and theories. We try to

come to terms with our assumptions, not in order to forget them, but rather to hold them deliberately at bay and even to turn this knowledge against itself, as it were, thereby exposing its shallow or concealing character. (p. 47)

In order to make explicit my own understandings, beliefs, biases, assumptions, presuppositions, and theories about collaborative learning, as Van Mannen suggests, I submitted to a "bracketing interview" with a colleague experienced in both qualitative research methodology and collaborative learning, but uninvolved with this project. During this interview my colleague, Ruth Smith, asked me about my understanding of the nature of the collaborative learning process phenomenon and other questions she felt relevant to this topic. She was free to ask me any questions she deemed appropriate and related to this study. The interview was audio-tape recorded and transcribed. I reviewed this information prior to conducting the phenomenological interviews and during the data analysis phase of the study to insure that the interpretation of the

data is not solely a result of my own personal bias, but rather is present in and supported by the data itself.

Data for this study were collected in 1994 and 1995. It is now 1999. In the intervening years I have continued to work with collaborative learning groups, primarily as a facilitator or co-facilitator, and to study the growing literature surrounding this phenomenon. I believe that what is written here is a stronger and more complete documentation of the collaborative learning process because of what I have learned from these experiences. For example, like the participants in this study, I developed knowledge of the third kind, as discussed in Chapter Five (Shotter 1993a), during the time I spent working on this research. I now see the collaborative learning process differently than I did before, but moreover, I see myself seeing it differently.

I continued, however, to examine my own understandings, beliefs, biases, and assumptions about collaborative learning so that my interpretation of results was not solely a function of my own bias. While my analysis remained true to the participants' descriptions of their experiences and

to my original record of observations, my interpretation of results was made stronger and more complete as they were informed by what I continued to learn about collaborative learning.

Data Analysis

Due to the different nature of the data collected from each method the analysis process was begun separately for each set of data. After the two sets of data were transformed into manageable data sets, a thematic analysis of the combined data was conducted. This process is described below.

Ethnographic Observations

Because of the sheer volume and the difficulty of doing so, audio-tape recordings of the class sessions were not transcribed. Instead, after the courses were completed, I listened to the tapes and logged them, creating a second set of notes. I used these notes to augment fieldnotes from

original observations. As with the original fieldnotes, when logging the taped class sessions I listened for transitions in the discussion and for what appeared to influence these changes; in addition, I also listened for patterns of engagement and interactions among participants and for instances in which participants discussed process as well as content. An example of engagement and interaction is when a question asked by a participant was responded to by one or more other participants. Process discussion refers to periods when participants talked not about a topic, but about what they had done in the class session and reflected on the reasons for their actions. This analysis resulted in a more detailed set of fieldnotes, augmented by my notes from logging the tapes.

Phenomenological Interviews

All audio tape recordings of the phenomenological interviews I conducted with participants were transcribed, some using the services of a professional transcriptionist and some by me. The transcriptionist signed a certificate of

confidentiality, a copy of which is in Appendix B, agreeing to maintain the anonymity of the participants. Donal Crosse was responsible for transcribing the interviews he conducted and we then shared copies of the transcripts. This resulted in 18 typed transcripts totaling approximately 700 pages.

Thematic Analysis

At this point I combined the two sets of data and began a thematic analysis of the full data set. I analyzed the interview transcripts from a first person, or emic, perspective, trying to understand participants' perceptions of their experience. The ethnographic observation data added my etic interpretation of the phenomena to the emic concepts present in participants interviews.

I began by reading each transcript and set of fieldnotes once. On the second reading of each, I began coding them following a coding process described by Glesne and Peshkin (1992):

Coding is a progressive process of sorting and defining and defining and sorting those scraps of collected data

that are applicable to the research purpose. By putting like-minded pieces together into data clumps, we create an organizational framework. It is progressive in that we first develop, out of the data, major code clumps by which to sort the data. Then we code the contents of each major code clump, thereby breaking down the major code into numerous subcodes. Eventually we can place the data clumps in a meaningful sequence. (p. 133)

I separated the data into individual ideas, coded the ideas, conceptualized the ideas, and then recombined them into related concepts and themes. There were essentially three phases to my thematic analysis, but I cycled through the phases several times. First, I began by identifying and marking the concepts and ideas that seemed to recur in the data. Then I transferred these ideas to separate sheets of paper, coded according to where they were found in the original transcripts and fieldnotes so that I could later return to the raw data and locate their source. I sorted these ideas many times in order to gather together related ideas into coherent concepts. As potential themes emerged from the analysis, I returned to the transcripts and

fieldnotes to see if the themes were supported by what the participants had said in their interviews and by what was documented in my fieldnotes. If the theme was supported by the data, I kept it. If not, the theme was dropped, and I returned to the analysis. After several revisions of concepts and themes three separate, but related, categories of themes emerged. Each category has multiple themes within it. These categories and themes are presented as findings in Chapter Four.

Chapter Four

Findings

Chapter Four presents the findings of this study, in the form of three qualitative themes that describe the process of collaborative learning. As with any research, however, an understanding of the context in which the research was conducted is important to understanding its findings. Because both groups were university-based graduate-level classes, the most important aspect of the context was the structure of the course and the background and experiences participants brought to the learning environment. With this in mind I begin this chapter by describing the context of each of the groups, followed by the three themes.

Context

As noted in Chapter Three, participants were enrolled in two sections of a graduate-level university course entitled Psychoeducational Studies 513, "Reflective Practice

in Education and Psychology." The objectives of this course, as stated in the course syllabus, were "to have participants critically reflect on their own practices," "to enhance understanding of their own practice," and "to do both of these in a collaborative group while learning about collaborative learning." Each class met weekly for approximately two hours and 40 minutes for a period of fifteen weeks. There were four main activities in the class. Participants read the text and all supplemental readings assigned by the facilitator. After students read this material, it was discussed in class. Each participant wrote an educational autobiography about their educational experiences, and a brief critical incident about a recent learning experience. They shared written copies of these with all other participants and this became material for discussion in class. Another activity involved small group led learning activities. Participants divided into several small groups and each small group led the entire group through a learning experience about one of the chapters from the text that described a "tool" for fostering critical reflection. Examples of these tools include journal writing

and metaphor analysis. Roughly the first third of the semester was devoted to discussing educational autobiographies, the middle half to critical incidents, and the remaining time was devoted to small group led learning activities. The discussion of the assigned reading materials was spread throughout the semester. All of these activities were used as starting points for the discussions in class sessions. The conversations often extended to topics and ideas well beyond those contained in the assigned class activities.

In both groups, the facilitator was very involved in directing and coaching participants at the beginning of the semester but did less of this as time passed. Most of the directing and coaching took the form of the facilitator stopping the discussion and asking participants to look at the process of how they were interacting with one another. This focused on such things as the nature of the questions they were asking one another and on the nature of their discourse. He often asked participants to pay attention to the assumptions buried within their questions and statements, and to consider the effects of these assumptions

on the conversation. As time passed, participants began doing these things for themselves, and the facilitator intervened less frequently.

Group One met every Wednesday afternoon from 2:00 to 4:40 p.m. in a typical university classroom: hard plastic chairs arranged around several six foot long tables that were set up in an octagon shape so that participants could face one another, blackboards on three walls, bright overhead fluorescent lights, and constant noise distractions coming in from the heavily trafficked street and sidewalk that lie just beyond the bank of windows that lined the west wall. The facilitator began each session by turning down the lights and placing a lighted candle on one of the tables in the room.

Four of the participants in group one were full-time Doctoral students, three of them Educational Psychology majors, and one an Adult Education major. This was a required course for the Adult Education student but an elective for the other three. The three Educational Psychology students had counseling experience in both individual and group counseling. Two of the three were

actively seeing clients while perusing their degree. All three worked part-time as graduate assistants in the College of Education. The Adult Education student had been a minister in the past and had extensive pastoral counseling experience in both individual and group counseling. He was working in community development while in school.

One participant had an earned Ph.D. in Educational Psychology and was employed full-time by the College of Education as a research assistant on a grant project. She was taking the class out of curiosity about collaborative learning. The remaining three participants were Masters students majoring in Adult Education. This was a required course for them. None of the three had any counseling experience or background in psychology. One was a full-time student and worked as a resident assistant for the university. The other two were part-time students. One was working as a trainer in a local corporation and one was, at that time, unemployed.

Group Two met every Wednesday evening from 6:30 to 9:10 p.m. in a lounge in one of the university buildings. The lounge was carpeted and had two sofas and several stuffed

chairs that were arranged in a circle. The room was lit by three lamps, one placed on a piano and two placed on two of the several small tables that were in the room. The walls were paneled with dark wood that combined with the soft carpet and low lamplight to give the room a comfortable feeling that stood in stark contrast to the fluorescent and indifferent milieu normally experienced in a university classroom. One participant described the room as "like having class in a living room." The facilitator began each session by placing a lighted candle on a coffee table placed in the center of the circle of sofas and chairs.

One participant in group two was a Doctoral student working on his degree in Industrial/Organizational Psychology. He was a part-time student and was employed full-time in the University Human Relations Department. The other nine participants were Masters Degree students. One was perusing a degree in Instructional Technology, one had not yet decided on a major and the remaining seven were all Adult Education majors. Of these Adult Education students, two had minimal experience with group learning, both in community learning situations. The Instructional Technology

student was employed part-time as a graduate assistant in the College of Education. He was a full-time student. The remaining eight participants were employed full-time, one in adult literacy, one as a secretary, and the other seven as trainers in various public and private organizations. These eight participants were all part-time students. Given this context, the following three themes emerged from the data.

Three Categories of Qualitative Themes

Data for this study were collected through the use of phenomenological interviews and ethnographic observations. Analysis of data revealed three categories of qualitative themes. These are: 1)group process, 2)learning process, and 3)group facilitation. The group process category was defined by four themes: 1)cohesion, 2)trust and respect, 3)confusion and frustration, and 4)conflict. The learning process category was defined by three themes: 1)discourse, 2)engagement, and 3)questions. The group facilitation category was defined by two themes: 1)facilitator actions and 2)participants as facilitators.

Group Process

The group process category includes issues of the way in which individual participants became two groups and the nature of their interpersonal interactions. It contains issues concerning cohesion, trust and respect, confusion and frustration, and conflict.

Cohesion

Cohesion is a term for group relationship building (Yalom, 1995). The two groups in this study developed intra-group relationships that resulted in a sense of cohesion for the participants. Many of the participants recognized this and saw it as a necessary part of the collaborative-learning process. One participant from Group Two illustrates this point well:

I mean you can't force two people to like each other.

And you can't force groups to become cohesive. They've

got to do it on their own. Like I say this one probably took sixty percent of the semester to do it.

He goes on to describe his experience in the group as being part of a family:

When you're sitting around with your family and you're talking about stuff only the family knows about, and if somebody outside comes in, they don't know what's going on. I don't necessarily mean a mother, father, sisters, or brothers. I mean even a family in a workplace where you've got a group of people that have worked together, shared experiences, and can talk freely.

He follows this with the sense of protectiveness he felt for others in the group:

It's OK in a family if I criticize you, but somebody outside better not criticize you. They don't know you well enough. I know your drawbacks and your weaknesses, so I can do that, but this guy over here, he doesn't know that, so he can't.

A different participant from Group One described cohesion as "emotional attachments to others in the group." These attachments come from getting to know one another

through shared experiences and revealed bits of personal information. She says,

When somebody can tell their story that's in keeping with what we were doing, it bonds us and connects us and I almost get a physical sense that we all come closer together. You know, that we almost kind of leaned in more, that the circle got smaller rather than expanding.

A second participant from Group One agreed with this by saying "Hearing one's story helps you connect with them."

Trust and Respect

Along with cohesion, trust and respect emerged as a theme. In the phenomenological interviews participants in both groups talked about the development of trust over the course of each group's time together as participants took risks and these risks were met by other participants with respect. One participant summed up the development of trust in Group One by saying,

It was about trust. And I think it was a tenuous trust, that it could have shattered any moment. But in this group it so happened that it didn't. And I think that all comes about when you have your opportunity, and make your critical incident, and you talk about your life, something that happened to you, and others listen and join with you and try to figure it out.

But these participants are also saying that trust and respect go hand in hand. One participant put it this way:

I'm saying that we have respected each other and that at times we have held each other accountable for acting in the proper way. And that seems to have built our level of trust very quickly, more quickly than anyone could ever assume that trust level could be built.

She seems to be saying that accountability and responsibility are integral parts of the sense of trust and respect in these groups.

The primary source of risk taking for participants in these groups was the risk taking associated with sharing thoughts and ideas that were not yet fully developed.

Participants reported finding that the sharing of thoughts

and ideas with others that were not yet "finished"

difficult. A participant in Group One summed this up well:

I think that is a big part of what this whole thing is about. We've got to expose our thinking to each other, not only in the sense of telling what we think, but also expose in the sense of becoming susceptible to the influence of other's thinking. It's pretty scary, I think -- pretty uncomfortable.

As trust built in these groups, participants reported feeling the freedom and confidence to allow themselves to become vulnerable by exposing their thought process to others. They allowed themselves to "think out loud" and to share their incomplete thoughts and buds of ideas. Many times this sparked thoughts in other participants who then shared their own incomplete thoughts "out loud." A participant from Group One said,

I think that it is a situation where you feel trust enough that you can honestly be open really without that fear that we talked about a number of times--this fear of looking dumb. Fear of exposing ourselves, you know, all those classic things. And toward the end, I

felt that some other people were getting to the point that we were more trusting. We stopped monitoring ourselves.

Confusion and Frustration

A third aspect of this category of themes concerns a sense of confusion and frustration with the process. Many participants reported experiencing confusion and frustration with the process early in the semester. Many voiced concerns that they were not accomplishing anything. They often reported feeling lost, that the group had no direction. Two perspectives on this, one from each group, follows. The first perspective is

I didn't feel like I could understand why I was there.

And I didn't feel like we were going anywhere. And I

hate to say this because it sounds horrible, but I

didn't care about what we were discussing. You know, to

me it just seemed like we were going nowhere fast.

The second perspective is

What happened from my vantage point is that for the first several sessions none of us knew where we were going, and we were all sitting around waiting for somebody to lead a little bit more, and we wasted a lot of time. Wasted a lot of time, not doing what I think we really needed to do.... It wasn't just the time flying by. It was that in a given session at the beginning, it was not- OK, I think this describes it. It was not that we were moving slowly, it's that we were moving in circles. We were not going anywhere. That we were just totally spinning our wheels.

Both of these participants, however, reported feeling that the focus of the groups improved as time passed and that by the end of the semester both groups were productive. Later in their interviews these same two participants said:

But that night [about half way through the semester] I saw a reason, and now it was like, oh yeah! Yeah, this does make sense. I can see this now. You know, I can see why you would use this technique.

The second participant echoed this sentiment saying:

Toward the end I felt like we were moving. I really did. I felt good about it, like we were really getting through the confusion.

This sense of frustration with the process was also prevalent in fieldnotes. During the semester many participants expressed a sense of frustration with the process, especially early in the semester. About four weeks into the semester the facilitator began a session with Group Two by asking for the participants' assessment of how things were going. One participant characterized his own experience as frustrating:

I felt a lot of frustration the previous time. Like we were spending too much time interrogating people rather than asking questions that really helped bring up answers.... So we need to move things along a little faster, to get into more incidents and biographies. To get more involved because we are getting really bogged down in the interrogation process asking all kinds of leading questions and curiosity questions.

In this same session the group went on to discuss the process in terms of trying to establish an exchange between

members of the group rather than a one-way interrogation of the participant who happens to be discussing his/her critical incident or educational autobiography at the moment.

Conflict

Conflict also was reported to play a role in the experience of group participants. Participants in both groups reported an experience of various forms of conflict, and while most expressed a sense of discomfort with conflicts when they occurred, they seemed to feel that in the long run the conflicts, or perhaps more precisely, working through the conflicts, allowed the groups to develop a sense of cohesiveness. One participant in Group Two described an incident of conflict in the group where two other participants got into a heated discussion. She described her experience of the conflict this way:

And I think I was a little bit uncomfortable with the direct conflict. But the two people who were in the conflict seemed to be able to handle it. I didn't have

the perception that one of them was going to run out of the room crushed for life or anything.... I guess I don't always like conflict. I personally am probably a conflict avoider, and so in a way I probably thought it was kind of neat that they were standing up for what they believed in. I was probably a little bit uncomfortable. I'm not sure that I necessarily felt that I ought to step in and do something. They seemed to be handling it OK. And then afterwards, it maybe left a little bit of feeling of being uncomfortable with it because I'm not sure it was totally resolved, but it didn't seem that it was totally a group issue. It was more of a difference of opinion. And I mean they were exposing their assumptions. I think both of them were kind of in the things they were saying. So, it didn't necessarily feel real bad afterwards, although there was probably some residue.

Later in her interview, this participant went on to describe her overall impression of the group, and her experience in it, by saying,

And the mix of people, we just seemed to interact well.

And it did seem to be a lot of, I don't know what the word would be, just seemed to be in accord or something. I felt like we were really learning together.

For this participant, working through the conflict led to a sense of cohesiveness in the group that she felt was conducive to the learning process.

Group One had an even more powerful experience of conflict. In the second class, one of the participants challenged the facilitator claiming that the facilitator had not adequately explained to participants what they could expect in the class and that the facilitator had unfairly assumed that none of the participants had any experience with collaborative learning. This discussion took the entire class session, and in the interviews nearly all of the participants in Group One talked about this episode. They seemed to feel that this was a defining moment for the group because it helped set the tone for how participants would interact. One participant summed this up well:

Because I think he [the other participant who challenged the facilitator and the process] helped set the tone for the class in a way. For the reason that, regardless of how disrespectful he was, Dr. Peters was very gentle in terms of responding to his challenge. And I think that's why the whole class feels really good about challenging each other throughout the term. And even challenging Dr. Peters. Because if somebody who has come across so strongly and didn't get his head bitten off then it was clearly an encouraged practice. Many participants in this group (although not all) spent the remainder of the semester challenging one another's ideas and trying to develop new meanings and understandings. Another participant summed this up in this way:

But at the same time before learning occurs you have to have challenges to your assumptions. You have to have challenges. I mean you have to have dissonance to your ideas. You have to have cognitive dissonance, otherwise you're not going to move. And your ideas are always going to be the same. And we could all sit around in a

group and all talk about the same thing and all agree and all be good buddies and all be good pals, but we would never learn anything. We could have great discourse if we challenge each other's ideas. And it occurs to me that for learning to move that we have to have a foundation of established trusting of each other as persons, but then we have to be willing to take risks and challenge each others' ideas, without feeling that we're challenging the person.

Learning Process

The second thematic category to emerge from the data analysis was termed the learning process. This category is not about the content, or what the participants learned, but is an expression of how the participants learned. One participant from Group One said, "the content isn't really that important. Actually I don't remember most of the content."

Three themes characterize this category. The first concerned the nature of the discourse between participants

during class sessions; the second concerned the level of engagement participants felt, both personally and in terms of the level of engagement they sensed in others; the third aspect was the nature of the questioning that occurred between the participants. Although all three aspects are closely related and overlap a great deal, I chose to present them this way because this seemed to be the way they presented themselves in the data--as a patterned gestalt.

Discourse

Several participants described the nature of the discourse in these collaborative learning groups as a unique experience for them and as an integral part of their overall learning experience. The learning that occurred in the groups, according to participants, came almost exclusively as a result of the discourse among participants. They saw discourse as a significant part of the collaborative learning process.

However, participants saw differences in the nature of their discourse at different times in their work together.

They felt that the quality of their discourse was better at some times than at others since they were able to learn more at some times than at others. Some participants described such times of quality discourse as moments when the discourse took on a life of its own. One participant from Group One described it this way:

It was almost like the conversation itself became alive, became an entity that we were all kind of interacting with. And you know, everything else was sort of, not really subordinate, but involved in it, so that it was kind of a collective whole. I know that's a bizarre thing to say, but it almost has a life of its own, you know the discussion.

A participant from Group Two described a sense of energy she received from the discourse. She described the feeling she had after a particular class session:

When I leave a group like that, I have a very high energy level, and why I have one I don't know. I guess maybe I have it because I enjoy it, or maybe I enjoy it because it brings me energy. You know what I mean?

She went on to describe this sense of energy further:

Maybe the content is just the vehicle. And you know, I'd sit there and I'd think about it. It doesn't have to just necessarily be something that I'm real comfortable or real familiar with. We had some really energizing conversations with things I knew very little about. Or new topics. Or things I wouldn't naturally have thought I was going to be interested in. And afterwards I'd be very surprised and say, you know I can't believe we had such a really good conversation about that because I've never been interested in that before. So I don't know. But I do know that it leaves you feeling energized.

Many participants in both groups expressed that the result of such discourse was knowledge construction. One participant from Group One used the metaphor of building a house to express this idea:

OK. If we're going to build a house together, we have to communicate, we have to respect each other's stuff, and we all bring our different stuff to the site. And for me to feel that what I've done has contributed to the structure, before the structure is meaningful to

me, some of me has to be in it. If I didn't contribute to it, then it's not going to mean a whole lot to me. But if I can see that I've added something, and [Bill] has added something, and [George] has added something, then we've built this really sort of wonderful thing out there.... Yah, it's like building a house. We can't all stand at the same place and look at the house. I may be looking at the north face. And [Bill] is over here looking at the south face, and we can see each other across the room, but what each of us sees is a different house. I see a house that I've built with all these guys. [Bill] sees a house that he built with all these guys. And we see different sides of the house. And we all know that. It's sort of knowing that the house is there. It's the sharing of the reality that we've created something and we know that we've done it together. And it's also the bridge. It's the thing that [pause] OK. We don't care what the house looks like. I mean I don't care that [Bill] sees the house a little differently than I see it. But that we can go there and meet. And so it is sort of a knowledge that the place

is there, and it's the link. It's kind of like the handshake across the gap, and we don't have to speak to feel it or to see it once it's constructed.

This participant then turned to describing this same construction process in the discourse of the group:

We listen to somebody's story and we get some themes out of it, and we start talking about those themes or constructs or whatever. And we end up weaving this sort of external construct, which, in some ways is unique for me, because this reflects on everything I've already got. And it's probably unique to them, but what we have in common, the shared vision, the shared structure, is meaningful to the extent that it carries each of our ideas forward. My meaning is going to be different than [Bill's] meaning or different from [George's] meaning. But maybe it's possible that we have a shared meaning.

Another participant, also from Group One, described this phenomenon by saying,

I think that moment is when our defenses are dropped and each person is getting involved with what is

happening right at that moment and we're not looking in the future and we're not looking at something in the past. We're pretty much in the present at that moment and involved in what's happening.... And it seems, or from my point of view it seemed that we were mostly moving on in a common direction. We were discovering things at about the same time. It wasn't that anyone was leading the group or anything like that. Everyone in the group was moving in the same direction and discovering the same things and ideas.

When analyzing fieldnotes from Group One there appeared to be no pattern to the discourse. The engagement and interactions between participants were inconsistent and disjointed. At one moment group members would seem quite engaged and involved with one another. They would inquire into one another's thoughts and ideas, explore topics in detail, and exhibit a great deal of energy and enthusiasm for what they were doing. At other times, their discussion became a series of disjointed statements, unrelated to those that preceded or followed them. Often these variations occurred several times in the same session.

The reason for this appears to be not what was being said, but who was saying it. The four doctoral students in Group One were able to engage in productive discourse and ask questions that facilitated the collaborative learning process almost from the moment the course began. Later in the semester, the participant with the earned doctorate was able to join them; the three masters students, however, struggled with the process for the entire semester. Depending upon who was most heavily involved in the discussion at any moment, the conversation took on various shapes. When one or more of the doctoral students were most involved in the conversation, they were able to suspend their own assumptions and ask open questions to inquire into others' thoughts and ideas. Only after they had a detailed understanding of what others were trying to say did they reveal their own assumptions, allowing the group to explore all ideas in full.

The three masters students were not able to do this. They did not suspend their own assumptions, but instead waited for opportunities to inject their own opinions into the conversation. They asked leading questions and did not

take the time to fully understand what others were saying before drawing conclusions.

Analysis of fieldnotes from Group Two revealed a more consistent pattern of engagement during their time together. Most participants were tentative in engaging in discourse early in the semester, but became more involved as time passed. During the early parts of the semester when the facilitator stopped the group to ask about process many participants expressed concerns such as "I'm not sure I'm doing it right," or "I sometimes get so wrapped up in the topic of the conversation that I forget to monitor the process." Around the last month of the semester, however, the participants began to see progress in their collaboration. For example, when they stopped to discuss process during the twelfth session, participant said,

I think of the metaphor of Sisyphus. I don't know, that just struck me tonight. It's like we get the rock up the hill and we're just almost there and it just crashes down to the bottom again, so let's start all over again. And every session here recently, for the last several, we've gotten real close. We could have

elevated the discussion up a little bit more, but we never get to that point until the end of class. Then we have to stop and start over again the next week.

Near the end of the semester Group Two reached the point where they were able to engage in constructive discourse. They inquired into each others' ideas, examined their assumptions, and constructed new knowledge.

Engagement

An important aspect of the learning process for participants was the level of engagement required of them as learners in collaborative learning groups. They experienced engagement as unique when compared to traditional didactic learning situations. One participant compared this course to a traditional lecture-based course:

Well there are some people that just aren't comfortable in this type of setting. And, you know, it is much easier to sit in the class and have somebody lecture to you than it is to be involved.

Rather than relying solely on the facilitator to provide information and to direct class activities, participants became involved with other members of the group. For learning material, they drew upon all participants' experiences as well as traditional learning materials such as the text and other reading materials. This resulted in engagement among the participants, and in the learning process of the group. A participant from Group One described this engagement:

I think if somebody's talking about a personal experience, I think my response, [would be to] try to get him to clarify his expressions by reflecting what he said back to him. And you know, to try to get him to talk more about his experience. And when he's through, I ask him more questions about his experience. And those where I don't get a clear picture, I try to reflect what I see to see if he's seeing the same thing, or his experience is the same.

When prompted by the interviewer to say more, the participant went on to say,

Well I sort of check to see if what I'm seeing is accurate. So I'm trying to reflect accurately what he is expressing. And in a way, the process is like meditation, because there is always that voice that comes in from yourself saying I bet he was thinking this, or you know, making my own judgments. And I'm making a conscious effort to push out my own, you know my own noisy mental chatter, my own judgments about this. Making a conscious effort to try to get to his experience and keep my experience out of it so that I can really hear what he's trying to say. Really trying to see his view of what's going on. So when I'm actively engaged I'm constantly pushing myself out of the picture and trying to focus on him, and that's a continuous process.

Another participant, also from Group One, described engagement in these terms:

My experience in the group is that there are multiple processes going on for me. You'll tell your story, and as I listen to your story, other things go on in my mind too. And I don't know, it could be a lot of--it

could be my own story--Who was it? [Jarrod] told some of his story, personally you know, his own experience. And I can't remember, but I do recall feeling--I mean he was talking about Africa, he was talking about places I'd never been and things I had never done, and yet there was a point at which I could feel a real connection with him, even though I never had that particular experience.

Beyond simple engagement with other participants, collaborative learning requires participants to become involved in, and responsible for, their own learning in ways not usually required in traditional learning situations. Several participants described engagement with the learning process in their interviews. One participant described being drawn into engagement with the group contrary to his intentions when he first entered the class:

But to get in this group, this collaborative-learning group, and go to one meeting and get all stirred up for whatever reason. I mean I'm thinking, aw hell, I didn't want to do that, I just wanted to go to class. And it was like what I most wanted to avoid. That is this sort

of profound involvement. I found myself right in the middle of it from the first get go, you know. So it was so--I mean I was aware of it--so surprising I would invest that much in it at the beginning.

Another participant described this engagement among the members of his group:

In a way there's--and I don't know, it's an intuitive thing--there's a palpable sense of when a group is alive and then at other times the group doesn't seem to be alive in the same way, and I call that energy. It could be spirit too. And I mean spirit doesn't have to be religious. I'm speaking of team spirit, football team. Sometimes the team has an aliveness about it that it doesn't have otherwise. And it's different from the aliveness of the individuals who are there. I don't know, something happens there that raises the energy.

Questions

The final aspect of this category of themes concerns the role of questions in collaborative learning. During the

phenomenological interviews nearly all participants discussed the importance of questions in collaborative learning. Notations about questions also appear in my fieldnotes quite often. Similar discourse and engagement, participants saw questioning as an activity differentiating collaborative learning from other types of learning. They reported that they felt the primary difference was that participants ask questions of one another, rather than just the teacher asking questions of the students, as is the case in many traditional learning situations. In both groups participants characterized the purpose of questioning to be to move the learning process along and to inquire into each others' ideas and assumptions. They also found this a difficult thing to do well. One participant from Group One described her struggle with this by saying,

It becomes the challenge of asking the right question.

That's really--that's really where the skill comes in.

It's not ever coming up with the answer. It's coming up with the question.

This participant went on to describe a specific incident from the class where she was questioning another

participant, and she was mindful of trying to ask the "right" question:

And so I was really aware of how our tendency is to push an answer on someone, or push your opinion in an answer. And I know that in one of the questions I asked I was able to not do that. I was able to keep me out of the question. There's nothing harder, you know, in keeping you out of the question, and just asking her for the answer in such a way that she can examine it without any of the emotion that comes from it being somebody else's stuff.... There are so many things you can do to violate a question.

This participant then continued to characterize a well-formed question as a gift the questioner gives to the answerer. She also adds the importance listening plays in being able to formulate, and give, a question that furthers the collaborative learning process:

A question is a wonderful gift. The right question that you ask someone is a wonderful freeing gift. It's a freeing gift because it is not an easy thing to keep you out of it. Or, it's not an easy thing to really

listen to what somebody said and to have represented in that question all the things that they have said to you already. So you have to assimilate all the things that they've said to you, the things you know about them.... Because the whole point is this. The question is this-- is this gift, because it's untainted. It's untainted, and it has all the ingredients that it needs. And then this person can take that gift and use it if they will. I mean they can then use that.

A different participant, from Group Two, described the moment when she came to a similar understanding of the importance of questioning in the collaborative learning process. And she adds to this her understanding that, like declarative statements, questions are reflective of one's beliefs and assumptions and that those beliefs and assumptions can inhibit learning:

I can see how your assumptions cloud the views of how you're looking at other people. I could see how your assumptions and your view of the world affect your ability to reflect. I saw that that night.

Asked to clarify what she meant she said,

I remember that I had leapt to this really big assumption that- and I recognized that wait a minute. You don't really know that. And I asked another [a different] question. And as a result of the other question I got a totally different perspective and my assumption was wrong. You know, the assumption I had leapt to, I would have operated on. You know, I would have pressed on under that assumption and assumed that to be the truth.

When prompted for the details of this incident she responded by saying,

It was something that's--it was sort of a psycho-babble thing. Obviously this is somebody who has difficulty with authority, or it was almost a self-esteem issue. And as a result of what she said, my very first thought that leapt out was that she had a problem dealing with people that she considered to be of higher stature. And I would have approached all of my questioning from that assumption. That, you know, I would have tried to get her to see where she was self-esteem wise. And in reality the question that I did ask exposed it [the

other participant's critical incident] had nothing to do with self-esteem. And that's such an easy leap. I mean, you know, you see it on Oprah all the time. So it's an easy leap to go there. And it made me aware that I have a tendency toward that assumption, which, in my job, I have to be very careful about. And I think maybe that's probably also why it was really a powerful insight for me.

She summed this up by saying,

I think that's maybe, and maybe this is just me, but maybe we need to look at it from not just the perspective of that person that you're interviewing assumptions. But also at the same time identifying your own assumptions. Because both of them prevent you from being able to interact. You know, that I have assumptions that get in my way of really hearing what you have to say. And you have assumptions that get in the way of you actually knowing what you're doing or why you're doing it in the first place. And we need to expose your assumptions so that you understand your behavior. And I need to expose my assumptions to make

sure that they're not getting in the way of my understanding.

These participants were discussing their experience of the role questions play in moving the learning process along in collaborative learning. There were several examples in my fieldnotes of when questions hindered the collaborative learning process. The following example occurred in Group Two as the group was discussing the critical incident of one of the participants. The participant sharing a critical incident related an incident where he was teaching an introductory college freshman course and had several disruptive students in the course. He reported that as things in the course progressively deteriorated, he decided to end class a few weeks early and gave individual assignments to finish out the semester. Looking back on his actions, he felt he had made the wrong decision and had penalized all of the students for the actions of a few. When he finished telling the group about his critical incident, these questions from other group members followed in the order they are written here:

Did you give grades?

Did you consider other forms of discipline?

What about the students who were not disruptive, did you give them the same assignments?

What would have happened if you just kicked out the disruptive students and continued with the other students?

What was the college's policy about handling disruptive students?

What did other instructors at the college do in similar situations?

Each of these questions was driven by the questioner's own assumptions about teaching and learning, yet none of these was revealed and examined. Each of these questions was met with a brief answer on the part of the participant who had presented his critical incident, and no one in the group really addressed in any way his, or anyone else's, assumptions about the teaching and learning process. In this case the questions hindered collaborative learning.

Several participants saw a change in the nature of their questions over the span of the semester. One participant from Group Two described this in his

phenomenological interview by comparing the fourteenth class session, which he felt was the group's best session, with earlier sessions in the semester:

I think we were more open. It was easier to talk and ask questions and to challenge things, and people weren't getting defensive as much. I think initially [early in the semester] somebody would say something, and somebody else would challenge that person, and that person would feel like they were intentionally trying to hurt them. But towards the end of the semester, and especially that night, people realized that these questions are not meant to hurt you, not meant to put you on the spot. They are meant to illicit some more information to make you think about it. And I think people started accepting that premise and working under those guidelines. It was give and take. You're looking at the idea, not the person.

This participant went on to say that not only were participants less defensive, they also were more skilled in asking questions that focused on the ideas and did not attack the person being questioned:

It wasn't that you were attacking that person, you're asking about an idea. You got to the point where you felt, at least I did anyway, more comfortable in asking questions. I wasn't asking, you know, "Why the hell did you do that?", but "What happened?" That made a difference in how we were able to interact.

Group Facilitation

The third category of themes to emerge from the data analysis concerned the topic of group facilitation. The category was defined by two different aspects: the first, is that participants in these groups felt the facilitator acted in such a way as to give them space to work and develop together; the second is the fact that participants came to assume group facilitation responsibilities. Participants came to see themselves as facilitators of the group, and saw they could assume responsibility for, and direct, their own learning experiences.

Facilitator Actions

My fieldnotes show a decrease over time in the tendency of the facilitator to direct the groups. Early in the semester, the facilitator frequently stopped conversation and directed participants' attention to how they were engaging in the discussion. He pointed out such things as the questions that were being asked and the nature of the conversation. He also asked participants to evaluate the conversation in these same terms. Near the end of the semester the facilitator did this less often. In the last two class sessions for both groups I have no notations in my fieldnotes of the facilitator's stopping the conversation.

In their interviews, participants did not talk about the facilitator stopping the conversation, but did see changes in the amount of involvement of the facilitator in the groups' conversations. This, in part, took the form of the facilitator leaving the groups for periods of time during class sessions. Two participants, one from each group, described this as the facilitator giving the group space. A participant from Group One said,

I feel that Dr. Peters' withdrawal to go do whatever he does on occasions, I thought that was highly significant because it let us--we are equal. It took the pressure off of having direction, or giving direction, because invariably professors want to see it their way. And I think that our group was self-directed.

A participant from Group Two addressed this issue by saying,

One of the things was John's willingness to leave the class and let the class take over for itself. I think that that probably promoted our class growth as much as anything did. But I also realize that you have to get a group to a certain place before you could assume that progress would continue. His acceptance of our ideas and even our behavior, you know, he jokes about our bad behavior and accepts it pretty willingly.

These participants' assessment of the facilitator's leaving the groups is consistent with my fieldnotes. In the first two sessions for each group I have no notations that the facilitator left the group. Beginning with the third session he began leaving the groups for brief periods of

usually ten to twenty minutes at a time. He continued to do this periodically throughout the next twelve sessions for both groups. The facilitator was present the entire session for the final class in both groups.

Participants as Facilitators

My fieldnotes show that initially most participants in both groups did not assume any responsibility for facilitating the group, looking to the facilitator to assume the traditional role of directing class activities. As time wore on, however, many became quite active in directing the learning experiences of the groups. For example, one participant, Participant A, in relating his educational autobiography, focused primarily on his experiences with formal education and described himself as being at odds with the educational system. He discussed one incident as an "aha experience" in which he realized "this institution does not exist to serve the needs of the students. It exists to meet the needs of the people who work here." He finished his autobiography by saying "I have survived my formal

education." A second participant, Participant B, then responded to the autobiography by pointing out what he saw as a "paradox," suggesting that even though Participant A felt at odds with the formal education system, he kept returning, currently as a doctoral student. Two other participants, Participants C and D, also picked up on this apparent paradox and the four of them engaged in several minutes of dialogue about this topic. A fifth participant, Participant E, then interrupted this exchange by asking a leading question, and stating her own opinion, about the possible motivation of Participant A's teachers:

Don't you think that the teachers were doing the best they could? I mean the teachers are there because they want to help students learn. They aren't there just to have a job or just to get a paycheck. Maybe the system is not the best, but don't you think the teachers-- don't you think your teachers were trying to help you learn so you would be prepared for life?

Participant B intervened at this point and said to Participant E "You seem to be making a statement."
Participant E responded by saying "I'm just trying to learn

to use this technique." There was a brief pause from other members, then Participant C redirected the discussion by asking Participant A "You mentioned that you saw learning and education as two different things. Can you say more about that?" Participant A responded by defining education as something that was formal and usually institutionalized, and learning as something more self-directed. Participants A, B, C, and D then engaged in more dialogue around these definitions of education and learning, including other people's experiences with the formal education system. This exchange was typical of others that occurred in both groups, although primarily near the end of the semester.

In their interviews, participants also recognized that they had assumed responsibility for group facilitation. A participant from Group Two, describing a session near the end of the semester when the facilitator was late getting to class, said,

And so we just took off and started doing it and said 'you can catch up when you get here.' That was another sign, it just dawned on me. I just remembered that now. That was another sign that the group, not that John was

unnecessary, but that the group could function without him. So we just carried on class that night.

This same participant went on to speculate that not only was the group able to function without the facilitator, but that it really wasn't the "facilitator's group". The group had assumed a life of its own.

So it wasn't his group anymore, and I don't know if it was his group at the beginning because we weren't a group. It was his students, it was his class. But I don't ever know if it was his group. Because when we became a group, we almost cut the umbilical cord. It was the group's group.

And he went on to sum this up by saying:

But it was more ownership of the group that, towards the end there, we were taking responsibility for accomplishing what needed to be accomplished. We weren't going to rely on John.

A participant from Group One discussed this same issue by discussing changes she saw occur over the course of the semester.

One obvious one [change] is that I think the whole class took more initiative to begin the process, rather than waiting for Dr. Peters to start. And it was that initiating, it was that kind of self-initiation sort of started because [of when] Dr. Peters didn't come to class on time, I guess. So we had no choice but to start ourselves. He is going to laugh when he hears this.

Another issue related to the notion of participants as facilitators was that they held one another accountable for their actions in the group. A participant from Group Two said,

I remember one time when I said something to somebody, and I'm not sure of the words used back to me, but it had to do with 'Are you asking a leading question or are you making an assumption?' There's this thread all the way through of the class members trying to keep people on task, of respecting what the person was trying to say.

She followed this by saying,

And at times we have held each other responsible for asking a question in the proper way. And that seems to have built our level of trust very quickly. More quickly I think than anyone could ever assume that trust level could be built.

Summary

These three categories of themes and their respective supporting themes describe the process of collaborative learning in these two groups. The themes are discussed, and implications are drawn from the discussion in chapter five.

Chapter 5

Summary, Discussion and Implications

This study described and documented collaborative learning by students enrolled in two sections of a graduate education course. Ethnographic observations were taken of the two groups over the course of a semester. Each of the eighteen participants in both groups was interviewed about his or her experience in their respective groups. Analysis of fieldnotes deriving from ethnographic observations and from interview transcripts deriving from phenomenological interviews revealed three thematic categories that described the process of collaborative learning in the two groups.

The three thematic categories are: 1)group process, 2)learning process, and 3)group facilitation. The group process is concerned with describing how participants experienced becoming two functioning groups as a result of their interpersonal interactions. It further describes group interactions in terms of the following four themes:

1) cohesion, 2) trust and respect, 3) confusion, and 4) frustration, and conflict. The second thematic category is an expression of how the participants learned. This thematic category concerns the nature of discourse in the two groups, the level of engagement of participants in the discourse, and the questioning process. The third thematic category concerns the participants' perceptions of roles that the facilitator and participants played in the two groups. The three thematic categories and the specific themes will now be discussed in terms of how they relate to the two major research questions guiding the present research.

Discussion of Findings

As may be remembered, the major research questions were:

- 1) What is the nature of the collaborative learning process in a formal classroom environment?
- 2) How do students engaged in collaborative learning experience the process?

The collaborative learning process for the two groups in this study may be characterized best by the two terms evolution and change. This was true for group process, learning process, and for the way the groups were facilitated. At the beginning of the semester participants were not two groups but two collections of individuals. At the end of the semester they had become cohesive groups.

Most participants in this study initially expressed excitement about the collaborative learning process although their excitement soon turned to confusion and frustration. Initially, they felt that they did not know what they were doing--and many expressed concerns that they were not "doing it right," and that they were not progressing as they had expected. When the facilitator did not act as participants expected, they felt frustrated with the process and the facilitator. As participants learned that collaborative learning operates from a different set of assumptions and requires different behaviors of learners, their sense of frustration and confusion subsided. By the mid-point of the semester, most participants began to dialogue with one another and to establish relationships of the kind essential

to effective collaborative learning. Most participants reported that they "got it" after all.

Brookfield (1994) found that early in a critically reflective learning experience learners "attempt to make sense of the apparent chaos through which they are passing. There is a hermeneutic quest to create and ascribe meaning to this chaos as a way of reducing feelings of dissonance, discomfort and alienation" (p.213). For participants in Brookfield's study, developing a sense of community was one means of coping with chaos. This sense of community allowed critically reflective learners to confirm that they were not alone. While none of the participants in this study used the word *chaos* to describe his or her experience, many did express feelings of confusion and frustration. As they worked their way through the confusion and frustration they began to develop a sense of cohesion. Isaacs (1993) describes the first phase of dialogue as "instability of the container", in which participants typically experience frustration and confusion with the process and usually with the planner/facilitator of the event in which they are participating. Tisue (1999) also reported this sort of

initial reaction to the collaborative learning process in her attempt to facilitate collaborative learning with a management team in a family business. In Isaac's model, and in Tissue's research, the outcome was similar to the findings of this study - about "mid-way" in the term of the learning experience, participants "get it". That is, the process seems to take time, requiring participants and facilitators to adjust to the initially unfamiliar demands of a collaborative learning experience. Eventually, when acceptance of the possibilities of the process is in place, the group forms essential relationships, skills begin to develop, and participants are able to "see" themselves in the act of collaborative learning. Essential to this process, however, is a sense of trust and respect among members of the group.

In this study, participants' sense of trust of others in the group also changed over time. While participants were able to treat one another in a respectful manner from the beginning, they were reluctant at first to disclose much about their thinking to others. They slowly opened themselves to others and disclosed more and more as the

semester wore on. This show of trust came as a result of participants taking risks in the groups and of having their risks met with respect from other participants.

Yalom (1995) claims that the primary source of risk taking in group process concerns sharing personal information with others. Participants in this study did share personal information with one another, but few experienced that as risk taking behavior. Instead, they found sharing incomplete thoughts and ideas with the group to be the primary source of risk taking. Discussing ideas as they were formulating them (or "thinking out loud") initially led many participants to feel that they were vulnerable to the criticism of others in their group. When individual participants took the risk and shared their underdeveloped thoughts and ideas, other participants treated their risk-taking behavior with respect. This show of respect helped to create an environment that allowed trust to grow and develop.

Relationships in collaborative learning groups thus seem to develop "in terms of learner to learner, learner to group, and group to learner" (Peters and Armstrong (1998,

p.79). The findings of this study support the first two aspects of relationship in this characterization of relationships. The relationships in these two groups went beyond relationships between individuals in the groups (learner to learner) to include a relationship with the group as a whole (learner to group). Initially, participants felt a sense of individual relationship with other participants. However, their sense of relationship extended beyond individual relationship to include a sense of relationship to their respective groups. They expressed their relationship with the group as cohesion and commitment to their respective groups.

The group to learner aspect of relationship was not as clearly evident in these groups. One participant described his sense of the group as being a family, thus implying that he felt support from the group (group to learner) although he was the only participant to describe the group in this manner.

The learning process also changed with time. The learning process is a reflection of the skills necessary for participants to engage in collaborative learning, primarily

those of dialogue. Unlike the group process changes, which slowly and steadily evolved toward trust and cohesion, the learning process was more erratic, especially in Group One. Group Two participants entered the course with roughly the same level of experience and skill, and individuals proceeded to acquire the skills at about the same pace. Their questioning skills and their abilities to examine assumptions slowly improved. Their discourse was slightly erratic (two steps forward one step back) but in general showed a steady progression toward dialogue, and subsequently collaborative learning. Brookfield (1994) calls this a "halting, incremental rhythm" to the learning process.

Participants in Group One, however, entered the course with varying levels of experience and skills. Thus, the learning process for Group One was quite different from that of Group Two. Instead of the steady evolution seen in Group Two, Group One had erratic moments of quality dialogue alternating with extended periods of discussion and debate, depending upon who was involved in the conversation at the time. The four doctoral students were able to engage in

dialogue as soon as they entered the course. The three masters-level students in Group One did not seem to reach a point where they could question and suspend their assumptions adequately for them to engage in dialogue or collaborative learning with others in the group.

The beginning mix of skill levels might have contributed to the relatively slow development of questioning and dialogue skills on the part of the three masters-level participants in Group One. The more skillful participants exhibited their skills early in the course, and even though they did not dominate discussion and dialogue, less-skilled participants seemed content to bask in the light of their more skillful fellow participants.

The differences in the evolution of the learning process in these two groups calls into question the assumption implicit in the collaborative learning literature that all groups evolve and develop in the same manner. Isaacs' (1993) work with dialogue groups is illustrative of this. He describes four stages that dialogue groups proceed through before they reach the final stage, where they create shared meaning. Isaacs admits that the stages are not

linear, saying "One could think of the evolving stages as enfolded within one another. In one sense they are all present simultaneously, though one may seem dominant" (1993, p.34). Isaacs does imply, however, that all groups proceed through these "evolving stages" in a similar manner. The two groups in this study did not evolve in the same manner.

Perhaps all novice collaborative-learning groups, (as was Group Two), do evolve in a manner similar to the one described by Isaacs, but if some of the participants in a group are much more experienced and skilled in dialogue the group may develop differently. This study demonstrates that one cannot assume that all collaborative learning groups will evolve and develop in the same manner.

Dialogue between participants is one of the foundational aspects of the collaborative learning process. Even though participants did not use the term, when they spoke of discourse that engaged them and left them with a sense of spirit or energy they were referring to what Isaacs (1993) calls dialogue. Drawing on the ideas of Bohm, Isaacs defines dialogue as a the development of shared meaning among participants in a conversation. In collaborative

learning the development of shared meaning is a precursor to knowledge construction. This suggests that an ability to engage in dialogue is a part of the collaborative learning process and a necessary skill.

Creating shared meaning, as Isaacs calls for in dialogue, is similar to what Mezirow (1991 and 1996) calls communicative learning. The purpose of communicative learning is to learn "what others mean when they communicate with you" with the intention of bringing "about a common understanding and trust" (Mezirow 1996, p. 163). Mezirow goes on to say that becoming competent in communicative learning requires

the ability of the learner to negotiate his or her own purposes, values, and meanings rather than to simply accept those of others. A learner may acquire communicative competence by becoming more aware and critically reflective of assumptions, more able to freely and fully participate in discourse, and to overcome constraints to taking reflective action. (p. 164)

While Mezirow feels that learners can become competent in communicative learning by becoming aware of assumptions, participating in discourse, and overcoming constraints, he does not address the question of what skills are necessary for learners to accomplish these tasks. The findings of this study suggest that in collaborative learning, learners need to engage in dialogue with each other, and to inquire into the ideas and assumptions of all participants through the use of questions.

Not all questions lead to communicative learning or collaborative learning. Pollio (1989) suggests that in college classrooms there are two types of questions, those of a lawyer and those of a scientist. Answers to questions like those of a lawyer are already known by the questioner. The questioner (usually the instructor) uses the question to direct and control the conversation, and limits learning by orienting the conversation toward knowledge of the past, or what is already known by at least some of the participants in the conversation. Answers to questions like those of a scientist are not known by the questioner. These questions seek the advancement of knowledge. They orient the

conversation toward the knowledge of the future and encourage the autonomy of all participants in the conversation; thus freeing the participants in the conversation to learn something new.

When the one of the participants in this study described questions as "gifts" given from questioner to answerer, she was describing questions like those of a scientist. Questions without preconceived answers allowed the participants to examine ideas and assumptions, to engage in dialogue, and to construct new knowledge. Learning to ask questions like those of a scientist appears to be a necessary skill for participants in collaborative learning. Asking questions like those of a lawyer, which is the most common form of questions in education, hinders collaborative learning.

Simply learning the skills of dialogue was not all the participants in this study accomplished. They also "saw" themselves as learning and practicing these skills. Through the use of dialogue they established relationships and developed shared meanings that became the background and context from which they constructed new knowledge. By doing

so they created their own culture from which they learned. Shotter (1993a, 1993b) calls this "knowing from within," which he differentiates from two other kinds of knowing-- "knowing that" and "knowing how."

Knowing *that* refers to having knowledge of rules, facts and beliefs; knowing *how* is practical knowledge. For participants in this study knowing *that* involved learning about collaborative learning. This kind of knowing was augmented by reading materials and class discussions. For example, by reading and participating in class discussions, participants learned that they were to suspend and examine assumptions and that some questions facilitated collaborative learning while others hindered it. They didn't know *how* these skills factored into the collaborative learning experience until they were able to practice them in class sessions. This process of knowing follows Jarvis's (1998) distinction between merely having information and making that information a part of one's practical knowledge, which comes only from testing the information out in one's own practice or social life.

As noted above, these participants became aware of themselves learning the first two kinds of knowledge. They also became aware of interactions within their respective groups and how these interactions contributed to their knowing *that* and their knowing *how*. Thus, the participants developed a third kind of knowledge, which is referred to by Shotter (1993a) as "knowing from within". Such knowledge has been described as,

the kind of knowledge that one has *only from within* a social situation, a group, or an institution, and which thus takes into account and is accountable to *others* as to whether its expression or use is ethically proper or not. (p.7) [emphasis in original]

Not only did participants in this study see themselves learning the first two kinds of knowledge, they also came to see how their individual actions and learning related to the actions and learning of others. They came to see how they were accountable to and responsible for each other and for the group as a whole. This is knowledge that came only from within the group, and it is knowledge that only has meaning within the group.

As participants learned how their actions affected their own and others' learning they began to assume responsibility for their own actions and to hold others accountable for their actions. When participants of these groups redirected group discourse, and when they began sessions without the facilitator being present, or continued when the facilitator temporarily left the groups, they were assuming responsibility for their own learning.

The belief that adult learners should assume responsibility for their own learning is not new to the field of adult education. Self-directed learning is founded on this very principle (e.g. Tough, 1971; Knowles, 1980; and Brockett and Hiemstra, 1991). Self-directed learning, however, is a theory of individual learning, and even though self-directed learners may assume responsibility for their own individual learning, they do not necessarily assume any responsibility for the learning of others. The participants in this study did assume responsibility for the learning of others. They were truly co-learners.

The manner in which the two groups were facilitated also changed over time. Findings reported in Chapter Four

show two obvious changes: 1) participants gradually became more and more active in the facilitation of their respective groups, and 2) the facilitator became less and less active in the facilitation of the two groups. When authors of works about collaborative learning address the role of the facilitator they often contradict themselves. In Types I and II teaching and learning the role of a teacher is primarily that of transmitter of information and one who directs group activities. In Type III teaching and learning, collaborative learning, the role of the facilitator is that of equal participant and co-constructor of knowledge (Peters and Armstrong, 1988). Much of the literature about collaborative learning calls for a Type III structure while ascribing a Type I or II role for the facilitator.

Imel (1991) provides an example of this contradiction when she describes facilitators and learners as equal co-participants in collaborative learning. She then goes on to say that the facilitator must do such things as establish clear objectives, use suitable techniques, structure groups, and provide expected outcomes, and that the facilitator must continue to control these aspects of a course throughout its

term. This apparent mix of Type III intent and Type I facilitator role can result in a mixed message to learners and a less than desired Type III effect. In such situations, learners are much more likely to turn to the facilitator for direction and content expertise and avoid turning to one another (as well as to the teacher) as co-constructors of knowledge. Learners are not equal co-participants when the facilitator serves as the primary source of information and controls the structure, activities, and outcomes of the group.

In a related example, Bruffee (1993, 1999) describes collaborative learning as the construction of knowledge through shared inquiry. However, he also says that, "the job of college and university teachers is to represent the knowledge communities of which they are members in a way that will most effectively reacculturate new members" (p.3); in this case students. This privileges the knowledge of the teacher over that of students. Students cannot be co-constructors of knowledge when their knowledge is not valued by the facilitator.

In this study, the facilitator acted in ways that encouraged participants to establish themselves as co-learners and facilitators of their collaborative learning experience. For example, by gradually decreasing his involvement in directing group actions over the course of the semester, the facilitator gave participants the time and space to develop their ability to act as co-facilitators. He did this by physically leaving the room on occasion, and by coaching participants as they learned to facilitate other participants' learning experiences. Participants learned to facilitate even as they assumed responsibility for their own learning, in the act of learning. Thus, the course facilitator's own actions were consistent with Type III structure and expectations.

Conclusions and Implications

The collaborative learning process experienced by participants in this study can be described in terms of group process, learning process and facilitation. It was in terms of the *interaction* of these three themes that

participants in the course accounted for their experience with collaborative learning. Thus, each theme discussed in this chapter needs to be understood within the context of the others. Collaborative learning is a multifaceted, complex gestalt involving more than simply "learning." It is also described by the relationships that participants form and their role in facilitating their own and others' learning experiences.

Knowledge construction is similarly a complex process, consisting of not only knowing *that* and knowing *how*, but also knowing *from within* (Shotter, 1993a, 1993b). Present findings indicate that participants were able to observe their own learning experiences in terms of relationships formed in their respective groups. This "third kind" of knowing is usually not acknowledged by participants in most other types of teaching and learning although it is a profoundly influential aspect of learning in any setting.

Collaborative learning is a developmental process. Most participants grew over time, in terms of their ability to dialogue and to form relationships with one another. If participants did not enter the course with requisite skills

of dialogue and other aspects of collaborative learning, they needed to develop them over the course term.

Participants were able to witness their own development over the term, and results of their reflections on their own development contributed to their knowledge and skill in learning collaboratively.

Facilitation of collaborative learning is not a task to be left to a single individual, including the formally-designated leader. For collaborative learning to work well, all participants must share in the facilitating role. The co-facilitation feature of collaborative learning helps to ensure that the process is democratic, and participants can further develop their collaborative skills with practice in the role of facilitator.

Models and discussions of collaborative learning found in the literature usually do not describe with precision what the process is like in practice. Results of this study suggest that the reality of collaborative learning may not be aligned perfectly with certain concepts of the process held by writers in the area of collaborative learning (e.g., Peters and Armstrong, 1998) and related processes, such as

dialogue (e.g., Isaacs, 1993). In keeping with the stated need for this study, much more research will be necessary before scholars and practitioners can begin to grasp the complexities of collaborative learning and how it is to be facilitated. Additional descriptive studies of collaborative learning in a variety of situations are needed in the current early stages of theory development, as are systematic inquiries of collaborative learning in the lives of practitioners. Such studies will help accelerate the development of inquiries into the complexities of this special type of teaching and learning.

REFERENCES

REFERENCES

Bergevin, P. and McKinley, J. (1965) Participation Training for Adult Education. St Louis: Bethany Press.

Brockett, R. and Hiemstra, R. (1991) Self-Direction in Adult Education: Perspectives on Theory, Research, and Practice. New York: Routledge.

Brookfield, S. (1994) Tales from the dark side: A phenomenography of adult critical reflection. International Journal of Lifelong Education, 13(3), 203-216.

Brookfield, S. and Preskill, S. (1999) Discussion as a way of teaching. San Francisco: Jossey-Bass.

Bruffee, K. (1992) Collaborative learning and the conversation of mankind. In Goodsell, A., Maher, M., and Tinto, V. (Eds) Collaborative Learning: A Sourcebook for Higher Education (pp. 23-33) Syracuse, NY: National Center on Postsecondary Teaching, Learning and Assessment.

Bruffee, K. (1993) Collaborative Learning: Higher Education, Interdependence, and the Authority of Knowledge. Baltimore, MD: Johns Hopkins University Press.

Bruffee, K. (1999) Collaborative Learning: Higher Education, Interdependence, and the Authority of Knowledge. 2nd ed. Baltimore, MD: Johns Hopkins University Press.

Clark, M. and Wilson, A. (1991) Context and rationality in Mezirow's theory of transformational learning. Adult Education Quarterly, 41, 75-85.

Collard, S. and Law, M. (1989) The limits of perspective transformation. Adult Education Quarterly, 39, 99-107.

Cranton, P. (1996) Types of group learning. In Imel, S. (Ed.). Learning in Groups: Exploring Fundamental Principles, New Uses, and Emerging Opportunities. New Directions for Adult and Continuing Education, no.71 (pp. 25-32). San Francisco: Jossey-Bass.

Gonzalez, V. and Macaulay, B. (1994) When more is less: Perceived Barriers to Collaborative Learning by Adult College Students. Program and Proceedings for the 35th Annual Adult Education Research Conference.

Group for Collaborative Inquiry (1994) A Model for Transformative Learning: Individual Development and social

Action. Program and Proceedings for the 35th Annual Adult Education Research Conference.

Glesne, C. and Peshkin, A. (1992) Becoming Qualitative Researchers: An introduction. White Plains NY: Longman.

Hamilton, S. (1994) Freedom transformed: Toward a developmental model for the construction of collaborative learning environments. In Bosworth, K. And Hamilton, S. (Eds.) Collaborative Learning: Underlying Process and Effective Techniques. New Directions for Teaching and Learning, no. 59 (pp. 93-101). San Francisco: Jossey-Bass.

Headland, T. and Pike, K. (Eds) (1990) Emics and Etics: The Insider/Outsider Debate. Frontiers of Anthropology, Vol.7. Newbury Park, CA: Sage Publications.

Imel, S. (1991) Collaborative learning in adult education. Columbus, OH: Ohio State University. (ERIC Document Reproduction Service No. ED 334 469).

Imel, S. (Ed). (1996) Learning in Groups: Exploring Fundamental Principles, New Uses, and Emerging Opportunities. New Directions for Adult and Continuing Education, no.71. San Francisco: Jossey-Bass.

Isaacs, W. (1993) Taking Flight: Dialogue, collective thinking, and organizational learning. Organizational Learning, 22(2), 24-39.

Jarvis, P. (1987) Adult Learning in the Social Context. London: Croom Helm.

Jarvis, P. (1992) Paradoxes of Learning: On Becoming and Individual in Society. San Francisco: Jossey-Bass.

Jarvis, P. (1998) The Practitioner Researcher. San Francisco: Jossey-Bass.

Kagan, S. (1997) Cooperative Learning. San Capistrano, CA: Kagan Cooperative Learning.

Kasl, E., Marsick, V. and Dechant, K. (1992) A conceptual model for a group learning. Program and Proceedings for the 33rd Annual Adult Education Research Conference.

Knowles, M. (1980) The Modern Practice of Adult Education: From Pedagogy to Andragogy. (2nd ed.) New York: Cambridge Books.

Kvale, S. (1983) The qualitative research interview: A phenomenological and a hermeneutical mode of understanding. Journal of Phenomenological Psychology, 14(1), 171-196.

MacGregor, J. (1992) Collaborative Learning: Reframing the classroom. In Goodsell, A., Maher, M., and Tinto, V. (Eds) Collaborative Learning: A Sourcebook for Higher Education (pp. 37-48) Syracuse, NY: National Center on Postsecondary Teaching, Learning and Assessment.

Marsick, V., Dechant, K., and Kasl, E. (1991) Group learning among professionals: The Brewster company case study. Proceedings of the Annual Conference, Commission for Continuing Professional Education, American Association of Adult and Continuing Education.

Merriam, S. (1998) Qualitative Research and Case Study Applications in Education. San Francisco: Jossey-Bass.

Mezirow, J. (1990) Fostering Critical Reflection in Adulthood: A guide to transformative and emancipatory learning. San Francisco: Jossey-Bass.

Mezirow, J. (1991) Transformative Dimensions of Adult Learning. San Francisco: Jossey-Bass.

Mezirow, J. (1996) Contemporary paradigms of learning. Adult Education Quarterly, 46(3) 158-172.

Peters, J. And Armstrong, J. (1998) Collaborative partnerships: People laboring together to construct

knowledge. In Saltiel, I., Sgroi, A., and Brockett, R. (Eds.) The Power and Potential of Collaborative Learning Partnerships. New Directions for Adult and Continuing Education no. 79 (pp.75-85). San Francisco: Jossey-Bass.

Peters, J. and Armstrong, J. (forthcoming) Facilitating Collaborative Learning. San Francisco: Jossey-Bass.

Pollio, H. (1989) Any questions, Please? Teaching/Learning Issues, 66. Knoxville TN: Learning Research Center, University of Tennessee, Knoxville.

Senge, P. (1990) The Fifth Discipline. New York: Doubleday.

Sgori, A. (1998) Teaching-Learning Partnerships in the Arts. The Power and Potential of Collaborative Learning Partnerships. New Directions for Adult and Continuing Education no. 79 (pp.23-32). San Francisco: Jossey-Bass.

Shotter, J. (1993a) Cultural Politics of Everyday Life. Buckingham, UK: Open University Press.

Shotter, J. (1993b) Conversational Realities: Constructing Life through Language. London; Sage Publications.

Slavin, R. (1991) Synthesis of Research on Cooperative learning. Educational Leadership (February) 71-82.

Tisue, L. (1999) Facilitating Dialogue and Decision-Making in a Family Business. Unpublished Doctoral Dissertation, University of Tennessee.

Tomasello, M., Kruger, A., and Ratner, H. (1993) Cultural learning. Behavioral and Brain Sciences, 16, 495-552.

Tough, A. (1971) The Adult's Learning Projects: A Fresh Approach to Theory and Practice in Adult Learning. Toronto: Ontario Institute for Studies in Education.

Van Mannen, M. (1990) Researching Lived Experience: Human science for an action sensitive pedagogy. Ontario, Canada: Althouse Press.

Vella, J. (1994) Learning to Listen Learning to Teach: The Power of dialogue in educating Adults. San Francisco: Jossey-Bass.

Vella, J. (1995) Training through Dialogue: Promoting Effective learning and Change with Adults. San Francisco: Jossey-Bass.

Watkins, K. And Marsick, V. (1992) Towards a theory of informal and incidental learning in organizations.

International Journal of Lifelong Education, 11(4), 287-300.

Watkins, K. and Marsick, V. (1993) Sculpting the Learning Organization. San Francisco: Jossey-Bass.

Yalom, I. (1995) The Theory and Practice of Group Psychotherapy. 3rd ed. New York: Basic Books.

APPENDICES

Appendix A

Informed Consent

This research project entitled "A Case Study of the Collaborative Learning Process," involves case study method research with students engaged in two sections of a graduate course, PES 513 "Reflective Practice in Education and Psychology." Its purpose is to describe the process by which participants in a group learn to act collaboratively. Each class session will be audio-tape recorded and later transcribed.

You will be asked to participate in two to five individual interview sessions, each lasting 30-60 minutes. The interviews will also be audio-tape recorded and later transcribed.

Your participation in this study will be greatly appreciated, as it will contribute to research on the collaborative learning process, and possibly to your own understanding of your practice.

Your participation involves permission to be interviewed two to five times about your experiences in PES 513 and to have the interviews audio-tape recorded. The audio recordings of both your interviews and the class sessions will be transcribed for the purpose of data analysis and interpretation. Hard-copy transcripts maybe included in the final report, but the transcripts will be purged of all materials that would identify you. References to you in the transcript and the final report will be made using an identification number. The identification key will be available only to me. Audio recordings of the interviews may be heard once by a professional transcriptionist and then immediately returned to me. The transcriptionist will sign a "Certificate of Confidentiality." If the class sessions need to be transcribed, I will personally transcribe them. I will retain the audio tapes and their corresponding identification-keyed hard copy transcripts in a locked filing cabinet in my office until this study is completed. At that time, the tapes and identification keys will be

destroyed. If you so desire, you are free to hear the class session tapes or the tapes of your interviews, read the transcripts, and read the final report upon its completion. Your participation in this study is voluntary and you may withdraw at any time without penalty or loss of benefits. Withdrawal will not affect your class standing or grade. You may also terminate any of the interviews during or between interviews without penalty. Verbal accounts of your experience are completely at your discretion and their depth and breadth are totally under your control.

Your signature on this form indicates your understanding and willingness to participate in this project. Thank you for your contributions to this project. Any questions prior to, during, or after your participation may be directed to me at: Joe Armstrong, 241 Claxton Addition, University of Tennessee, Knoxville, TN 37996. My phone number is: (615) 974-6138.

I, _____, agree to participate in the aforementioned study. I understand that I will be interviewed and that the interviews and class sessions will be audio-tape recorded and transcribed. I also understand that I am free to verbalize my experience at my discretion and that I may interrupt or terminate my participation at any time during or between interviews.

(Signature)

(Date)

Appendix B

Certificate of Confidentiality

I, _____, certify that I have transcribed the audio-recorded tapes from interviews with participants in Joe Armstrong's research, "A Case Study of the Collaborative Learning Process." In having access to the interview data, I promise to keep all material confidential and secure. I will refrain from disclosing any names or revealing any information pertaining to the transcripts to any party, except for Joe Armstrong.

(Signature)

(Date)

VITA

Joseph L. Armstrong was born in Chicago Illinois. At age ten his family moved to rural Indiana and he subsequently graduated from Eastern-Green High School. He attended Indiana University and later transferred to the Indianapolis campus that Indiana University jointly operates with Purdue University. He has a B.A. in psychology from Purdue University, and an M.S. in Technological and Adult Education and a Ph.D. in Adult Education from the University of Tennessee. He is currently employed as Assistant Professor of Adult Education at Morehead State University in Morehead Kentucky.