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ADULT LEARNING IN A COOPERATIVE LEARNING ENVIRONMENT

presented by

Rose Margaret Lataillade-Beane

has been accepted towards fulfillment
of the requirements for

PH.D degree in Adult and Continuing Education

James E. Gruber
Major professor

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ADULT LEAF

ADULT LEARNING IN A COOPERATIVE LEARNING ENVIRONMENT

By

Rose Margaret Lataillade-Beane

A DISSERTATION

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

Adult and Continuing Education

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ABSTRACT

Adult Learning In A Cooperative Learning Environment

By

Rose Margaret Lataillade-Beane

This field study examined adult learning in the cooperative learning environment of a "Learning Theories of Teachers" graduate course at Saginaw Valley State University. Commonalities between adult learning and cooperative learning characteristics presented a construct which conceptually linked the two methods as a phenomenon worth observing in the classroom.

The twenty-five teachers enrolled in this course processed seven course objectives while participating in assigned "cooperative support groups" (by teaching grade level). The goal of the course was for teachers to analyze contemporary learning theory while articulating their own learning theory to develop applications for the classroom. Using the "cooperative support group" as the case, this study explored contextual factors in and out of group activities that influence cooperation and collaboration for learning. The study aimed to show 1) one way to organize adults for learning which uses cooperative learning as a theory base, 2) an alternative instructional strategy for adult learning in higher education, and 3) the broader theoretical issues of environment, curriculum, teaching strategy and learning strategy.

Why link adult learning with cooperative learning? For the remainder of this

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century and beyond, colleges and universities must examine and respond to the needs of a changing student population. At the same time, the new world-class workforce of the 21st century will require cooperative and collaborative work relationships and environments. Greater numbers of adults in higher education necessitates new methodologies, researching alternatives and restructuring the traditional approach to teaching from teacher-centered to student-centered. Adult learning principles are not supported by empirical evidence. Although, there is a great body of empirical research, descriptive knowledge of the instructional process and internal dynamics of cooperative learning with adults is sparse.

The study was a qualitative design utilizing field study and observation procedures for data collection and the case study method to organize the data. The findings were drawn from analysis in an out of the field and involved reviewing field notes, interview transcripts, transcripts of a class feedback session, weekly opinionnaires and an opinion survey to validate key assertions. The findings were then generalized back to adult learning principles and cooperative learning theory.

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To my LOR

Beane and my pare

unconditional love a

To my LORD and Savior. To my husband, Joe Beane, Jr., my son, Joseph L. Beane and my parents Edith and Guillaume Lataillade. Thank you for your unconditional love and faithful support.

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ACKNOWLEDGEMENTS

...be admonished: of making many books there is no end; and much study is a weariness of the flesh. Let us hear the conclusion of the whole matter. Fear God, and keep his commandments: for this is the whole duty of man. (Ecclesiastes 12:13-14, Bible, KJV)

Jesus is the LORD of the doctorate. The scripture reference is the summary of King Solomon's findings after he analyzed the data from a field study to find meaning in life. I think it is an appropriate reference from which to give praise and all the glory to God Almighty through Jesus Christ my Savior. I pray LORD that you may continue to give me your wisdom, anointing and purpose for my life.

I thank my family, who supported me with unconditional love. My husband, Joe, who I greatly admire and who always believed in me. My son, Joseph, whose spontaneous hugs always renewed my perspective and whose questions gave me other things to think about throughout the journey. My father and mother, Guillaume (deceased) and Edith Lataillade, who instilled precious values and a commitment to lifelong learning. Special thanks to my Mother, who inspired me with her creativity, courage and strength to endure and never give-up amidst change. My brothers and sisters, all seven of them and their families, Adrien, Nadia, Jocelyn, Ronald, Jehanne, Patrick and Joel, thank you for your love and understanding. My sister-in-law and brother-in-law, Debra and Richard, thank you for your love and support. Special friends, Denise, Winnie and Tara, thank you for coming to my rescue with

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Special thanks to the people who help me produce that "flawless copy" in more ways than one. My assistant and word processing specialist, Maria, for all her attention to detail and personal support. The Research and Development department at Delta College, Gene and Jeanine, for assisting me in developing the survey and compiling the data. Tara Ransom, a fine journalist and good friend, who pre-edited my chapters and helped me set the style for the descriptive presentation of the study. Mary Wolverton, word processing specialist at Delta College, whose desktop/graphic design expertise made the conversion from IBM to Macintosh and created an aesthetic as well as a flawless copy.

Without wise and scholarly counsel my path may not have been lighted as brightly. Therefore, I thank my mentors, who facilitated my education in ways that reached beyond the classroom! Dr. Patrick Dickson, my former ESD advisor and cognant committee member, who believed in me, gave me an opportunity to succeed and pointed me back on course when I was derailed! Dr. Herman Hughes, my KCP advisor and at-large committee member, who recruited me through the "Enhance Your Future" seminar and later awarded me the King/Chevez/Parks Fellowship and always was there with wise counsel! Dr. Chris Clark, my PROSEM professor, who talked with me like a brother and taught me the key to the process of writing! Dr. Howard Hickey, my ACE professor and dissertation committee member, who challenged me to go outside of myself in a cooperative group and peek my learning! Dr. Doug Hansen, my mentor and research site instructor, who allowed me to use his classroom as a laboratory to study adult learning in a cooperative learning environment and to learn from a master teacher! Last but certainly not least, Dr. Jim

Snoddy, my ACE

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Snoddy, my ACE professor, doctoral program advisor, and dissertation director, thank you for your patience and calmness, your wisdom and counsel, your ability to make the difficult look simple and doable, and most important for your tutelage throughout the process of my program of study and the writing of this my dissertation!

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CHAPTER I:

INTRODUCTION

On Wednesday at seven minutes to four, graduate students waiting for TE505, the "Learning Theories for Teachers" course at Saginaw Valley State University, rush into 214 Brown Hall and gather into their assigned groups as students from the previous class are trying to exit. These homogeneously formed "Cooperative Support Groups" had been assigned according to the graduate student's teaching grade levels by the second week of classes. Groups claimed squatters rights at each of the natural four corners of the "U" shaped table arrangement located in the middle of the large classroom. A fifth group settled down in the back of the room at a set of tables behind the "U" shaped table arrangement. The five groups had claimed their meeting spots the second week of classes and now every week returned to them like homing pigeons. The cooperative support groups continued working on an activity for course objective three as Dr. Douglas Hansen, the course instructor, had directed them to do the previous week.

The "Secondary Education" group wasted no time and began thinking aloud to solve the problem presented the previous week by Hansen. Hansen had asked the Cooperative Support Groups to problem solve and come up with three rules that could be applied to raise the front of a disabled car.

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> *Can you have discussion without knowledge? Or must you have knowledge before discussion? We have a small car with a flat right front tire and no jack. Near the car there is a low brick fence. Next to the fence, there is a 10 foot long two-by-four and a sturdy rope. Can the front of the car be raised? (Fieldnote Transcripts, 2/12/92)*

Group members appear puzzled and struggled to dialogue about the question, their eyes darted back and forth looking for answers they didn't get from one another.

> *"We have to apply a principle with three rules." "All we have to do is raise the front of the car not fix the flat, right?" "Yes, I think the front of the car can be raised but how?" (Fieldnote Transcripts, 2/12/92)*

One member of the group worked on applying the principle with a pop can and his ink pen and managed to come up with "lever" but was unable to explain the rule he demonstrated. Another member wrote an algebraic formula down on a scratch piece of paper and tried to recall its relationship to the problem. Someone else was taking notes in case anything that was being talked about would prove important later as they developed the answer to the problem. Still another person expressed some frustration and said, "I never was good at math!" The discussion kept circulating and ping-ponging from member to member as fragments of the answer were gleaned from a type of brainstorming session. Then finally the knowledge gathering discussion paid-off:

> *"That's it, we can apply the principle of force using the two-by-four as a lever, the low brick fence as a fulcrum, and our body weight as the force." (Fieldnote Transcript, 2/12/92)*

The flat tire activity represented an application of Gagne's behaviorist theory for rule learning (application). The activity involved group discussion to reach consensus for a group outcome.

Meanwhile, the distracting aroma of the Student Government popcorn sale, out in the hallway, lured at least one gopher from each group to fetch a needed

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snack. Students in at least one group were busy talking about current events in their respective school buildings, school district, central office and the State of Michigan, Department of Education but they somehow made the connection back to the task. It was the fourth week of classes and it seemed that group members were comfortable in processing group assignments, since they had come to know each other a little better.

Hansen arrived at four o'clock in the midst of this noisy but structured interaction. He walked to the front of the class from the back door and dropped his accordion-like briefcase on the podium table, unnoticed by the groups. He surveyed the chattering groups at work on their assignment as he took off his coat and walked to the back of the room to hang it up. Then, he went over and sat with the "Early Childhood" group and observed the cooperative group process.

This vignette introduces the study of "Adult Learning in a Cooperative Learning Environment" which was conducted in the "Learning Theories for Teacher's" course at Saginaw Valley State University. The description provides a thumbnail sketch of one way to organize adults for learning using cooperative learning as a theory base and an alternative instructional strategy for adult learning in higher education. The graduate school classroom is seen as a laboratory in which the course in the context of its use of cooperative support groups might be explored for implications for future research and practice. The vignette places the reader in the center of a group processing activity which is the focus of the present study.

The following sections provide some background information that indicates the significance of the study of "Adult Learning in a Cooperative Learning Environment."

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Demographic Shift in Student Population

For the remainder of this century and beyond, virtually all of the nation's two-year and four-year institutions of higher education must examine and respond to the needs of the changing student population in American society (Poynter & Sanders, 1989). Demographic trends suggest changes in the age of the population in general and specifically in the age of the student population of colleges and universities.

According to Census Bureau projections, adult students over 30 years of age will represent one out of every three college students by 1992 (Kelly, 1986). Currently, 45% of all undergraduates are adults 25 years and older and projections indicate a 16% increase among this segment of the nation's population by the year 2000 (Poynter & Sanders, 1989).

As the number of high school graduates continues to plummet until it is projected to reach a low point in 1993, two-year and four-year private and public institutions of higher education must confront the probability of undergraduate enrollment declines in the number and percentage of traditional age students (18 to 21 years old). Americans under age 35, who are a majority of the population today, will represent only 42% by 2050 (Nutter, Kroeger & Kinnick, 1991).

It is perhaps a sad commentary that of all our social institutions, colleges and universities have been among the slowest to respond to adult learners (Knowles & Associates, 1984). Some investigators suggest that colleges and universities are beginning to comprehend the implications of such an increase in adult learners on campus (Aslanian & Brickell, 1988). Many institutions plan to devote more attention to this fast growing segment of the college-bound population and respond by focusing research on the academic concerns of this older group (Poynter & Sanders, 1989).

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Shift in Approaches to Work

As we experience the shift in student population, a shift is also taking place in the way we approach work.

> We are already feeling the shock waves of the collision of demographics and technology, as fewer and fewer people become available for the increasing complex jobs in today's work environment (Edwards, 1990).

According to the Bureau of Labor Statistics, more than half of all new jobs created between 1984 and 2000 will require some education beyond high school, and almost a third will be filled by college graduates.

> How well we compete globally will be determined to a great extent on our ability to form relationships, to cooperate, to collaborate...We must perform these functions at all levels (Tyree, 1990).

The old "cog work force" and "compartmentalized work environment" is fastly becoming a causality of technological and economical changes in our global community (Tyree, 1990). The new world-class work force will require cooperative and collaborative work relationships and environments. Colleges and universities have the leadership challenge of "educating Americans for the 21st century." This will require identification of alternative instructional strategies necessary to prepare students to adapt to the new world-class work force of the 21st century and beyond.

Shift in Approaches to Teaching

Greater numbers of adults in higher education necessitate new methodologies, researching alternatives and restructuring the traditional instructional system, which is largely pedagogical. Today, many factors are influencing a paradigm shift in college teaching. Hopefully, the approach to college teaching is changing.

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> The old paradigm of college teaching is based on John Locke's assumption that the untrained mind is like a blank sheet of paper waiting for the instructor to write on it...Student minds are viewed as empty vessels into which instructors pour their wisdom... (Johnson, Johnson & Smith, 1991; see Figure1).

Cooperative learning, which was developed for children, is a teaching methodology which makes use of small-group work with special emphasis to the fostering of cooperation among members. Cooperative methods present a set of alternatives to the traditional instructional system and fits the new approach to teaching (Johnson, Johnson & Smith, 1991).

> The new paradigm is based on theory and research that has clear applications to instruction...The new paradigm of teaching is to help students construct their knowledge in an active way while working cooperatively with classmates so that students' talents and competencies are developed. (Johnson, Johnson & Smith, 1991; see Figure 1).

Greater numbers of adults in college and university classrooms at all levels will stimulate change in ways of thinking about teaching and learning. Teaching success in today's world requires a new approach to instruction (Johnson, Johnson & Smith, 1991). The technology available to educators in the 21st century will allow those in higher education to revitalize teaching approaches and respond to the adult learner in the American and global society.

The advent of adult learners as a majority on campuses will present some new challenges to colleges and to institutional researchers in particular. One important challenge is how colleges and universities can respond through instruction to meet the need of the changing student population. Traditionally, adults (age 22 and over) have engaged in higher education learning experiences in graduate schools and continuing education. The graduate school environment can serve as a natural laboratory to study the phenomenon of adult learners as they construct their own knowledge

Knowledge
Students
Faculty Purpose
Relationship
Context
Assumption

Figure

	Johnson, Johnson & Smith (1991)	
	OLD PARADIGM	**NEW PARADIGM**
Knowledge	Transferred from Faculty to Students	Jointly Constructed by Students and Faculty
Students	Passive Vessel to be Filled by Faculty's Knowledge	Active Constructor, Discoverer, Transformer of own Knowledge
Faculty Purpose	Classify and Sort Students	Develop Students' Competencies and Talents
Relationship	Impersonal Relationships Among Students and Between Faculty and Students	Personal Transaction Among Students and Between Faculty and Students
Context	Competitive/Individualistic	Cooperative Learning in Classroom and Cooperative Teams Among Faculty
Assumption	Any Expert Can Teach	Teaching is Complex and Requires Considerable Training
	BEHAVIORIST	**COGNITIVE**

Figure 1: Comparison of Old and New Paradigms of Teaching
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Statement of the Problem

One of the debates in the field of adult learning is centered around the lack of empirical research to support adult learning principles which have been proposed. The increased attention on cooperative learning as a collegial model to structure the way students and teachers construct their own knowledge on-the-job with other students and teachers is being generalized to adult learners in the college classroom (Johnson, Johnson & Smith, 1991). Cooperative learning theory may present a new base of existing empirical research for investigation from the adult learning perspective.

Descriptive knowledge of the instructional processes and internal dynamics of cooperative learning with adults is sparse. Johnson and Johnson (1983) indicate that despite the large number of studies on cooperative learning the internal dynamics of cooperative learning groups has been relatively ignored. They identified areas that descriptive research might illuminate such as:

> 1) the type of learning task assigned; 2) the quality of learning strategy used to complete learning task; 3) the occurrence of controversy versus concurrence seeking when students disagree with each other while completing learning task; 4) the time-on-task engaged in while completing learning task; 5) the cognitive processing engaed in while interacting about the learning tasks; 6) the peer regulation and feedback engaged in while interacting about the learning tasks; 7) the active involvement in learning occurring while completing the learning tasks; 8) the ability levels of group members; 9) group cohesion. (Johnson & Johnson, 1983 pp. 115 - 144, Johnson, Johnson & Holubec, 1986)

Cooperative learning, as developed by Johnson and Johnson (1975/1991) is a pedagogical theory which makes use of small-group techniques and requires

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cooperation among members for a single outcome. Pedagogy is the "art and science of teaching children." However, Johnson and Johnson (1975/1991) have found that the cooperative approach can be used regardless of subject matter or age group. The connection to adult learning becomes more apparent when related to Knowles' statement:

> "Andragogy-Pedagogy represents a continuum and the use of both techniques are appropriate at different times in different situations regardless of the age of the learner." (1984)

Andragogy is the "art and science of helping adults learn" (Knowles, 1984). The linking of andragogy-pedagogy in the college classroom for adult learning in a cooperative learning environment then presents some implications for research. Davenport and Davenport (1985) have suggested that adult educators should consider a blend of pedagogical and andragogical techniques. Marshak (1983) indicated that the dilemma for practitioners is that they often encounter a mixed situations in which the attributes of both models are present.

A focus of the present study is the way adults actively construct their knowledge during "cooperative group" work. The classroom represents a complex culture which is influenced by the physical and psychological environment, curriculum, teaching strategies and learning strategies as well as the needs and preferences of the teacher and learners. This study looks at these factors from an adult learner perspective and is designed to show patterns of a cooperative learning model that may represent an alternative instructional strategy that can be further examined and developed for adult learning.

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Background of the Study: A Pilot Study

Adult learning was always the foundational focus of my research but the connection to cooperative learning emerged from my literature review. I was interested in what I termed the "Anatomy of a Study Group" and wanted to examine graduate study groups in and out of the classroom for beginning courses in statistics. In an attempt to identify a body of literature, "cooperative learning" emerged as a theory which made use of small groups in the classroom. The small-group aspect of the cooperative learning methods was interesting and I reviewed the literature to see what implications it had for adult learners.

Later, when the pilot study was designed, and I was looking for a research site that used small-group work in the classroom, I remembered Douglas Hansen, Ph.D. at Saginaw Valley State University. He taught a course in my masters' program that involved structured group activities which I resisted at the time but which had the impact of transforming my perspective and learning theory base for teaching. The course was "TE505 - The Learning Theories for Teachers".

The present study emerged from my pilot study, "Cooperative Learning in an Adult Learning Setting". For the pilot study, a research site was negotiated at Saginaw Valley State University with the "Learning Theories for Teachers" course for Winter Term, 1991. The instructor, Dr. Douglas Hansen was one of my mentors during my masters degree program at SVSU. His teaching methods stimulated me to explore the possibilities of using alternative instructional strategies in the college classroom. Gaining entry to his "Learning Theories for Teachers" course was the smoothest aspect of the pilot study.

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The pilot study got underway on January 9, 1991 in 214 Brown Hall. I was relaxed about the nature of my first observation. It was the first day of classes and having attended my share of graduate courses I had a sense of what to expect. One student recognized me and said, "Rose, I thought you were living in Lansing? What are you doing here?" Hansen appeared glad to see me again and gave an impressive introduction both for me and my study. The class of 22 female teachers were receptive to my "brief" overview of the project. Volunteers were elicited both by Hansen and myself, and two teachers immediately volunteered. This marked a positive beginning. It was nice being back on SVSU's campus. As a result of my pilot field study experience, I chose to remain at this site for the present study.

"Learning Theories for Teachers" is a required College of Education foundation course in the graduate program for academic preparation and professional renewal for practicing educators (SVSU Catalog, 1990-92). SVSU is on a 15 week semester system, and TE505 met for three hours on Wednesday from 4:00 p.m. to 7:00 p.m. My arrangement initially involved observation during eight weeks but I ended up staying 15 weeks, until the end of the semester conducting observations and interviews. Interviews with the instructor and respondents were planned for the beginning of the observation period, midway and prior to leaving the site for a developmental perspective of the course process.

I chose to observe "Learning Theories for Teachers" because of the unique design of the course. Hansen used cooperative learning methods as a classroom management strategy as well as a teaching strategy. Seven course objectives structured the curriculum content which covered behaviorist and cognitive learning theories by R. M. Gagne, A. Bandura, and J. S. Bruner. The objectives served as

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the basis for individual and group assignments throughout the semester. Hansen assigned five "Cooperative Support Groups" (CSGs) using a homogeneous composition of students who shared the same teaching grade level within a range of three grade levels. This structure identified the homogeneous groups as Primary Education, Elementary Education, Middle School, Secondary Education, and Adult Education/Nursing.

The focus of the pilot study was to observe the group processing activities and how the instructor facilitated this process. The pilot study as a field experience allowed me to learn qualitative research methods (ethnography, field study, participant observation, case study) and to understand the kinds of questions this method of inquiry might answer.

Research Questions

The general research question that guided the pilot study was "What does cooperative learning look like in this setting" with adult learners in the "Learning Theories for Teachers" course at Saginaw Valley State University? I started looking for cooperative learning methods that were being used and the implications for adult learning applications as well as for adult teaching strategies. Specifically. I focused on situations in which 1) students were given the opportunity through task structures to use their background experiences as a resource for learning; 2) students were provided opportunities to apply new knowledge to their own situations and environments; 3) students were oriented toward self-direction in learning and problem centeredness; 4) student's learning was oriented to the developmental task of their social roles as teachers; 5) cooperative methods used were compatible or

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The qualitative method of inquiry generated preliminary questions with which I entered the field, What do cooperative learning methods and groups look like and how do they develop? How is cooperative learning carried on? What are the experiences and perceptions of teachers as students while they engage in the cooperative learning process of the "cooperative support groups" in the course? What does the learning and teaching transaction look like, and how does it take place? What are underlying or explicit strategies, systems of rules, or criteria by which this complex activity is accomplished? What social context frames the phenomenon?

Three questions emerged from the process of sequential sampling of the data and these guide the present study:

1. How is cooperative learning implemented with adults in this setting and how are cooperative skills and attitudes transmitted and acquired in the absence of direct instruction?

2. What is the nature of the cooperative learning model in this adult learning setting in higher education?

3. In what ways do the "cooperative support group" method and process parallel adult learning principles and how has this assisted students in understanding and completing course objectives?

Three additional questions emerged during the final reporting of the research data:

4. What are the implications for this model presenting an alternative instructional strategy for adult learning?

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5. In what way did the "cooperative support groups" contribute to student's individual learning perceptions and achievement?

6. In what ways and to what extent had the cooperative learning models and adult learning principles shaped the course design?

Overview of the Study

This study is organized into five chapters. This first chapter provides an introduction to the study. It places the study in the context of a cooperative learning environment in higher education and in the larger context of the shift in the student population, the shift in approaches to work, as well as the proposed shift in approaches to teaching in higher education. Along with these factors, which are suggested as potential influences in the way we will approach adult learning in colleges and universities in the 21st century and beyond, is the background, the problem, and research questions.

Chapter II presents a review of the literature, focusing on andragogy and cooperative learning. The review draws attention to the commonalities between the adult learning theory and methods and cooperative learning theory and methods and summarizes using the framework of the classroom environment, curriculum, teaching strategies and learning strategies (implications to the learner). Chapter III describes the method of inquiry that was used for the study. Field-based, qualitative research is discussed as the method of inquiry and the eclectic design which emerged from the use of the field study and participant observation method for data collection, and the case study method to organize and analyze data. The pilot study findings are summarized with the use of the framework of the classroom

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Chapter IV includes the data analysis and the assertions that emerged from the findings. It provides an integrated presentation of descriptive findings with interpretive commentaries based on these assertions. This chapter describes the "Learning Theories for Teachers" course including student viewpoints and course instructor perspectives of the "cooperative support group" process. The results of a survey instrument are used to validate assertions in the discussion. Using the evidence of the field study findings and the survey results, the assertions are generalized back to the theory of adult learning and cooperative learning for further validation. The findings are summarized, using the framework of the classroom environment, curriculum, teaching strategies and learning strategies with implications for the learner.

Chapter V offers interpretations of the findings and implications for future research and practice. The study is viewed as a preliminary study to continuing research on alternative instructional strategies for adult learning which might be supported by existing empirical research.

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CHAPTER II

REVIEW OF RELATED LITERATURE

The pedagogical model, "the art and science of teaching children," has been the dominant approach to teaching children since schools were organized in the seventh century (Slavin, 1983). In fact, it is the only way many think about education because pedagogy has dominated all of education — even adult education until recently (Knowles, 1984). However, just as understanding the psychological, physical and cognitive development of children is relevant to pedagogy and designing instruction for young people, so too, is knowledge of adult growth and development important to adult learning (Merriam, 1989).

Adult Learning: An Eclectic Theory

Adult education has not established an authoritative list of the needs of adult learners (Lyons, 1988) or a unified theory of adult learning. Adult learning authors have typically handled the learning material by first reviewing the theories according to pre-determined categories and then by extracting those principles, laws, or concepts most helpful or applicable to adult learners (Cross, 1981; Knowles, 1984).

In the adult education literature, the most common categories of learning theory are behaviorism, humanism, and cognitivism from psychology and educational psychology (Merriam, 1989, p. 3). These theories explain learning but

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do not address adult learning in particular. Therefore, many writers in adult education offer principles and models of learning drawn from general learning theories, motivation research and adult development. Some writers propose principles generic to learning at any age but most suggest ideas specific to adults.

Lindeman (1961) linked Dewey's ideas about learning as an active process in adult education with learner participation by building on past experiences. Bergevin (1967) discussed the democratic nature of adult education, and Bergevin (1967) and Kidd (1976) highlighted the importance of learner-centered education. Houle (1972) defined education as a cooperative art and developed a comprehensive curriculum model for its implementation. Knowles (1970) discussed the need for adults to take responsibility for their own learning through self-directed inquiry. Knox (1986) has focused on the process of facilitating adult learning and evaluating continuing education activities. Friere (1970) focused on problem-posing educational techniques to assist the oppressed in raising their level of consciousness.

Collectively, Lindeman, Bergevin, Kidd, Knowles, Knox, and Friere argued that the curriculum should be learner-centered, that learning episodes should capitalize on the learner's experience, that adults are self-directed, that the learner should participate in needs diagnosis, goals formation, and outcomes evaluation, that adults are problem-centered, and that the teacher should serve as a facilitator rather than a repository of facts (Conti, 1975, p. 221).

Theories, Principles and Assumptions

Attempts at theory building have lead to at least six explanations of the phenomenon of adult learning (Merriam, 1989, p. 7). Knowles' (1980) Andragogy

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and Cross's (1981) Characteristics of Adults as Learners (CAL) model emanated from characteristics of adult learners. Knowles (1980) offered assumptions which differentiates adult learning characteristics from child learning. Cross (1981) offered a "framework for thinking about what and how adults learn.

McClusky's (1970) Theory of Margin and Knox's (1980) Proficiency Theory, are anchored in an adult's life situation with its attendant social roles and responsibilities. McClusky (1970) felt his theory explained the dynamics of adult learning. His theory of margin is based on assumptions that adulthood is a time of growth, change, and integration in which one constantly seeks balance between the amount of energy needed and the amount available. Knox (1980) presented a set of interrelated concepts that hinge upon what he defined as being the purpose of adult learning "to enhance proficiency to improve performance" (p. 399).

Mezrow's (1981) Theory of Perspective Transformation and Freire's (1970) "Theory" of Conscientization present theoretical formulations that deal with the mental construction of experience and inner meaning and of the change that occur therein. Mezrow (1981) based his theory on the assumption that learning in adulthood is not just adding to what we already know. "Rather, new learning transforms existing knowledge into a new perspective and in so doing "emancipates" the learner." The ultimate result of this type of learning is to become aware of the "cultural assumptions governing the rules, roles, conventions, and social expectations which dictate the way we see, think, feel and act" (p. 13). Freire (1970) wrote, "the process in which men, not as recipients, but as knowing subjects, achieve a reality to transform that reality" is what takes place in an authentic education encounter (p. 27).

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Principles of adult learning were offered by Lindeman (1926) and James (1983). Lindeman (1961) posited that, (1) "adults are motivated to learn as they experience needs and interests that learning will satisfy; (2) adults' orientation to learning is life-centered; (3) experience is the richest resource for adult learning; (4) adults have a deep need to be self-directing; and (5) individual differences among people increase with age" (quoted in Merriam, 1989, p. 5). James (1983) conducted an analysis of perceptions of the practice of adult educators from five different settings that reported nine basic principles of adult learning which presented factors that influence adult learning. James' nine basic principles of adult learning are (1) adults maintain the ability to learn; (2) adults are a highly diversified group of individuals with widely differing preferences, needs, backgrounds, and skills; (3) adults experience a gradual decline in physical/sensory capabilities; (4) experience of the learner is a major resource in learning situations; (5) self-concept moves from dependency to independence as individuals grow in responsibilities, experience and confidence; (6) adults tend to be life-centered in their orientation to learning; (7) adults are motivated to learn by a variety of factors; (8) active learner participation in the learning process contributes to learning; (9) a comfortable supportive environment is a key to successful learning (James, 1983).

Andragogy: The Art and Science of Helping Adults Learn

> While some people attribute the word to Knowles, andragogy was actually coined in 1833 by the German teacher, Alexander Kapp who used it to describe the educational theory of Plato (Nottingham Andragogy Group, 1983). Another German, Johan Frederick Herbart, adamantly opposed the use of [sic] the use of the term for such a purpose, and andragogy disappeared for nearly a century. The term reappeared in 1921 and was being used extensively by the 1960s in

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> France, Yugoslavia, and Holland. Anderson and Lindeman (1927) first introduced andragogy to the United States in 1927. However they did not attempt to develop the concept; hence andragogy had to wait over 40 years before becoming a lexicon of American adult education (Davenport & Davenport, 1985, pp. 151-159).

Andragogy, "the art and science of helping adults learn," is the best known "theory" of adult learning as defined and popularized by Malcolm Knowles (1970). Its approaches are commonly used in adult education, nursing, and social work and have even found their way into business, religion, agriculture, and law (Davenport & Davenport, 1985). Yet, andragogy's popularity has met with opponents who have launched the controversial "andragogy debate." The criticism stemmed from Knowles (1970) definition of andragogy ("the art and science of helping adults learn," Knowles, 1970) as a parallel to pedagogy ("the art and science of teaching children," Davenport & Davenport, 1985). The "theory" or "model of assumptions" has caused more controversy, philosophical debate and critical analysis than any other concept, theory, or model proposed thus far in the history of adult education (Davenport & Davenport, 1985, pp. 151-159).

Andragogy as defined by Knowles (1970) is based on four crucial assumptions about the characteristics of adult learners which distinguish adult learning from childhood learning (Davenport & Davenport, 1985). The characteristics deal with self-concept, the role of experience, developmental readiness, and time perspective (Knowles, 1980).

The four assumptions are that, as a person matures, (1) the self-concept moves from one of being a dependent personality toward one of being a self-directed human being; (2) maturity brings a growing reservoir of experience that becomes an increasing resource for learning; (3) readiness to learning becomes

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oriented increasingly to the developmental task of the person's social roles, and (4) time perspectives change from one of postponed applications of knowledge to immediacy of application, and accordingly the orientation towards learning shifts from one of subject-centeredness to one of problem-centeredness (Knowles, 1980). From each of these four assumptions, Knowles draws numerous implications for the designing, implementation, and evaluation of learning activities for adults in numerous settings.

Knowles (1980) initially was interpreted as positing andragogy vs. pedagogy in The Modern Practice of Adult Education: Andragogy versus Pedagogy, which emphasized differences between child and adult learning. This started the debate which stemmed from differing philosophical orientations, classification of andragogy (whether it is a theory, method, technique, or set of assumptions), and general utility or value of the term for adult education (Davenport & Davenport, 1985, p. 151). Although, the debate continues based on basic philosophical differences there is a call for future discussion to include the growing empirical base from educational research.

Knowles (1984) later indicated a change in his views to be less dichotomous and that andragogy-pedagogy represented a continuum, and the use of both techniques is appropriate at different times in different situations regardless of the age of the learner. This pointed to the situational nature of adult learning and the complexity of the teaching-learning transaction (Knowles, 1984).

> In keeping with the spirit of such notions about the vast range of individual and contextual differences among adult learners, Knowles no longer refers to andragogy as a theory of adult learning. He prefers to call it a model of human learning. And he qualifies it even further by

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> saying it's a situational model. What's important, Knowles says, is the individual learner in a given situation. (Feuer & Geber, 1988, p. 36)

The Collaborative Mode

A significant portion of the adult education literature supports the "collaborative mode" as an effective and appropriate learning-teaching method for adults (Conti, 1985, p. 221). Support for the underlying principles of the collaborative mode can be traced through the writings of such prominent adult educators as Lindeman, Bergeven, Kidd, Houle, Knowles, Freire, Cross, Conti, and Knox.

The collaborative mode is learner-centered and cooperative in nature (Bergevin, 1967) and seeks to solve the peculiar problems of the participants. The collaborative mode is experience oriented and experience is emphasized in the literature as a characteristic unique to adults as a resource for learning (Knowles, 1970; James, 1983; Lindeman, 1961). The collaborative mode recognizes that adults are self-directed and assumes that adults are problem-centered which has implications for the curriculum (Conti, 1985). The collaborative mode attends to building a supportive and active environment for learning (Knox, 1987). The collaborative mode has the teacher as facilitator rather than "a repository of facts" (Conti, 1985, p. 221). Finally, the collaborative mode organizes adult learners into small-groups for interaction among group members about the curriculum (Seaman & Fellenz, 1989).

> Learning through the collaborative mode has its advantages. Members of the group provide support for one another in learning efforts. The development of interpersonal relationships, meaningful

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> communication, and mutual motivation makes the small-group approach a secure and energizing environment for examining new ideas attempting new behaviors. (Seaman & Fellenz, 1989, p. 24)

Cooperative Learning Theory

Cooperative learning, which was developed for children, presents a set of alternatives to the traditional pedagogical instructional approaches and may be transferable to adult learning situations. It is one of the most thoroughly researched process-product strategies available to educators (Lyman, Lawrence, & Foyle, 1989).

Cooperative learning, as developed by Johnson and Johnson (1975, 1991) and others (Kagan, 1988; Slavin, 1983; Cohen, 1986), is a teaching methodology based on the belief that learning increases as students develop cooperative skills. It makes use of small-group work, giving special emphasis to the fostering of cooperation among group members. It goes beyond typical small-group techniques by providing specific strategies that require cooperation (Ringdahl, et al., 1986).

Essential Elements of Cooperative Learning

The essential elements of the cooperative learning instructional system as defined by Slavin (1983) can be summarized in two categories: the task structure and the student incentive structure. The task structure refers to the many ways in which the teacher (or students themselves) sets up activities designed to result in student learning. The incentive structure refers to the means of motivating students to perform learning tasks. The incentive structure refers primarily to the grading

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system, but also includes the day-to-day means of motivating students to be prepared and to attend to learning tasks in class (Slavin, 1983).

The term "cooperation" can refer to cooperative behavior, cooperative incentive structure, cooperative motives and cooperative task structures (Slavin, 1983 p. 3-4). "Cooperative behavior" refers to working with or helping others and actual participation and cooperation of efforts between two or more individuals in a situation in which the task-related efforts of any individual helps others to be rewarded. "Cooperative task structures" are situations in which two or more individuals are allowed, encouraged, or required to work together on some task. "Cooperative motives" refers to the preference for cooperative activities over competitive or individualistic ones. The presence of cooperative incentive or task structures or of cooperative motives does not guarantee that cooperative behavior will occur.

Johnson, Johnson and Holubec (1990, p. 10-16) outline five essential components of small-group cooperative learning as cooperative interdependence, face-to-face promotive interaction, individual accountability/personal responsibility, interpersonal and small group skills and group processing. Positive interdependence exists when students perceive that they are linked with group mates in a way so that they cannot succeed unless their group mates do (and vice versa) and/or that they must coordinate the efforts of their group mates to complete a task (Johnson, Johnson & Holubec, 1990 p. 10). Face-to-face promotive interaction is the interaction patterns and verbal interchange among students promoted by the positive interdependence which involves maximizing the opportunity for students to promote success by helping, assisting, supporting, encouraging, and

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praising each other's efforts to learn (Johnson, Johnson & Holubec, 1990, p. 12). Individual accountability/personal responsibility exist when the performance of each individual student is assessed and the results given back to the group and the individual or that each student is individually accountable to do his or her fair share of the group's work (Johnson, Johnson & Holubec, 1990, p. 13). Interpersonal and small group skills must be taught which involves social skills required for high quality collaboration and motivation to use these skills and work productively in cooperative groups (Johnson, Johnson & Holubec, 1990, p. 14-15). Group processing exists when group members discuss how well they are achieving goals and maintaining effective working relationships (Johnson, Johnson & Holubec, 1990, p. 15). The purpose is to clarify and improve the effectiveness of the members in contributing to the collaborative efforts to achieve the group's outcome goals (Johnson, Johnson & Holubec, 1990).

Cooperative Learning Methods

Research on cooperation in learning settings has been conducted since the beginning of this century, although classroom research on practical cooperative methods began in the early 1970s. Over the past 30 years there has been a considerable research effort concerning the effects of cooperative, competitive, and individualistic incentive structures and individual and group productivity (Slavin, 1983, p. 429). The research on these incentive structures has been reviewed on several different occasions (Johnson & Johnson, 1974; Michaels, 1977; Miller & Hamblin, 1963; Slavin, 1977). All these reviewers agree that research relating different incentive structures to performance produce inconsistent findings.

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However, the reviewers disagree about the conditions under which cooperative incentive structures enhance performance (Slavin, 1983, p. 429). The latest meta-analysis by Johnson & Johnson (1981, p. 58) came to the same conclusion as the earlier Johnson and Johnson (1974) review and concluded,

> ...the overall effects stand as strong evidence for the superiority of cooperation in promoting achievement and productivity...Educators may wish to considerably increase the use of cooperative learning procedures to promote student achievement.

How do cooperative learning methods work and under what conditions are they most effective? Some cooperative learning methods described in the literature which are extensively researched (in the process-product domain) and widely used are the Student Teams-Achievement Divisions (STAD), Teams-Games-Tournaments (TGT), Jigsaw, Team Assisted Individualization, Learning Together, and Collegial Support Groups (Slavin, 1983; Johnson & Johnson, 1984).

Student Teams-Achievement Divisions (STAD)

In Student Teams-Achievement Divisions (STAD) students are assigned to four-or five-member learning teams (Slavin, 1983, p. 24). Each team is made up of high-, average-, and low-performing students, boys and girls of different racial or ethnic backgrounds, so that each team is like a microcosm of the entire class. Each week the teacher introduces new material in a lecture or discussion. The team members then study worksheets on the material. Following team practice, students take quizzes on the material they have been studying. The amount each student contributes to his or her team is determined by the amount the student's quiz score exceeds the student's own past average. The improvement point system gives

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every student a good chance to contribute maximum points to the team by exceeding his/her personal past records. The teams with the highest scores are recognized in a weekly one-page class newsletter.

STAD is perhaps the easiest of the cooperative strategies to implement since content can be presented in the ways teachers have traditionally presented lessons and individual assessment can utilize the same criteria and methods teachers have traditionally presented (Lyman et al., 1989).

STAD involves both cooperation and competition. It emphasizes the three ideas of cooperative task structure (success in the task requires contribution by all members), cooperative incentive structure (group members are rewarded for group success), individual accountability (the individual's contribution to the group's success is clear).

The Center for Social Organization of Schools at John Hopkins University under the leadership of Slavin (1977) conducted a study that examined differences in minority group (Black) and White achievement in classrooms using cooperative learning teams. Slavin replicated a study by Lucker et al. (1976). They found that an interdependent (student team) classroom technique, the "Jigsaw Method," was more effective than a control technique in increasing the academic achievement of minority students (a combined group of Blacks and Mexican-American), but no more effective than the control techniques in increasing the academic achievement of Anglo students.

STAD is similar to the "Jigsaw Method" which contains a cooperative incentive structure and a cooperative task structure (Slavin, 1977). However, the STAD treatment is designed for use over periods of at least eight weeks, while the

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In Aronson's (1978) Jigsaw method, students are assigned to six-member teams. Academic material is broken down into five sections. For example, a biography might be broken down into early life, first accomplishments, major setbacks, later life, and world events during his or her lifetime. Each team member is assigned a different section to read, except for two students who share a section so that if one student is absent, all five topics can still be covered (Slavin, 1983, p. 27). Members of different teams who have studied the same sections meet in "expert groups" to discuss their sections. Then the students return to their teams and take turns teaching their teammates about the content of their reading sections. Since the only way students can learn in the section other than their own is to listen carefully to their teammates, they are motivated to support and show interest in each other's work.

Jigsaw does not actually use a cooperative incentive structure. Following the team reports, students may take individual quizzes covering all of the topics, and receive individual grades on their quizzes. However, Jigsaw is classed as a cooperative learning method because it uses a cooperative task structure that creates a great deal of interdependence among students (Slavin, 1977, p. 27).

Hooper, Simon and Hannafin (1988) conducted a comparative study of the achievement of 40 low and high ability eighth grade students working cooperatively during computer-based instruction. The students comprised approximately equal numbers of mainstream males and females from both the top and bottom ability

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levels of pre-algebra and general math. This study examined two methods of ability grouping for cooperative learning. Participants working in small homogenous groups of three or four students, received a computer driven tutorial. The content was based on basic arithmetic concepts that all students of this grade level should have mastered. To promote cooperation between group members, the tutorial contained an embedded strategy that required students to alternate roles after approximately every five questions (Hooper et al., 1988, p. 393). There were three cooperative groupings: homogeneous high, homogeneous low, and heterogeneous (Hooper et al., 1988). Students received a delayed post-test to avoid the influence of recency. The low ability subjects, grouped heterogeneously, consistently scored higher than their low ability counterparts, grouped homogeneously (Hooper et al., 1988).

As expected, significant differences were found for both levels of questioning. The interaction between the ability and grouping method was statistically insignificant. Post hoc analysis of the interaction of ability and levels of questioning, using Tukey tests, indicated significant pairwise comparisons between factual and both application and problem solving questions: increasing the complexity of the learning task resulted in differences in group achievement. While the overall effect of grouping strategies appears to have little influence on high ability students, low ability students grouped heterogeneously appear to perform at higher levels than their homogeneous counterparts. No significant differences were found between the two grouping methods. (Hooper et al., 1988, p. 393)

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Jigsaw II

A modification of the Jigsaw was developed by Slavin (1980) and incorporated in the Student Team Learning program. In this method called Jigsaw II, students work in four to five member teams as in TGT and STAD. Instead of each student having a unique section, all students read a common narrative, such as a book chapter, a short story, or a biography. The students who had the same topics meet in expert groups to discuss them, and then return to their teams to teach what they have learned to their teammates. Then, students take individual quizzes, which are formed into team scores. Improvement scores are used to form team scores, and the highest scoring teams and individuals are recognized in a class newsletter. Jigsaw II, unlike the original Jigsaw, uses cooperative incentive (recognition or grades) as well as cooperative task structures (Slavin, 1983).

Teams-Games-Tournaments (TGT)

Teams-Games-Tournaments (TGT) uses the same types of teams, instructional formats, and worksheets as STAD. However, in TGT, students play academic games to show their individual mastery of the subject matter. Students compete in weekly tournaments with members of other teams who are comparable in past performance.

TGT can best be explained by describing its three components. Teams consist of student assigned to four- or five member teams. Each team contains as much diversity as the classroom allows in such factors as academic achievement, race and sex. Tournaments are the teammate practice sessions that prepare the student for game sessions in an ongoing competition between teams. Games are

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skill exercise sessions which focus on the current subject matter which are played during the tournament sessions (Slavin, 1983, p. 26-27).

DeVries, Lucasse & Schackman (1979) conducted a comparative study to investigate the relative impact of small group instruction versus individualized instruction and the impact of intensive training, and consulting with teachers around the innovative instructional approach known as "Tournaments-Games-Teams" and the subsequent use of that approach. A large-scale ten week experiment involving 57 classes and 19 teachers in a 2 X 2 quasi-experimental design was conducted with 1,187 students in seventh and eighth grade language arts classes.

Students were assigned to four- or five-member teams. Each team contained as much diversity as the classroom allowed on such factors as academic achievement, race and sex. Ideally, each team had one high achiever, two average achievers, and one low achiever. The teams were organized so that each team is approximately equal in overall achievement and team members remain intact throughout the period of time when TGT was used. (DeVries, et al., 1979)

All teachers were asked to conduct their language arts classes around Slavin's (1979) TGT practices (Slavin, 1979). The study focused on two measures of academic achievement and two self-concept scales. The treatment-specific achievement test was the Hoyum-Sanders', 48-item multiple-choice test of language arts knowledge which focuses on the nine curriculum topics covered during the experiment. To test self-concept, two scales were adapted, Coopersmith's Self-Esteem Inventory—Form B (an eight-item General Academic Self-Concept Scale and a seven-item Social (Peers) Self-Concept Scale).

The analysis indicated a modes differential effect of Team Group Techniques

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(TGT) versus individual instruction on both academic and self-concept. Slavin reported TGT was found to increase scores on a treatment-specific achievement test but the results did not hold up on a standardized test. The results support the other TGT studies in which students in TGT conditions evidenced more learning in such subject areas than students in more "traditionally" conducted classrooms (DeVries & Slavin, 1978). TGT also had a greater impact on one of the two self-concept scales (relations with peers). Intensity of teacher training had no significant effect on either achievement or self-concept.

Learning Together

One specific cooperative learning method that was incorporated into this study as a theoretical framework is the "Learning Together" method developed by Johnson and Johnson (1974) at the University of Minnesota. It has less specific methodology then other cooperative learning methods. Teachers use different methods to nurture a philosophy of cooperation based on the five elements: positive interdependence, face-to-face interaction, individual accountability, social skills and group processing. Students work in groups on assignments to produce a single group product, and are instructed to seek help from one another before asking the teacher for assistance. Rewards are given for both individual and group performance and are in the form of grades, tokens, and privileges. Learning together was used with "English as a Second Language" (ESL) students.

Johnson & Johnson, et al., 1978) conducted a study using to the Learning Together Model. The effects of two methods of structuring learning goals, cooperatively and individually, were compared on a series of attitudinal and

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performance variables. An advanced math class for fifth and sixth grade, White students (30 boys and girls) in a suburban, upper-middle class school was divided randomly into cooperative and individual conditions controlling for math ability. Students studied math, one hour a day, for 50 days. (Johnson & Johnson et al., 1978)

At the end of the study, each student completed a post-experimental questionnaire consisting of questions taken from the Minnesota School Affective Assessment. The effects of two methods of structuring learning goals, cooperatively and individually, were compared on a series of attitudinal and performance variables. Cooperative learning experiences tended to promote more motivation to be a part of a learning group with persons who were different sexually, ethnically, and culturally, with the expectation that the heterogeneity would increase the learning and enjoyment resulting from being in school. Wanting to work together with specific peers in the future seems to depend on previous cooperative experience together, not achievement level of the peer. (Johnson & Johnson et al., 1978)

Collegial Support Groups

Collegial Support Groups (CSG), also developed by Johnson & Johnson (1987, p. 27-28), applies principles of cooperative learning to adults. The process builds on the tendency of teachers to help each other and thereby extend the benefits of on-the-job learning. Collegial support groups developed out of collegial learning which is based on a cooperative relationship structure which exists when members work together to achieve joint goals. Members seek outcomes that benefit both themselves and their colleagues. The success of any one person is determined

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by the person's performance together with the performance of his or her colleagues. Teachers accept responsibility for continuously improving both their own productivity and that of their colleagues, and rewards are distributed equally. Ideally, when a colleague is recognized for professional competence, everyone feels proud and celebrates together. Collegial support groups offer a formal structure for learning from colleagues to complement informal on-the-job learning. It consist of three to five teachers or administrators, which set the goals of improving each other's professional competence and ensuring each other's professional growth (Johnson & Johnson, 1987). Members of these groups discuss new teaching practices and problems connected with their implementation; together they plan, design, prepare, and evaluate curriculum materials; and they coteach, observing each others' teaching and offering feedback (Johnson & Johnson, 1987).

Johnson & Johnson (1987) characterized the learning that occurs among colleagues (in Collegial Support Groups) as similar to learning how to play tennis or golf, how to perform brain surgery, or how to fly an airplane.

> Procedural learning exists when educators study a teaching strategy to (a) learn conceptually what the teaching strategy is and where and when it should be appropriately used, (b) translate their conceptual understanding of the strategy into a set of operational procedures appropriate for their students and subject areas, (c) actually use the teaching strategy, (d) eliminate errors in using the procedures to move through the initial awkward and the mechanical stages of skill mastery, and (e) attain a routine-use, automated level of mastery. (Johnson & Johnson, 1987 pp. 2-3)

Combining Learning Methods

Cooperative learning, then, as an alternative to traditional instruction presents

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some interesting parallels with adult learning theory. When characteristics of adult learning (James, 1983; Knowles, 1984; Lindeman, 1961; Knox, 1986) and cooperative learning (Slavin, 1983; Johnson & Johnson et al., 1984) are listed and compared the similarities between the two become more apparent (See Figure 2). The commonalities may also have some interesting implications for research when we consider how cooperative learning might be carried on in an adult learning setting.

One way to look at the implications the characteristics of adult learning and cooperative learning may have on instructional design is to group them into the four general categories of environment (psychological and physical), curriculum (content or subject matter), teaching strategies (methods and techniques) and learning strategies (cognitive and behaviorist) (Appendix B). Analysis of the characteristics in this way present some interesting questions for research which were explored in the "Learning Theories for Teachers" course during the pilot study and the present study.

Environment

The situation in which learning activities occur can influence how adults learn (Seaman & Fellenz, 1989, p. 8). Knox (1987, p. 127) emphasizes the importance of setting the climate and building a supportive and active learning environment for adults learners. A supportive physical and interpersonal setting in which participants feel secure and welcome is especially important for adults (Knox, 1987, p. 132). A challenging setting is problem-centered as suggested by the adult education literature and participants are expected to be actively involved in learning

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Adult Learning Characteristics	**Cooperative Learning Characteristics**
• Learner-centered	• Learner-centered
• Supportive environment	• Cooperative in nature
• Problem centeredness	• Problem centered
• Recognizes independent personality of learner	• Creates independence of learner
• Positive interaction	• Positive interdependence
• Self-directed	• Individual accountability
• Problem-centered	• Problem centered
• Collaborative mode	• Small-group interaction
• Participation is key	• Participation is key
• Readiness to learn oriented to social roles	• Positive social interaction skills
• Life-centered motives	• Incentive structure
• Learner major resource	• Task Structures
• Student-centered	• Teachers as facilitator

Figure 2: Commonalities of Adult and Cooperative Learning
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The learning environment then takes on both a physical dimension and a psychological dimension. Concrete measures include comfortable chairs, arrangements of chairs and tables that encourage interaction, decor that reduces distractions and fatigue and increases concentration and learning (Knox, 1987, p. 133). In addition, the adult literature suggest characteristics to consider throughout planning to meet learner needs and motivations such as the need for respect, reasons for participating or readiness to learn, life-centeredness, individual differences as to experience, ability and resources, and proficiencies.

The learning theory that drives the learning event usually determines whether the environment is student-centered or teacher-centered (Knowles, 1984). Adult learning and cooperative learning are derived from cognitive learning theory and are student-centered which affects the psychological environment (Knowles, 1984; Johnson, Johnson & Holubec, 1990).

Curriculum

The content and the level of treatment dictate which teaching strategies will be most effective for the adult learner (Seaman & Fellenz, 1989, p. 8). For example, content can influence teaching style, classroom structure, equipment, and furniture requirements. The level of treatment calls for a certain order in the presentation of material, practice, review, evaluation, and practice again during the learning activity (Seaman & Fellenz, 1989).

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learning are usually emphasized by learning or performance objectives which identify learning outcomes. The objectives are clear and specific statements of intended learner outcomes that focus on knowledge, skill, attitude or a combination that constitutes desired proficiencies (Knox, 1987, p. 72). Bloom's (1956) six levels of how cognitive learning occurs (knowledge, comprehension, application, analysis, synthesis, evaluation) has been used to help indicate how content can influence learning when developing objectives. The content of the learning material can therefore have a significant influence on the effectiveness of teaching strategies, particularly the level of learning in terms of the cognitive domain (Seaman & Fellenz, 1989, p. 21).

Teaching Strategies

The teacher's main task is to provide opportunities for the student to acquire desired learning in a meaningful way (Seaman & Fellenz, 1989, p. 17). Therefore, the teacher should select strategies that enable adults to achieve preferences for learning that can be used immediately or in the near future (Seaman & Fellenz, 1989). There is usually more than one way to facilitate learning for adults. The teacher must know which strategies to choose and how to use them effectively.

Adult education literature suggest the "collaborative mode" as the preferred teaching and learning mode for adult learners (Conti, 1985). This presents the main issue of how much control the teacher can share with the students. In the lecture, the teacher has almost total control, whereas in the discussion or seminar format, control of the situation is shared with the students (Seaman & Fellenz, 1989, p. 18).

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Seaman & Fellenz (1989, p. 5) have defined teaching strategy to describe the process through which teaching/learning occurs:

> *Teaching strategy:* The activity through which the teacher or learning facilitator assists the adult student in acquiring new knowledge or skills. Of all the activities described in previous literature, the term strategy relates best to the term technique as described by Verner (1962). It is through specific strategies, selected by the facilitator, that the learner or participant becomes involved in the learning process. If the strategy is effective, the participant should be stimulated to continue learning in the future.

The teaching strategies selected must enable the adult learner to acquire knowledge at the desired level if the learning is to be meaningful, useful, and satisfactory. (Seaman & Fellenz, 1989, p. 21)

Verner (1962) made an important distinction between organizing learners and selecting teaching strategies. There is a tradition among adult educators to distinguish among methods, techniques and devices (Seaman & Fellenz, 1989, p. 23). Methods are the ways of organizing people; for example, as individuals, in small clusters, or as a total group. Techniques refer to ways of organizing the interaction of learners and content which range from lectures and panels to simulations and role playing. Devices are instruments such as audio or visual aids that support methods and techniques.

Learning Strategies

One cannot discuss learning without considering the people involved and how their personal characteristics, that is, needs, background, experiences, competencies, goals, learning styles and attitudes, affect their learning (Seaman & Fellenz, 1989, p. 7). All learners may not fully understand their needs, but most

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> A *learning strategy* is a complete plan one formulates for accomplishing a learning goal; and a learning tactic is any individual processing technique one uses in service of the plan (Derry and Murphy 1986, Snowman and McCown 1984). That is, a learning strategy is the application of one or more specific learning tactics to a learning problem. (Derry, 1988/1989)

Broadly defined, learning strategies are behaviors or thoughts that facilitate learning (Weinstein & Mayer, 1986). In this context, Derry (1988/1989) explained that learning is a form of problem solving that involves analyzing a learning task and devising a strategy appropriate for that particular situation. Different learning situations may call for different strategies (Derry, 1988/1989).

The implications here for the learner with cooperative learning methods is the organizing of the learners into small groups in a cooperative and supportive environment. The tactics or learning strategies involve the essential components of cooperative learning: positive interdependence, face-to-face promotive interaction, individual accountability/personal responsibility, interpersonal and small group skills and group processing (Johnson, Johnson & Holubec, 1991). These tactics facilitate procedural learning after the instructor has introduced new concepts and has illustrated how they apply, students must obtain some active practice in using these new ideas and in applying them in various ways (Johnson & Johnson, 1987; Cohen, 1986). Learning is further enhanced by group work such as practice, analysis and evaluation for mastery of new concepts. If you design a good group work task, learning emerges from the chance to talk, interact, and contribute to the group discussion (Cohen, 1986).

Cohen (1986) suggested two key features of group work which facilitate the

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development of learning strategies, 1) delegating authority in an instructional task to the student; 2) interdependence. When the authority is delegated for the instructional task, students are responsible for specific parts of their work; students are free to accomplish their task in the way they think best, but they are accountable to the teacher for the final product. Interdependence in groupwork means that members need each other to some degree to complete the task; they cannot do it all by themselves. Students take over some of the teaching functions by suggesting what other people should do, by listening to what other people are saying, and by deciding how to get the job done within the time and resource limitations set by the instructor. Students in a group communicate about their task with each other. This may include asking questions, explaining, making suggestions, critizing, listening, agreeing, disagreeing, or making joint decisions. Interaction may also be nonverbal, such as pointing, showing how, nodding, frowning, or smiling. (Cohen, 1986)

Benefits of Cooperative Learning as an Alternative Method

The benefits of cooperative learning methods may respond to many of the issues raised in the adult education literature (Lyons, 1988) which require empirical research support such as:

* Responsibility for learning is placed with the learners. Activities are learner-centered; the instructor facilitates and is not the focal point of all activities.

* Learning groups are largely self-determined, autonomous units. This aspect not only reinforces independence but helps to create interdependence. It also establishes locus of control with the learning groups or teams.

* Elaborate equipment and/or facilities are not needed.

* Contributions of all learners are encouraged (this is implied, however, it may occur as a direct reinforcement by sensitive, process-oriented team members).

* Secondary learning gains result. As team and group members develop their interaction skills they become more socially competent individuals, enhance communications skills, increased understanding of others.

Traditionally, cooperative learning has responded to situations which require attention to individual differences such as intergroup gender, ethnic and cultural relations and mainstreaming of academically and physically handicapped students. Adult learning presents some concerns for individual differences in terms of adult development, social roles, life problems, experience, and time perspectives (Knowles, 1970). The secondary learning gains which typically result from the social interaction in cooperative learning activities may be generalizable to the adult learning issue of harnessing the adult learner's experience as a resource.

In brief, we know enough about cooperative learning group/team approaches from empirical studies to conclude, that on balance, this teaching approach can be as powerful as most other approaches as far as student achievement is concerned. There is now 90 years of research on cooperation. Of the 450 studies that have been conducted since 1897, 133 have utilized adult samples (i.e. individuals who are 18 years of age or older) (Johnson & Johnson, 1987).

Johnson and Johnson (1987, p. 11) conducted a meta-analysis of all the research that has ever been done comparing the relative effectiveness of cooperative, competitive, and individualistic efforts. They found that cooperation among adults promoted greater positive interpersonal relationships, social support, higher self-esteem, than competitive or individualistic efforts (Johnson & Johnson,

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1987, p. 11). "The diverse settings in which the studies were conducted, the different decades within which they were conducted, the diverse task used in the studies and diverse ages and backgrounds of the participants indicate that the results on (sic) are highly generalizable" (Johnson & Johnson, 1987).

The productivity, positive relationships, social support, and self-esteem promoted by cooperation among adults have important implications for the way we approach adult learning in and out of universities and colleges.

> The dominant form of school learning and performance is individual. Although group activities of various kinds occur in school, students ultimately are judged on what they can do by themselves. Furthermore, a major part of the core activity of schooling is designed as individual work -- homework, in-class exercises, and the like. For the most part, a student succeeds or fails at a task independently of what other students do (except for the effects of grading on a curve!) In contrast, much activity outside school is socially shared. Work, personal life, and recreation take place within social systems, and each person's ability to function successfully depends on what others do and how several individuals' mental and physical performances mesh. (Resnick, 1987, p. 13)

The challenge for future research on cooperative learning is to explore the internal dynamics of cooperation (Johnson, Johnson & Holubec, 1986).

> What are the critical factors that make it work? There are seemingly limitless number of variables within a cooperative relationship that have not been adequately studied. Some of these relate to how the cooperation is structured — for instance, heterogeneous groupings as opposed to homogeneous groupings, or groups provided with methods and time for analyzing how well the group functions as opposed to groups not given either.
> Other variables relate to the kinds of interaction that take place in a group ... looking at different kinds of learning task ... to see if particular interaction patterns are appropriate to particular kinds of task ... The obvious place to start is by learning more about student/student interaction and about cooperative learning groups in particular. (Johnson, Johnson, & Holubec, 1986, pp. 10-16)

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Summary

The adult learning literature supports the "collaborative mode" as the most effective and appropriate learning-teaching mode for adults (Conti, 1985). The understanding now between andragogy and pedagogy as posited by Knowles (1980) is that use of both techniques represent a continuum and are appropriate at different times in different situations regardless of the age of the learners. Nine basic principles characterized adult learning (James, 1983) in different settings, ability to learn, diversity of individuals, gradual decline in physical/sensory capabilities, experiences as a resource, self-directedness, life-centeredness, readiness to learn, participation, supportive environment.

Cooperative learning, which was developed for use with children, presents a set of alternatives to the traditional pedagogical instructional systems and is appropriate for adult learners. The essential elements are task structures and incentive structures. It is one of the most thoroughly researched product-process strategies available to educators (Lyman, Lawrence & Foyle, 1989). It makes use of small-group work, giving special emphasis to the fostering of cooperation among group members for individual and group outcomes. Of the over 450 studies that have been conducted since 1897, 133 have utilized adult samples which strengthens the generalizability of cooperative learning methods to adult learners. The implications for research point to examining how cooperative learning naturally occurs and give occasion to learning as a personal but social process from teh instructor's and adult learner's perspective.

CHAPTER III

METHODOLOGY

This study was designed to investigate how adult learning was conducted in a cooperative learning environment and the implications for alternative instructional strategies in higher education. The present study emerged from a pilot study which helped to inform the research design. The pilot study investigated how a college instructor designed a course and how adult learners engaged in the teaching and learning process as members of assigned "cooperative support groups."

The first two chapters introduced the background of the study and reviewed literature related to this study. This chapter begins with a summary of the pilot study as the preliminary case study with implications for the design of the present study. The pilot study summary follows the framework of four areas of analysis which include: curriculum, teaching strategies, learning strategies and the design of the classroom environment. The final sections explain the design of the study which include the method of inquiry, the research questions, and the method of data collection and analysis.

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The Pilot Study

Chapter I explained the background of the pilot study and the conceptual link of adult learning and cooperative learning as a phenomenon for observation in the classroom. During the pilot study the observations focused mainly on the group activities which the instructor entitled "Cooperative Support Groups" (CSGs). However, the CSGs were embedded in the classroom environment (physical and psychological), curriculum, teaching strategies and learning strategies. Therefore, the observations were attentive to these focus areas which made up the design of the course.

Physical Environment

The setting of the pilot study was a classroom on Saginaw Valley State University's 725-acre campus located in central Michigan within the Tri-City area of Saginaw, Bay City and Midland. The area is most noted for five General Motor Corporation plants spread throughout Saginaw and Bay City, and for the Dow Chemical Company and the Dow Corning Corporation both of Midland. The 1980s brought permanent layoffs and plant closings to Saginaw Valley residents and education is an alternative on the minds of many adults facing life and work transitions.

The University has also undergone a transition. Chartered a private institution in 1963, it became state assisted in 1965 as "Saginaw Valley State College" and the institution's name became "Saginaw Valley State University" (SVSU) in 1987. SVSU has a growing student population of 6400 with approximately one-half age 25 and older and approximately one-half are full-time

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students. The average class size is 24 students. (SVSU, 1992)

SVSU's Education department is located in Brown Hall. The course met in 214 Brown Hall, a large classroom with tables that could easily be arranged for group activities. Usually the tables were arranged in a "U" shape located in the middle of the large classroom. Another row of tables were arranged behind and parallel to the closed end of the "U" shape. When students were seated around the "U" shaped arrangement, the open setting allowed everyone to see everyone else. This accommodated space for students to break into smaller groups and cluster at the four corners of the "U" shaped arrangement or at the tables just behind the "U" shape. The instructor was able to freely move among students during the large group discussions as well as during the small group activities.

The participants of the pilot study were 21 White females. The course started with 22 White females but one student dropped the course after the first night of classes. Most of the participants were active teachers in elementary, secondary, special education and adult education.

Psychological Environment

Hansen, the instructor presents an eclectic cooperative learning model which is somewhat different than the games and tournament activities described in the literature. Hansen's model is based on the essential element of cooperative learning, "cooperative behavior", which had the effect of creating a cooperative and supportive classroom environment.

Cooperative behavior refers to working with or helping others and the actual participation and coordination of efforts between two or more individuals in a

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situation where the task-related effort of any individual helps others to be rewarded (i.e. group outcomes). "Ten Principles of Good Consensus Leadership" (Appendix A) was the title of a handout given to the class as criteria for group interactions. Hansen believes in creating a cooperative, supportive environment which sets a climate for teacher modeling, higher order thinking, problem solving, analysis and learning. The "Cooperative Support Groups" are seen as having a "supportive" function which assist and reinforces learning. The model is situational and the group activities change with the curriculum.

"Cooperative" refers to the theory borrowed from "cooperative learning" which refers to cooperative efforts of two or more individuals in a situation where the task-related efforts of any individual helps others to be rewarded. It directly relates to Hansen's premise that "everything is based on groups, group activities and working cooperatively (Interview, 1/16/91). "Cooperative" also refers to the physical environment Hansen tried to create with the use of small-groups or "teams" as he called them.

"Support" represents the psychological environment which Hansen tried to create in the classroom.

> I try to create a warm, comfortable, safe environment for them by putting them into groups which provides a safety mechanism. They want to hear what others are doing in the same subject area or in the same grade level. Students who have taken the course say that they would not have survived without their support group (Interview Transcript, 1/16/91).

Support therefore is represented by this homogeneous grouping of students based on the subject and grade level they teach. Hansen felt that this environment eliminated barriers to learning by bringing together small groups of students who

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could relate similar experiences for the purpose of translating learning theory to classroom applications. The students followed a checklist for specific learning theory applications which is similar to procedural learning (instructions on how to use practices and procedures; Johnson & Johnson, 1987). The support is strengthened by the bonding relationships of assigned groups members throughout the 15 week semester. Safeguarded by this small learning circle, students developed a cohort and collaborated to complete course objectives which require cooperation to develop group and individual outcomes.

"Group" refers to each cluster of students which Hansen organized based on personal data elicited the first day of class. Five such groups were structured from the 21 White female students enrolled during the Winter Semester, 1991. Group members were selected according to the individual's grade level or teaching assignment. Hansen viewed the groups as homogeneous only on this criteria but otherwise heterogeneous.

Curriculum

"Learning Theories for Teachers" (TE505) is a required course in the graduate programs in Teacher Education at Saginaw Valley State University. The course provides an overview of the major theories and principles of human learning. The emphasis is on the implications of behaviorist and cognitive learning theories and principles as they affect curriculum planning, teaching and learning strategies and the design of the learning environment. The textbook is Learning Theories for Teachers by Morris L. Bigge (1982), Harper Row Publishers. The main theories include Gagne's "behavioristic-eclectic psychology", Bruner's "cognitive psychology"

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What makes this course a little different is the design of the course. The curriculum is based upon seven performance objectives (Appendix B) that require both individual and small group outcomes which represents the teaching strategy. The learning strategies involve interaction, reinforcement, and an evaluation process. The use of "Cooperative Support Groups" is viewed as a classroom management strategy which organizes students for learning.

Class sessions usually involve all or some of the following events:

1. A lecture is followed by a class discussion to define a specific learning theory and the appropriate practice or procedure used for teaching and learning strategies, environment and curriculum.

2. Next, the instructor models an application of the theory presented in the lecture in a lesson format with implications for curriculum planning, teaching and learning strategies and the design of the learning environment.

3. Each cooperative support group analyzes the instructional moves (operational procedures on how to use and implement a teaching strategy) of the theory application modeled by the instructor, followed by a large group debriefing session.

4. Higher-order thinking task and activities are provided to reinforce conceptual understanding of the theory application and practice for completion of the course objectives.

5. Specific group activities are planned which involve group analysis and evaluation of individual member's theory applications. Lesson presentations must consider implications for curriculum planning, teaching and learning strategies, the

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design of the learning environment according to instructional moves checklist for the completion of course objectives with individual and/or group outcomes.

6. The instructor facilitates the cooperative group function by monitoring the group process, asking key questions, and providing clarifications as appropriate.

7. Outcomes for course objectives include individual work to reinforce the mastery of theory and application.

Teaching Strategies

Hansen taught the course from a cognitive theory approach. Adult learning theory was not explicitly considered. During the three-hour long class sessions, Hansen intentionally made an effort to change teaching strategies every hour. Hansen felt that this would motivate students to be active participants in the learning process.

Some of the teaching strategies employed throughout the course were mini-lectures, discussion, question and answer periods, small-group activities, large-group consensus building, teacher modeling of theory applications, small-group analysis of theory modeling, large-group analysis of modeling, and demonstrations. However, almost from the beginning of the observations, the "cooperative support groups" emerged as the central reoccurring event.

Hansen reported that he used the CSGs as a class management strategy, a way to organize students for learning and to ensure mastery of course objectives (Interview Transcript, 1/16/91). For this reason, cooperative learning does not appear on the course syllabus but is embedded in the curriculum. Hansen incorporated groups into the design of the course based on cooperative learning

theory and a modified version of methods developed by Johnson and Johnson (1981). The use of small-groups to organize students for learning is considered a teaching strategy by Seaman and Fellenz (1989) in adult learning.

On the first day of class in Winter, 1991, Hansen gave three reasons for structuring the curriculum around small group activities (Fieldnotes Transcript, 1/9/91):

1. To utilize groups of teachers with similar backgrounds and interests (collegial support);

2. Survival (successfully complete course objectives) of individual teachers in the course; and

3. Translating theories to practical applications for ownership (procedural learning).

Hansen titled these small groups "Cooperative Support Groups" and defined the groups as "teams." His expectation was that groups should develop team efforts which are required to complete course objectives. Even the individual assignments utilized CSG processing so members could cultivate ideas and map out basic procedures to meet course objective assignments.

Later during my initial interview with Hansen, on January 16, he reflected on his rationale for the design of the course:

> I have a basic premise throughout the course and this is to try to make everything as practical as possible, and have the teachers work in support groups which is the "cooperative learning thing" and that is throughout the semester. ...the course is designed to run theory and my baseline design is that everything is based upon groups, group activities, working cooperatively and formulating the topics of the course objectives. (Interview Transcript, 1/16/91)

This quote points to Hansen's model of cooperative learning for TE505 and the way

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he designed the course with support groups. This concept is known as base groups which are defined as long-term cooperative learning groups with stable membership whose primary responsibility is to provide each student the support, encouragement, and assistance they need to make academic progress (Johnson, Johnson & Smith, 1991). However, in the literature base groups are composed heterogeneously on ability level and Hansen's groups were composed homogeneously on teaching level.

The field observations and interviews identified the "Cooperative Support Group" process as having a significant role in the environment, curriculum, teaching and learning strategies of the course. Cooperative support group processing activities emerged as the recurrent event. Repeated analysis of the data collected help to formulate my first assertion which was that "cooperative learning in the 'Learning Theories for Teachers' course does not look like the games and tournament models described in the literature." Instead, in this setting, cooperative learning was characterized by "Cooperative Support Groups" which resembled the "Learning Together" model and "Collegial Support Groups" described in the literature (Johnson, Johnson, 1987; Johnson, Johnson & Holubec, 1990). The "Learning Together" model was a less specific model in which students used different methods to nurture a philosophy of cooperation based on the five essential elements of cooperative learning: positive interdependence, face-to-face promotive interaction, individual accountability/personal responsibility, interpersonal and small group skills, and group processing. Students worked in groups on assignments to produce single group products and were instructed to seek help from one another before asking the teacher for assistance. The "Collegial support Group" model is based on collegial learning and builds on the tendency of teachers to help each other and thereby

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extend benefits of on-the-job procedural learning (Johnson & Johnson, 1987).

The pattern that emerged in the class is marked by "cooperative behavior" and "positive interdependence" which is defined in the literature. The course objectives are facilitated through the "Cooperative Support Groups" which are characterized by "group processing." This assertion was linked to the main research question, "What does cooperative learning look like in this setting?" by way of a subquestion, "What are some characteristics of cooperative learning in this adult learning setting?"

Each of the cooperative support groups were comprised of four or five students. Each group took on some of the characteristics of an individual student in more traditional classes. Whereas in the larger class group there were 21 or 23 students, the CSG design for reporting purposes generated only five or six voices which represented each of the five or six groups. Members of each group took on functional roles as recorder, reporter, gopher, monitor, checker/summarizer, or researcher as the group discussed and processed a task and arrived at group consensus. The course objectives became the task or activity and through a series of group processes, four or five persons worked together to complete one task with one group outcome. Cooperative support groups were seen as making the completion of the course objectives easier by creating survival and support mechanisms which allowed students to process applications of learning theories in class.

The main premise that underlines Hansen's philosophy is that there is a crucial difference between having students break into groups to learn and in structuring groups and tasks for cooperative interdependence among students to

facilitate the teaching/learning process (Johnson, Johnson & Holubec, 1991). There is a difference between the typical use of classroom learning groups and cooperative learning groups (Johnson et al., 1988, pp. 9-10). According to Johnson, Johnson & Holubec (1991) traditional learning groups have no member interdependence, no individual accountability, are based on homogeneous membership, one leader is appointed, only tasks are emphasized, social skills are assumed or ignored, teachers ignore groups and there is no group processing (Johnson et al, 1991, pp. 3:3). Cooperative learning groups, on the other hand, are attentive to positive interdependence, individual accountability, heterogeneous membership is encouraged as is shared leadership, task and relationships are emphasized, social skills are directly taught, the teacher monitors groups and intervenes, and there is group processing (Johnson et al., 1991). Hansen's pattern was attentive to cooperative learning principles of positive interdependence, individual accountability among students, group processing, and emphasis on shared leadership. He monitored groups and intervened as appropriate, and task and relationships were emphasized in the cooperative support groups. Small group skills and cooperative skills were explained through task instructions and the "Ten Principles of Good Consensus" (Appendix A) were used as ground rules for how the groups would function and how members would behave during group processing.

Learning Strategies

> Across each analytic trail at observing a recurrent event the participant observer can alter slightly the focus of analytic attention, each time attending to some feature of what is occurring and not attending to others (Erickson, 1986, p. 144).

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The analytic trail that Erickson (1986) talks about in this quote referred to the process used by researchers to collect and analyze data in the field. Analytic attention refers to a strategy used by researchers to concentrate on a particular feature of a recurrent event while investigating emerging themes and key assertions.

While I began by focusing on the course design, I was attentive to different features of the group activities and processing as Erickson describes. My observations of what was happening in the "Learning Theories for Teachers" course presented interesting assertions from the viewpoint of the instructor and students. In the pilot study, I observed 16 group activities which involved cooperative support group processing. The themes that emerged from my observations of group activities lead to my analysis of fieldnotes and respondent interviews which identified features that described "what cooperative learning looked like in this setting." The Cooperative Support Group processing was characterized by these themes which later emerged as key assertions for the current study:

* Asking questions, paraphrasing, clarifying
* Problem-solving by way of consensus building
* Analysis of course content and theory applications
* Relating background experiences, sharing ideas
* Shared leadership and expertise
* Cooperative and collaborative behavior
* "Bouncing ideas off each other"

These themes explained how meaning was constructed and how students made sense of the curriculum during the CSG processing.

Method of Inquiry

> Method is the attribute which distinguishes research activity from mere observation and speculation... When we speak of research, we speak of a family of methods which share the characteristics of disciplined inquiry... It is important to recognize that differences in method are not merely alternative ways of reaching the same end or answering the same questions. What distinguishes methods from one another, usually by virtue of their contrasting disciplinary roots, is not only the procedures they employ, but the very types of questions they tend to raise... There are many times when we wish to know not how many or how well, but simply how. (Shulman, 1988, pp. 4-6)

Qualitative research, the method of inquiry that informed the design of this study includes various approaches such as, ethnography, field study, participant observation, and case study (Erickson, 1986) which relates to some of the alternative strategies available to researchers (Wolcott, 1982). Ethnography, sometimes known as cultural anthropology, is a method of field study observation that became popular in the latter part of the nineteenth century (Best & Kahn, 1986, p. 95). The data gathered by way of fieldnotes consists of observed patterns of action, verbal and nonverbal interaction between members of the group studied as well as between the subjects, the researcher and the informants, and the examination of available records or materials (Best & Kahn, 1986, p. 95). The field study approach, which was used to gather data for the pilot study and the present study, has been used in social sciences as a research method for about seventy years. It involves a) intensive, long-term participation in a field setting; b) careful recording of what happens in the setting by writing field notes and collection of other kinds of documentary evidence; and c) subsequent analytic reflection on the documentary records obtained in the field (Erickson, 1986). Using the methods of participant observation, the researcher watched, listened to and conversed with the

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subjects in as free and natural an atmosphere as possible (Best & Kahn, 1986 p. 97). The participant observation method was used to collect data in the field during the pilot study and the present study. Finally, a case study is a detailed examination of one setting, or a group which refers to a collection of people who interact, who identify with each other, and who share expectations about each others' behavior (Bogdan & Biklen, 1982, p. 58, 60). The case study approach was used to organize the social data which identified the "cooperative support groups" as the unit of analysis in the pilot study and examined it in the present study (Best & Kahn, 1986, p. 92).

Design

> Every type of empirical research has an implicit, if not explicit, research design. In the most elementary sense, the design is the logical sequence that connects the empirical data to a study's initial questions and, ultimately, to its conclusions. Colloquially, a research design is an action plan for getting from here to there, where "here" may be defined as the initial set of questions to be answered and "there" is some set of conclusions (answers) about these questions. Between "here" and "there" may be found a number of major steps, including the collection and analysis of relevant data. (Yin, 1989, p. 28)

For case studies, five components of a research design are especially important (Yin, 1989, p. 29):

(1) the study's questions;

(2) its propositions, if any;

(3) its unit(s) of analysis;

(4) the logic linking the data to the propositions;

(5) and the criteria for interpreting the findings.

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Research Questions

Erickson (1986) characterized the ethnographic data collection and inquiry process by pointing out that:

> Perceptions and guiding questions are present from the outset, but the researcher does not presume at the outset to know where, specifically, the initial questions might lead next.

The general research question that guided the pilot study was "What does cooperative learning look like in this setting" with adult learners in the "Learning Theories for Teachers" course at Saginaw Valley State University? I started looking for cooperative learning methods that were being used and the implications for adult learning applications as well as for adult teaching strategies. Specifically, I focused on situations in which 1) students were given the opportunity through task structures to use their background experiences as a resource for learning; 2) students were provided opportunities to apply new knowledge to their own situations and environments; 3) students were oriented toward self-direction in learning and problem centeredness; 4) student's learning was oriented to the developmental task of their social roles as teachers; 5) cooperative methods used were compatible or aligned with assumptions of adult learning for designing, implementing, and evaluating adult learners.

The qualitative method of inquiry generated preliminary questions with which I entered the field for the pilot study. What do cooperative learning methods and groups look like and how do they develop? How is cooperative learning carried on? What are the experiences and perceptions of teachers as students while they engage in the cooperative learning process of the "cooperative support groups" in the course? What does the learning and teaching transaction look like, and how

does it take place? What are underlying or explicit strategies, systems of rules, or criteria by which this complex activity is accomplished? What social context frames the phenomenon?

Three questions emerged from the process of sequential sampling of the data and these guide the present study:

1. How is cooperative learning implemented adults in this setting and how are cooperative skills and attitudes transmitted and acquired in the absence of direct instruction?

2. What is the nature of the cooperative learning model in this adult learning setting in higher education?

3. In what ways do the "cooperative support group" method and process parallel adult learning principles and how has this assisted students in understanding and completing course objectives?

Three additional questions emerged during the final reporting of the research data:

4. What are the implications for this model presenting an alternative instructional strategy for adult learning?

5. In what way did the "cooperative support groups" contribute to student's individual learning perceptions and achievement?

6. In what ways and to what extent had the cooperative learning model and adult learning principles shaped the course design?

The complete list of research questions used in the study are provided in Appendices D, E, F, G, and H.

Using the course, "Learning Theories for Teachers" as the case, this study

explored contextual factors, in and out of the "cooperative support group" activities, that influenced cooperation for learning. The study aimed to show patterns of a cooperative learning model that may represent an alternative instructional strategy for adult learning in higher education. Specifically, I looked for patterns in which:

* Teachers were given the opportunity through cooperative task structures to use their background experiences as a resource for learning;

* Teachers were provided opportunities to apply new knowledge to their own life situations;

* Teachers's learning was oriented to the developmental task of their social roles as teachers;

* The assumptions and basic principles of adult learning as described by Knowles (1980) and James (1983) were parallel with the implications for the design, implementation and evaluation of learning activities for adults as learners.

Data Collection

The methods of inquiry used to research these questions was primarily a qualitative design utilizing field methods of participant observation and field notes for data collection, and the case study method to organize the data. The data collection of the study involved:

a. Direct classroom observations were conducted weekly on Wednesday nights from 4:00 p.m. to 7:00 p.m. during Winter Semester, 1991 for the pilot study.

b. Direct observation methods were used and written field notes were recorded during each class session. Specific attention was given to implications of cooperative learning theory and principles of curriculum planning, teaching and

learning strategies, and the design of the learning environment with emphasis on group activities. Observations made the patterns of behavior that characterize the course as a cooperative learning environment visible.

c. Documentary evidence was collected including the course syllabus (Appendices B & C) which outlines the learning environment, use of groups and seven objectives that were used as the framework for the course content. The textbook used is entitled, Learning Theories for Teachers by Morris L. Bigge, Harper & Row Publishers. Other documents, such as course and instructor materials, assignments and personal journals, were collected.

d. Audio tape recordings were taken during class sessions, as appropriate, with the permission of participants as well as during scheduled interviews. Tape recordings were transcribed to written transcripts, as appropriate, and identities of participants were coded for confidentiality.

e. Personal interviews were conducted with the professor and volunteer respondents, during the course, at the beginning, midway and at the end (Appendices D, E, F, G, H). This allowed a developmental approach to the respondent's viewpoints of the course over time. The interviews were designed to help the researcher make visible the thinking and reflection of the participants as well as the instructor and represent their insights, perceptions, motivations and experiences. During the pilot study (Winter Semester, 1991), there were four voluntary respondents. During the current study, there were five respondents, one representing each assigned "cooperative support group." Interview questions are listed in Appendix D, E, F.

f. Weekly opinionnaires (Appendix E) were developed to collect

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developmental data about the respondents emerging perceptions, motivations, and attitudes about the cooperative learning environment, group funcitons and group processing.

g. A whole class opinion/feedback session was held during the pilot study on the last day of class. During this session, students responded to questions from the researcher and gave their perceptions of assertion statements. A small group interview session was also held with the respondent during the class session. The two respondents represented two cooperative support groups assigned during the course. The questions for the whole class session and group interview are listed in Appendix G and H.

h. Final opinions were elicited in three ways for the current study during winter semester, 1992 at the last class session (4/15/92). This included a whole class opinion feedback session, the small group respondent interview session (Appendix H), and a Likert scale attitudinal survey (Appendices I, J, K). All three data collection techniques were conducted the last class session with the approval of the instructor and students. There were six respondents representing the six assigned cooperative support groups for the current study.

Analysis of Data

Analysis of the data was conducted in two phases, analysis in the field and analysis after data collection as recommended by Bogdan & Biklen (1982). Ongoing analysis in the field served to clear thinking and establish direction as well as focus data collection and reflection about questions, ideas, themes and assertions. Final analysis, after data collection, generated and tested key assertions and connected

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Erickson's (1986), Bogdon's and Biklen's models (1982) for qualitative methods in research on teaching served as a basis for the design of this study. Accordingly, Erickson (1986) outlined nine main elements that survey the full range of evidence which is the task of data analysis and reporting:

1. Empirical assertions
2. Analytic narrative vignettes
3. Quotes from field notes
4. Quotes from interviews
5. Synoptic data reports (frequency tables, etc.)
6. Interpretive commentary framing particular description
7. Interpretive commentary framing general description
8. Theoretical discussion
9. Report of the natural history of inquiry in the study

These nine elements guided the interpretive analysis of the data collection during field observations and after data collection (Erickson, 1986).

My analysis in the field involved decisions to narrow or alter the scope of data collection, development of analytic questions, planning of data collection in view of previous observations, writing observer comments in fieldnotes, writing analytical memos to summarize emerging themes; exploring literature, expanding fieldnotes and transcribing audio tapes, and cataloguing data (Erickson, 1986; Bogdan & Biklen, 1982).

My analysis after data collection (Figure 3) involved layered reviews

DATA ANALYSIS PROCESS
LAYERED REVIEWS

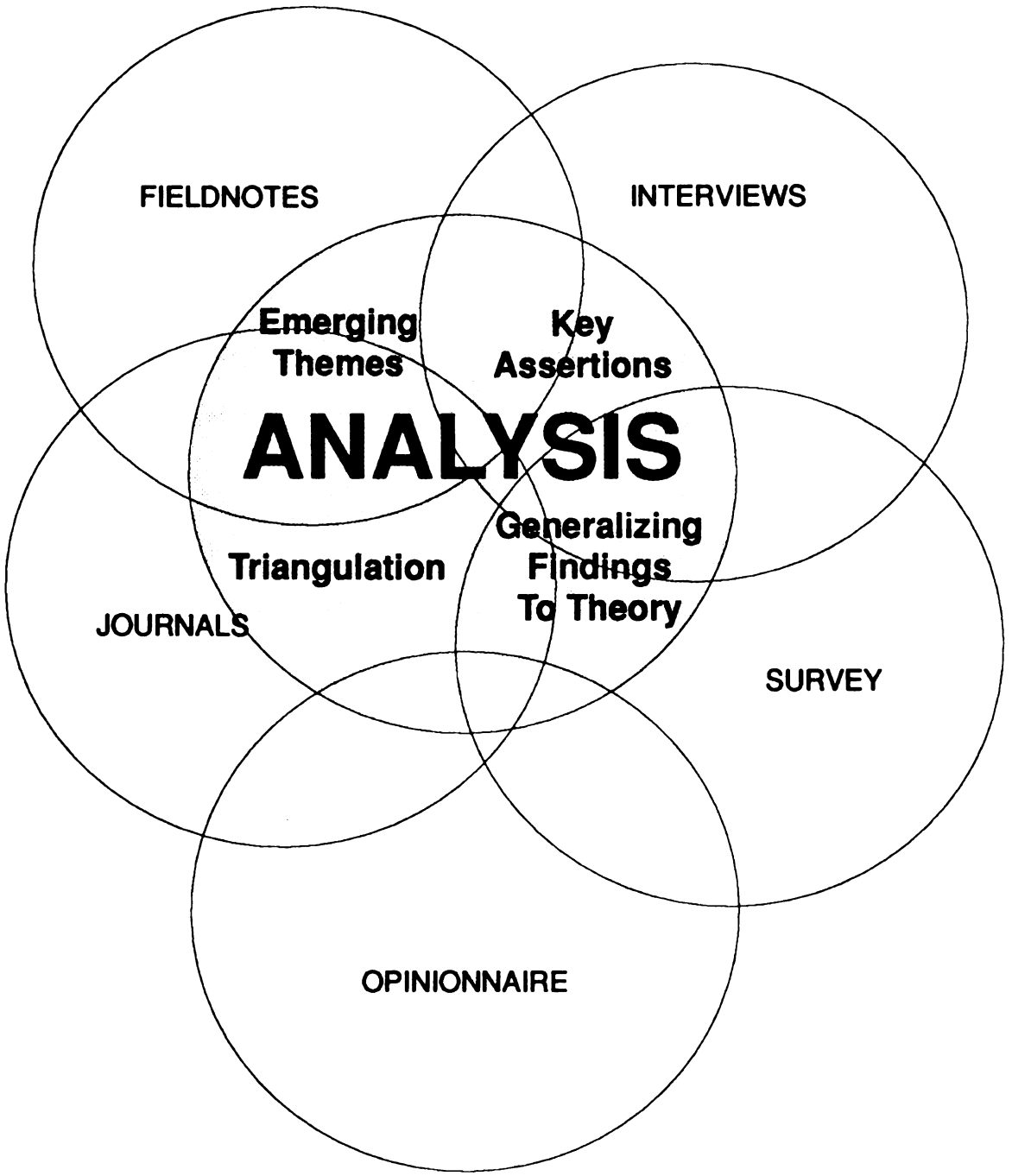


Figure 3
(R. M. Lataillade-Beane)

(repeated review of the data sources for recurrent themes) of the full set of field notes, analytical memos, interview notes and audio tapes or transcripts plus official and personal documents. The data were coded for emerging themes and key assertions as well as traces of confirming and disconfirming evidence. Once coded and categorized, the key assertions were linked with the main elements gleaned and developed from the data set such as narrative vignettes, field note and interview quotes, synoptic data, attitudinal survey data, interpretive commentary and the natural history of the study. By linking and comparing the emerging assertions, with evidence in the various data sources, triangulation was established as a basis for checking inferences across the field study data set (Erickson, 1986; Bogdan & Biklen, 1982). When diverse kinds of data lead to the same conclusion, there is a more confidence given to the inference (Hammersley & Atkinson, 1983). Cross-referencing various data sources was difficult to plan. In application, triangulation does not guarantee accuracy in the findings, but it is an attempt to validate the analysis of the data by the researcher. A survey was developed to further validate the analysis and will be discussed later in this chapter.

Although, inferences drawn from qualitative research are not generalizable beyond the case study, Yin (1989) encourages the analyst to try to generalize findings to "theory." Therefore, inferences drawn from triangulation were generalized back to the cooperative learning theory and adult learning theory outlined in the related literature.

The key assertions that emerged from the themes discussed earlier in this chapter were used to interpret the findings as they related to the factors that designed the course and characterized the cooperative learning environment of the

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"Learning Theories for Teachers" course such as "cooperative support group" processing, the classroom environment, the CSG environment, learning strategies, teaching strategies and the curriculum.

These key assertions emerged from data analysis of the pilot and present study and represent the participants' viewpoint:

a. The classroom environment during the course was "cooperative and supportive."

b. The environment in the assigned groups was "cooperative and supportive."

c. The preliminary group processing for a task can be described as "everyone bouncing ideas off everyone else."

d. The contribution and roles that members served during group processing can be characterized as "shared leadership."

e. Students characterized their behavior during group processing as "cooperative and supportive."

f. As a result of the course, students planned to use the cooperative group method at the grade level they taught.

g. Students recommended that cooperative group methods be incorporated in college level courses.

h. Students felt that their cooperative support group was helpful to their learning in this course.

i. Prior to this course, some students preferred to work individually in a course setting.

j. As a result of this course, students felt that they significantly benefitted from the experiences their cooperative support group shared.

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k. Students found that the technique of "talking it out" was effective in preparation of theory applications.

l. Students found that the technique of "talking it out" was effective for analysis of theory applications.

m. Students felt that organizing the groups homogeneously (by grade level) was effective for this course.

n. Students felt that cooperative and collaborative skills should be taught.

An opinion survey (Appendix I) was developed and administered at the last class session (4/15/92) of the semester for the present study. The opinion survey was used to obtain the students' expressed reaction to key assertion statements (that emerged from the data analysis) about the course, learning and the cooperative environment. This survey was a means of validating the assertions (from the participants' viewpoint) that emerged from the data analysis after the pilot and current study.

The students in the course were asked to indicate their degree of agreement or disagreement with a series of statements about how cooperative learning was carried on in the course. The Likert Scale of Summated Ratings (Appendix I) was employed using a scaling technique that assigns a five scale value starting with a particular point of view (Best & Kahn, 1986, pp. 181-185). The points of view primarily represented were strongly agree, agree, disagree, strongly disagree, and not applicable. The statements represented 20 assertions that emerged from the ongoing analysis of the data. Demographic data was also collected related to age categories, teaching grade level, number of years teaching and whether or not this was their first experience with a group based on cooperative learning theory.

Although, the opinion survey has limitations for exact measures of opinion the data was linked with other data sources to develop triangulation (Best & Bogdan, 1986). Some of the other data sources included observation fieldnotes (quotes, vignettes); interview transcripts (quotes and vignettes from interviews with the instructor and respondents); weekly opinionnaires (instructor and respondents comments to research questions about their experiences with cooperative learning); journals (respondent dialogic journals about cooperative learning experiences during the pilot study); the whole class opinion/feedback session (perceptions, motivations, attitudes from the whole class group used as quotes and vignettes); and the small group respondent interviews (opinion/feedback session with the six respondents who represented the assigned cooperative support groups); as well as generalizing the findings of the case study to adult learning and cooperative learning theory.

Summary

Classroom observation is a challenging method of inquiry. Analysis of the resulting fieldnotes is embedded in the field observations as well as analysis after data collection. The framework of the study was always in the stage of emerging as observations continued. It was only when this researcher marked the end of data collection, against the desire to remain in the field, that the body of data was defined and the natural occurrences were interpreted against the various data sources.

The observations of cooperative learning in the adult learning setting of "Learning Theories for Teachers" resulted in a rich data set. Chapter IV discusses the findings of the present study and attempts to present various data sources to validate the assertions that emerged from the data analysis. These assertions are

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then generalized back to cooperative learning theory and adult learning theory presented in the related literature in Chapter II. Chapter V will provide the implications for future research and practice.

CHAPTER IV

FINDINGS, ANALYSIS, INTERPRETATION

Chapter IV presents findings, analysis and interpretive commentary with the focus on how adult learning was carried on in the cooperative learning environment of "Learning Theories for Teachers." The discussion of the findings involves 1) assertions; 2) research questions; 3) the perceptions of students as they reflect on how they progressed through the course, at the beginning, midway and at the end; 4) the perspective of Hansen, the instructor and developer of the course, as he envisioned the design and planned its outcomes; 5) excerpts of selected group processing activities which involved the outlined course objectives and explanations of the processing cycle of the cooperative support groups; 6) discrepant cases; 7) the respondent answers to a weekly opinionnaire; 8) and the opinion survey results.

The framework Hansen suggested in course Objective #2 (Appendix B) was used to organize and examine the findings: the environment (psychological and physical), curriculum, teaching strategies and learning strategies was one aspect of the analysis. The interpretation focused on the course objectives as they were facilitated through the organization of learners in Cooperative Support Groups.

Chapter V concludes the study and provides the summary of the findings with implications for future research and practice.

Analysis: Learning Theories for Teachers

The focus of the study is the dynamics of adult learning in a cooperative learning environment with "Cooperative Support Groups" as the recurrent activity. The subject matter of "Learning Theories for Teachers" is significant to this study only as a contextual factor as it relates to the development of the cooperative learning environment, teaching strategies, learning strategies and implications to the "Cooperative Support Groups". The study examines cooperative learning with adults using the "Cooperative Support Group" activities as the unit of analysis. The "Cooperative Support Group" activities are embedded in the course environment, curriculum, teaching strategies and implications for learning strategies.

The following key assertions which represent the particpant viewpoints emerged from the data analysis and guided the presentation of the findings:

a. The classroom environment during the course was "cooperative and supportive."

b. The environment in the assigned groups was "cooperative and supportive."

c. The preliminary group processing for a task can be described as "everyone bouncing ideas off everyone else."

d. The contribute and roles that members served during group processing can be characterized as "shared leadership."

e. Students characterized their behavior during group processing as "cooperative and supportive."

f. As a result of the course, students planned to use the cooperative group method at the grade level they taught.

g. Students recommended that cooperative group methods be incorporated in college level courses.

h. Students felt that their cooperative support group was helpful to their learning in this course.

i. Prior to this course, some students preferred to work individually in a course setting.

j. As a result of this course, students felt that they significantly benefited from the experiences their cooperative support group shared.

k. Students found that the technique of "talking it out" was effective for analysis of theory applications.

l. Students found that the technique of "talking it out" was effective for analysis of theory applications.

m. Students felt that organizing the groups homogeneously (by grade level) was effective for this course.

n. Students felt that cooperative and collaborative skills should be taught.

Curriculum

Designing a curriculum for teachers to learn and apply contemporary learning theories was a challenge for Hansen. Especially, when the students in the class arrived at 4:00 in the afternoon for a required course after teaching all day . The challenge was to get teachers as students to engage in the subject matter and construct meaning through a framework of analysis, application, reinforcement and evaluation that they would carry back to their classrooms and apply to their ongoing instruction.

The subject matter involved behaviorism and cognitivism learning theory with focus on such theorists as Gagne, Bandura and Bruner as well as Life Space and Cognitive-Field theory. Admittedly, the subject matter was complex. Learning Theories for Teachers by Bigge (1982) was a difficult textbook but was chosen because it covered all the identified theorists in one text.

With this in mind, Hansen organized the curriculum content or subject matter to respond to the real life experiences of teachers in the field. Using cognitive learning theory, Hansen asked himself the same questions he later posed to the students in the course (Appendix B, Syllabus, 1992). These questions are answered through the analysis of the curriculum, environment, teaching and learning strategies.

* What is your objective?
* How would you develop the classroom psychological environment?
* What is your classroom physical environment?
* What are the group procedures you will follow?
* What are the key teaching questions?
* What procedures will you follow by using the classification or application checklists?
* What interaction do you want? (student to student, student to teacher, teacher to student)
* What are some other problem-solving activities you can generate from this objective?

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Course Life-Cycle

The "cooperative support group" life-cycle chart in Figure 4 (p. 76) is an illustration designed by the researcher of the sequence the learning process followed throughout the course. The "cooperative support group" emerged as the recurrent event. The instruction involved the teaching strategies which include the presentation of the theory (lecture) and instructions to the cooperative support groups regarding objectives, group tasks and activities. The class was then directed to break into their assigned cooperative support groups to attend to the task which involved theory application, reinforcement, brainstorming, and evaluation. During this step, roles were assigned to group members such as facilitator, gopher, reporter, recorder and researcher. Group processing involved the internal dynamics of the individual cooperative support groups such as group consensus, communications, shared leadership, giving and receiving help, brainstorming, conflict resolution, cooperative and supportive behaviors. Throughout this stage of the cycle, Hansen facilitated group processing through asking questions structured to promote critical and higher order thinking, clarification of task and process, and clarification of selection of theory applications to instructional moves (procedures for implementing learning theory). Each course objective, involved task and activities that resulted in individual and group outcomes. Both individual and group outcomes were processed through the cooperative support groups to allow students to brainstorm ideas and "bounce ideas off" fellow group members for clarification. Most group tasks were followed by a large group and whole class debriefing session in which the task was analyzed and evaluated. Groups reported group outcomes in a round-robin fashion for evaluation and analysis. Some tasks required the large

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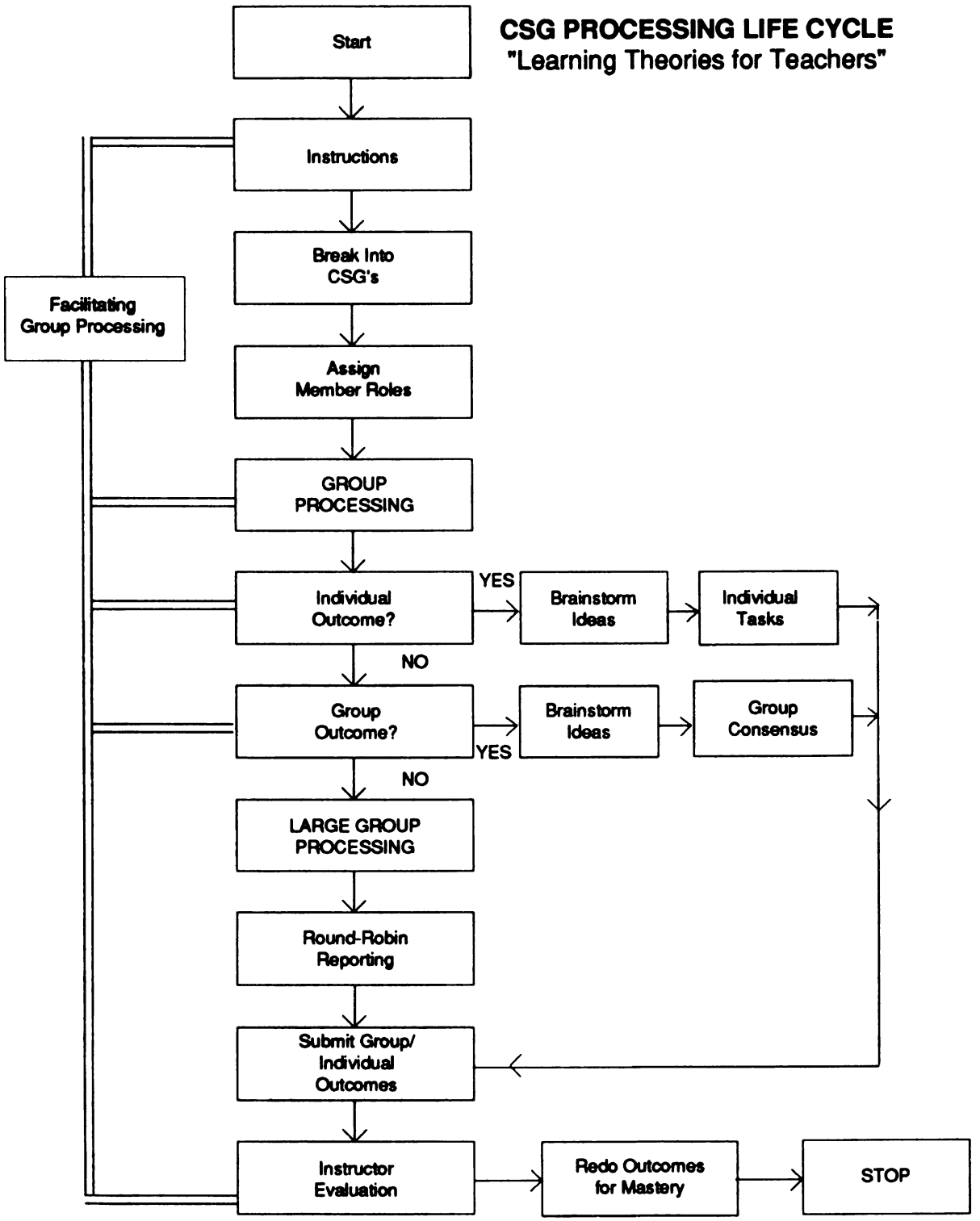


Figure 4
(R. M. Lataillade-Beane)

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group consensus and that process was facilitated by the instructor with discussion. Individual and group outcomes of assigned tasks were submitted for instructor evaluation (grading) and students had the option to rewrite individual assignments for mastery.

Course Outline

Seven content objectives (Appendix C) were developed to identify specific course outcomes. Each objective required students as teachers to engage in the subject matter to analyze, apply, reinforce, and/or evaluate a selected learning theory. The objectives will be discussed in the interpretation section of this chapter. The course syllabus (Appendix C) defined the instructional activities across the 15 week semester beginning with Gagne the behaviorist theorist, and ending with a cognitivist theorist, Bruner.

Since, it was not the intention of this study to examine the content of the course but the patterns of cooperative learning activities, there is no discussion of specific learning theories except to represent what the course covered. The following section represents the outline of the course, "Learning Theories for Teachers" as designed by Hansen. For explanatory purposes, excerpts were taken from the course syllabus such as the topic(s) for the week with the corresponding course objective and outcomes are identified as individual or group activities (Appendix C). The layout for each week represents, the objective, the lecture (topic), modeling (theory applied to a lesson taught by the instructor), group work (practice / application / evaluation), and individual work as appropriate:

Each class will have a lecture period concerning the theory, group

work on brainstorming examples of theory in practice, an application, and an evaluation session of the theory. (Appendix C)

WEEK 1

Objective: #1

Lecture Topic: Orientation/Definition of Learning Theories, Textbook and other resources, Format for group development

Individual Work: Students wrote out Objective #1 in class or wrote it out for homework.

WEEK 2

Objective: #2

Lecture Topic: Chapter 3 & 4 - Major Families of Contemporary Learning Theories; behaviorist theory which includes stimulus-response conditioning

Group Work: Students were assigned to Cooperative Support Groups; analyzed curriculum materials according to objective #2's analysis framework of curriculum planning, environment, teaching strategies, and learning strategies.

WEEK 3

Objective: #3

Lecture Topic: Chapter 6 - Gagne - Introduction of Gagne's Behavioristic-Eclectic Psychology and explanation of how to develop an informational hierarchy

Group Work: Groups helped each member to develop their informational hierarchy in preparation for objective #3's tutorial lesson; completed the "Hang-up Coat" theory application activity to reinforce the chaining theory application.

Individual Work: Students completed their informational hierarchy. Students were asked to reflect about the instructional sequence they might use for teaching children, teenagers and adults how to

hang-up their coats when they come home based on Chaining Theory; and reflect about an instructional sequence for teaching preschool children to line-up in a straight line. Also, to bring in examples of learning strategies such as Acronyms and Mnemonics that can assist learning.

WEEK 4

Objective: #3

Lecture Topic: Chapter 6 - Gagne Association/Teach - A continuing discussion of the eight conditions of learning with distinctions between instructional moves for association, classification or application checklist (Appendix L)

Modeling: The instructor modeled the use of the Association checklist (Appendix L) with the "Nonsense Syllable" Lesson which involved instructional moves for chaining and verbal association.

Group Work: Groups analyzed the model lesson according to the association checklist (Appendix L) and completed the "Lining-up Pre-schoolers" theory application activity to reinforce chaining theory.

Individual Work: Students developed a lesson objective for objective #3's tutorial lesson using the informational hierarchy.

WEEK 5

Objective: #3

Lecture Topic: Chapter 6 - Gagne Classification/Teach - A continuing discussion on the eight conditions of learning.

Modeling: The instructor modeled examples of concept learning (Appendix L) with the "Triangle Lesson" and "Hexagon Lesson".

Group Work: Groups analyzed the model lessons according to the Classification checklist (Appendix L) for instructional moves which involved concept learning and multiple discrimination.

Individual Work: Students prepared for Objective #3's tutorial lesson presentation and wrote lesson plan narratives.

WEEK 6

Objective: #3

Lecture Topic: Chapter 6 - Gagne's Application/Teach - A continuing discussion on the eight conditions of learning. Instruction to groups for objective #3's tutorial lesson presentation and evaluation.

Modeling: The instructor modeled examples of rule learning with the "Addition Problem" and the "Flat Tire" lessons.

Group Work: Groups analyzed the "Addition Problem" Lesson in preparation for rule learning in the "Flat Tire" activity; identified rules for two column addition and three rules to raise the front of a car. Following the task the groups evaluate the process using the application checklist (Appendix L) for instructional moves to reinforce rule learning and problem solving theory applications.

Groups begain evaluating the TUTORIAL lesson taught by individual members according to the checklist selected by the student for the completion of objective 3. The completed evaluation instrument (Appendix L) was the group outcome.

Individual Work: Students submitted a typed narrative of the lesson according to the instructional moves checklist identified by the student.

WEEK 7

Objective: #3 & #4

Lecture Topic: Chapter 7 - Bandura - Introduction of Bandura's Social Learning Theory with discussion of the psychological learning environment. View video, "The Skillful Thinker." Dyads or Triads Problem Solving (Appendix M)

Group Work: Groups evaluated each members presentation of the TUTORIAL lessons for objective 3.

Individual Work: Students wrote out assignment for Objective #4

WEEK 8

Objective: #5

Lecture Topic: Chapter 8 - Life Space/Cognitive-Field Theory of Learning, discussion of Glasser's Reality Therapy, viewing of videotapes series on "A Private Universe."

Group Work: None

Individual Work: Students reflected on the principles of "Life-Space" theory.

WEEK 9

Objective: #6

Lecture Topic: Chapter 9 - Thinking Skills/Problem Solving - Viewing of videotape series on Cooperative Learning. "Cooperative Learning: Social Skills" Video (#3).

Group Work: Groups participated in activities for reinforcement of thinking and problem solving skills' application using the classification and application checklist (Appendix M).

Modeling: The instructor taught a lesson using the Cognitive-Lesson Format guidelines for Objective 6 (Appendix C) using the classification checklist (Appendix M).

The model lesson was the "Conflict" Activity which involved critical thinking and problem solving in the small group, building consensus and bringing outcomes to the whole class group for final consensus. The groups were instructed to follow the procedures for item #6 on the Cognitive-Lesson Format and categorize a unique set of pictures by similarities and differences, define three relationships and a concept to symbolize what the pictures represented.

Individual Work: Students design a lesson using the cognitive lesson format and the guidelines for Objective #6 (Appendix C).

WEEK 10

Objective: #6

Lecture Topic: Chapter 9 - Bruner/Classification

Modeling: The instructor taught a lesson using the Cognitive-Lesson Format guidelines for Objective 6 (Appendix C) which used the application checklist (Appendix M). The model lesson was the "Similarities and Differences" Activity. The groups were instructed to follow the procedures given in the Cognitive-Lesson Format and determine whether a "Tomato" is a fruit or a vegetable (Appendix M).

Group Work: Groups process the "Similarities and Differences" activity for reinforcement of Bruner's Cognitive Psychology (Appendix M).

Individual Work: Students considered creative ideas to use for a model lesson using the guidelines for Objective #6 (Appendix C).

WEEK 11

Objective: #6

Lecture Topic: Chapter 10 - Bruner/Teach - Bruner's Center Learning upon Conceptualization or Categorization, Viewed video series on Cooperative Learning.

Group Work: Groups worked on varous problem-solving and thinking skill activities to reinforce Bruner's Cognitive Psychology activities (Appendix M). Groups discussed Objective #6 and assigned each member task for lesson presentation.

Individual Work: Students worked on assigned task for Objective #6s' group lesson presentation.

WEEK 12

Objective: #6

Lecture Topic: Chapter 13 - Bruner/Application/Explanatory Understanding

Group Work: Groups worked on an activity to reinforce Bruner's Cognitive Psychology and development of the Cognitive-Lesson Format for Objective #6 (Appendix C).

Individual Work: Students prepared for Objective #6s' lesson presentation.

WEEK 13

Objective: #6

Lecture Topic: Bruner/Application/Explanatory Understanding

Group Work: Groups have developed and designed Objective #6's lesson and agree on one member who will teach the cognitive-lesson to the instructor (who will role-play a student). The other members provided support and evaluated the lesson as taught to the instructor according to Objective #6 guidelines and the Cognitive-Lesson Format (Appendix B).

Individual Work: Students considered selecting one of the options for Objective #7 as the final class project.

WEEK 14

Objective: #6 and #7

Lecture Topic: Evaluation - Explanation of Guidelines for Objective #7 (Appendix C) and its various options for individual outcomes and mastery of course content.

Group Work: Groups work together to present their cognitive lesson to the instructor for Objective #6.

Individual Work: Students worked on Objective #7, the final project.

WEEK 15

Objective: #6

Lecture topic: Wrap-up of Course - Instructor available for assistance on Objective #7, Course Evaluations

Opinion Survey: The researcher administered the Opinion Survey to the class (Appendix I).

Feedback Session: The researcher facilitated an Opinion/Feedback Session (Appendix G) allowing students to reflect and synthesize their discoveries in the course as well as the "Cooperative Support

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Group Work: Groups met for the last time and assisted those who needed help with Objective #7.

Group Interview The students who volunteered from each of the five groups met with the researcher for a respondent small-group interview following the whole-class feedback session.

Individual Work: Seek assistance from the instructor as appropriate on clarifications of Objective #7.

During a discussion the last class session, one student gave this perspective on the curriculum:

> One thing I can say about the curriculum, it's useable. I've had so many classes where I walked out going, what in the hell can I use this for? A lot of this stuff here, I can see myself using. Not immediately but I can use it. (Fieldnote Transcripts, 4/15/92)

This quote points to Hansens' objective to organize and present a curriculum that responds to the real life experiences of teachers and which they can carry back to their classrooms and apply in ongoing instruction.

Environment

Saginaw Valley State University was the physical setting of both the pilot study and the present study. The course met in 214 Brown Hall, a large classroom with tables that could easily be arranged for the group activities.

Hansen expressed a preference that 214 Brown Hall be scheduled as the site for "Learning Theories for Teachers". When the classroom was occupied by the 25 participants, interacting in their assigned "Cooperative Support Groups", a certain ambiance was evident. The space and the furnishings allowed flexibility for re-arrangement. There was enough room to push back or spread out the tables and chairs and yet keep discussion at a high level without distraction. The classroom

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was equipped with such audio visual capabilities as an overhead projector and screen which Hansen used often during mini-lectures. The large picture windows lighted up the classroom and provided a eastward view of the faculty and staff parking lot and the Ryder Center, SVSU's new Physical Education facility.

The environment had such other features as the demographics, the psychological environment, the cooperative group composition and profiles, the roles and identities of the participants which are discussed in the following sections.

Demographics

The participants of the study were 25 graduate students and the instructor, Hansen. The course started with 26 students but one student dropped the course after the first week of class. The demographics reported here do not include the instructor. The participants by race and gender were four White males, one Asian female, and 19 White females. The age of the participants varied somewhat, four students were 25 and under (18%), six students were between the ages of 26 and 35 (27%), ten students were between the ages of 36 to 45 (46%), and two students were over the age of 45 (9%).

The number of years participants had been teaching as surveyed at the end of the course also varied. Nine students (41%) had taught less than two years. Eleven students (50%) of the class had been teaching between two to five years. Only one student (5%) had been teaching between six to ten years. Only one student (5%) had been teaching more than ten years. (Appendices J and K)

The teaching grade level was somewhat evenly distributed across participants. Teaching grade level was used as a criteria for organizing students into

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groups. The even distribution made the assignment of students to groups easier for the instructor. Five students (23%) were teaching at the Preschool/Kindergarten grade level. Five students (23%) were teaching at the Primary Education grade level. Six students (27%) were teaching at the Middle School grade level. Three students (14%) were teaching at the Secondary Education grade level. Finally, three students (14%) reported the "OTHER" category which included areas of work outside of K-12 Education such as Nursing, Adult Education and Business and Industry. (Appendices J and K)

Another interesting profile of the participants from the opinion survey indicates that 50% (11) of students reported that this was their first experience with a small group based on cooperative learning theory and 50% (11) reported it was not their first experience with a cooperative group going into the course. The implication might be that at least half of the class members were familiar with groups based on cooperative learning theory. (Appendices J and K)

Psychological

The psychological environment created in the course is one of a "community of inquiry" where students are free to ask questions in the Socratic method, as described by Hansen (Interview Transcript, 1/16/91). The classroom is a forum for questions and answers in spite of the structured instruction and academic activities prepared for engagement in subject matter. Each class session had a warm-up activity. In every session, Hansen facilitated an open forum for inquiries (15-20 minutes) about current events in the: world, other countries, the nation, the state, the cities, the counties, school districts, school buildings, and the classrooms. This

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same community of inquiry was carried over to the presentation of the subject matter and the group task. The culture invited critical and higher order thinking, analysis, evaluation and synthesis for instructional improvement embedded in theory application.

> What you are trying to do is to develop an environment where everybody will be successful, if they only know what you want. But, you've got a cognitive level that you've established for the class. I haven't had to modify the standards for the class. (Interview Transcripts, 4/13/92)

The other aspect of the psychological environment embedded in the approach to organize learners into groups is the notion of a "cooperative and supportive" learning environment. Hansen said:

> I like a warm, comfortable classroom. I try to deal with that very heavily with a very harsh, very hard topic. I try to create a very safe environment for them by putting them into groups which provides a safety mechanism. I try to bring their classroom experiences into it by telling them they already have a learning theory. (Interview Transcripts, 1/16/92)

Hansen's classroom management plan was to create a warm, comfortable, and safe classroom environment. He saw cooperative support groups as a means to that end. The classroom management technique of organizing learners into groups presented a hidden or secondary curriculum based on cooperative learning theory and method. This is directly linked to Hansen's underlying cognitive theory approach to the course curriculum.

The data from the opinion survey (Appendices J and K) taken on the last day of class provides some insight into the perceptions of students. When students were asked to respond to the assertion, *the classroom environment during the course was "supportive and cooperative,"* 73% (16) strongly agreed, 18% (4) agreed and one

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student disagreed and one student did not indicate an opinion. Combining "strongly agreed" and "agreed" responses, 91% (20) of the 22 students surveyed agreed that they experienced a "supportive and cooperative" environment in the whole class group. More specifically, when students were asked to respond to the assertion, *the environment in my assigned group was "cooperative and supportive,"* 77% (17) strongly agreed, 18% (4) agreed, and only one student strongly disagreed. Combining the responses, 95% (21) of the 22 students surveyed agreed that they experienced a "cooperative and supportive" environment in their assigned "cooperative support groups."

Student responses on weekly respondent opinionnaires, respondent interview session, and the whole class debriefing session reflected these verbatim responses:

> He (*Hansen*) allowed us to ask questions and make comments even if we were off track he was complimentary and he was always positive, cooperative, supportive. (Interview Transcripts, 4/15/92)
>
> I could sit quietly here and let the whole class pass by and never say a word. Where when you're in the small group your voice is equally heard and you're able to ask questions a lot more. (Fieldnote Transcripts, 4/15/92)
>
> I believe people, for the most part, need support systems and want to feel comfortable and not threatened. (Weekly Opinionnaire, 2/15/92)
>
> The support groups are functioning as a "life-line" for this class. Much of the information is not especially clear; the members of our group are able to clarify meaning for each other. (Weekly Opinionnaire, 2/6/92)

These verbatim responses point to the inquiry nature of the classroom environment during whole-class and group activities as well as the positive support promoted by Hansen. The cooperative support group format encouraged at least one student to greater participation. Other students acknowledge the support and characterized the assistance from groups as a "support system" and a "life-line."

Social Context and Social Events

> Current intellectual developments in cooperation and learning have grown out of two streams of historical thought. One of those comes from the work of John Dewey, who emphasized social aspects of learning and the role of the school in educating students in cooperative democratic living. The other historical stream flows out of the work of Kurt Lewin and subsequent work by scholars of group dynamics... (Slavin et al., 1985).

The social context of the "Learning Theories for Teachers" course is one of "student to student and teacher to student interactions" as they complete tasks in cooperative support groups. This aspect of cooperative learning involves socialization which is supported by the urbanization of the world population. Johnson, Johnson, and Holubec (1990, p. 88) indicate that one of the great advantages of cooperative learning is that important "life-survival" skills are required, used, reinforced, and mastered within a task situation. Students need to become skillful in communicating, building and maintaining trust, providing leadership, engaging in fruitful controversy, and managing conflicts (Johnson, 1987, 1990; Johnson & F. Johnson, 1987).

The opinion survey data indicated that when students were asked to respond to the assertion, *"In my opinion, cooperative skills must be taught,"* 50% (11) strongly agreed, 36% (8) agreed and students (14%) 3 disagreed. There is an implication that students may not believe that they come equipped with the cooperative skills need to engage in group processing. Hansen provided instruction on cooperative and collaborative skills and asked the groups to use the "Ten Principles of Good Consensus" (Appendix A).

The profiles presented for each of the assigned cooperative support groups and responses from whole class discussion offer a glimpse at the internal dynamics

of the cooperative support groups while presenting some rich socialization experiences. These accounts reported shared leadership, individual accountability and responsibility, interdependence, managing conflicts, building and maintaining trust, giving and receiving help, consensus building and socialization.

Hansen's intent was to structure an environment in which this socialization would naturally take place in the assigned cooperative support groups. His expectation was for high levels of interaction to occur in the classroom environment.

> Teachers want to hear what others are doing in the same subject area and grade level. They need an environment where they can talk, exchange ideas, problem-solve. (Interview Transcripts, 1/16/92)

When students were asked in the opinion survey to respond to the assertion, *"In my opinion, I found the technique of "talking it out" was effective in preparation of theory application,"* 50% (11) strongly agreed, 41% (9) agreed and two students 9% (2) disagreed. Combining "strongly agreed" and "agreed" responses, 91% of the 22 students surveyed agreed that "talking it out" was an effective preparation for theory application which has implications for learning strategies. Also, when students were asked to respond to the assertion, *"I found the technique of "talking it out" was effective for analysis of theory application,"* again 50% (11) strongly agreed, 36% (8) agreed and 14% (3) disagreed. Combining "strongly agreed" and "agreed", "talking it out" was thought to be effective for analysis of theory applications by 86% (18) of the 22 students surveyed and three students did not agree.

> Social events, as combinations of smaller action sequences, are among the basic units of analysis in fieldwork research. All human beings, operating with their own culture and range of experience, are capable of telling what event is occurring; we all know what counts as appropriate behavior in that event. We are also capable of knowing when an event is changing, and what changes in our behavior are necessary in the new event. (Campbell, 1990)

The unit of analysis for this case study is the "Cooperative Support Group Processing" which is seen as a social event in the cooperative environment. The profile section provides descriptions of each of the "Cooperative Support Groups" from the individual respondent's perspective as participants in the assigned groups. These profiles give some insight as to how participants adjusted their behavior for cooperative group processing. As each group worked through the stages of group development situationally specific identities, roles, rights, and duties emerged.

Social Identities and Role

> Within our own cultural frameworks, each of us has several social identities which help to define the roles which influence our interactions with other people in the social events that comprise our daily lives. ...Each identity, in turn, has associated with it certain culturally defined roles, specifiable in terms of rights and duties, for what counts as appropriate and inappropriate action in one's dealing with other people. (Campbell, 1991)

In context of the cultural framework of "Learning Theories for Teachers", the participants had definite social identities and role relationships. Hansen's social identity was "instructor" and "facilitator." During weekly class meetings, Hansen's main identity was "instructor" but during group activities his identity alternated to "facilitator."

> ...facilitator refers to those individuals who help adults learn. Helping adults learn is a transactional process which the facilitator interacts with the learners, content, other people and material to plan and implement an educational program. The facilitator is in a sense a guide to learners who are involved in an educational journey. (Galbraith, 1989)

Hansen's roles as a facilitator involved monitoring the group function, monitoring group activities and providing key questions (as a guide) that assisted

(made easier) the students in working through the group task.

Respondents and other participants of the class were "graduate students," "teachers," and "group members." Participants were "graduate students" during regular whole class sessions and alternated to their identity as "group members" as they engaged in group activities. Both as "students" and "group members," the participants engaged in the subject matter as "teachers." As "teachers" participants had diverse identities and roles such as "preschool and kindergarten teachers," "primary education teachers," "secondary education teachers," and "middle school teachers." Also, there were "male" and "female" identities. Of course, all the participants had many other identities and roles in the other realms of their life. Participants made role changes depending on the situation. For instance, the social identities and role relationships were somewhat different for students as they moved from the large class group to the small cooperative support groups. The identity of "students as teachers" was a constant identity which was embedded in the role relationships as well as "teacher as facilitator."

Some of the relationships involved "teacher to student(s)," "student(s) to student(s)," "student(s) to teacher" and in the context of curriculum, "teacher to subject matter," student(s) to subject matter," and "teacher and student(s) to subject matter." Hawkin's (1974) suggested that the role relationship represented a triad in teaching and reflection which is represented by the pronouns, I, Thou and It. Hawkin's (1974) used the corners of a triangle as a metaphor to represented the pattern of mutual interest and exchange between the teacher and student. The corners at the two legs of the triangle represent the teacher and student interaction between one another; the apex corner represented the subject matter which the

student and teacher in their relationship focus and engage in the subject matter.

> I get the insight of how to interact with the students, with the teacher, the method and content. (Weekly Opinionnaire, 2/12/92)

Hawkins' suggestions were considered in the analysis of the role relationships and social identities of the study.

As such, this was an opportunity to observe and analyze the group processing in relationship to the situational specific identifies, roles, rights, and duties of the various participants as suggested by Campbell (1991).

Tuckman's Group Development Sequence

Tuckman (1965) developed a model of group developmental sequence in the interpersonal realm which included forming, storming, norming and performing. Forming is the first stage and involves orientation through testing and dependence. In this early stage, group members attempt to discover what interpersonal behaviors are acceptable based on reactions by the leader, other group members and pre-existing external standards, seeking guidance and support. Storming is the second stage and involves intergroup conflict. Group members may become hostile toward the leader or each other as a means of expressing their individuality and resisting group structure formation. This stage is characterized by lots of "infighting", lack of unity, jockeying for status or power within the group. Norming is the third stage and involves development of group cohesion. In this stage, group members accept the group and the idiosyncracies of fellow members. Individual personality differences which earlier caused tension and division begin to be viewed as valuable to the overall functioning of the group. The group solidifies as members, accepting the

group as an entity, attempting to maintain and perpetuate it, and establish new group norms. Harmony takes on maximum importance. Performing is the final stage in the interpersonal realm and involves functional role relatedness of members. The group becomes a fully functioning problem solving instrument. Members begin to view each other in changeable roles which emerge to aid the group in its effectiveness. Personal relationships are well established and no longer are a major priority during group time. This sequence seems to closely resemble the respondents descriptions of what their Cooperative Support Group activities involved and how they developed over the 15 week course.

Tuckman (1965) also presented four stages of the group developmental sequence in the task activity realm which included orientation to task, emotional response to task demands, open exchange of relevant interpretations, and emergence of solutions. Orientation to Task is the first stage in the sequence and involves group members trying to identify task in terms of its relevant parameters and how the group will be used to accomplish the task. The group seeks out the "ground rules" and decides on the type of information they will need in dealing with the task and how the information will be obtained. Emotional Response to Task Demands is the second stage and is when group members react emotionally to the task as a form of resistance to the task demands. The individual struggles to resolve the conflict between what he or she perceives as his/her personal orientation versus what will be demanded of him/her by the task. Open exchange of Relevant Interpretations is the third stage and this is where opinions on topic are freely exchanged and solicited. A mood of acceptance is present and harmony is a to priority for group members, meaning little disagreement on opinion. Emergence of

Solutions is the final stage and the group makes constructive attempts at successful task completion. The stages in the interpersonal realm usually coincide with the stage sequence in the task activity realm. In this study, the respondent descriptions of the Cooperative Support Group processing development resembles Tuckman's development sequence (Tuckman, 1965, pp. 384-399).

Cooperative Support Group Composition and Profiles

In the first class session, Hansen passed out index cards and asked that students provide information such as their name, address, phone, teaching grade level and/or type of teaching certificate held. By the second class session, Hansen had assigned each student to a "Cooperative Support Group". The range for determining group size was no less than three students to a group and no more than seven. The group assignments were considered homogeneous according to grade level. Each assigned group stayed together for the entire 15 week semester. Johnson, Johnson and Smith (1991, p. 8:24) in Active Learning: Cooperation in the College Classroom identified long-term groups as "base groups." Base groups have stable membership and had the primary purpose to provide student support, encouragement and the students' need for academic progress (Johnson, Johnson & Smith, 1991). Students were not allowed to select whom they wanted to be placed with in the groups.

At first, during the early development of the course, Hansen had assigned students to groups heterogeneously by grade level but it didn't work because teachers wanted to talk with other teachers who taught the same grade level and share experiences for learning. Using the trail and error method, Hansen

determined that it was better if the groups were composed homogeneously by grade level and certification. Yet, he still felt that the groups were heterogeneous in other ways such as gender, ethnicity, background and experience levels.

Each Cooperative Support Group was unique. Students had similar but diverse experiences within their assigned groups as they worked through group activities. The next section provides a profile of each of the five assigned groups in the present study, preschool/kindergarten, primary education (there were two groups), secondary education, and middle school. The profiles represent composites of the respondents discoveries and perspectives as cooperative support group informants. The profiles provide insights into the group development sequence as described by Tuckman (1965).

Preschool/Kindergarten Group. The Preschool/Kindergarten Group had five members, three preschool teachers and two kindergarten teachers. The respondent for this group was a kindergarten teacher who will be referred to as Donna. According to Donna, because she accustomed to working in isolation as a teacher, group processing was difficult to do. Admittedly, Donna preferred to work individually and put little or no faith in cooperative group processing as a way to learn. In the beginning of the course, Donna's weekly opinionnaire comments were negative toward group activities and she seemed to resist interacting with fellow group members as they attempted to engage in the course content.

> I am 99% sure that I will end up doing it individually and having to pretend I'm a happy member of a group. Are we going to get a group grade? (Weekly Opinionnaire, 1/15/92)

> I feel it was a waste of time (*cooperative group activity*). I didn't come to a clear understanding - and I didn't get my chart analysis done (*objective #2 activity*). I'll have to spend a lot of time out of class

> figuring this out on my own. I feel angry — hostile—. (Weekly Opinionnaire, 1/15/92)

It was not until a problem arose as a result of Donna's comments during a class session that the show of support from her assigned group affected a change in her perspective.

Donna felt that her group was really "rocky" (did not bond) from the beginning. They were all "take charge" people and she said that was what teaching was all about "being in a room by yourself and leading things".

> We had one strong leader and one weak leader. The person in the middle sort of had to assert herself and say, "I'm going to be the leader because the strong leader is not having any impact." So, we sort of rejockied for positions. It was very difficult in the beginning, we argued a lot. We didn't come to any consensus. I remember walking out of there a couple of times. It was difficult! (Interview Transcript, 4/15/92)

> Towards the end, we did become friends and things came together. Because of the "crisis" everyone rallied around me. It had to do with being in the room - the psychological environment - feeling very comfortable to say what you wanted. I said some things that I wanted to say and wanted to find out about and another person in the "large group" took it very personally and very antagonistically. They made things horrible for me and tried to get me fired! And, I came back to my group and I said, Boy, I know I do have an abrasive personality but what did I say? Do you remember anything specifically that I might have said that someone would object to so strongly and send a hazing letter to my boss. And they said, no we don't remember anything and took a piece a paper and said, we will draft a letter and write down our impressions, you don't get involved in this and we will sign our names. They signed their names and wrote down their phone numbers! I was so impressed by that... No one ever stood-up for me like that...ever! (Interview Transcript, 3/29/92, Interview Transcript, 4/15/92)

> But by that time, I guess we had developed some kind of group mentality. But two weeks before that, I wouldn't said there is no way that any of us would have brought a cup of coffee for each other! (Interview Transcript, 4/15/92)

Tuckman's group development sequence features (forming, storming,

norming an dperforming) are evident in Donn'as description of the Preschool/ Kindergarten Group. Donna talked abot how she struggled with discovering what interpersonal behaviors were appropriate. Members of the group jockeyed for leaderhip positions as they worked out intergroup conflict. Finally, circumstances caused the group members to join together and accept their diversity. Donna expressed it by saying that "things came together."

Primary Education Group. The Primary Education Group had five members. They were first, second, and third grade teachers. The respondent for this group was a third grade teacher named Sherry who was celebrating her 21st year of teaching. Sherry was very positive. As a respondent, she openly shared her background. Sherry has a Bachelor of Arts Degree plus 42 (semester) graduate credit hours with certification K through 8 grades in all subjects and ninth grade Social Sciences. Her undergraduate major was Elementary Education with a minor in Social Sciences. She was working on a Masters Degree in reading for the young child. The origin of Sherry's personal learning theory was behaviorist coming from public schools and a private Christian college. What Sherry liked most about teaching was the "wide-eyed happy responses of students".

The Primary Education Group quickly bonded because as Sherry put it:

> We had similarities in our jobs, it was easy to communicate with each other and understand our joys and frustrations. I don't know everything — where I am weak — someone in my group was strong. Where I am strong — I was able to share that with others. I enjoy working in groups because the sharing of minds, ideas, and suggestions makes learning richer and more successful. (Interview Transcripts, 4/15/92; Weekly Opinionnaire, 2/5/92)

Sherry was concise and positive in her weekly opinionnaires and interviews. The members of the group knew each other outside of class and some of them

carpooled. This Primary Education Group seem to have skipped the early stages of group development because group cohesion already existed outside of class.

Primary Education Group #2. The Primary Education Group #2 also had five members, four White females and one Asian female. They group taught third, fourth and fifth graders and one member taught Adult Basic Education courses. Mickey, a fifth grade teacher was the respondent.

Mickey described her group as being comprised of a Special Education Teacher, a substitute teacher who didn't have a position yet, a teacher who had been teaching three years, a teacher who had been studying a year and a half and a Japanese student (Interview Transcript, 4/15/92). This presented a diverse group to work with but they all seem to "hit it off" really well. Like the other groups, Mickey felt that they realized immediately a sense of responsibility when a group member was absent to make sure that they knew — because if they didn't they couldn't function as a group.

Mickey felt all of the group members were leaders and although she did not perceive this negatively whenever they had to assume group roles that each member inevitably tried to take that leader position as facilitator. It was very difficult to be passive. The whole class often teased this group about being the "slow group" that sort of had a delayed time in understanding the material. Mickey had this to say about that label:

> In the whole group discussion, we talked about us being "slow learners" but I don't think that was really true. I think because we all tried to be leaders, we wanted to get our opinions in and we didn't always get to the end of the task as quickly as other people. It wasn't that we didn't know where we were going. We all wanted to get our two cents in. We weren't reaching consensus as quickly as other groups and whenever we did someone would say, "but what about

this..." (Interview Transcripts, 4/15/92)

The Asian student in the group was Japanese. This student reflected on the course and group activities from her cultural perspective in this way:

> I would describe what is happening in the cooperative support groups as discussion, advise, help, and interaction.
>
> When I go back to Japan, I would like to use what I've learned in this class to teach English as a second language to the Japanese student. This course will change my own teaching from a passive atmosphere to an active atmosphere; less interaction to much interaction between teachers and students, among students; much lectures to much discussion.
>
> I personally prefer not working in the group because the group activities are not really effective for me (compared to the teacher-lecture activities). Group activities are not systematic. It is easier for me to follow the teacher's instruction than to work in the group. This is probably because of my language handicap.
>
> (Weekly Opinionnaire, 2/12/92)

The Primary Education Group #2's sense of responsibility to the course task seem to motivate effective group development. However, because each group member was seen as a leader, negotiating group processing was a challenge when completing group activities. The group diversity was another interesting aspect. The Japanese student's discoveries were interesting as she reflected on the cultural differences in education and what she might take back to Japan from the cooperative experience.

Secondary Education Group. The Secondary Education Group was the largest Cooperative Support Group with six members, three males and three females. The respondent was Bill, a seventh and eighth grade English teacher, in his fourth year of teaching. He explained that the group started slowly because it took time to build trust and the time they spent "talking about things other than the

assignment". Bill felt that this was "vital" because it actually helped them get to know each other more personally other than "just names or the way we teach" but personally. One of the members of the group discovered she was pregnant during the course and that was "cool". Bill characterized the group as having a great sense of humor and once they bonded there was a lot a "good natured kidding" that made it easier to talk with each other and solve problems.

One interesting reflection Bill had was that as a male majoring in Education he was often in the minority.

> A guy in Education, I usually find that I am on the minority end of it. Almost all the classes I take, I'm either the only male or one of two in the class. I mean over and over and over again. (Interview Transcripts, 4/15/92)

Yet, he didn't perceive that being a male presented any problem in the group processing. Bill found that everyone worked together well.

> If someone didn't understand, everyone helped to explain. If someone was missing, we covered for that person. We made sure they had all the materials and then assigned one person to call and fill in. It didn't matter, we took responsibility for it.
> (Interview Transcripts, 4/15/92)

Also, the group didn't have many active teachers. One member was preparing to be a nursing teacher. One was going from working for General Motors Corporation to becoming a teacher. One was a master's student completing the requirements for the degree. So, there were only two full time active teachers who were teaching in the classroom everyday. However, Bill felt that they had wonderful examples to share and their own experiences to add to what the group was talking about.

Middle School Group. The Middle School Group had four members, one male and three females. The respondent was Maria who was a substitute teacher

for two and a half years. Her masters degree is in Elementary Education with certification for K-5, sixth grade reading and social studies. Maria enjoyed refining Project Read lesson plans as she taught them over. Also, she had a collection of children's literature which she loved to share with her classes. The Project Read lesson plans and her collection of children's literature were used as resources for developing her lessons for the required course objectives. She characterized herself as "definitely" in the behaviorist school and very comfortable with it.

Maria felt very close to the group. She described the group in this way:

> Well, usually when you work with a group you have someone that kind of dominates group but we didn't! Everyone spoke up when they wanted to.
>
> We had a group member to became pregnant. Another group member had a very serious illness in his family and he missed a couple of times. We made up for what he missed and helped him with phone calls. So, he didn't miss a step because of it!
>
> Our group was fun! We had a great time together. We had a lot in common and we enjoyed working together.
>
> (Interview Transcript, 4/15/92)

Maria described one interesting situation in the middle school group. There was one member who was a more "visual" learner and consequently had a lot of trouble with the course syllabus. Maria's perception was that this member would not have made it through the class if the group had not helped her interpret what was going on with the papers (tutorial lesson narrative for objective #3).

Teaching Strategies

> *Teaching Strategies*: the activity through which the teacher or learning facilitator assists the adult student in acquiring new knowledge or skills.

> It is through specific strategies, selected by the facilitator, that the learner or participant becomes involved in the learning process. (Seaman & Fellenz, 1989, p. 5)

Throughout the "Learning Theories for Teachers" course there were specific teaching strategies employed by Hansen. Certainly, cooperative learning methods were the framework for the cognitive approach used by Hansen as his personal learning theory.

> The key insight is in my philosophy, I want all to learn. Learning theories are very difficult for teachers. I feel the only way for success to occur for all is to use cooperative learning groups and to give them (*students as teachers*) reasons for this type of classroom organization so they are also seeing it modeled. (Interview, 4/13/92)

Each class session followed a teaching strategy pattern that repeated a cycle:

* A lecture period - introduction of the theory
* Group brainstorming - discussion of theory in practice
* An application - group task that applies theory
* An evaluation session - large/small group evaluation

The lecture was more of a mini-lecture/discussion that introduced the theory which focused on a course objective. Chapter outlines were provided so that students could follow the discussion and take notes. The unique aspect of the lecture was the presentation of a lesson by the instructor were modeled the theory. The lecture was usually followed by a time for groups to reflect on examples of the theory in practice through brainstorming. This was often a warm-up activity that preceded group tasks. Students identified practical examples of the theory in their own classrooms. An application activity usually followed after additional discussion which allowed students to engage in a group task that caused them to apply the

theory to practice and reinforcement. The group task involved various applications such as analysis of the lesson that modeled the theory, evaluation of the model lesson and a unique task that specifically allowed theory application. Finally, an evaluation session was the last step in the cycle which involved assessment of the instructor's lesson presentations and individual students' presentations. During the evaluation session, students worked in their cooperative support groups and evaluated the model lesson presented by the instructor using the appropriate checklist for instructional moves. The instructor usually facilitated a large class group feedback session on the evaluation of the lesson. Also, students worked in the cooperative support groups and evaluated each others' lesson presentations to provide feedback for Objective #3 and Objective #6.

The strategy of structuring the class with lectures and cooperative support group work was generally met favorably by the students as reflected in their comments:

> I like the combination. I feel its smart to start class with groups so strugglers have a chance to get here and not miss the lecture. (Weekly Opinionnaire, 2/5/92)
>
> I like it. I like the input from my support group. (Weekly Opinionnaire, 2/10/92)
>
> I think it's a great example of an eclectic approach to teaching. Many of the things that structure the class are behaviorist — the goal is cognitive. (Weekly Opinionnaire, 2/5/92)
>
> I detest it. I'm afraid I won't learn much. (Weekly Opinionnaire, 2/5/92)
>
> I am receiving an instant feedback on my perceptions of what is being covered in class. I am finding out ways in which I can implement new strategies of teaching at least to the point that I can put a label on what I already do. (Weekly Opinionnaire, 2/5/92)

> I get the insight of how to interact with the student(s), with the method and content. (Weekly Opinionnaire, 2/12/92)

Hansen also was attentive to mixing the teaching strategies over the course of the three hour block of each class session. His technique admittedly was to change the teaching strategy every hour. So, this technique followed a rotation from lecture, group work, to large group discussions for theory application and evaluation. One student explained it like this:

> He broke it up into sections, even when he had a lot to say, he seemed to break it up — so, that we weren't doing one thing for too long of a time. We got to do group work, lectures with questions/ answers and discussion. (Interview Transcript, 4/15/92)

Another technique he used involved the overhead projector with transparencies which outlined key points while lecturing. The lectures could be characterized as informal. Although, it was clear that Hansen was teaching in a lecture mode, he allowed students to freely interrupt him and ask questions. Sometimes when a student asked a question or related a personal experience the discussion branched into a different topic but Hansen seemed to "go with the flow" and bring it back to the lecture topic. He also would sit on the edge of the podium table, crossing his legs at the ankle in a relaxed fashion. From my observations, it appeared that these factors contributed to the informal climate that characterized his lectures.

Hansen chose to organize the students into "cooperative support groups" to facilitate learning of what he characterized as a "difficult" subject matter. His past experience with presenting the learning theories to teachers (student evaluations) indicated that teachers found this to be difficult (Interview Transcripts, 1/16/91). The cooperative support groups provided a "learning together" environment which is

supported in the literature for academic achievement (Johnson, Johnson & Smith, 1991, Johnson & Johnson, 1987).

Learning Strategies

As stated in Chapter III, learning strategies can be broadly defined as behaviors, thoughts or a plan that facilitates learning (Derry, 1988/1989; Weinstien & Mayer, 1986). In the context of this study, learning strategies were directly taught at the beginning of each lesson by way of instructional move checklists (Appendices B, L, and M). The different learning theory applications called for different instructional move checklist or different strategies. Hansen delegated authority for the instructional task to the students and directed groups about interdependence (working together). Therefore, students developed learning strategies or instructional plans for accomplishing cooperative support group activities and for individual assignments. Learning tactics (individual processing techniques) were developed as a plan for the accomplishment of the course objectives.

The learning strategies utilized throughout the course were embedded in the selection of cooperative learning methods that required that learners should be organized into small groups. The decision to form the groups homogeneously by teaching grade level also has implications to the learner and emerges as a learning strategy. The decision to assign students to the groups for the duration of the 15 week semester for group development contributed to the learning process. Another significant learning strategy is the use of the outcome based objectives whose completion was contingent upon cooperative support group processing and task. The application and evaluation components of the course reinforced the learning

process as yet another learning strategy. Finally, the essential components of cooperative learning; positive interdependence, individual accountability, group processing, face-to-face promotive interaction, and social skills were embedded in the cooperative learning strategy.

When students were asked to respond to the assertion, *my cooperative support group was helpful to my learning in this course*, 64% strongly agreed, 27% agreed and 9% strongly disagreed. Combining the "strongly disagreed" and "agreed" responses, 92% of the 22 students surveyed agreed that their learning was enhanced by their experience in the cooperative support groups. Also, when students were asked to respond to the assertion, as a result of this course, *I felt that I significantly benefited from the experiences my cooperative support group shared*, 50% strongly agreed, 45% agreed and 5% disagreed. Combining the "strongly agreed" and "agreed" responses, 95% of the 22 students surveyed agreed. Other indicators include students assessment of the level of Bloom's taxonomy (levels of learning) their cooperative support groups were operating at most frequently, knowledge (46%), comprehension (50%), application (64%), analysis (64%), evaluation (46%), and synthesis (50%). Student indicated that they first felt that they could apply the theory analysis skills, 23% after Objective #3, 50% after Objective #6 and 18% after Objective #7. Finally, when students were asked to respond to the assertion, *as a result of the class I am better able to apply cognitive and behaviorist theory as appropriate*, 45% strongly agreed and 55% agreed. Combining "strongly agreed" and "agreed" responses, 100% of the 22 student surveyed agreed that they acquired the skills the course was designed to teach.

Some students explained the implications to the learner in this way:

> Students were actually partially the teachers in the respect that they have the responsibility of getting through the task. They end up coming to a conclusion —. The teacher (*Hansen*) has constructed it (*curriculum/strategy)* in such a way that they (*students*) are going to reach that outcome that you want them to but the students are constantly working together, and interacting together — so that, they come up with that (*objectives*). And you feel a sense of responsibility and accomplishment when it's done (*the objective*). (Fieldnote Transcripts, 4/15/92)

> Traditionally, the course would be to read the book, memorize the book and take the exam. But the way we did it in here it was talk about everything and use everything in every way. It took so much more out of you — then to read it and memorize it by writing it down. That was so much easier. (Fieldnote Transcripts, 4/15/92)

Interpretation: Cooperative Support Groups

On the first day of class, Hansen gave three reasons for structuring the curriculum around small group activities:

1. To utilize homogeneous groups of teachers with similar characteristics, in this class it was teaching grade level;
2. Survival (support) of individual teachers in the course; and
3. Translating theories to practical applications for ownership.

He defined CSGs as "teams" with the expectation that groups would develop "team effort" to successfully complete course objectives. The objectives included both group and individual outcomes and were designed to be facilitated through the CSGs. The intent was for group members to assist each other in the learning process.

During my initial interview with Hansen, he explained his rationale for the design of the course:

> I have a basic premise throughout the course and this is to try to make

> everything as practical as possible, and have the teachers work in support groups which is the "cooperative learning thing" and that is throughout the semester. ...the course is designed to run theory and my baseline design is that everything is based upon groups, group activities, working cooperatively and formulating the topics of the course objectives. (Interview Transcript, 1/16/92)

"Learning Theories for Teacher's" students entered the course with a vague idea of what the course was about. The students knew that the course was a foundational requirement in the Teacher Preparation programs for K through 12 Education which included Elementary, Middle School, Secondary and Special Education. Students had various impressions after their first look at the course syllabus:

> Well, when I first started the class—and looked at the syllabus —I was a little apprehensive — because of all the objectives. I told myself I would just break them down one at a time and hopefully I would get clarification as I went along. So, I never looked beyond —really I never knew where I was going. So, that was helpful—when I got into the groups...(Interview Transcripts, 2/17/91)

> One thing I want to know when I walk in a class at the start, I want to know what we are going to do, when, how it's suppose to be done and I want to know right now! I had to trust him (*Hansen*). I had to really let go and it was hard for me to do. But the first thing I thought was that we have support groups here. We have support here! And if some didn't get an area— then someone else did and that made it not completely comfortable but okay to let go. (Fieldnote Transcripts, 4/15/92)

> Confusion, and a sense of being overwhelmed with my class preps, this will be more crap to do. (Weekly Opinionnaire, 1/15/92)

> I had Dr. Hansen before and I knew he would explain and not let you get lost. Some of my friends in the class were ready to drop the class but I told them wait. I convinced my friends to wait it out. I just figured he would explain Objective #3. It's like a puzzle and we don't have all the pieces yet. It's not really clear on the syllabus — I had no idea what he was talking about until he explained. (Interview Transcripts, 2/7/92)

> Whew! It seems overwhelming —so rigid - demanding - I checked my

> Winter Term Bulletin to see the last day I could drop out with a "W." (Weekly Opinionnaire, 1/15/92)

These quotes were taken from interviews with respondents and responses from the weekly opinion questionnaire. These students were concerned about the outlined course objectives. Their feelings ranged from apprehension, to uneasiness, to confusion, and considering the option of dropping the course. At least two of the students seemed to find some reassurance in the fact that they would be involved in groups. They alluded to the possibility of support from other members for clarification and for giving and receiving help. The opinion survey indicated that when students were asked, *"Was this your first experience with a group based on cooperative learning theory?"* 50% (11) of the 22 students surveyed said, "yes" and 50% (11) said, "no."

The assignments for each "Cooperative Support Group" was announced the second week of class. From the perspective of one student, Hansen's course design was successful in creating a cooperative learning environment and a sense that at least that others in the class would be there to help with the objectives:

> When I got into groups different people in my group would say, "Have you looked at this objective? This is not going to be that difficult because we need to do this..." "Hansen mentioned this..." "Everyone bounced off everyone else." That was the initial feeling I got from the cooperative group... that this was going to be helpful... the fact that we were all in the same boat together... we were going to help each other and there was merit to that... (Interview Transcripts, 2/17/91)

Week 1: Objective #1

> *Teachers will write an analysis of their current understanding of a theory of learning as it applies to their teaching situation and complete reactions to incomplete statements. (Pre-test)* (Appendix B)

The first course objective was introduced in the first class session. Objective #1 provided students an opportunity to individually write an analysis of their current "understanding" of a theory of learning as it applied to their teaching situations. Hansen had made some changes to the first objective since the winter semester, 1991. The syllabus at that time, asked that students write a "meaning of a learning theory" and current understanding of a theory of learning as it applied to their teaching situation. The "meaning of learning theories" was dropped from objective #1 in the syllabus for Winter Semester, 1992. Students were given the option to write out Objective #1 in class or to take it home and hand in the written assignment the following session. Most students took the extra time to reflect on their response. This assignment was merely checked for receipt and returned to the students the last class session of the semester for developmental analysis. My review of this assignment indicated that "students as teachers" found it difficult to explain their current understanding of a theory of learning in terms of identifying specific theories or providing significant analysis of their current teaching situations. Receiving this assignment back at the end of the course allowed students to explore their own emerging learning theory. This objective did not involve any group processing.

The illustrations designed by the researcher in Figure 5, 6, and 7 represent the curriculum for "Learning Theories for Teachers" and classroom management using VENN diagrams to show the connections with the cooperative group structures. These figures were developed by the researcher after analysis of the findings. Figure 5 (p. 109) illustrates the "Learning Theories for Teachers" course curriculum which covered such contemporary theorists as Gagne, Bandura and Bruner. The overlapping of the curriculum with the cooperative group structures

LEARNING THEORIES FOR TEACHERS CURRICULUM CONTEMPORARY THEORIST

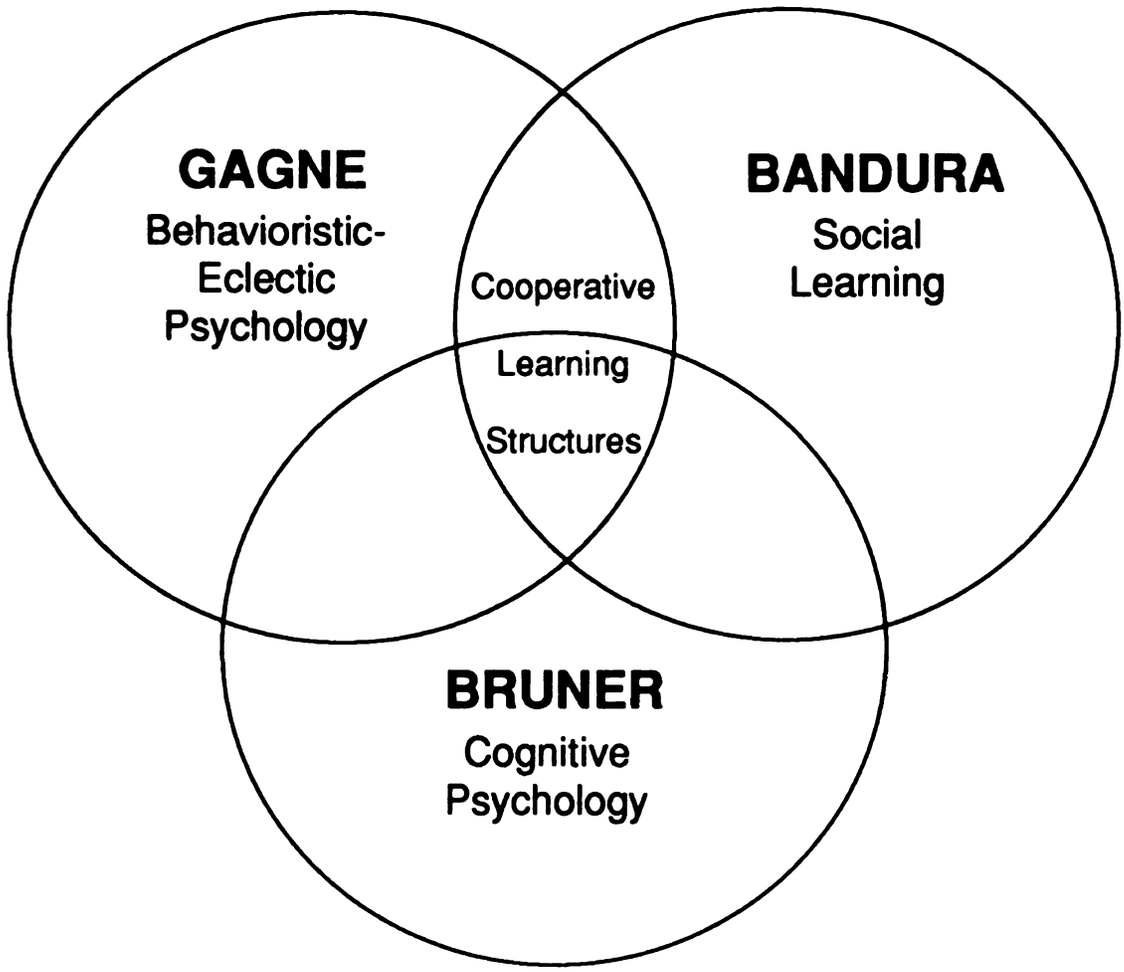


Figure 5

(R. M. Lataillade Beane)

MODELING ACTIVITIES
LEARNING THEORY APPLICATION AND EVALUATION

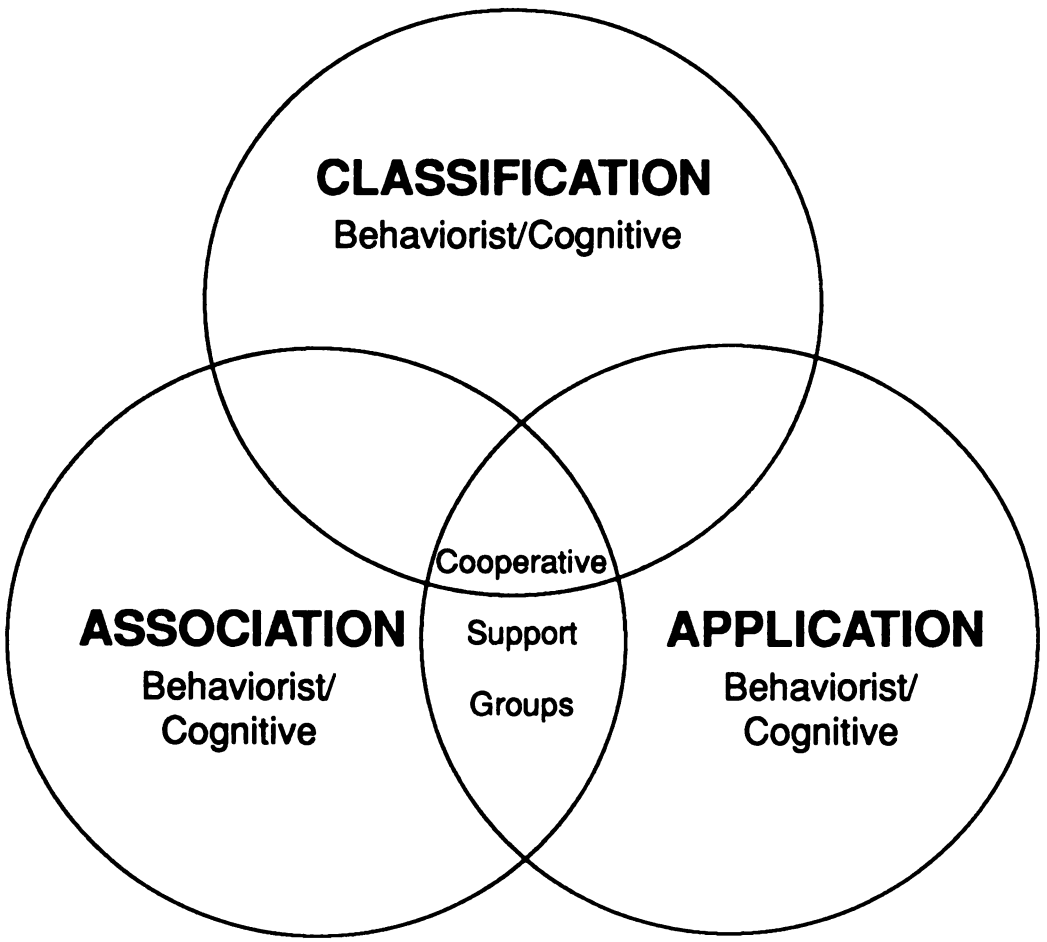


Figure 6
(R. M. Lataillade Beane)

"LEARNING THEORIES FOR TEACHERS"
Teaching Strategies and Classroom Management Techniques

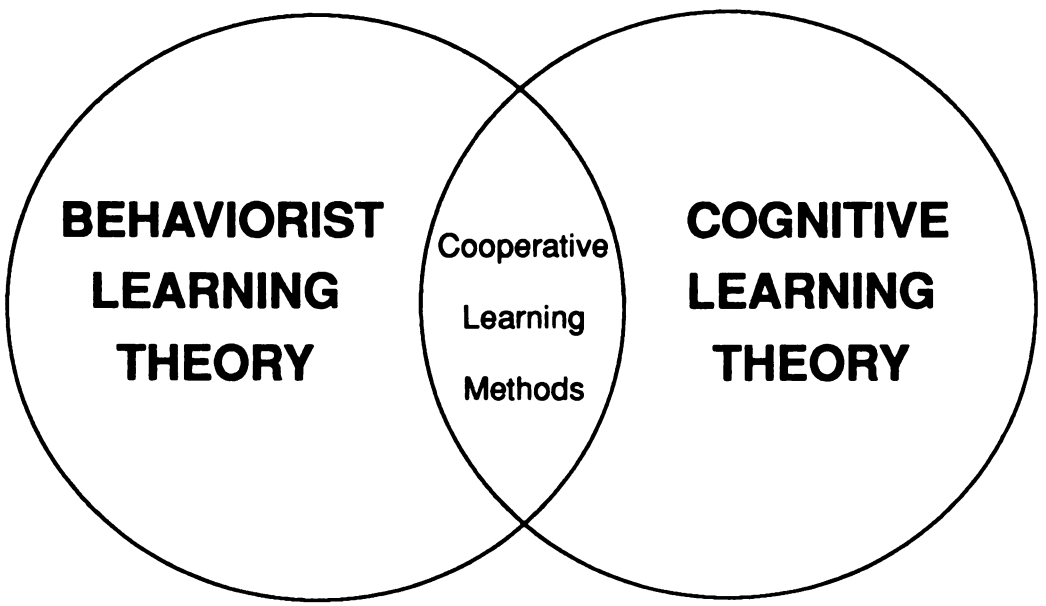


Figure 7

(R. M. Lataillade Beane)

represents the secondary curriculum. Figure 6 (refer back to p. 110) illustrates the modeling activities for learning theory application and evaluation. The modeling activities involved behaviorist and cognitive learning theory applications which were evaluated from three levels of instructional moves, association, classification, application. Figure 7 (refer back to p. 111) illustrates the broad content areas of behaviorist and cognitive learning theory which were always presented in the cooperative learning structure throughout the course.

Also, during the first class session, Hansen asked students to write information about their teaching background on an index card. Such basic information was requested as teaching grade level, certification, program of study, and any other information that the students felt relevant. Hansen used this information to make group assignments by teaching grade level.

Week 2: Objective #2 - CSG Development - Analysis Framework

> *Teachers will analyze and evaluate current curriculum materials as to the environment (physical and psychological), curriculum, teaching strategies and learning strategies using the analysis sheet.* (Appendix B)

The second class meeting began with Hansen passing out a list of the group assignments. Groups were asked to cluster and get acquainted as he called off the names for each of the assigned groups. Hansen explained the necessity for group members to work together and assist each other with survival in the course. Hansen emphasized that the "level of interaction" within groups on any given objective was directly related to the quality of group and individual outcomes.

Hansen introduced Objective #2 by identifying several teaching situations for

analysis which represented either Behaviorist or Cognitivist theory applications (refer back to Figure 6 (refer back to p. 110). These teaching situations included, "Sesame Street," a children's television education program; "To Sir With Love," a movie about the development of students in a nontraditional classroom; "Mr. Roger's," a children's educational television program; "The Dead Poet's Society," a movie about a nontraditional approach to teaching in the classroom; "My Fair Lady," a movie about a transformation of a unlearned lady to learned; "Lean on Me," a movie about a nontraditional approach to schooling. Hansen used these examples to illustrate learning environment (physical and psychological), curriculum, teaching strategies and learning strategies. The examples had the affect of becoming living examples of both behaviorist and cognitivist theory applications. For each example, through open class discussion Hansen facilitated analysis of the four component framework of analysis: environment, curriculum, teaching, and learning strategies.

Students had brought in all kinds of curriculum, materials, books, from their own teaching situations and were ready to tackle Objective #2 with the examples in mind that Hansen had provided. The academic task designed for Objective #2 involved the opportunity for students to become familiar with this method to analyze and evaluate curriculum, environment, teaching strategies, and learning strategies. The activity was for the teachers to collaborate in their "Cooperative Support Groups" using "Principles of Consensus" (Appendix A) to arrive at a single analysis sheet to represent their groups' work on analyzing and evaluating at least one of the items brought in by each group member. The "Ten Principles of Building Consensus" was a handout Hansen gave the students to assist them with working through group activities.

My observation was of Primary Education CSG students. The five female students I observed, wasted no time but began discussing curriculum materials they had brought into class. They had constructed an analysis sheet with headings along the top quadrant and along the side lengthwise. The group of women discussed "Assertive Discipline" a strategy being used for discipline in their respective school to supplement the curriculum. The group processing went like this (Fieldnote Transcripts, 1/22/92):

S1 - Do you use Assertive Discipline?

S2 - I do. I write their names on the board and put a check by their names if they act up. At the end of the day, I give crackers (for good behavior).

S3 - It's easier with little children.

S2 - A cracker means so much to them.

S4 - But does it bring out the negative?

S5 - I did a lottery for good behavior!

S1 - Some really need the discipline. They need to know their limits, the rules...

S2 - There's more to it.

S4 - But I just see it as negative. I try to catch them doing something good!

The discussion was specifically about teaching strategies students used for the application of "Assertive Discipline" which is a supplementary program for classroom management. The group members apparently all shared common experiences in implementing this class management tool and were comparing notes. The object of the task was to discern the theoretical base of the curriculum materials under analysis. The group had decided early on that this was a Behaviorist

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Week 3 - 6: Objective #3 - Behaviorist Theory Applications

> *Teachers will apply Gagne's definition of learning, identify Gagne's eight conditions of learning and then apply the theory to a TUTORIAL lesson where components will be used. The lesson must include: 1. a written hierarchy, 2. objective(s), 3. utilization of the task analysis of instructional moves and 4. the instructional checklist analysis from classification and/or application. This lesson will be taught to the group, and analyzed and evaluated by the group following instrument. (See attached guideline #3 for details)* (Appendix C)

By the third week of class, most students had become acquainted with their assigned groups. Preliminary task for Objectives #1 and #2 had provided the groups with an idea of how groups would operate in the context of the course. As the class moved to Objective #3, Hansen engaged the students in a series of group activities to lay a foundation for cooperative support and the academic tasks.

Informational Hierarchy Task. The first of these activities involved formulating an information hierarchy for the tutorial lesson that would be taught to the group in fulfillment of Objective #3. Objective #3 had been introduced and the planned group activities help students to complete the steps to the desired performance outcome. Here, Hansen introduced a preliminary group activity for Objective #3:

> Let's see where we are and where we are going. Objective #1, most of you have submitted your individual theory of learning.If not, please get that in right away. Objective#2 ...most groups have submitted their analysis of the curriculum materials you brought in. Objective #3, deals with Gagne,Chapter 6 (text reference), tutorial lesson, observe and evaluate (itemize Objective #3). One person is teaching others to observe and evaluate Gagne's seven categories of learning. There are five to six students in each group and each of you will analyze five to six papers (lesson plans) to evaluate. The lesson will include a hierarchy. Hierarchies represent the sequence of activities you teach in some subject. It is a kind of data base for your subject matter. What's the sequence you teach and how do you want to teach it? I

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> want to give you time in your groups to share hierarchies. (Fieldnote Transcripts, 1/22/92, 1/23/91)

The students gathered in their respective groups to share and formulate information hierarchies. Hansen took a great deal of time to explain the difference between informational and task hierarchies. The group task involved developing an informational hierarchy from the subject matter data base of the content area that students chose to pursue for this task. The initial discussions of the Secondary and Adult Education CSG, went like this (Fieldnote Transcripts, 1/22/92, 1/23/92):

A - Can you give me some ideas?

B - Subject area?

A - English.

C - Art...I teach self-confidence using shape-by-shape drawing. To give them confidence to draw, they don't think they can. I have them identify simple shapes on top of drawings. It's like a giant puzzle piece.

A - I saw that on TV - drawing upside down or something.

C - Yes, it's right and left brain theory. I usually start off with a confidence builder. They can pick anything but it has to be a photograph. I use it as a first step to drawing. I stumbled on to it my first year teaching.

During an interview, Jocelyn an Early Childhood teacher in Primary Education CSG expressed these comments about <u>relating experiences</u>:

> Experiences are definitely shared and in doing that problems are solved. Then the course of actions are more clearer. (Interview Transcripts, 2/17/91)

> I like the ideas. We share different ideas and strategies, what's happening in our class, someone else gives an idea from their own classroom that helps. I like the verbal interaction, other people's stories, other solutions. It's like brainstorming. It's nice to be able to share with other teachers and hear new methods of doing things.

(Interview Transcript, 2/7/92)

"Adult learning in a cooperative learning environment may be characterized by the assertion 'relating of background experiences,' (Interview Transcripts, 1/16/91) which emerged from analysis of the observation data. This is collaborated by the evidence of interview comments from Hansen, "they are willing to share their ideas because they've had a lot of experiences" (Interview Transcripts, 1/16/91). The assertion is further evidenced in the fieldnotes of group discussions in all the "Cooperative Support Groups" which describe teachers relating background experiences (Fieldnotes 1991/1992).

In addition, the assumptions proposed by Malcolm Knowles' (1980) andragogical model indicates that "Adults have a rich reservoir of experience that can serve as a resource for learning." Hansen's model of Cooperative Learning using the "Cooperative Support Groups" seems to create a structure wherein adults can use their background experiences as a resource for learning. In this instance, Cooperative Learning is characterized by "relating or sharing background experiences." Incidents of teachers relating background experiences can be found in the field notes documented for each cooperative group activity. Also, incidents of Hansen eliciting students to draw from their rich reservoir of experience to serve as resources for learning in the classroom — for application of the theories and concepts presented are numerous (Fieldnote Transcripts, 1991, 1992).

Lining-up Preschooler's Task. During week four, I observed another instance of this assertion "relating background experiences" in the cooperative support group processing, when Hansen introduced the behaviorist learning theory of Gagne. He conducted an open discussion about models of signal learning, stimulus response

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and finally chaining. He asked teachers how they would teach a group of preschoolers to line-up using the chaining theory (Chaining is a series of stimulus responses that condition a precise behavior.) Hansen's question was formulated for a group activity which allowed teachers to apply the chaining theory to the "line-up" situation. This group activity facilitated one of the theory applications for Objective #3. We look in on the classroom and find Hansen giving task instructions:

> Hansen said, Okay, what you're going to do now is get in your groups and analyze the question as it relates to chaining. I gave you an example and it related to "lining-up." Now, chaining is a series of stimulus responses. The challenge to the group is... now that all of you have thought this through is... to come up with the best example that you can deliver. It can be a consensus of the group or can be one that someone already has there...Okay, you know what your task is? We'll see how you do. I'll give you five— eight minutes and see how you do. (Fieldnote Transcripts, 1/30/91, 1/29/92)

Hansen's instructions to the "Cooperative Support Groups" were to design a task analysis indicating how they would teach pre-schoolers to "line-up". He directed them back to the discussion that preceded this segment in which he laid the foundation of Gagne's stimulus response theory and subsequently the chaining theory. He directed the students to work together in their CSGs and by consensus or expert decision arrive at the best they could deliver. Because of the nature of the topic, "lining-up pre-schoolers," Hansen chose to have the Elementary CSG evaluate the responses of the other grade levels as experts.

Accordingly, he directed the higher grade levels to give their feedback to the whole group first (Secondary, Middle School). The homogeneity of the CSGs was evident by the grade level designations. The nature of the activity was problem solving; consensus principles were identified as a process to use for a solution and cooperative behavior was implied. Next, let's look in on the actual group activity and

see how they processed the task. The group activity involved six members (three females, three males) in the Secondary Education CSG. They discussed how they would teach pre-schoolers how to "line-up" using Gagne's chaining theory application (Fieldnote Transcript, 1/30/91, 1/29/92).

A - We're lining-up kids?

J - Okay how are we going to do it? (Takes on the role of recorder)

A - By rows?

J - Well, I don't know how you would do it but if I was doing it I would have to explain that when we go places its easier for us to line-up rather than for us to be all grouped up together. Do you do that? Do you explain it to them?

J - Is that going to be the rationale for lining up?

A - Then, how in depth are you going to do it?

J - He said it was up to us. I don't know.

K - But you can give a synopsis. What a line is first. I think that you have to know. Then, a reason. And then, kind of start in on how to do it.

J - Okay, you want the demonstration first and the rationale second?

The students continued to discuss the sequence of the chaining activity to establish the linkages that would elicit the desired response from the pre-schoolers. They grappled over the sequence point by point giving examples of what prior knowledge pre-schoolers might bring with them to the classroom. The dialogue represented participants asking questions to facilitate group processing, problem solving by way of consensus, clarifications and paraphrasing as well as sharing experiences. Nancy, one of the teachers, shared her fear of applying for a sixth

grade teaching position because of this same prior knowledge issue. Again, this sharing of a personal experience is the way the processing sometimes plays out. They grappled over this for a few more minutes and shared examples of prior knowledge pre-schoolers might have such as "holding hands when they are going places," "getting on and off a bus in a single file." They decided that some kids knew what a line was and that is where the group discussion resumes (Fieldnote Transcript, 1/30/91, 1/29/92).

J - Okay, What a line is and why we might want to use a line. Are we still going to go with letting them know what a straight line is. So, then we demonstrate and give the rationale, still? Okay. So, it's probably still a good idea to cover it, you mean?

J - Yeh, and how are we going to do it in our room.

J - So, and how are we going to do it? (Monitoring consensus.)

A - By Groups?

K - Classifying it by Colors? or letters... How do you enforce it.

J - You can classify it anyway by groups. You could change it day by day.

J - But you wouldn't have to do it everyday, once they got use to it, would you?

A - How do you walk in lines?

K - You'd have to practice. And this could be the practice part.

J - Okay, Practice. (In a consensus tone, she wrote it down in the notes.)

J - Did you write that down? Practice?

At this point, Hansen interrupted the group activity. He asked the Secondary Education group to report their response for the question to the larger group. Here,

we can see the contribution of various members of the CSG can be seen and the group processing unfolds clearer instances of asking questions, clarifications, some analysis, collaboration and consensus building. J, one member of the group begins monitoring the group consensus as a way of facilitating a group solution to the task. It happened that the Secondary Education group was called on to respond first. This is what the recorder reported to the whole group when prompted by Hansen (Fieldnote Transcript 1/30/91, 1/29/92).

D - Okay, What do we have? The Secondary Group...?

A - That's us!

D - You have the perfect solution right. (Looking at the Secondary Group) JD's still scrambling there? We are talking about Chaining — this is linking two or more stimulus responses and we will cover the last part about links and what happens when links are not there. What happens? Chaos happens. (Class laughs.) With that Secondary group?

J - Okay, we would: (Reading from her notes of the group consensus.)

1. Ask them what a line is. Depending on the response...
2. Explain what a line. Get examples.
3. Explain why we might use a line.
4. Then, explain how we will use a line to line-up in our classroom and demonstrate it to them.
5. Then, by groups, rows, some breakdown of the larger group we have them practice in small groups.

Hansen - Okay, did they make it. Thumbs up or thumbs down? Did they make it? (Looks over for thumbs up/down sign from Elementary group.)

Okay you made it!

The cooperative support groups completed the CSG process and the outcome of the deliberations were presented to the large class group and assessed by the expert group of Primary Teachers. The teachers in the Secondary Education Group tackled a learning theory identified as "chaining" and attempted to apply that theory to a practical application of teaching pre-schoolers to "line-up." This is the format that the course follows with each objective.

The activity was one of several foundational activities which worked up to the performance outcome and individual written assignment for Objective #3. Overall, the vignette when analyzed to see "everyone bouncing off of everyone else" presents a rich example of this particular feature and others that characterize the CSGs processing function. Ideas were elicited for examples of how to line-up kids; rationale for lining-up kids; ways to practice lining-up; and an instructional checklist for lining-up kids as an outcome of the group processing. The "bouncing off everyone else" assertions could be viewed as a metaphor. It describes the group interaction and gives a sense of a ping pong ball being served to members of the group as they paddle back their comments into discussion as resources of the problem-solving activity. The opinion survey indicates that when students were asked, "In my opinion, the preliminary group processing for a task can be described as "everyone bouncing ideas off everyone else," 36% (8) "strongly agreed," 55% (12) "agreed" and 9% (2) disagreed. Combining the "strongly agree" and "agree" responses, 91% (20) of the 22 students surveyed agreed with the assertion "everyone bouncing ideas off everyone else." (Appendices J and K)

Also, this was a clear instance of the CSG facilitating teachers to map out

instructional moves (procedural learning) for a tutorial lesson of teaching kids to "line-up." Then, several roles could be distinguished like the facilitator, the recorder, checker/summarizer, and reporter which are self-explanatory.

Objective #3 marked the turning point of the course for curriculum, as well as learning and teaching strategies. The structured activities both in and out of groups set the stage and framework for the other objectives that followed. The instructional moves which had to be applied to the tutorial lesson were either understood or became more confusing at this juncture. Therefore, Hansen reminded the students of the need to "depend" on their groups to process and evaluate each members tutorial lesson and the synthesis needed to complete the individual written assignment which followed. This had direct implications for the level of interaction in each CSG. The opinion survey indicated that when students were asked, "I found the technique of "talking it out" was effective in preparation o ftheory applicaiotns," 50% (11) "strongly agreed," 41% (9) "agreed" and 9% (2) "disagreed." Combining the "strongly agreed" and "agreed" responses, 91% (20) of the 22 students surveyed agreed that "talking it out" was an effective preparation for theory applications. When students were asked, "I found the technique of "talking it out" was effective for analysis of theory applications," 50% (11) "strongly agreed," 36% (8) "agreed," and 14% (3) "disagreed." The results were slightly different. Combining "strongly agreed" and "agreed" responses, 86% (19) "agreed" that "talking it out" was an effective technique for analysis of theory applications. (Appendices J and K)

Tutorial Lesson. The first group I observed during the sixth week of class, was Primary Education CSG. The women in this Primary Education group appeared organized. It was clear from the observations that they had determined the order

each member would teach their lessons and the way they would evaluate. They listened to each member as they taught the tutorial lesson from beginning to end. Then members questioned the teacher about various parts of the lesson from the appropriate checklist. There was a pattern to this CSGs processing activity and it was followed for each lesson taught.

The vignette that follows involves the Secondary Education CSG. Unlike Primary Education CSG, the Secondary Education CSG's processing appeared not so organized. Although they originally agreed to listen to lessons all the way through — they changed their minds and stopped and asked questions all the way through the lesson. The student who taught the lesson made revisions along the way and reviewed the revised lesson at the end of the evaluation. So, the prepared lesson was not taught as a whole — the distinct parts outlined by the instructional moves checklists (Appendix L) was followed and pulled apart and scrutinized.

Nadia prepared a tutorial lesson on pre-writing. Admittedly, she felt apprehensive about teaching the lesson and about what she had prepared. She asked the group if she could present her lesson last — so she could see what others had done. In her weekly opinionnaire, Nadia had these comments about her group and processing Objective #3 the tutorial lesson activity.

> I felt that the group was of great benefit to me in organizing my lesson. In fact, had it not been for my group, I probably would not have done well on my assignment. The steps that I proposed to complete the objective, when discussed with my group, turned out to be mixed up and missing important sections. (Interview Transcripts, 4/17/91)

The tutorial lesson that Nadia prepared presented a pre-writing strategy called "clustering." She started by sharing her informational hierarchy listing with the group. Initially her objective for the lesson was to have the students complete the clustering

activity as well as a descriptive essay. The group quickly advised her to deal with only one task for the purpose of the tutorial lesson. The other problem that I observed was that for the entire first half of the group's evaluation of her lesson — there was confusion because Nadia was incorrectly referring to the "VENN diagram" as "Clustering." There is a distinct difference between the two strategies as the "VENN diagram" is a tool for comparative analysis in reading or writing and the "Clustering" technique is a way of generating ideas from a main idea and organizing thoughts for writing. A "VENN diagram" is an illustration of two overlapping circles which may represent for instance two different topics or concepts which have similarities or common characteristics. "Clustering" on the other hand is an illustrations that begins by recording a nucleus word or topic which is circled and then recording other related words which come to mind and circling the word and connecting it to the closest related word to generate ideas to writing.

Nadia sounded insecure — she kept commenting that her lesson was "screwed-up." Here is some of the initial dialogue of the Secondary Education group as they evaluated Nadia's tutorial lesson on pre-writing strategies (Fieldnote Transcripts, 2/20/91).

N - Okay, well I'm starting out on a hierarchy of objectives... narrative paragraphs, then descriptive paragraphs, starting with people, places, objective action, expository paragraphs, persuasive then into essays... So, this lesson is a descriptive essay and they'll know how to do pre-writing.

A - You know what? You could almost take your whole hierarchy and use pre-writing.

J - Yeh, because each one of those (items on hierarchy) are separate and pre-writing would be one of your hierarchy.

N - You mean I could do pre-writing?

J - Oh!

N - I can do pre-writing! What do they have? Let's see they have clustering. This is kind of what we just did today in class. What is it there's branching. What's another one? It has to be the steps. Is there another one? (Group members appeared not to know the answers to questions. They did not respond.)

J - Outlining?

N - How many did we have to have in your hierarchy?

J - It was ten — it doesn't matter.

N - What's another one? I can look it up. (in frustration)

J - Maybe that would be better.

N - I'm getting nervous.

J - You're getting nervous?

N - Well, let me do my objective because I don't know where my lesson might end up — I don't know if it applies or not but let's go through it and maybe you can help me tear it apart. Given high school freshman students will be able to generate a free writing list of ideas for writing a descriptive essay about a favorite vacation spot in Michigan with a 100% participation using a VENN diagram (she really meant "clustering" diagram).

A - I would cross the descriptive essay out. Because really you are not

having them write an essay now. What you're having them do now is learn to use the VENN diagram to cluster their ideas and stuff.

N - Okay, let me do my lesson, and we'll go back to my objective.

A - Okay then, your objective is making a VENN diagram.

This quote from the Secondary Education CSG's group activity for Objective #3's tutorial lesson points to analysis and problem solving which took place during the group processing. Nadia shared her informational hierarchy with the group and they immediately suggested a big change for the focus of her lesson. They suggested she focus on one pre-writing strategy and drop the descriptive essay from the objective and the lesson. Nadia began asking consecutive questions about the hierarchy but the group was unable to respond with any suggestions for additional ideas for the prior steps in her hierarchy. They may not have had the knowledge of this particular technique and after a while Nadia reconciled that she could look up the information later. They went on to her objective. Nadia admitted that she was growing nervous about her lesson presentation. A member of the group, Anita, suggested that she refer to the "descriptive essay" from her objective to coincide with the revision to the hierarchy earlier. This characterized some critiquing of the lesson but still fell primarily under analysis and problem-solving. Throughout the dialogue, Nadia was asking for clarifications and asking questions to better understand the task. She asked the members of the group to help her by tearing apart the lesson. Nadia went on to work through a typed narrative of her lesson. Another member of the group role-played a student and responded to questions as Nadia taught the lesson. Nadia started referring to the pre-writing technique as "VENN diagram/ clustering" because she wasn't sure what it was called. It was not until they

discussed the number of places in Michigan that would be illustrated on the "VENN diagram" that Nadia figured out that maybe it wasn't a VENN diagram after all. (Fieldnote Transcripts, 2/20/91)

A - You are doing the VENN diagram for two places?

N - No, the VENN diagram is for one place — I was going to take Traverse City and make a cluster.

A - Is that really going to be a VENN diagram?

N - I don't know. Maybe I don't really know what a VENN diagram is.

A - Well, you take two circles — (draws illustration on paper for group to see).

N - Well, I used the wrong word. I'm really off base! Oh boy! Anyway I had the wrong word. So, I wanted "Clustering" instead of a VENN diagram.

Nadia went on to show the group how she would cluster her favorite vacation spots in Michigan. The flow of the prepared lesson and the narratives that she role-played were effective. However, the group again identified a problem with determining the specific instructional moves checklist (Application, Classification, Association) that should be followed for the lesson (Appendix L). This was a significant point because the lesson could have been evaluated based on the wrong set of criteria otherwise. Later while interviewing Nadia she explained,

> The steps I proposed, when discussed with my group, turned out to be mixed up and missing important sections. Had I been required to turn this in on my own, I wouldn't have realized this error... or at least it would have been more difficult to find it. Then, by talking it out with my group, I was able to figure out what steps were appropriate at what point in the checklist. (Interview Transcript, 3/17/91)

The reference in this quote about "talking it out" with the group points to the experience of participants in a "thinking aloud" as an additional feature of the Cooperative Support Groups. The sense that Nadia gives is that by hearing her own thinking about the construction of planned tutorial lesson she was able to detect errors and correct them before submitting it for the instructor's evaluation. The important and most difficult part was identifying the type of instruction that was being taught and selecting the appropriate checklist to follow.

Hansen provided teachers with a packet of several instructional move (procedures to follow to implement theory applications) checklists (Appendix I) when he introduced Objective #3 which involved: 1) General instructional moves, 2) Checklist for Rules for Association (Chaining and Verbal Association) Checklist of Rules for Classification (Concept, Multiple Discrimination) Checklist for Rules for Application (Rule Learning, Problem Solving). These checklists served as a guide to set-up lessons and format them to include the required steps based on the specific level of the behaviorist learning theory being used which were Association, Classification, and Application. The students selected the level of the theory they wanted to use and apply using the content of the tutorial lesson. To reinforce that selection, Hansen demonstrated model lessons in each of the broad theories areas and subareas. Hansen, provided supplementary group activities such as "Prep" activities (preliminary activities or task which allowed groups to work on parts of the objective) to develop informational hierarchy and the "Chaining" activity featured earlier where the teachers worked on mapping out how to teach pre-schoolers how to "line-up." The level at which the CSGs operated on Bloom's (1956) taxonomy are reported in the opinion survey results in Appendices J and K. Students indicated

significant group operation at the levels of application, 64% (14) "frequently" and 36% (8) occasionally; and at the level of analysis, 64% (14) "frequently," 27% (6) occasionally and 9% (2) "sometimes." Other results may be reviewed in Appendices J and K.

Hansen expected that each student's lesson would be scrutinized by their Cooperative Support Groups, so that the outcome would be a perfected model of a behaviorist theory-based instruction. (Fieldnote Transcripts, 2/20/91)

J - Do you have any rules?

A - That's why I was wondering if you were doing rule learning and problem solving or are you slipping back to classification?

N - I'm just thinking...

A - Because, I'm just thinking now you're making them (students) choose what kind of definitions and stuff for the diagram.

N - Could I just explain what I was going to do? 'Cause, I know my typed lesson is kind of screwed-up now.

During the final dialogue of this vignette which follows, Nadia works through the demonstration of her tutorial lesson for Objective #3. She asked the instructor Hansen to listen to the group. This introduces how Hansen facilitated the group function and processing. The group was struggling with Nadia and did not seem 100% sure if the instructional moves checklist selected was the right one. They had agreed to follow the Application checklist and were stuck on item #2 and #3. Item #2 on the checklist asked the students to demonstrate the "whole task" with descriptive information to the learner and state the rule. Nadia had demonstrated drawing a map of Michigan and starring different cities on the map to illustrate where she

visited on her vacation. She shared pictures of her family and herself at the different vacation spots in Michigan such as Oscoda, Traverse City, Battle Creek and Mackinac Island. She selected Mackinac Island as a main idea to cluster different images that reminded her of their visit. Item #3 on the checklist asked the students to take the task in item #2 apart starting with a stimulus situation for recalling parts. Nadia did not seem to understand the transition from the whole task to the parts of the task. We look in on the group process as Hansen is invited to set in for clarification of the task. (Fieldnote Transcript, 2/20/91)

N - Can you listen in or don't you want to ?

Hansen - Yes!

A - I'm just thinking it says to tear the task a part — what you are actually doing is the opposite. You're building it up.

Hansen - That is #3 when you get into the minute detail of what you want, and you break it apart. Not build it up. That's #4 when you go back to the whole again.

N - Okay! (The group answered simultaneously relieved at the clarification) Here, Nadia brought Hansen up-to-date with the status the group in the processing the lesson, the nature of the content, and their thinking about the instructional moves.

With Hansen's help the group was able to walk through the "Application" checklist (Appendix L) and evaluate Nadia's lesson. The group was bordering frustration and Hansen commented in our discussions that when using cooperative learning methods groups should not be allowed to flounder past certain frustration levels. He stated that the job of facilitating and monitoring of group function is to

watch levels of frustration and promote positive group processing with clarifications and questions to redirect the group to success. So, in this next vignette Hansen ask the group for clarification on the definition of "Clustering" and he goes on to clarify points of the checklist (Appendix L) not content but the design. (Fieldnote Transcripts, 2/20/91)

Hansen - That's what I'm saying. I'm stepping in here... so help me if I'm wrong. I see that all these are the parts you're trying to put together and in #4 can you see all these parts come together?

A - All your little lines off your main idea (referring to the "Clustering" illustration on Nadia's lesson plan) go back to Michigan.

N - So, in #2, should I get into doing the whole State of Michigan?

A - Uh huh, I would say do the whole thing...

Hansen - Diagram it, Clustering.

N - Clustering it, yeh!

A - You have to do #4 ... now that you've got all these your going to go back and...

Hansen - Review, (chimes in and ends the sentence) that's what we're going to do folks ...that's what we want to do...

A - Review!

Hansen - Now, are there any discrepancies? Discrepancies are things that are inconsistent. (Appendix L)

N - Would their always be discrepancies?

Hansen - Well, no— with #5 as with #6 it may not apply. But most things if you have a hierarchy going, there's always a discrepancy that may involve

the other things in your hierarchy.

N - Oh! Like how is it different from free writing?

Hansen - There we go! There we go! Exactly!

N - Okay! Okay! Got that! (Wrote it down in here lesson plan draft).

J - "The ankle bone connected to the...(Sings a bar) (Everyone laughs. The frustration appeared to be released with the new found success in processing).

The group talked it through with Hansen and completed the Application checklist (Appendix L). Hansen was very positive and gave the group members, especially Nadia, comments of approval and let them know they were on the right track. The group worked out of frustration into feeling good about the flow as they moved quickly through the checklist of instructional moves. Suddenly, everything seemed to click. "Everyone is bouncing ideas off everyone." Nadia was furiously taking notes on her typed lesson draft for later when she revised her plans for the individual written assignment. The dialogue ended with this discussion between Nadia and another member after Hansen has moved on to another group: (Fieldnote Transcripts, 2/20/91)

N - Thank you for my group! Oh man! —mines is really wrong! Man, everything on mines was all screwed-up!

J - Well, it's not screwed-up it's just that you changed. You changed your objective. You had "essay" and you changed to "clustering!"

Later in the respondent small group interview and weekly journal, Nadia reflected about how she felt after this session:

This really was a relief because I was very anxious about whether I

was right or wrong. Therefore, I could say that the cooperative group was a lifesaver for me! (Interview Transcript, 4/17/91)

In the final respondent interview, Nadia shared these discoveries and perspectives which characterized the cooperative group behavior as (Interview Transcripts, 4/17/91):

*Being able to utilize the expertise from each other, and being able to recognize what others have to offer (looking beyond yourself)

*Allowing equal input of all members —one person should not dominate the discussion or the goals or direction of the group

*Relying on other members of the group to be able to give you suggestions which will help you or enhance you and your learning.

For some those used to self-reliance, partnership is risky.

*Putting your ideas together with others to be able to solve a problem when you may not be able to solve it on your own.

Nadia summarized her cooperative group behavior and by her experience with the Secondary Education Group very well. This was a rich example of group processing and it included many of the features listed earlier in this study.

Other students had these reflective comments during the final respondent interviews (Interview Transcripts, 4/17/91, 4/15/92):

*Everyone has different expertise and you have to switch roles depending on the topic or what your working on. Different people take over depending on their expertise.

*The other way (large group) some people are shy and won't speak up. But in small groups it's less threatening. Even if someone says something that's inappropriate, no one makes you feelbad.

*You get feedback! The feedback got me going. If you're doing it yourself, you get no feedback. It's nice reinforcement to clarify what you want to do.

*It personalizes the learning experiences when you are working in groups.

*The groups help to clarify that you are on the right track. Cooperative learning promotes refinement, clarifiers help to break it up so you can know how to go about doing it.

*Sure, the objectives could be completed without the groups but it would be more difficult. You could do it alone but it definitely would be more difficult. The groups definitely made a difference.

*Groups dynamics! Different people have different roles on different days depending on the topic and their level of expertise. One person paraphrases, another is questioning, someone is redirecting, someone acts as a facilitator.

*You have to change your role depending on the topic. Feedback information — and cooperative with each other.

*Experiences are definitely shared and in doing that problems are solved. The course of actions are more clear.

Objective #3 was thought by Hansen to be the turning point of the "Learning Theories for Teachers" course. Objective #3 is significant in establishing the process that Hansen has created by way of the cooperative learning environment of the Cooperative Support Groups and group processing of objectives toward the goal of individual synthesis. Students who responded to interview questions and who submitted weekly opinionnaires agreed that somewhere during the processing of Objective #3 they realized the key building blocks of the course. Students became aware of the fact that a) Hansen was actual demonstrating model lessons of how they should apply the theory they were learning; b) the cooperative learning environment was the catalyst that Hansen chose to use by way of the Cooperative Support Groups to assist their learning; c) through it all they were learning how to develop, analyze and evaluate their own theory of learning, environment, curriculum, teaching and learning strategies. However, the Opinion Survey results (Appendices

J and K) from this study indicate that when students were asked, *"At which point in this course did you first feel that you could apply the theory,"* only 23% (5) indicated after objective #3, 59% (13) indicated after objective #6, and 18% (4) indicated after objective #7. The implication may be that although students became aware of the learning strategies Hansen utilized in the course they may not have been comfortable with the process until after Objective #6.

The remainder of the course followed the patterns of cooperative learning established for "Learning Theories for Teachers" through the first, three objectives.

Week 7: Objective #4

> *Teachers will identify the components of Bandura's Theory of Learning and then describe the theory for modeling that represents how they developed (synthesized) as teacher and/or design an instrument that will measure how students perceive you as teacher, (model). If an instrument is designed, the descriptive summary of the data is provided plus a tabulation summary of the instruments.* (Appendix C)

Objective #4 required the students' to apply Bandura's theory of learning to their development as teachers over time. Students also had the option of developing survey instruments to assess how their students perceived them as teachers and then analyze the data gathered.

The activities surrounding this objective were not the focus of my observations.

Week 8: Objective #5

> *Teachers will identify the components of Cognitive-Field Theory of Learning and then apply principles of "Life-Space" to a group of 5-7 children where components will be used. A detailed analysis of the "Life-Space" follows the diagram.* (Appendix C)

In Objective #5, students were asked to identify the components of the Cognitive-Field Theory and then apply principles of "life-space" to a group of 5-7 children and submit a detailed analysis.

> Life-space is a scientific formulation of a series of nonrecurring but overlapping situations, each replete with its unique propensities and relationships. It is developed for the purpose of (1) expressing what is possible and impossible in the life of a person and (2) anticipating what is likely to occur. It represents the total pattern of factors or influences that affect an individual's behavior at a certain moment or longer juncture of time. Within field psychology, behavior is any change in a life space that is psychological, that is, in accordance with a growing intelligence. (Bigge, 1982, p. 190)

Objective #5 was an individual assignment, but students were given opportunities to discuss the objective with group members. Hansen covered this material but decided to waive objective #5 in the interest of time and after the urging of the class to focus more on objective #6.

Here is one student's impression of what they got out of the content of this objective:

> I've found with "life space" and talking about it— I've always been pretty open minded in the classroom, accepting divergent answers from my kids. But going through some of the exercises that we have done and looking at some one else's point of view — I've gone back with my kids (children in teaching situations) and qualified more of their answers. Where usually I would have said, "No, they're just not getting it, they just don't understand it —," now, I've gone back with the kids and said, "How did you arrive at this? What were you doing?" I found out that they really did know. They just arrived at it the long way. (Fieldnote Transcripts, 4/15/92)

Week 9 - 14: Objective #6

> *Teachers will identify the components of Bruner's Cognitive Psychology and then apply the theory to a classroom lesson developed by the group where the components are used following the explanatory/understanding model of Bruner. The lesson will be*

> *designed according to the cognitive lesson format. The lesson will be taught and evaluated by a group following an evaluation instrument. (See attached guideline #6 for details)* (Appendix C)

There were preliminary group tasks that preceded the cognitive lesson activity for Objective #6 which were designed to assist students in understanding the cognitive theory process. Over a period of two weeks, Hansen modeled two cognitive lessons that allowed students within the Cooperative Support Groups to experience the application of the theory. This had the affect of reinforcing the value of cooperative learning through the discovery process which occurred during group processing and resulted in secondary learning even though it wasn't the expressed intent of the course. This notion emerged from the weekly respondent opinionnaires, comments during the open session held on the last day of class with students and with the group interview with respondents.

> There must be more interaction and less domination by one or two people. We need more guidance on how a group like this is suppose to interact. When I took a class on cooperative learning we were told to lay out specific roles that would be alternated. (Weekly Opinionnaires, 1/29/92)

> I'm still on the fence. I'm not sure the direction is good. Some people are interrupting people trying to present their lessons. Others didn't know what they were doing. (Weekly Opinionnaire, 2/19/92)

> I really felt that we did the sharing to clarify the assignment. It was so confusing to <u>all</u> of us. (Weekly Opinionnaire, 2/19/92)

> The groups' encouragement of each other on our papers -- gave me a warm feeling! (Weekly Opinionnaire)

> Well, technically I have no training in cooperative learning. I'm more familiar with peer groups. Students helping each other, practicing prosocial behavior. I have to focus on the cooperative learning -- the peer interaction -- allowing students to help each other. (Interview Transcript, 2/17/91)

> Group dynamics. Different people have different roles on different

> days depending on the topic and their level of expertise. One person paraphrases, another is questioning someone is redirecting, someone acts as a facilitator, feedback information and cooperate with each other. (Interview Transcript, 2/17/91)

> Group dynamics. Different people have different roles on different days depending on the topic and their level of expertise. One person paraphrases, another is questioning, someone is redirecting, someone acts as a facilitator, feedback information and cooperate with each other. Experiences are definitely shared and in doing that problems are solved. (Interview Transcript, 2/17/91)

Objective #6 is similar to Objective #3 in so that the students had to apply the theory to a lesson and teach the lesson. For Objective #6, the group worked as a team to develop a lesson using Bruner's cognitive psychology theory and then applied the theory in a lesson. The lesson was designed according to the components of Bruner's explanatory/understanding model and followed the Cognitive Lesson Format (See Appendix C) guidelines. Whereas, Objective #3 required a written objective for the lesson, objective #6 did not require a stated objective in the demonstration. Each group then agreed on one member who taught the lesson to Hansen. Hansen role-played a student at the grade level identified by the group. The lesson was evaluated by other members of the group as well as by Hansen during the process. Group members used an evaluation instrument which represented a checklist of instructional moves for Bruner's model. During the introduction of the subject matter related to objective #6, Hansen emphasized the "classroom of inquiry" as a place where,

> Thinking skills must be taught. An environment can be created where children are challenged through natural occurring events to critical think through situations, problems... (Interview Transcript, 4/1/92)

He talked about how we were living in the "Information Age" but that our children would live in the "Next Age" (20 to 30 years from now) where they will

operate on an analytical level. That the next age could be described as the "Peer Problem Solving Age" where the "Human/Technical Interactive Dimension" is one of problem solving. This lead into a brief activity that allowed the students to have some fun with the cognitive process.

"I Am The Most Important Because..." Hansen introduced the group task as "a new stimulated exercise." He explained how students might feel uncomfortable during the activity. He asked groups to process, compare, contrast to their own comfort levels (synthesis) — not whatever they were thinking that he (as professor) wanted. They were asked to reference materials given to them on problem solving and critical thinking (See Appendix M). The task was framed in the context of an "English" lesson on punctuation marks which Hansen modeled using Bruner's theory application.

Each cooperative support group was secretly assigned a punctuation mark: 1) question mark, 2) comma, 3) period, 4) exclamation mark, 5) quotation marks. Hansen did not tell the groups which punctuation mark other groups were assigned for this task. The groups were instructed as the first part of the task to brainstorm on completing the sentence, "I am the most important because...," as it pertained to the punctuation mark they were assigned. The second part of the task was to come up with a "creative" one minute presentation of the sentence completions. This was a singularly "fun" activity. These adult students allowed their creative juices to flow through the brainstorming activity and came up with hilarious presentations on the importance of their assigned punctuation marks.

The students listened intently during the instructions for the activity. They were already clustered with their assigned cooperative support groups. The

atmosphere in the room was very quiet and suddenly the silence was broken by a loud burst of discussion. There was a great deal of laughter as they began to get the hang of the assignment. The Secondary Education group appeared excited as they came up with all kinds of ideas of how expressions and dialogue would sound like without an exclamation mark. They quickly came to a consensus to present the list of expressions and dialogues as monotone statements without any expression or inflections in their voices. One of the Primary Education group's wrote the number one billion on the blackboard and acted like "human commas" (curled their bodies to form a comma) to present "I am the most important because there are a billion ways to use a comma." All of the presentations were creative and presented critical facts about each of the punctuation marks. Hansen allowed this presentation by a student in an effort to provide the class with active examples of creative cognitive theory applications.

After this activity, Hansen allowed a student in the Secondary Education group to demonstrate a cognitive lesson he had developed for an American Literature class. This lesson resembled the cooperative learning games and tournament models described in the literature (STAD, TGT, Jigsaw and Jigsaw II) in Chapter II. The game lesson was entitled "Win with Finn" and the content was based on The Adventures of "Huckleberry Finn." This lesson was designed to get high school students interested in reading the subject matter. The format was a lot like "Trivial Pursuit" and the questions all pertained to Huckleberry Finn and his adventures. Another phase of the lesson was formatted like the "Price is Right" television game show in which prizes were won for getting the right answer. Fantasy prizes were conjured up and read by the student in his role as the announcer and

commentator of the game lesson. He had taken care to design the prizes to parallel Huckleberry Finn's adventure — for instance there was a "raft race" down the Saginaw River which is a local community affair. The class was divided into two large teams and team names were "Overworked" and "Under-paid." Points were awarded (5, 10, 15 points) for right answers. One leader was chosen by each group whose role was to chose the points for each question. Sound effects were provided to identify right and wrong answers or win/lose situations. The sound effects added a certain game show ambiance to the whole lesson. There was a fireworks explosive sound effect for right answers and a petering out fireworks sound for wrong answers. Also, whenever a team was given time to consider and think about a question "game show thinking sound effects" were provided which sounded like a musical time clock ticking away. A "certificate of participation" was given for the first place team as well as for the second place team — there were no losers in this game. The class came alive with laughter and the teams though a bit rusty on the facts about Huckleberry Finn manage to arrive at some answers by a cooperative and collaboration effort. I was even given a role as a character in the Huck Finn's story to go for the big fantasy prizes. Of course, I did not get the right answers although rallied by the audience teams. It was a fun lesson and I could see how high school students could get excited about engaging in the subject matter through this motivating activity within a lesson. This was used as a model lesson preliminary to the completion of Objective #6.

The Conflict Task. The next group task for Objective #6 was the "Conflict Task" which was framed in a the context of a English class looking at a concept. Hansen modeled the lesson and introduced the activity according to the Cognitive-

Lesson Format (See Appendix B) for Bruner's cognitive psychology theory application. He posed the question at-large to the class, "Who processes the information in a behaviorist driven classrooms?" (answer: the teacher) and "Who process the information in a Cognitive driven classroom?" (answer: the student). The lesson followed the Classification Checklist (See Appendix M).

Students clustered in their cooperative support groups and received instructions. The cognitive lesson required that specific group procedures be identified. Hansen passed a set of unique pictures to each of the five cooperative support groups. Although, each set of pictures were different, they had been specifically selected to emerge the concept definition for "conflict." The psychological environment was described as a cooperative one where interaction existed, the physical organization was loose, and activities were structured cooperative groups. It was explained that although the instructor knew the objective for the lesson it would not be known to the students until the end of the task. Group members accepted or volunteered for necessary roles such as:

* Recorder - writes down group results
* Reporter - talks for group in whole group sharing
* Facilitator - guides group through discussion
* Gopher - runs errands for the group
* Monitor - reminds group to stay on task

The students were then directed to read the Classification Checklist together and follow the steps through (Appendix M):

1. Question phase
2. Similar and different phase

3. Multiple variable phase

4. Definitional phase

5. Application phase.

Hansen's role as facilitator was to identify key questions for critical thinking, to assist group processing, to assist group functioning for consensus, and promotive interaction for problem solving.

A group's first step was to organize the pictures according to their similarities and differences. This was done through a group brainstorming discussion where ideas about the similarities and differences of the pictures were explored by each member with the recorder documenting the consensus. Once some generalizations were reached by consensus, the next step was for the groups to combine the pictures into three categories and identify representative topics that described each category. One member of a group decided quickly that all the pictures were interacting with the environment and had different response to nature. Another group began linking the pictures in a global perspective as events around the world — different parts of the world. Still another group emerged from their discussion with the concept "conflict" but went off on a tangent and changed the topics as they trailed off into a philosophical (personal beliefs and values) discussion. Meanwhile, Hansen visited with each group and intervened with prepared key questions whenever a group was stuck or needed to develop their generalizations or topics a little more. Most groups struggled to identify the three categories. Some examples of the emerging topics were "Man vs Man," "Man vs Self," "Man vs Nature."

The third step was to identify a single concept that represented all three of the

categories that emerged from step two. The concept that Hansen was looking for was "conflict." The very next step was to define the concept that had been identified.

Once all of the groups had reached consensus on the three topic categories, the single concept and its definition, the recorder of each group was asked to write the outcome on the blackboard for the whole group discussion and consensus. The similarities that emerged between the topic categories, concepts and definitions across groups was amazing. Although each CSG had different pictures, they all represented "Man vs" himself and other elements. Groups were able to construct their own meaning of the nonstated objective as they drew meaning from the procedures, the group interaction and consensus, and the key questions.

Hansen facilitated group reporting in a round-robin format in the whole group discussion that followed the cooperative group task. As the whole class was processing the group reports, Hansen posed key questions for consensus building to again relate the similarities and differences in the group outcomes, three overall categories the represented the whole collection of pictures, and one concept and definition that identified the nonstated objective. At the end of the session, Hansen stated the objective for reviewing the concept, "Conflict." Afterwards a brief analysis reviewed the classification checklist (Appendix M) that was followed to evaluate the lesson.

> This was a bit, considering the fact that we did not see "conflict" in all our pictures. We saw people in all pictures, but in two of them we did not consider them to be conflict -- but enjoying life. We saw the three different categories of life: living it, saving it, and taking it. (Weekly Opinionnaire, 1/22/92)

> I was frustrated, I didn't understand the the task and I didn't

> understand the categories. Others in the group attempted to explain them and were irritated. I kept asking questions. I finally gave up but I still didn't get it. (Weekly Opinionnaire, 1/22/92)
>
> The time constraints. We were enjoying the discussion but had to sop. Weekly Opinionnaire, 1/22/92)

The Tomato Task. Another preliminary task to Objective #6 was the "Tomato Task." Hansen introduced this activity as a demonstration lesson in which he modeled Bruner's Application Model (See Appendix M). He told the class that the Supreme Court in the 1893 landmark case, Nix vs Neddon, declared that a tomato is a vegetable. The problem presented to the Cooperative Support Groups for discussion was "Is a tomato a fruit or a vegetable?" The groups identified leadership roles for group members and were instructed to "confront and restructure knowledge. I observed the Primary Education group while they engaged in a discussion about the question. Their first task was to determine the similarities and differences between fruits and vegetables while expanding and transferring this knowledge to a "tomato." The group discussed all kinds of possibilities in a brainstorming fashion. They explored everything from seeds to blossoms; whether seeds were within the fruit or on the stalk; sweetness and whether or not fruits were high in glucose or natural sugars. One member of the group exclaimed, "Now is when you need a gopher to go get an encyclopedia" and then looked over at me and asked if it was permissible. In an attempt not to interfere, I nodded my head from left to right to indicate my answer in the negative "no!" Finally, Hansen came over to the group and intervened with some key questions which generated further reflection on the question, "Is a tomato a fruit or a vegetable?" (Fieldnote Transcripts, 4/1/92)

H - Where does a pear come from?

S - Blossom.

H - What happens to the blossom?

S - It turns into the fruit.

H - What are you eating when you eat cauliflower? broccoli?

S - The immature flower, stem..?

H - What are you eating when you eat a potato?

S - A tuber.

H - What about a pea?

After grappling with Hansen's key questions, the Primary Education group finally arrived at a conclusion that a tomato was a fruit and wrote their definition on the blackboard.

Later, on the last day of class, while reflecting on this particular activity one student had this to say:

> The lesson where we had to answer the question, "Is a tomato a vegetable or a fruit?" — made me really think about how things grow. I mean, my Dad is a farmer. I've been hoeing in his fields forever — and we've never realized that a tomato is a fruit. It's possible in the sense that I came to the realization that — "Yes, this a fruit" without someone telling me. Because, I would say it for the test but inside "No Way!" I would have blocked it out and kind of doubted and said, "No way!" But I went through it myself — and realized, yes it is —! I went home and still thought about it — I still kept processing it. I started asking questions — is this a fruit? Is this a vegetable? Why or why not? And it led to further discussions at home with my Dad. (Fieldnote Transcript 4/15/92)

The purpose of this lesson was to have students as teachers explore how misconceptions carry-over to teaching and learning transactions in the classroom. Students had previewed a video tape entitled "The Private Universe" which showed how learners had develop misconceptions while structuring knowledge about the

four seasons. The "tomato exercise" created a similar experience where the cooperative support groups were asked a question which conflicted with their own "private universe" or perceptions —. Most of the class started out believing that a tomato was a vegetable. Through the critical thinking inquiry and experience of confronting and restructuring knowledge, students worked through their own misconceptions and came to the realization that a tomatoes was a fruit and not a vegetable. It was interesting to observe students gleaning the knowledge of fellow group members about fruits and vegetables. Piecing together the parts of the puzzle to arrive at a knowledge base and discovering that this knowledge base was in conflict with their own perceptions about fruits and vegetables. As the groups developed working definitions that were shared with the large class group — it become increasingly difficult to maintain the misconceptions of their own "private universe." Many members of the class, like the one student who expressed herself at the last class session, had to continue processing the knowledge that emerged from the discussion to restructure misconceptions that had carried over from teaching and learning transaction they had long since forgotten.

Week 14 - 15: Objective #7

Teachers will design a unit according to <u>one</u> of the following situations. (See attached guideline #7 for details)

a. Design a unit for your teaching situation according to objective 3.

b. Design a unit for your class following objective 6 that uses the explanatory/understanding and thinking tactics of the Cognitive-Field. Example(s): War, Environment, or cultural differences.

c. Design for your class one lesson twice. The first lesson would

follow the Behaviorist (Gagne's Model) and the second time the lesson would be designed according to the Cognitive-Field (Bruner's Model). Use the guidelines from objective 3 and 6.

d. Evaluate a text or program you use according to either theory. The evaluation would be a narrative using objective 3 and/or 6 as vehicles for complete analysis

e. (Administrators) design your school curriculum, environment and management by either theoretical area.

f. Select one of the following theories and write a research paper based on contributions, summary of the theory, environmental factors, curriculum implications, teaching strategies, and learning strategies. Follow correct research paper format.

(1) George Gropper

(2) M. David Merrill

(3) Charles M. Reigeluth

(4) Jerome Briggs

(5) Benjamin S. Bloom

(6) Morris L. Bigge

(7) Jean Piaget

(8) Others? (Appendix B)

Finally, Objective #7 encouraged students to summarize all they had learned in theory and application. Objective #7 allowed teachers to expand upon work from previous objectives and develop follow-up units for Objective #3 and #6 in which lessons were taught.Students were given a choice to design the same lesson two ways one using the behaviorist model, the other using the cognitive model. Students could evaluate a text or program they used according to either theory.

Administrators could chose to design their school environment, curriculum and management by either theory. Students could chose to do research papers on

a theorist's contributions, summary of theory, environmental factors, curriculum implications, teaching strategies, and learning strategies. Finally, a student could create his/her own idea for a project as long as it involved the outlined theories and applications in the behaviorist and cognitivist theories. The same procedures established during the course were observed for synthesis in the selected task for Objective #7. However, Objective #7 required individual mastery of the course objective to understand contemporary learning theory for application in teaching situations. Group members used the final class period and other time in the group at the end of the semester to "bounce their ideas" for objective #7 and to grapple with the final assignment.

Summary

The data analysis provided in Chapter IV indicated the Cooperative Support Groups facilitated the course objectives and group processing was characterized by analysis, problem-solving, asking questions, clarifications, everyone bouncing ideas off everyone, and generally facilitating group processing. All seven course objectives required active group participation for individual and group outcomes. The excerpts from respondent interviews, weekly opinionnaires, fieldnotes, the class discussion all provided a rich data for analysis and interpretive commentary. Chapter V will summarize the findings and implications for future research and practice in adult learning in higher and continuing education.

CHAPTER V

SUMMARY AND IMPLICATIONS FOR RESEARCH AND PRACTICE

This study examined a situational model of cooperative learning used with adult learners in a formal higher education setting. This cooperative learning model was unlike the games and tournaments models outlined in the literature by Johnson and Johnson (1981) and Slavin (1983). This cooperative learning model was designed for the "Learning Theories for Teachers" course at Saginaw Valley State University. Teachers enrolled in this required graduate course were charged with seven course objectives which dealt with behaviorist and cognitive learning theory and applications. The teachers worked through the course activities during in-class participation in homogeneous (by teaching grade level) "Cooperative Support Groups." The intended outcome was for individual teachers to derive their own learning theory models and applications for the classroom. The cooperative support group was used as the unit of analysis for this case study. The study aimed to show patterns of a cooperative learning approach in an adult learning setting that may present an alternative instructional strategy for adult learning.

The method of inquiry used for the study was a qualitative design utilizing field study and observation procedures for data collection and the case study method to organize the data. The findings were drawn from analyses of the course materials, fieldnote transcripts of the "Cooperative Support Group" activities and

interview transcripts of discussions with the instructor and respondents. The research questions provide a framework to summarize the findings in the sections that follow.

1. How is cooperative learning implemented with adults in this setting and how are cooperative skills and attitudes taught in the absence of direct instruction?

2. What is the nature of the cooperative learning model in this adult learning setting in higher education?

3. In what way do the "cooperative support group" method and process parallel adult learning principles and how has this assisted students in understanding and completing course objectives?

4. What are the implications for this model presenting an alternative instructional strategy for adult learning?

5. In what way did the "cooperative support groups" contribute to student's individual learning perceptions and achievement?

6. In what ways and to what extent had the cooperative learning models and adult learning principles shaped the course design?

Finally, using the concept of "group processing" and "group activities," the "Cooperative Support Groups" emerged as the recurrent event and "natural phenomenon" for this case study. As a natural phenomenon, the cooperative group activities were marked by a series of actions (interactions) that lead (contribute) to a specific result in the natural laboratory presented in the classroom (Erickson, 1986). The findings described the features of the cooperative learning environment, the curriculum, teaching strategies and learning strategies. Since this is a single case study, it was not expected that the findings would be generalized beyond this case.

However, the researcher tried to generalize the findings to adult learning theory and cooperative learning theory for implications for future research and practice.

How was Cooperative Learning Implemented

> *How is cooperative learning implemented with adults in this setting and how are cooperative skills taught in the absence of direct instruction?*

Hansen implemented cooperative learning in the "Learning Theories for Teachers" course through a cooperative group structure which had implications for the classroom environment, curriculum, teaching strategies and learning strategies. Students were organized in cooperative support groups by teaching grade level. The group assignments were for the semester. Students were not allowed to chose their group assignment. Five cooperative support groups were assigned during Winter Semester, 1992.

A cooperative and supportive classroom environment was cultivated in which students felt free to collaboratively work through assignments, ask each other questions and construct new perspectives. The classroom culture invited higher order thinking, analysis, evaluation and synthesis for instructional improvement embedded in theory application.

The curriculum of behaviorist and cognitive theory was designed to provide examples of situational uses of cooperative learning structures for both theories. Hansen presented lessons in both theory applications and allowed groups to analyze and evaluate each application as part of the dynamic curriculum.

The teaching strategies Hansen selected for the course reinforced cooperative learning methods. Group activities were the central processing vehicle

for the lecture, theory modeling, theory applications, analysis and evaluation. The course objectives were facilitated through the cooperative support groups.

Finally, the instruction provided built-in learning strategies that were implemented by way the instructional move checklists, the "Ten Principles of Good Consensus" and specific group activity instructions that fostered cooperative learning skills (Appendices B, K, L, and M).

The Nature of the "Cooperative Support Group" Approach

What is the nature of the cooperative learning model in this adult learning setting?

The nature of the cooperative learning model in this course is characterized by the cooperative learning environment created with the "Cooperative Support Group" activities. The CSGs were homogeneous groups of teachers from similar grade levels. Hansen's intent was to create a "safety mechanism" with the "Cooperative Support Groups" to insure teachers success in the course which meant mastery of the course objectives. In the natural laboratory of the classroom, the nature was the social event of group activities characterized by teachers discussing the behaviorist and cognitive learning theories, theory applications, and working through problems connected with theory applications for group and individual outcomes. This was characterized in the group activities as asking questions, "everyone bouncing ideas off each other" (group interaction), paraphrasing, seeking and offering clarification, problem-solving, consensus building, analyzing course content and activities, evaluating theory applications, sharing leadership and expertise, working cooperatively and collaboratively. These characterizations were

observed as an integrated process but each one was focused on at the exclusion of the others for the purpose of identification and explanation. The activities can be described as "collegial" in this particular setting which is significant as these findings can be generalized back to cooperative learning theory in the literature for validation.

The character of Hansen's cooperative learning model was the "cooperative and supportive" environment and the development of a "classroom of inquiry" in and out of the cooperative support groups for the student success. The nature of the cooperative learning environment was described by participants in chapter IV as reported from interviews transcripts, fieldnote transcripts, weekly opinionnaires and the opinion survey results (1991/1992).

Parallels with Adult Learning Principles

> *In what ways do the "cooperative support group" method and process parallel adult learning principles and how has this assisted students in understanding and completing objectives?*

The commonalities between adult learning and cooperative learning presented in chapter II, figure 1, provide an interesting construct from which to view the findings for answers to this research question. Hansen's "cooperative support group" method is learner-centered, problem-centered, self-directed and life-centered. The cooperative support group environment provided positive interaction, support and collaboration, and active participation. The method recognized the adult learner as an independent personality and as a major resource. Hansen's approach took into consideration the adult learners readiness to learn and orientation to social roles. These factors are directly parallel to adult learning principles and are common to cooperative learning.

Hansen's approach developed a cooperative and supportive environment that allowed students to collaborate to complete course objectives. The findings from the weekly opinionnaires, interviews, the feedback session and opinion survey indicated that students felt the CSGs assisted their understanding and completing of course objectives (1991/1992). This was seen in the group activities as students worked through course objectives with the assistance of group members.

The environment, teaching strategies and learning strategies facilitated a process which parallel adult learning principles and the preferred mode for adult learning (Conti, 1985).

An Alternative Instructional Strategy for Adult Learning

What are the implications of this model presenting an alternative instructional strategy for adult learning?

Cooperative learning is based on cognitive learning theory which is supported by empirical research. Adult learning models and theories have been criticized for a lack of empirical evidence supporting popular assumptions and principles. However, adult learning principles have also been aligned with cognitive learning theories (Merriam, 1989). There is adequate empirical evidence (Johnson et al., 1981, Slavin, 1983) for cooperative learning with adults to generalize the findings to adult learning for an alternative instructional strategy. Specifically, the research on the Collegial Support Group model and the Learning Together model supports Hansen's cooperative support group approach (Johnson, Johnson & Holubec, 1991.

The cooperative learning approach as implemented by Hansen and adult learning principles are very compatible. The question then arises as to how the

model might be applied in other adult learning settings. Several implications are possible from the Cooperative Support Group model. First, the cooperative learning environment which Hansen created for the context of the cooperative support groups was critical. Cooperation as a learning theory is necessary to create a supportive environment for adult learners to work in groups. The use of groups without attention to cooperative learning theory to validate the environment does not constitute a cooperative learning environment. As the literature states (Johnson, Johnson & Holubec, 1990),

> "There is a crucial difference between putting students into groups to learn and in structuring cooperative interdependence among students. There is a difference between the typical use of classroom learning groups and cooperative learning groups (Johnson, et al., 1988, pp. 9-10).

The "Cooperative Support Group" was clearly situational in that Hansen varied the activities from semester to semester depending upon the characteristics of the students enrolled in the course. Through Hansen's instructional strategies students cooperated to meet seven course objectives drawn from behaviorist and cognitive theories and applications. In addition to the learning theory objectives, Hansen used the four components in Objective #2 (Appendix B) as a framework for analysis of the design of the learning environment (psychological and physical), curriculum planning, teaching strategies and learning strategies (implications to the learner).

Adult learning requires situational decisions on curriculum, environment, teaching and learning strategies. Knowles (1984) has suggested that andragogy-pedagogy represent an instructional continuum and the use of both techniques are appropriate at different times in different situations regardless of the age of the learner (children or adults). Slavin (1983) and Johnson and Johnson (1987) agree

that cooperative learning can be used with students at all levels from kindergarten to graduate school. The implications suggest that for situations in which learning groups are used with adults, cooperative learning theory can provide a learning theory base supported by empirical research (Johnson & Johnson, 1987; Slavin, 1983).

Of 450 studies conducted on cooperation, 133 have utilized adult samples (individual 18 years old or older) (Johnson & Johnson, 1987). These findings show that cooperation among adults promotes achievement, positive interpersonal relationships, social support, and self esteem. This supports the use of cooperative learning groups with adults as utilized in the cooperative support group approach.

The second consideration must be the "curriculum". The implications are that this model used a learning objective driven curriculum. Outcomes were set forth to allow for mastery. Hansen's intention was to systematically present content in bite size chunks for the learner to digest by way of the cooperative support group environment. Teachers who use small groups tend not to provide sufficient development or an appropriate curriculum for making this format work (Grouws et al., 1990, Slavin, 1983). Hansen appeared to provide an appropriate curriculum for making the cooperative support group format work and he appeared to pursue both social and academic outcomes. The third consideration is teaching strategies. The teaching strategies incorporated various methods of discussion, question and answer, large and small groups and facilitating techniques for group processing. The most critical strategy used was the demonstration of model lessons for the theories presented and evaluation by the students as a teaching strategy. Hansen modeled the theories he presented throughout the curriculum. This was a critical

component of the course and one that has far reaching implications for adult education in preparation of adult educators.

> I have to tell you about my perspective as a nurse. This is the first education class I've taken. I've taken a ton of nursing classes but I've never had a nursing instructor actually model theory. You take an abstract concept (learning theory) put it down in a concrete form (instructional moves, lesson plan) and the learners (cooperative support groups) can see it and think about it abstractly. We were able to do this in class and in our groups. (Fieldnote Transcripts, 4/15/92)

Today, there are very few teacher preparation programs for adult educators and in many instances an adult learning component is not included in traditional teacher preparation programs. Cooperative learning theorists, such as Johnson, Johnson and Holubec (1990) have begun to address teacher preparation in terms of learning circles, collegial learning and other models. The generalizations here are applicable to adult learning practice.

A fourth consideration is learning strategies. They were clearly structured through the composition of the "cooperative support groups". Structured group activities in an inquiry learning environment as well as a cooperative environment is significant for adult learning. The structured group activities were planned to develop the teachers own learning strategies and challenge them to implement similar strategies in their own classrooms. This strategy has two levels of synthesis, procedural learning and professional development for practical application. Again, the implications for adult learning are significant. These structured activities develop critical thinking and analysis which are cognitively based. These kind of structured activities require curriculum planning for adult learning as well as group activities. The structured group activities and group interaction were student-centered and capitalized on the characteristics of the adult learner as problem-centered, self-

directed, self-regulated, a resource and reservoir of experience.

Cooperative Support Groups' Contributions

In what way did the "Cooperative Support Groups" contribute to student's individual learning perceptions and achievement?

Cooperative Support Group Contributions. The respondent interviews and journals indicated that perceptions about working with groups were changed.

In some ways I must be teacher-directed because I tend to still go to the teacher — and secure their final approval rather than totally rely on the group's input. I was surprised, yet glad ultimately that Doug wouldn't really give a final word on our questions, but seemed to refer us back to reliance on the groups' suggestions and input. He did willingly discuss our questions, but somehow seemed to purposefully be non-committal. I really think this is the best way to guide and facilitate cooperative learning in groups. (Weekly Opinionnaire 2/27/91)

It is evident from this student's weekly opinnionaire that her perceptions changed from being teacher-dependent to becoming more self-directed as she progressed through the course. Initially, she had definite doubts about working in groups due to past experiences with groups in the classroom. What she found was that in the absence of a teacher-centered learning environment theory and structured interdependence among students, outcomes are less than desirable for participants.

The perspective of the next two teachers when interviewed was significant. They both agreed that it was doubtful what their degree of success would have been in the course had it not been for their "cooperative support groups."

> I felt that the group was of great benefit to me in organizing my lesson. In fact, had it not been for my group, I probably would not have done well on my assignment. (Weekly Opinionnaire, 2/20/91)
>
> The cooperative support group was a great help to me as it acted as a clarifying agent. (Weekly Opinionnaire, 3/27/91)
>
> Sure the objectives could be completed without the groups but it would be more difficult. You could do it alone but it would definitely be more difficult. (Interview Transcript, 2/17/91)

Thank you for my group! (Fieldnote Transcripts, 2/20/91)

Both of these respondents were apprehensive about the class and the structured cooperative groups but the claims of the cooperative literature and empirical research play out in the data for this fieldwork study. The Cooperative Support Groups most importantly "personalized the learning" for individual teachers in their role as students, at least the two respondents.

Yet, both women were different kinds of teachers and different kinds of learners. One respondent was very insecure to begin with and had a poor experience working with groups in another graduate course. Also, her cooperative support group initially presented some problems for her. In the group, she asked many questions and asked for clarifications as well. Her CSG was unstructured and went with the flow of activities and objectives. On the other hand, the other student was confident and participated in a structured CSG. She was poised as a self-regulated learner and presented strategies to herself for learning upon looking at the syllabus. She saw the challenge and resolved that the group structure would be of some assistance.

However, both respondents near the end of the semester reflected on struggles they faced in learning and agreed that the "Cooperative Support Groups" played a

significant role in their individual learning, achievement and mastery of the course objectives. These perspectives came from two very different teachers and students at different grade levels. This suggests that we should look further and see if these patterns continue across participants.

Individual Learning Perceptions and Achievement. From the respondents' perspective on cooperative group processing, it is evident that through discussions which were characterized by "thinking aloud" or "working through instructional problems for implementation," teachers were able to make sense of behaviorist and cognitive learning theories and adapt their own models for application in their classrooms. There are implications for procedural learning and adult learning achievement. In these quotes two teachers interviewed expressed this notion in so many words.

> Then, by talking it out with my group, I was able to figure out what steps were appropriate at what point in the checklist. (Journal, 2/20/91)

In this way, teachers were able to articulate their own theories and applications collaboratively in group assignment/outcomes and ultimately in individual written assignment/outcomes for the mastery of objectives. The group processing provided various steps towards synthesis of the theories. First, Hansen presented and demonstrated model lessons using the theory application. Second, the groups evaluated the model lesson Hansen present using a checklist of instructional moves which illustrated the theory application step-by-step. Third, the group collaborated in application activities which allowed teachers to work out the strategy and procedures for teaching a lesson using the theory. Fourth, individual teachers developed their own applications using the theory instructional moves and

demonstrated a lesson to the group for evaluation (by checklist of instructional moves). Finally, the individual teacher was able to articulate the strategy in writing towards analysis and synthesis of their own model and application for the classroom for mastery of the course objective(s). This instructional strategy implemented by Hansen insured that teachers could have an environment for maximum potential to derive their own behaviorist, cognitive, cooperative learning theory models and applications for the classroom.

What Shaped the Course Design

In what ways and to what extent had the cooperative learning models and adult learning principles shaped the course design?

Cooperative Learning Models. The findings indicate that while the cooperative learning models (Johnson & Johnson, 1981; Slavin, 1983) influenced the design of the "cooperative support group" approach Hansen developed and used for this course, it was unlike the games and tournaments models described in the literature. Hansen's model was similar to the "Learning Together" (Johnson & Johnson (1975) and the "Collegial Support Group" (Johnson, Johnson & Holubec, 1990) techniques. It was similar to "Learning Together" (Johnson & Johnson, 1984) in that there was a less specific methodology and teachers worked in groups on assignments to produce a single group product, and were instructed to seek help from one another before asking the teacher for assistance. It was similar to "Collegial Support Groups" (Johnson & Johnson, 1987) in that members sought outcomes that benefitted both themselves and their colleagues and members of these groups discussed new teaching practices and problems connected with their

implementation; together they planned, designed, prepared, and evaluated curriculum materials; and they co-taught, observed each other's teaching and offered feedback.

The composition of the cooperative support groups promoted collegial learning (Johnson & Johnson, 1987) and thereby "teachers as students" maximized their potential to derive their own learning theory models and applications to take back to the classroom. Collegial learning (Johnson & Johnson, 1987), learning from colleagues, is a cooperative learning derivative which is the contextual window for viewing the course and the group processing. In the context of the cooperative support groups, the sequence of events taking place can best be characterized as "procedural learning" (Johnson & Johnson, 1987). Paraphrasing Johnson and Johnson's (1987) definition of procedural learning, teachers in the cooperative support groups studied a learning theory, a) learned conceptually what the learning theory (behaviorist / cognitive / eclectic) is and where and when it should be appropriately used, b) translated their conceptual understanding of the theory into a set of instructional moves (Application /Association /Classification) appropriate for their curriculum (subject areas), a learning environment, teaching strategies and learning strategies (implications for their students), c) actually used the learning theory (objectives), d) eliminated errors (evaluation) in using the instructional moves through the initial awkward and the mechanical stages of skill mastery (practice, application), and e) attained a routine-use automated level of mastery (use in the real world classroom).

Adult Learning Principles. Adult learning principles did not explicitly shape the course design. Hansen agreed that adult learning principles and cooperative

learning were compatible (See Figure 8 p. 167 and Figure 1, Chapter II p. 33), and he acknowledged that the adult learner's experience played a significant role in the group activities.

For many kinds of learning in adult education, peers are the richest resources for learning. Adults learn within a framework of sharing experiences with other adults. (White, 1991, p. 6) Teachers preferred to work in homogeneous groups by teaching grade level so they could hear what others were doing at the same grade levels (Interview Transcript 1/16/92). White (1991) suggested that adult students may be accustomed to creating ideas in the context of social interaction which small group instruction accommodates. Cognitive and cooperative learning theory research supports the benefits of adults working in groups (Johnson & Johnson, 1987). Hansen based the design and approach to the course on cognitive and cooperative learning theories.

Implications for Future Research and Practice

A cooperative learning environment and the social interaction of the group activities is a complex instructional event. Adult learning is also a complex event when examined in the context of a cooperative learning environment. Subsequent research should anticipate these dimensions and develop methods for examining various features of the formats, activities, and interactions in the instructional approach to explain this phenomenon. It should be understood that the data presented here are descriptive. So, there is no formal data in this study to substantiate that certain instructional processes are better than others.

In future studies it will be important to employ quantitative as well as

ADULT/COOPERATIVE LEARNING CONSTRUCT
An Alternative Instructional Strategy

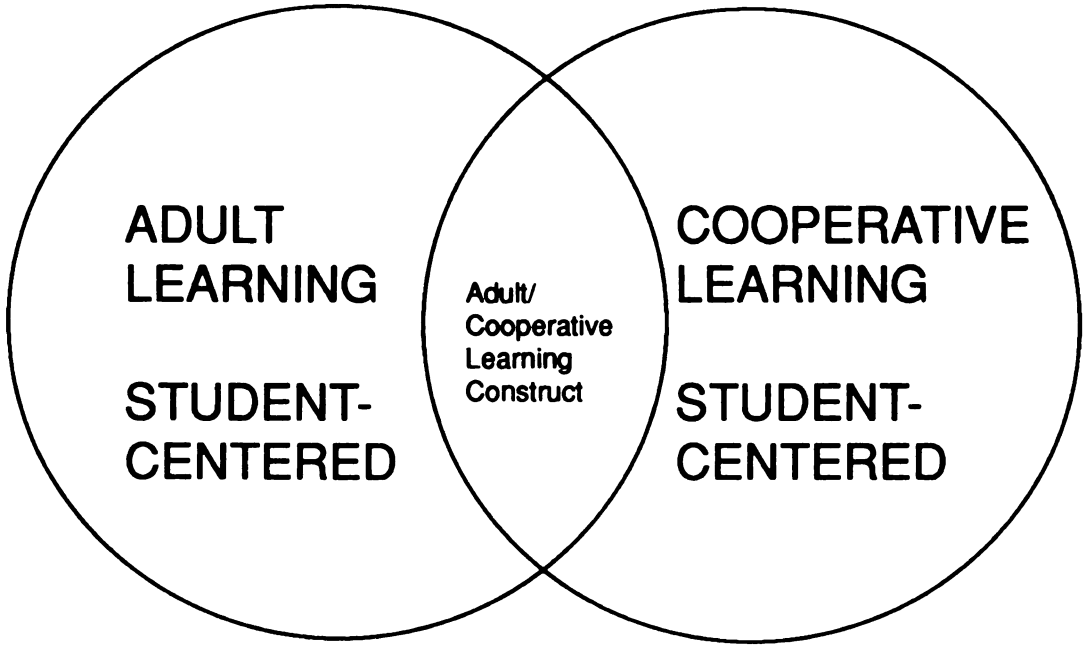


Figure 8
(R. M. Lataillade-Beane)

qualitative methods of inquiry. Researchers should explore adult learning in cooperative learning environments using the dimensions of curriculum planning for the development of small-group teaching models and cooperative work assignments for adults, the psychological and physical environment for cooperative learning with adults, teaching strategies for cooperative learning with adults, and learning strategies of cooperative groups with adults. The actual context of cooperative learning with adults can vary widely from the work setting, to community agencies, to independent self-directed learning groups, to traditional educational institutions (Merriam, 1987). Therefore, the direction researchers might want to take and the method of inquiry that might guide the approach to their questions are diverse.

There are strong implications for practice as we experience the shift in student population from 18 to 22 year olds to 23 years and older students in colleges and universities. As colleges and universities respond and attend to the adult learners, it will be important for faculty to engage in action research in the classroom to address academic concerns and analysis of the broader issues such as environment, curriculum, teaching and learning strategies. Institutional barriers which have the effect of discouraging cooperative group approaches to teaching must be identified. Teacher preference, teacher planning, and professional practice barriers which have the effect of making the use of cooperative group methods seem ineffective and punishing must also be identified. Faculty can work in small groups and explore behaviorist as well as cognitive applications since cooperative methods will accommodate both learning theories. Certainly, the "cooperative support group process" in this study may be used to experiment on how small-group activities can be applied in different situations presented by a given curriculum. Finally, the adult/

cooperative learning construct can supplement or alternate with the traditional pedagogical approaches to allow for diverse teaching/learning transactions.

This work is incomplete. Additional data must be collected. The findings from this preliminary study are promising and the implications encouraging. The analysis thus far has done much to teach me more about the process and the significance of asking the right questions to dig to the depths for the understanding and meaning.

Supplementing adult learning with the use of cooperative learning promises to enhance learning in the college classroom. It is an area worth exploring. Different questions might be asked. Different methods of inquiry might be used to further validate assertions that emerged from this work. This study can continue in the classroom of adult educators as action research, the study and application of research to educational problems in a particular classroom setting (Best & Kahn, 1986). What ever form additional research may take in this topic area the purpose should be to extend the knowledge base of the field and to improve practice (Merriam, 1987).

This has been the singularly most challenging experience in my professional career and the most reflective.

APPENDICES

APPENDIX A

TEN PRINCIPLES OF GOOD CONSENSUS LEADERSHIP

Dr. Douglas Hansen

Saginaw Valley State University

TEN PRINCIPLES OF GOOD CONSENSUS LEADERSHIP

Principle 1: Overcome barriers by stressing the possible.
- Keep group focused on the problem.
- Where are we?
- Where do we want to be?
- What barriers separate us from where we want to be?

Principle 2: Do not reinvent the wheel - but recognize that all problems are not alike.
- Keep focus on the hear and now.

Principle 3: What's in a name? Seek multiple definitions of the problem.
- Urge or allow the group to explore different problem defintions.

Principle 4: Be problem-minded-not solution-minded.
- Keep the group from premature closure. Encourage alternatives. People are uncomfortable with unsolved problems.

Principle 5: Encourage creative discontent.
- Encourage minority opinions, and protect those who see the prob lem differently. Avoid the tyranny of the majority.

Principle 6: Separate idea generation for idea evaluation.
- Discourage arguing over ideas during the initial phases. Later barter and compromise will be necessary, but to do so prematurely is to be solution-minded not problem-solving centered.

Principle 7: Do not let a single member dominate the discussion.
- Everyone must be heard. Everyone is a valuable and worthwhile member.

Principle 8: View problems as choice situation.
- Encourage the gorup to generate logical arguments for supporting their positions, but contain and discourage attacks on others' argu ments.

Principle 9: View choice situations as problems.
- When you get to the end, it may be time to re-examine and define the problem.

Principle 10: Prohibit power trips.
- Leaders job is that of problem-solver and facilitator, not to mention professional clarifier, but remember ALL are equal in a a consensus group.

APPENDIX B

LEARNING THEORIES FOR TEACHERS SYLLABUS, 1991

Dr. Douglas Hansen

Saginaw Valley State University

Learning Theories for Teachers Syllabus, 1991

Education 505

Dr. Douglas E. Hansen
Fall, 1991

Telephone: 791-7323 Office
792-8201 Home

COURSE DESCRIPTION:

An overview of the major theories and principles of human learning. Implications of these theories and principles to curriculum planning, teaching and learning strategies, and the design of the learning environment are emphasized.

Text: Learning Theories for Teachers by Morris L. Bigge.
Harper & Row Publishers.

COURSE OBJECTIVES:

1. Teachers will write what is the meaning of a learning theories and their current understanding of a theory of learning as it applies to their teaching situation. (Pre-test)

2. Teachers will analyze and evaluate current curriculum as to the environment, curriculum, teaching and learning strategies using the analysis sheet.

3. Teachers will apply Gagne's definition of learning, identify Gagne's eight conditions of learning and then apply the theory to a TUTORIAL lesson where components will be used. The lesson must include: 1. a written hierarchy, 2. objective(s), 3. utilization of the task analysis of instructional moves and 4. the instructional checklist analysis from, classification and/or application. This lesson will be taught to the group, and analyzed and evaluated by the group following an evaluation instrument.

4. Teachers will identify the components of Banduras Theory of Learning and then describe the theory for modeling that represents how they developed (synthesized) as a teacher and/or design an instrument that will measure how students perceive you as a teacher (model). If an instrument is designed, the descriptive summary of the data is provided plus a tabulation summary of the instruments.

5. Teachers will identify the components of Cognitive-Field Theory of Learning and then apply principles of "Life-Space" to a group of 5-7 children where components will be used. A detailed analysis of the "Life-Space" follows the diagram.

6. Teachers will identify the components of Bruner's Cognitive Psychology and then apply the theory to a classroom lesson developed by the group where the components are used following the explanatory/understanding model of

Bruner. The lesson will be designed according to the cognitive lesson format. The lesson will be taught and evaluated by a group following an evaluation instrument.

7. Teachers will design a unit according to one of the following guidelines below and include a design of your classroom (diagram) and discipline and explain them according to the theoretical models.
   a. Design a unit for your teaching situation according to objective 3.
   b. Design a unit for your class following objective 6 that uses the explanatory/understanding and thinking tactics of the Cognitive-Field. Example(s): War, Environment, or cultural differences.
   c. Design for your class one lesson twice. The first lesson would follow the Behaviorist (Gagne's Model) and the second time the lesson would be designed according to the Cognitive-Field (Bruner's Model). Use the guidelines from objectives 3 and 6.
   d. Evaluate a text or program you use according to either theory. The evaluation would be a narrative using objective 3 and/or 6 as vehicles for complete analysis.
   e. (Administrators) design your school curriculum, environment and management by either theoretical area.
   f. Select one of the following theories and write a research paper based on contributions, summary of the theory, environmental factors, curriculum implications, teaching strategies, and learning strategies. Follow correct research paper format.
      (1) George Gropper
      (2) M. David Merrill
      (3) Charles M. Reigeluth
      (4) Jerome Briggs
      (5) Benjamin S. Bloom
      (6) Morris L. Bigge
      (7) Jean Piaget
      (8) Others?

EVALUATION

1. Objective 7 30%
2. Objective 3 20%
3. Objective 6 20%
4. Objective 4 10%
5. Objective 5 10%
6. Miscellaneous 10%
   a. Discussions
   b. Group Activities
   c. Objectives 1 & 2

WEEK 1 Orientation/Define Learning Theories/Books/Group Development/ Objective 1

WEEK 2 Chapter 3 & 4 - Objective 2

WEEK 3 Chapter 6 - Objective 3 - Gagne

WEEK 4 Chapter 6 - Objective 3 - Gagne Association

WEEK 5 Chapter 6 - Objective 3 - Gagne Classification/Teach

WEEK 6 Chapter 6 - Objective 3 - Gagne Application/Teach

WEEK 7 Chapter 7 - Objective 4 - Bandura

WEEK 8 Chapter 8 - Objective 5 - Life Space/Cognitive Field

WEEK 9 Chapter 8 - Objective 6 - Thinking Skills/Problem Solving

WEEK 10 Chapter 9 - Objective 6 - Bruner/Classification

WEEK 11 Chapter 10 - Objective 6 - Bruner/Teach

WEEK 12 Chapter 13 - Objective 6 - Bruner/Application/Explanatory Understanding

WEEK 13 Objective 6 - Finish

WEEK 14 Objective 7 is due - Evaluation

WEEK 15 Objective 7 is due

PROCEDURE/REQUIREMENTS:

. Each class will have a lecture period concerning the theory, group work on brainstorming examples of theory in practice, an application, and an evaluation session of the theory. The evaluation part will consist of the theories effectiveness in the teachers classroom. All papers will be typed except when stated by the instructor. Since this is a Master's level course, attendance is a requirement. This course builds on previous classes and the group work requires your participation.

IDENTIFY LEARNING THEORIES:

a. Learning environment
b. Teaching strategies - objectives
c. Learning strategies - interaction, reinforcement, evaluation process

GUIDELINES FOR OBJECTIVE #7

1. Develop a teaching unit (4 objectives) you would like to teach. Use one we just developed as a model. This should be designed so it represents the best of the knowledge you have gained in this course according to the theory. In the development, first specify the theory you will use. As you develop the unit, explain and relate each component to the theory.

2. Design the specific learning environment to the theory you have chosen. The environment might be approached and designed using the Cognitive-Field or Behaviorist.

3. What are the teaching strategies used in the Theory? What is the emphasis in teaching?
   a. Objectives
   b. Methodologies

4. What are the learning strategies used with the learner in the theory?
   a. Interaction
   b. Reinforcement
   c. Transfer of learning
   d. Evaluation process (feedback)

5. This represents an analysis of your teaching. Develop it strictly to the theory you choose and the guidelines you already have developed in the worksheets. If you do use parts of other theories, please specify the change and why you made the change.

6. Two suggestions: a. write the lesson and them do the analysis (Cognitive-Field), or b. write/analyze at the same time (Behaviorist).

APPENDIX C

LEARNING THEORIES FOR TEACHERS SYLLABUS, 1992

Dr. Douglas Hansen

Saginaw Valley State University

Learning Theories for Teachers Syllabus, 1992
Education 505

Dr. Douglas E. Hansen
Winter, 1992

Telephone: 791-7323 Office
792-8201 Home

COURSE DESCRIPTION:

An overview of the major theories and principles of human learning. Implications of these theories and principles to curriculum planning, teaching and learning strategies, and the design of the learning environment are emphasized.

TEXT: Learning Theories for Teachers by Morris L. Bigge.
Harper & Row Publishers.

COURSE OBJECTIVES:

1. Teachers will write an analysis of their current understanding of a theory of l earning as it applies to their teaching situation and complete reactions to incomplete statements. (Pre-test)

2. Teachers will analyze and evaluate current curriculum materials as to the environment (physical and psychological), curriculum, teaching strategies and learning strategies using the analysis sheet.

3. Teachers will apply Gagne's definition of learning, identify Gagne's eight conditions of learning and then apply the theory to a TUTORIAL lesson where components will be used. The lesson must include: 1. a written hierarchy, 2. objective(s), 3. utilization of the task analysis of instructional moves and 4. the instructional checklist analysis from, classification and/or application. This lesson will be taught to the group, and analyzed and evaluated by the group following an evaluation instrument. (See attached guideline #3 for details)

4. Teachers will identify the components of Banduras Theory of Learning and then describe the theory for modeling that represents how they developed (synthesized) as a teacher and/or design an instrument that will measure how students perceive you as a teacher (model). If an instrument is designed, the descriptive summary of the data is provided plus a tabulation summary of the instruments.

5. Teachers will identify the components of Cognitive-Field Theory of Learning and then apply principles of "Life-Space" follows the diagram.

6. Teachers will identify the components of Bruner's Cognitive Psychology and then apply the theory to a classroom lesson developed by the group where the components are used following the explanatory/understanding model of Bruner. The lesson will be designed according to the cognitive lesson format.

The lesson will be taught and evaluated by a group following an evaluation instrument. (See attached guideline #6 for details)

7. Teachers will design a unit according to <u>one</u> of the following situations. (See attached guideline #7 for details)

   a. Design a unit for your teaching situation according to objective 3.
   b. Design a unit for your class following objective 6 that uses the explanatory/understanding and thinking tactics of the Cognitive-Field. Example(s): War, Environment, or cultural differences.
   c. Design for your class one lesson twice. The first lesson would follow the Behaviorist (Gagne's Model) and the second time the lesson would be designed according to the Cognitive-Field Bruner's Model). Use the guidelines from objectives 3 and 6.
   d. Evaluate a test or program you use according to either theory. The complete evaluation would be a narrative using objective 3 and/or 6 as vehicles for complete analysis.
   e. (Administrators) design your school curriculum, environment and management by either theoretical area.
   f. Select one of the following theories and write a research paper based on contributions, summary of the theory, environmental factors, curriculum implications, teaching strategies, and learning strategies. Follow correct research paper format.
      (1) George Gropper
      (2) M. David Merrill
      (3) Charles M. Reigeluth
      (4) Jerome Briggs
      (5) Benjamin S. Bloom
      (6) Morris L. Bigge
      (7) Jean Piaget
      (8) Others?

EVALUATION

1.	Objective 7	30%
2.	Objective 3	20%
3.	Objective 6	20%
4.	Objective 4	10%
5.	Objective 5	10%
6.	Miscellaneous	10%

   a. Discussion
   b. Group Activities
   c. Objectives 1 & 2

WEEK 1	Orientation/Define Learning Theories/Books/Group Development/ Objective 1
WEEK 2	Chapter 3 & 4 - Objective 2
WEEK 3	Chapter 6 - Objective 3 - Gagne
WEEK 4	Chapter 6 - Objective 3 - Gagne Association
WEEK 5	Chapter 6 - Objective 3 - Gagne Classification/Teach
WEEK 6	Chapter 6 - Objective 3 - Gagne Application/Teach
WEEK 7	Chapter 7 - Objective 4 - Bandura - Objective 3 is due*
WEEK 8	Chapter 8 - Objective 5 - Life Space/Cognitive Field - Objective 4 is due*
WEEK 9	Chapter 9 - Objective 6 - Thinking Skills/Problem Solving - Objective 5 is due*
WEEK 10	Chapter 9 - Objective 6 - Bruner/Classification
WEEK 11	Chapter 10 - Objective 6 - Bruner/Teach
WEEK 12	Chapter 13 - Objective 6 - Bruner/Application/Explanatory Understanding
WEEK 13	Objective 6 - Develop lesson by groups
WEEK 14	Objective 7 - Evaluation - Objective 6 is due
WEEK 15	Objective 7 is due*

PROCEDURE/REQUIREMENTS:

Each class will have a lecture period concerning the theory, group work on brainstorming examples of theory in practice, an application, and an evaluation session of the theory. The evaluation part will consist of the theories effectiveness in the teachers classroom. All papers will be typed that are marked with an asterisk above. Since this is a Master's level course, attendance is a requirement. This course builds on previous classes and the group work required your participation.

IDENTIFY LEARNING THEORIES:

a. Learning environment
b. Teaching strategies - objectives
c. Learning strategies - interaction, reinforcement, evaluation process

GUIDELINES FOR OBJECTIVE #3

1. The following are needed parts of your paper.

_____a. Cover page with your name, the title of your paper, the class, date, time, and level of instruction.

_____b. Page #2 will have your hierarchy, objective, and the level of instruction. Identify with an (*) the task you will teach in your hierarchy.

_____c. The paper will follow the format of the instructional moves task analysis. Identify each, such as: 1. Rapport, 2. Pre-test a, b, 3. Objective, etc.

_____d. The instructional moves "#6" follows the check list. Identify each such as 1. "V.A.", 2. "C", and 3. "App.", etc.

_____e. The development should be in a dialogue between you and the student. If in doubt in any part, be specific. It will help me understand your conceptualization.

_____f. Remember this is a TUTORIAL lesson. The situation is that you are teaching a student who is having some difficult and you are called upon to provide guidance.

_____g. Attach the evaluations from your group to the back of your paper.

_____h. Include any handouts or other instructional materials you would use with the student so I can follow your instruction. Please code the materials to your paper.

_____i. The paper must be typed. Proper grammar and spelling must be adhered to.

GUIDELINES FOR OBJECTIVE #6

COGNITIVE-LESSON FORMAT

1. What is your objective?

2. How would you develop the classroom psychological environment?

3. What is your classroom physical environment?

4. What are the group procedures you will follow?

5. What are the key teaching questions?

6. What procedures will you follow by using either

a. classification checklist
b. application checklist

a. Question phase
b. Similar & difference
c. Multiple variable phase
d. Definitional phase
e. Application phase

a. Question phase
b. Focus phase
c. Situational phase
d. Application phase

7. What interaction do you want?

   a. student to student
   b. student to teacher
   c. teacher to student

8. What are some other problem-solving activities you can generate from this objective?

GUIDELINES
FOR OBJECTIVE
#7

1. Develop a teaching unit (4 objectives) you would like to teach. Use objective #3 or #6 as models. The unit should be designed so it represents the best of the knowledge you have gained in this course according to the theory. In the development, first specify the theory you will use. As you develop the unit, explain and relate each component to the theory.

2. Design your classroom environment and identify the theory you have used. The environment might be approached and designed using the Cognitive-Field or Behaviorist.

3. What are the teaching strategies used in the Theory? What is the emphasis in teaching?

4. What are the learning strategies used with the learner in the theory?
   a. Interaction
   b. Reinforcement
   c. Transfer of learning
   d. Evaluation process (feedback)

5. This represents an analysis of <u>your</u> teaching. Develop it strictly to the theory you choose and the guidelines you already have developed in the worksheets. If you do use parts of other theories, please specify the change and why you made the change.

6. Two suggestions: a. write the lesson and then do the analysis (Cognitive-Field), or b. write/analyze at the same time (Behaviorist).

7. Following items are included in this paper:
   _____1. Cover page.
   _____2. Classroom design (drawing) and explain to your theory basis.
   _____3. Discipline used and the theory basis.
   _____4. Overview of your learning as you are today and plan for the future.
   _____5. Overview of your learning theory for your lessons.
   _____6. Hierarchy used in the lessons developed.
   _____7. Four lessons following the format of Objective #3 and #6.
   _____8. Paper is typed with proper grammar and spelling.

APPENDIX D

RESPONDENT INTERVIEW QUESTIONS

Respondent Interview Questions

For the Beginning of the Course:

1. What previous experience do you have working with cooperative groups? (Include teaching and learning experiences). Explain.

2. Have you participated in cooperative groups in other courses? Explain.

3. Would you describe the structure and process of the groups you experienced in these other courses? (Composition, organization, structure of activities, assignments and grades, interaction and group processing).

4. How were these groups the same and how were they different?

5. How do you feel about working in cooperative groups? Do you prefer to work with a group or individually? Explain.

6. How do you feel about working with a cooperative group in TE505?

7. Do you understand what cooperative learning is and what is involved in participating in a "cooperative support group?"

8. What are your expectations for completing the course objectives in relationship to group assignments and individual assignments?

9. What changes do you anticipate in your behavior?

10. How do you plan to contribute to the cooperative group process?

Respondent Interview Questions

For Midway through the Course:

1. Would you describe the structure and process of the "cooperative support group" you are assigned to in TE505? (Composition, organization, structure of activities, assignments and grades, interaction and group processing)

2. How is this group the same and how is this group different than other groups you experienced?

3. How do you feel about cooperative learning now that you are midway through the TE505 course? What is your preference for working with groups or individually? Explain.

4. How do you feel about working with your assigned "cooperative support group" in TE505? How did you behave? How would you characterize outcomes? What did you discover?

5. Do you understand what cooperative learning is and what is involved in participating in a "cooperative support group?"

6. What are your expectations for completing the course objectives in relationship to group assignments and individual assignments?

7. What changes have occurred in your learning behavior? Did you anticipate these changes?

8. What characterizes the "cooperative support group" process and interactions and how do you contribute to that process? What are the roles of members?

9. What do you like the most about the cooperative group process? What do you like the least? What helped you to learn? What did not help you to learn? Explain.

10. Will you use cooperative groups in your own classroom? Explain why or why not.

Respondent Interview Questions

For the End of the Course:

1. How do you feel about "cooperative learning" now that you have completed the TE505 course? What is your preference for working with groups or individually? How have your feelings and preferences changed?

2. How is the "cooperative support group" structure and process of TE505 the same or different than other group structures and processes you experienced?

3. How do you feel about working with your assigned "cooperative support group" during TE505? How did you behave? How would you characterize outcomes? What did you discover? What did other group members discover? How have your feelings about "cooperative support groups" changed?

4. Did you meet your expectations for completing course objectives in relationship to group assignments and individual assignments? How have your expectations changed?

5. What changes have occurred in your learning behavior? Did you learn in different ways? What did you discover?

6. What characterized the group interactions and process and how did you contribute to the "cooperative support group" interactions and process?

7. What did you like the most about the cooperative group environment? What did you like least? What helped you to learn? What did not? What activities/ assignment did you like the most or learn from the most? or the least?

8. What is cooperative learning? How is cooperative learning used in groups? What behavior is expected? How does it effect learning?

9. Will you use cooperative learning and cooperative groups in own classroom as an alternative teaching strategy?

10. How would you enhance any aspect of the TE505 course: environment, curriculum, implications for teaching and learning strategies? What would you change?

APPENDIX E

WEEKLY RESPONDENT OPINIONNAIRE

Weekly Respondent Opinionnaires

TO: Cooperative Support Group - Respondents

FROM: Rose M. Beane (517) 791-1462 / 686-4597 (W)

RE: Your insights, perspectives, motivations about TE505 and your Cooperative Support Group activities and processing of course objectives. Please used attach sheets to elaborate.

1. What were your immediate feelings when your reviewed TE505's course syllabus?

2. What are your expectations for completing the course objectives individually? with your cooperative support group?

3. Do you have any previous experience with cooperative learning methods or working in groups? Do you prefer to work individually or in a group? Explain why or why not.

4. What did you like the most about today's cooperative support group activity or processing? Explain.

5. What did you like the least about today's cooperative support group activity or processing? Explain.

6. How was the cooperative support group effective in contributing to your learning process or achievement of course objectives? Explain.

Weekly Respondent Opinionnaire

TO: Cooperative Support Group - Respondents

FROM: Rose M. Beane (517) 791-1462 / 686-4597 (W)

RE: Insights, perspectives, motivations of TE505 CSG activities

1. What did you like about today's "cooperative support group" process/ interaction/activities/outcomes?

2. What didn't you like about the "cooperative group" process/interaction/ activities/outcomes?

3. How do you feel now about this learning process?

Weekly Respondent Opinnionaire

TO: Cooperative Support Group - Respondents

FROM: Rose M. Beane (517) 791-1462 / 686-4597 (W)

RE: Insights, perspectives, motivations of TE505 CSG activities

1. What did you like about today's "cooperative support group" process/ interaction/activities/outcomes?

2. What didn't you like about the "cooperative group" process/interaction/ activities/outcomes?

3. How do you feel now about this learning process?

4. What arguments can you make for "cooperative support groups" and cooperative learning environment in TE505? Against it?

Weekly Respondent Opinionnaire

TO: Cooperative Support Group - Respondents

FROM: Rose M. Beane (517) 791-1462 / 686-4597 (W)

RE: TE505 Student Viewpoints

1. How did your cooperative support group assist you in the completion of Objective 3? Informational Hierarchy? Objective? Tutorial Lesson Application? Evaluation of Tutorial Lesson? Narrative Assignment? Describe specific examples.

2. Why did you find your CSG helpful or why not?

3. How did your CSG process the flat tire exercise? Describe specific examples of nature of the group discussion to come up with the three rules and consensus for one outcome.

4. How did your CSG process the Classification exercise on "Conflict"? Describe specific examples of the nature of the group discussion to reach consensus (differences, similarities, three categories, on concept, definition).

APPENDIX F

INSTRUCTOR INTERVIEW QUESTIONS

Instructor Interview Questions

The following questions are the focus of the instructor interviews:

1. Would you describe the environment, curriculum, teaching strategies and learning strategies and their implication for the learner for TE505?

2. Why "cooperative learning" and "cooperative support groups?"

3. What is your background with cooperative groups and cooperative learning?

4. Explain the structure of the "cooperative support groups" and how did you decide on the composition of these groups and why?

5. Explain the grading for the "cooperative support groups" as it relates to group assignments and individual assignments.

6. What is your philosophy behind the design of TE505 and the operating teaching and learning theory?

7. What is your experience with this design with TE505 and other courses you have taught in the college classroom? Do you use the cooperative learning theory and methods in other classes you teach?

8. What is the reason for not including the "cooperative learning" component of TE505 in the syllabus?

9. How do you monitor "cooperative support group" processing and how do you adjust for dysfunctional groups?

10. Which of the groups seem to be the most effective at processing the course content midway through the course? Objective #3? Objective #6?

11. How do you respond to students who just do not like working in the "cooperative support groups" and are reluctant or refuse to participate cooperatively?

12. How do you respond to students who are not "pulling their weight" in the cooperative group process?

13. How do you reconcile grading for students who are otherwise cooperative group members and contribute to group outcomes but breakdown with individual assignments?

14. How do you facilitate group processing in TE505?

15. What is the relationship between the design of group and individual assignments and outcomes?

16. How do cooperative learning support groups enhance adult learning in TE505?

17. Can the cooperative support group model designed for TE505 be restructured to use in other college courses? How? What is the framework?

18. Have you observed any predisposition to cooperative learning for the primary education groups vs the secondary group etc.?

19. What do you like most about using the cooperative learning and support groups in the college classroom? Least?

20. What is your assessment of the cooperative support group assignments developmentally from the beginning, midway, and end of the course?

APPENDIX G

WHOLE CLASS FEEDBACK/OPINION SESSION QUESTIONS

WHOLE CLASS FEEDBACK/OPINION SESSION QUESTIONS

1. Describe the class environment. What does the class look like physically?

2. What learning theory was operating in this class?

3. Describe the psychological environment in the class?

4. We have had a lot of fun with the concept "Life-Space" explain this in relationship to the course experience.

5. Describe the curriculum. What about the text book? What about the theory application at the various levels of instructional moves (application, classification, association)?

6. Describe the teaching strategies. (modeling, cooperative support groups, lecture, applications)

7. Describe the learning strategies. What the implications to the learner?

8. Were you motivated to do self-directed learning on your own as a result of the course and group activities?

9. How would you characterize the cooperative support group processing and activities?

10. (The remainder of opinion/feedback session facilitated using the opinion survey items to elicit information from the participants viewpoint.)

APPENDIX H

RESPONDENT SMALL-GROUP INTERVIEW QUESTIONS

RESPONDENT SMALL-GROUP INTERVIEW QUESTIONS

1. Describe your cooperative support group and the relationship between group members.

2. How would you describe what was happening in the cooperative support groups? What is your opinion about the group processing, group function and group activities?

3. How did your cooperative support group assist your learning in the course?

4. Reflecting back over the semester, what are you perceptions about the cooperative environment and cooperative support groups:
   * at the beginning?
   * midway?
   * at the end of the course?

5. How would you characterize your behavior during cooperative support group activities? Should cooperative skills be taught?

6. How would you characterize the learning experience during the course in the context of the cooperative support groups?

7. How would you characterize outcomes? Achievement of the seven course objectives?

8. What did you discover? What did fellow group members discover?

9. How has this course affected you personal learning theory? How do you plan to put into practice what you have learned in the course? Cooperative groups?

10. Would you recommend Hansen's cooperative support group approach as an instructional strategy for other graduate courses? Explain.

APPENDIX I

OPINION SURVEY

LEARNING THEORIES FOR TEACHERS
Adult Learning in a Cooperative Learning Environment
Student Survey

Demographics: Please mark an "X" in the space provided next to the category or answer that applies.

A. Your age category:
___ 1. Under 25
___ 2. 26 - 35
___ 3. 36 - 45
___ 4. Over 45

B. Number of years teaching:
___ 1. Less than 2
___ 2. 2 - 5
___ 3. 6 - 10
___ 4. More than 10

C. Teaching Grade Level:

___ 1. Preschool/Kindergarten on cooperative learning
___ 2. Primary Education theory?
___ 3. Middle School
___ 4. Secondary Education
___ 5. Adult Education
___ 6. Other _____

D. Was this your first experience with a group

___ 1. Yes
___ 2. No

Instructions: Please circle the response that indicates to what extent you:
SA Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree,
NA = Not Applicable.

E.	The classroom environment during the course was "cooperative and supportive."	SA	A	D	SD	NA
F.	The environment in my assigned group was "cooperative and supportive."	SA	A	D	SD	NA
G.	In my opinion, the preliminary group processing for a task can be described as "everyone bouncing ideas off everyone else."	SA	A	D	SD	NA
H.	I would characterize the contribution and roles that members served during group processing as "shared leadership."	SA	A	D	SD	NA
J.	I would characterize my behavior during group processing as "cooperative and supportive."	SA	A	D	SD	NA

K.	As a result of this course I plan to use the cooperative group method at the grade level I teach.	SA A D SD NA
L.	I would recommend that cooperative group methods be incorporated in college level courses.	SA A D SD NA
M.	My cooperative support group was helpful to my learning in this course.	SA A D SD NA
N.	Prior to this course, I usually preferred to work individually in a course setting.	SA A D SD NA
O.	As a result of this course, I felt that I significantly benefitted from the experiences my cooperative support group shared.	SA A D SD NA
P.	I found the technique of "talking it out" was effective in preparation of theory applications.	SA A D SD NA
Q.	I found the technique of "talking it out" was effective for analysis of theory applications.	SA A D SD NA
R.	In my opinion, organizing the groups homogeneously (by grade level) was effective in this course.	SA A D SD NA
S.	In my opinion, cooperative and collaborative skills must be taught.	SA A D SD NA

Instructions: Please mark an "X" or circle the response that indicates your opinion: (Y = Yes, N = No), <YP = Yes, positively; YN = Yes, negatively, NA = No affect>, [C = Cognitive, B = Behaviorist, E = Eclectic, N = Neither], {SA = Strongly Agree, A = Agree, D = Disagree, SD = Strongly Disagree, NA = Not Applicable}.

T.	At the beginning of the course, I would describe my learning theory as...	C B E N
U.	As a result of the class, I am better able to apply cognitive and behaviorist theory as appropriate to the instructional situations.	SA A D SD NA

V. Did you have members from both genders in your group? Y N

Did this affect cooperation and support? YP YN NA

Did this affect group processing? YP YN NA

Directions: Please mark an "X" or circle the response that indicates your opinion: [F= Frequently, O = Occasionally, S = Sometimes, N = Never]

W. How often did your group operate at each level of Bloom's Taxonomy?

1. Knowledge F O S N
2. Comprehension F O S N
3. Application F O S N
4. Analysis F O S N
5. Evaluation F O S N
6. Synthesis F O S N

X. At which point in this course did you first feel that you could apply the theory analysis skills?

___ 1. After Objective # 3
___ 2. After Objective # 6
___ 3. After Objective # 7
___ 4. After Objective # _
___ 5. None of the Above

Thank you for your cooperation and assistance with my dissertation study!

APPENDIX J

OPINION SURVEY RESULTS

OPINION SURVEY RESULTS
"Learning Theories for Teachers"

A. AGE OF RESPONDENT

	VALUE	NUMBER	PERCENT
25 AND UNDER	1	4	18
26 - 35	2	6	27
36 - 45	3	10	46
over 45	4	2	9
	TOTAL	22	100

B. NUMBER OF YEARS TEACHING

	VALUE	NUMBER	PERCENT
LESS THAN 2	1	9	41
2-5	2	11	50
6-10	3	1	5
MORE THAN 10	4	1	5
	TOTAL	22	100

C. TEACHING GRADE LEVEL

	VALUE	NUMBER	PERCENT
PRESCHOOL/KINDERGARTEN	1	5	23
PRIMARY EDUCATION	2	5	23
MIDDLE SCHOOL	3	6	27
SECONDARY EDUCATION	4	3	14
OTHER	6	3	14
	TOTAL	22	100

D. WAS THIS YOUR FIRST EXPERIENCE WITH A GROUP BASED ON COOPERATIVE LEARNING THEORY?

	VALUE	NUMBER	PERCENT
YES	1	11	50
NO	2	11	50
	TOTAL	22	100

E. THE CLASSROOM ENVIRONMENT DURING THE COURSE WAS "COOPERATIVE AND SUPPORTIVE."

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	16	73
AGREE	2	4	18
DISAGREE	3	1	5
DID NOT INDICATE	6	1	5
	TOTAL	22	100

F. THE ENVIRONMENT IN MY ASSIGNED GROUP WAS "COOPERATIVE AND SUPPORTIVE."

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	17	77
AGREE	2	4	18
STRONGLY DISAGREE	4	1	5
DID NOT INDICATE			
	TOTAL	22	100

G. IN MY OPINION, THE PRELIMINARY GROUP PROCESSING FOR A TASK CAN BE DESCRIBED AS "EVERYONE BOUNCING IDEAS OFF EVERYONE ELSE."

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	8	36
AGREE	2	12	55
DISAGREE	3	2	9

H. I WOULD CHARACTERIZE THE CONTRIBUTION AND ROLES THAT MEMBERS SERVED DURING GROUP PROCESSING AS "SHARED LEADERSHIP."

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	11	50
AGREE	2	10	46
DISAGREE	3	1	5

J. I WOULD CHARACTERIZE MY BEHAVIOR DURING GROUP PROCESSING AS "COOPERATIVE AND SUPPORTIVE."

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	8	36
AGREE	2	12	55
DISAGREE	3	2	9
STRONGLY DISAGREE	4	1	5

K. AS A RESULT OF THIS COURSE I PLAN TO USE THE COOPERATIVE GROUP METHOD AT THE GRADE LEVEL I TEACH.

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	12	55
AGREE	2	8	36
DISAGREE	3	1	5
STRONGLY DISAGREE	4	1	5

L. I WOULD RECOMMEND THAT COOPERATIVE GROUP METHODS BE INCORPORATED IN COLLEGE LEVEL COURSES.

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	16	73
AGREE	2	4	18
DISAGREE	3	1	5
DID NOT INDICATE	6	1	5

M. MY COOPERATIVE SUPPORT GROUP WAS HELPFUL TO MY LEARNING IN THIS COURSE.

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	2	9
AGREE	2	8	36
DISAGREE	3	9	41

N. PRIOR TO THIS COURSE, I USUALLY PREFERRED TO WORK INDIVIDUALLY IN A COURSE SETTING.

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	8	36
AGREE	2	12	55
DISAGREE	3	2	9
STRONGLY DISAGREE	4	3	14

0. AS A RESULT OF THIS COURSE, I FELT THAT I SIGNIFICANTLY BENEFITTED FROM THE EXPERIENCES MY COOPERATIVE SUPPORT GROUP SHARED.

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	11	50
AGREE	2	10	46
DISAGREE	3	1	5

P. I FOUND THE TECHNIQUE OF "TALKING IT OUT" WAS EFFECTIVE IN PREPARATION OF THEORY APPLICATIONS.

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	11	50
AGREE	2	9	41
DISAGREE	3	2	9

Q. I FOUND THE TECHNIQUE OF "TALKING IT OUT" WAS EFFECTIVE FOR ANALYSIS OF THEORY APPLICATIONS.

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	11	50
AGREE	2	8	36
DISAGREE	3	3	14

R. IN MY OPINION, ORGANIZING THE GROUPS HOMOGENEOUSLY (BY GRADE LEVEL) WAS EFFECTIVE IN FOR THIS COURSE.

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	10	46
AGREE	2	11	50
DISAGREE	3	1	5

IN MY OPINION, COOPERATIVE AND COLLABORATIVE SKILLS MUST BE TAUGHT.

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	11	50
AGREE	2	8	36
DISAGREE	3	3	14

S. AT THE BEGINNING OF THE COURSE, I WOULD DESCRIBE MY LEARNING THEORY AS...

	VALUE	NUMBER	PERCENT
COGNITIVE	1	2	9
BEHAVIORIST	2	5	23
ECLECTIC	3	12	55
NEITHER	4	2	9
DID NOT INDICATE	5	1	5

AS A RESULT OF THE CLASS, I AM BETTER ABLE TO APPLY COGNITIVE AND BEHAVIORIST THEORY AS APPROPRIATE ...

	VALUE	NUMBER	PERCENT
STRONGLY AGREE	1	10	46
AGREE	2	11	55

V. DID YOU HAVE MEMBERS FROM BOTH GENDERS IN YOUR GROUP?

	VALUE	NUMBER	PERCENT
YES	1	9	41
NO	2	13	59

DID THIS AFFECT COOPERATION AND SUPPORT?

	VALUE	NUMBER	PERCENT
YES, POSTIVELY	1	8	36
NO AFFECT	3	12	55
DID NOT INDICATE	4	2	9

DID THIS AFFECT GROUP PROCESSING?

	VALUE	NUMBER	PERCENT
YES, POSITIVELY	1	8	36
NO AFFECT	3	12	55
DID NOT INDICATE	4	2	9

W. HOW OFTEN DID YOUR GROUP OPERATE AT EACH LEVEL OF BLOOM'S TAXONOMY?

1. KNOWLEDGE:

	VALUE	NUMBER	PERCENT
FREQUENTLY	1	10	46
OCCASIONALLY	2	7	32
SOMETIMES	3	5	23

2. COMPREHENSION:

	VALUE	NUMBER	PERCENT
FREQUENTLY	1	11	50
OCCASIONALLY	2	9	41
SOMETIMES	3	2	9

3. APPLICATION:

	VALUE	NUMBER	PERCENT
FREQUENTLY	1	14	64
OCCASIONALLY	2	8	36

4. ANALYSIS:

	VALUE	NUMBER	PERCENT
FREQUENTLY	1	14	64
OCCASIONALLY	2	6	27
SOMETIMES	3	2	9

5. EVALUATION:

	VALUE	NUMBER	PERCENT
FREQUENTLY	1	10	46
OCCASIONALLY	2	8	36
SOMETIMES	3	3	14
NEVER	4	1	5

6. SYNTHESIS:

	VALUE	NUMBER	PERCENT
FREQUENTLY	1	11	50
OCCASIONALLY	2	6	27
SOMETIMES	3	5	23

AT WHICH POINT IN THIS COURSE DID YOU FIRST FEEL THAT YOU COULD APPLY THE THEORY ANALYSIS SKILLS?

	VALUE	NUMBER	PERCENT
FREQUENTLY	1	5	23
OCCASIONALLY	2	13	59
SOMETIMES	3	4	18

(VALID CASES 22 MISSING CASES 0)

APPENDIX K

OPINION SURVEY DATA PROFILE

OPINION SURVEY DATA PROFILE

RESULTS BY:	AGE CATEGORY				NUMBER OF YEARS TEACHING				TEACHING GRADE LEVEL					FIRST EXPERIENCE WITH A GROUP BASED ON COOP, LEARNING THEORY	
	25-UNDER	26-35	36-45	OVER 45	LESS 2	2-5	6-10	MORE 10	PRESCHO KINDERG	PRIM EDUC	MIDDLE SCHOOL	SECOND EDUCAT	OTHER	YES	NO
THE CLASSROOM ENVIRONMENT DURING THE COURSE WAS COOPERATIVE AND SUPPORTIVE															
Strongly Agree	2	4	8	2	6	8	1	1	4	3	4	2	3	9	7
Agree	2	1	1	0	2	2	0	0	0	2	2	0	0	2	2
Disagree	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
Did Not Indicate	0	0	1	0	0	1	0	0	1	0	0	0	0	0	4
THE ENVIRONMENT IN MY ASSIGNED GROUP WAS COOPERATIVE AND SUPPORTIVE															
Strongly Agree	2	4	9	2	5	10	1	1	5	4	4	2	2	7	10
Agree	2	1	1	0	3	1	0	0	0	1	2	0	1	4	0
Disagree	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
IN MY OPINION, THE PRELIM GROUP PROCESSING FOR A TASK CAN BE DESCRIBED AS EVERYONE BOUNCING IDEAS...															
Strongly Agree	1	3	3	1	3	4	1	0	2	2	3	0	1	2	6
Agree	2	2	7	1	4	7	0	1	3	3	3	1	2	8	4
Disagree	1	1	0	0	2	0	0	0	0	0	0	2	0	1	1

OPINION SURVEY DATA PROFILE

RESULTS BY:	AGE CATEGORY				NUMBER OF YEARS TEACHING				TEACHING GRADE LEVEL					FIRST EXPERIENCE WITH A GROUP BASED ON COOP, LEARNING THEORY	
	25-UNDER	26-35	36-45	OVER 45	LESS 2	2-5	6-10	MORE 10	PRESCHO KINDERG	PRIM EDUC	MIDDLE SCHOOL	SECOND EDUCAT	OTHER	YES	NO
I WOULD CHARACTERIZE THE CONTRIBUTION AND ROLES THAT MEMBERS...AS SHARED LEADERSHIP															
Strongly Agree	3	2	4	2	5	4	1	1	2	4	2	1	2	5	6
Agree	1	3	6	0	3	7	0	0	3	1	4	1	1	6	4
Disagree	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
I WOULD CHARACTERIZE MY BEHAVIOR DURING GROUP PROCESSING AS COOPERATIVE AND SUPPORTIVE															
Strongly Agree	2	3	4	2	4	5	1	1	2	1	4	2	2	5	6
Agree	2	2	5	0	4	5	0	0	2	4	2	0	1	6	3
Disagree	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
Strongly Disagree	0	0	1	0	0	1	0	0	1	0	0	0	0	0	1
AS A RESULT OF THIS COURSE I PLAN TO USE THE COOP GROUP METHOD AT THE GRADE LEVEL I TEACH															
Strongly Agree	2	3	5	2	4	6	1	1	3	2	5	0	2	5	7
Agree	2	1	5	0	4	4	0	0	1	3	1	2	1	5	3
Disagree	0	1	0	0	0	1	0	0	1	0	0	0	0	1	0
Strongly Disagree	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1

OPINION SURVEY DATA PROFILE

RESULTS BY:	AGE CATEGORY				NUMBER OF YEARS TEACHING				TEACHING GRADE LEVEL					FIRST EXPERIENCE WITH A GROUP BASED ON COOP, LEARNING THEORY	
	25-UNDER	26-35	36-45	OVER 45	LESS 2	2-5	6-10	MORE 10	PRESCHO KINDERG	PRIM EDUC	MIDDLE SCHOOL	SECOND EDUCAT	OTHER	YES	NO
I WOULD RECOMMEND THAT COOP GROUP METHODS BE INCORPORATED IN COLLEGE LEVEL COURSES															
Strongly Agree	3	4	7	2	7	7	1	1	4	3	5	1	3	9	7
Agree	1	1	2	0	1	3	0	0	0	2	1	1	0	2	2
Disagree	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
Did Not Indicate	0	0	1	0	0	1	0	0	1	0	0	0	0	0	1
MY COOPERATIVE SUPPORT GROUP WAS HELPFUL TO MY LEARNING IN THIS COURSE															
Strongly Agree	1	3	8	2	5	7	1	1	3	4	3	1	3	6	8
Agree	3	2	1	0	3	3	0	0	1	1	3	1	0	5	1
Strongly Disagree	0	1	1	0	1	1	0	0	1	0	0	1	0	0	2
PRIOR TO THIS COURSE, I USUALLY PREFERRED TO WORK INDIVIDUALLY IN A COURSE SETTING															
Strongly Agree	0	1	1	0	0	2	0	0	2	0	0	0	0	1	1
Agree	2	3	3	0	4	4	0	0	1	2	3	1	1	5	3
Disagree	1	2	4	2	3	5	1	0	2	2	2	2	1	4	5
Strongly Disagree	1	0	2	0	2	0	0	1	0	1	1	0	1	1	2

OPINION SURVEY DATA PROFILE

RESULTS BY: *AGE CATEGORY* *NUMBER OF YEARS TEACHING* *TEACHING GRADE LEVEL* **FIRST EXPERIENCE WITH A GROUP BASED ON COOP, LEARNING THEORY**

OPINION SURVEY DATA PROFILE

RESULTS BY:	AGE CATEGORY				NUMBER OF YEARS TEACHING				TEACHING GRADE LEVEL					FIRST EXPERIENCE WITH A GROUP BASED ON COOP, LEARNING THEORY	
	25-UNDER	26-35	36-45	OVER 45	LESS 2	2-5	6-10	MORE 10	PRESCHO KINDERG	PRIM EDUC	MIDDLE SCHOOL	SECOND EDUCAT	OTHER	YES	NO
AS A RESULT OF THIS COURSE, I FELT THAT I SIGNIFICANTLY BENEFITTED FROM THE EXPERIENCES...															
Strongly Agree	1	2	6	2	5	5	1	0	4	2	2	1	2	4	7
Agree	3	3	4	0	3	6	0	1	1	3	4	1	1	7	3
Disagree	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
I FOUND THE TECHNIQUE OF TALKING IT OUT WAS EFFECTIVE IN PREPARATION OF THEORY APPLICATIONS															
Strongly Agree	2	2	5	2	5	4	1	1	3	3	2	1	2	5	6
Agree	2	2	5	0	3	6	0	0	2	2	3	1	1	6	3
Disagree	0	2	0	0	1	1	0	0	0	0	1	1	0	0	2
I FOUND THE TECHNIQUE OF TALKING IT OUT WAS EFFECTIVE FOR ANALYSIS OF THEORY APPLICATIONS															
Strongly Agree	2	2	5	2	4	5	1	1	4	2	2	1	2	5	6
Agree	2	1	5	0	4	4	0	0	1	3	2	1	1	6	2
Disagree	0	3	0	0	1	2	0	0	0	0	2	1	0	0	3

OPINION SURVEY DATA PROFILE

RESULTS BY:	AGE CATEGORY				NUMBER OF YEARS TEACHING				TEACHING GRADE LEVEL					FIRST EXPERIENCE WITH A GROUP BASED ON COOP, LEARNING THEORY	
	25-UNDER	26-35	36-45	OVER 45	LESS 2	2-5	6-10	MORE 10	PRESCHO KINDERG	PRIM EDUC	MIDDLE SCHOOL	SECOND EDUCAT	OTHER	YES	NO
IN MY OPINION, ORGANIZING THE GROUPS HOMOGENEOUSLY (BY GRADE LEVEL) WAS EFFECTIVE IN THIS COURSE															
Strongly Agree	2	1	5	2	3	5	1	1	4	2	2	0	2	5	5
Agree	2	4	5	0	5	6	0	0	1	3	4	2	1	6	5
Disagree	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1
IN MY OPINION, COOPERATIVE AND COLLABORATIVE SKILLS MUST BE TAUGHT															
Strongly Agree	1	2	6	2	2	7	1	1	5	2	2	0	2	5	6
Agree	3	3	2	0	4	4	0	0	0	1	4	2	1	6	2
Disagree	0	1	2	0	3	0	0	0	0	2	0	1	0	0	3
AT THE BEGINNING OF THE COURSE, I WOULD DESCRIBE MY LEARNING THEORY AS															
Cognitive	0	2	0	0	0	2	0	0	0	0	2	0	0	0	2
Behaviorist	1	0	4	0	2	2	1	1	2	2	1	0	0	2	3
Eclectic	2	3	5	2	4	7	0	0	3	3	3	1	2	7	5
Neither	1	1	0	0	2	0	0	0	0	0	0	2	0	1	1
Did Not Indicate	0	0	1	0	1	0	0	0	0	0	0	0	1	1	0

OPINION SURVEY DATA PROFILE

RESULTS BY: AGE CATEGORY | NUMBER OF YEARS TEACHING | TEACHING GRADE LEVEL | FIRST EXPERIENCE WITH A GROUP BASED ON COOP, LEARNING THEORY

OPINION SURVEY DATA PROFILE

RESULTS BY:	AGE CATEGORY				NUMBER OF YEARS TEACHING				TEACHING GRADE LEVEL					FIRST EXPERIENCE WITH A GROUP BASED ON COOP, LEARNING THEORY	
	25-UNDER	26-35	36-45	OVER 45	LESS 2	2-5	6-10	MORE 10	PRESCHO KINDERG	PRIM EDUC	MIDDLE SCHOOL	SECOND EDUCAT	OTHER	YES	NO
AS A RESULT OF THE CLASS, I AM BETTER ABLE TO APPLY COGNITIVE AND BEHAVIORIST THEORY AS APPROPRIATE															
Strongly Agree	2	1	5	2	5	4	1	0	3	2	2	1	2	4	6
Agree	2	5	5	0	4	7	0	1	2	3	4	2	1	7	5
DID YOU HAVE MEMBERS FROM BOTH GENDERS IN YOUR GROUP?															
Yes	1	2	5	1	5	3	1	0	1	1	3	2	2	3	6
No	3	4	5	1	4	8	0	1	4	4	3	1	1	8	5
DID YOU HAVE MEMBERS FROM BOTH GENDERS IN YOUR GROUP?															
* Yes															
DID THIS AFFECT COOPERATION AND SUPPORT?															
Yes, Positively	1	1	4	1	4	2	1	0	1	0	2	2	2	3	4
No Affect	0	1	1	0	1	1	0	0	0	1	1	0	0	0	2
DID THIS AFFECT GROUP PROCESSING?															
Yes, Positively	1	1	4	0	4	2	0	0	0	0	2	2	2	3	3
No Affect	0	1	1	1	1	1	1	0	1	1	1	0	0	0	3

OPINION SURVEY DATA PROFILE

RESULTS BY:	AGE CATEGORY				NUMBER OF YEARS TEACHING				TEACHING GRADE LEVEL					FIRST EXPERIENCE WITH A GROUP BASED ON COOP, LEARNING THEORY	
	25-UNDER	26-35	36-45	OVER 45	LESS 2	2-5	6-10	MORE 10	PRESCHO KINDERG	PRIM EDUC	MIDDLE SCHOOL	SECOND EDUCAT	OTHER	YES	NO
DID YOU HAVE MEMBERS FROM BOTH GENDERS IN YOUR GROUP?															
*No															
DID THIS AFFECT COOPERATION AND SUPPORT?															
Yes, Positively	0	0	1	0	0	1	0	0	1	0	0	0	0	1	0
No Affect	3	3	3	1	3	6	0	1	2	4	3	0	1	7	3
Did Not Indicate	0	1	1	0	1	1	0	0	1	0	0	1	0	0	2
DID THIS AFFECT GROUP PROCESSING?															
Yes, Positively	0	1	1	0	0	2	0	0	2	0	0	0	0	2	0
No Affect	3	2	3	1	3	5	0	1	1	4	3	0	1	6	3
Did Not Indicate	0	1	1	0	1	1	0	0	1	0	0	1	0	0	2
AT WHICH POINT IN THIS COURSE DID YOU FIRST FEEL THAT YOU COULD APPLY THE THEORY															
After OBJ #3	1	1	2	1	3	1	1	0	1	1	0	2	1	2	3
After OBJ #6	0	4	8	1	4	8	0	1	4	3	4	0	2	6	7
After OBJ #7	3	1	0	0	2	2	0	0	0	1	2	1	0	3	1

OPINION SURVEY DATA PROFILE

RESULTS BY:	AGE CATEGORY				NUMBER OF YEARS TEACHING				TEACHING GRADE LEVEL					FIRST EXPERIENCE WITH A GROUP BASED ON COOP, LEARNING THEORY	
	25-UNDER	26-35	36-45	OVER 45	LESS 2	2-5	6-10	MORE 10	PRESCHO KINDERG	PRIM EDUC	MIDDLE SCHOOL	SECOND EDUCAT	OTHER	YES	NO
KNOWLEDGE															
Frequently	0	3	5	2	3	5	1	1	2	1	4	0	3	4	6
Occasionally	1	3	3	0	2	5	0	0	2	2	1	2	0	3	4
Sometimes	3	0	2	0	4	1	0	0	1	2	1	1	0	4	1
COMPREHENSION															
Frequently	1	4	4	2	2	7	1	1	2	2	5	1	1	4	7
Occasionally	2	2	5	0	6	3	0	0	2	3	0	2	2	5	4
Sometimes	1	0	1	0	1	1	0	0	1	0	1	0	0	2	0
APPLICATION															
Frequently	4	3	5	2	6	6	1	1	2	4	4	1	3	7	7
Occasionally	0	3	5	0	3	5	0	0	3	1	2	2	0	4	4
ANALYSIS															
Frequently	4	3	5	2	6	6	1	1	2	4	4	1	3	7	7
Occasionally	0	3	3	0	1	5	0	0	3	0	1	2	0	4	2
Sometimes	0	0	2	0	2	0	0	0	0	1	1	0	0	0	2

OPINION SURVEY DATA PROFILE

RESULTS BY:	AGE CATEGORY				NUMBER OF YEARS TEACHING				TEACHING GRADE LEVEL					FIRST EXPERIENCE WITH A GROUP BASED ON COOP, LEARNING THEORY	
	25-UNDER	26-35	36-45	OVER 45	LESS 2	2-5	6-10	MORE 10	PRESCHO KINDERG	PRIM EDUC	MIDDLE SCHOOL	SECOND EDUCAT	OTHER	YES	NO
EVALUATION															
Frequently	2	1	5	2	4	4	1	1	2	3	1	1	3	4	6
Occasionally	1	4	3	0	2	6	0	0	2	1	4	1	0	5	3
Sometimes	1	1	1	0	2	1	0	0	1	1	0	1	0	2	1
Never	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1
SYNTHESIS															
Frequently	3	2	4	2	4	5	1	1	2	4	2	1	2	6	5
Occasionally	1	1	4	0	3	3	0	0	2	1	1	1	1	4	2
Sometimes	0	3	2	0	2	3	0	0	1	0	3	1	0	1	4

APPENDIX L

TASK ANALYSIS

Dr. Douglas Hansen

Saginaw Valley State University

TASK ANALYSIS
CHECKLIST FOR GENERAL INSTRUCTIONAL MOVES

1. Rapport or learning set:
   Was a feeling or mutual understanding established?
   Was the student made to feel comfortable?
   Was the student told about what to expect?
2. Entry Test:
   (a) Test for knowledge
   Was the test for knowledge the same as described in the objectives?
   (b) Test for prerequisites
   Were the directions to the student explicit and clear?
   Were the materials, if any, easy to manipulate?
   Were there enough responses from the learner to ensure competency?
   Was there adequate check of all the prerequisites?
3. Task Introduction and Statement of the Goal or Objective:
   Were simple words used?
   Was the introduction brief?
   Was the verb describing the behavior operational enough that the learner could picture him/herself doing the task?
   Was the task demonstrated, if it could be?
   Were the given conditions, the expected behavior, and the acceptable behavior all part of the introduction?
4. Rationale or Reason for Learning the Task from the Learner's Stand-point:
   Was a closely related, or recently completed task mentioned?
   Was the next large task to be completed mentioned?
   Was the task's relationship to the total picture mentioned?
   Was a truly pragmatic reason delivered to the student?
5. Commitment:
   Was a verbal contract made between the teacher and the student?
   Was the student asked if he or she wanted to learn the task?
6. Instruction: (See Attached Checklists)
   Attention, guidance, response, feedback
7. Exit Test:
   Was the exit test the same as that called for in the objective?
   Was the exit test-for most situations-the same as the test for knowledge portion of the entry test?
   Was the order or testing or the examples different than in the instruction?
8. Review of the Task:
   Was a review of the task made at a later date, depending on the objective itself, the task type, and the learner's capabilities?

CHECKLIST OF RULES FOR ASSOCIATION
(Chaining and Verbal Association)

_____1. Individual links must be established.

_____2. Continuity must exist between links.

_____3. Repetition in proper order.

_____4. Length of memory at one time is seven plus or minus two. This determines the length of chain to maximize memory.

_____5. Proper review/practice of task.

_____6. Whole chain then progressive parts - then to whole.

_____7. Use helpers generated by you or the students and other Mnemonic (A device to assist memory).

a. Use acronyms or HELPERS
   FACE
   CAUTION
   HOMES
   EVERY GOOD BOY DOES FINE
   ROY (G) BIV
   DANGER
   Sister Mary Helen Eats Onions
   A Rat In The House May Eat The Ice Cream

b. Categorize (group the items)
c. Use Key Words like those highlighted words in texts.
d. Use Associations. (Sherri, Pearl, Georgia, Bill, Jane).
e. Use Rhymes.
f. Use a Peg List. (gum, shoe, tree, door, hive, stick, heaven, plate, sign, her).
g. Use the Link System. (Linking a vivid picture in your mind to the list).

(VERBAL ASSOCIATION)

_____1. Must know pre-requisites.

_____2. Response differentiation must have previously taken place.

_____3. "Code connecting" with pictures facilitates fast learning.

_____4. Continuity of links if necessary.



_____5. Whole chain then progressive parts - then to whole.

_____6. Proper Review-Repetition-Drill (over learning).

CHECKLIST OF RULES FOR CLASSIFICATION

(Concept, Multiple Discrimination)

_____1. Formulate attributes of the concept
- a. Brainstorm
  1. definition - question - characteristics (to help students paraphrase attributes).
  2. round robin - open.
  3. identify specific attributes (not to exceed 7 + or - two)

_____ (OR) b. Teacher (define) generate specific attributes.

_____2. Show the whole - Concept - Attributes.

_____3. Write full definition on something - STATIC.

_____4. Develop an example or the range of examples that represent the definitions visually.

_____5. Develop more than one example and non-example. Accentuate the criteria attributes through visuals. Use models, handouts, manipulative devices, etc.
- a. Individual items randomized
- b. Use items in sentences or other situations

_____6. The number of examples and non-examples should represent the whole range of possibilities.

_____7. Questioning Strategies For Examples and Non-Examples.
Is this a hexagon? Yes! Why?
Is this a hexagon? No! Why not?
What is it? What is a hexagon?
What is this figure? Why?
How does it differ from a hexagon? Why?

_____8. Do not use examples or non-examples beyond the students sphere of ability. Example: the concept is "hexagon." Non-examples from the hierarchy would be circle, square, angle, line, triangle. Beyond their sphere of ability that you would not use are: octagon, septagon, etc.

_____9. Develop the whole (definition-write) then the parts (accentuate the attributes) then the whole (draw-define). Whole - part - whole. If the teacher uses Ia., then this begins the paraphrasing

_____10. Through examples and non-examples
REVIEW - REHEARSE - REPETITION

_____11. Review previously formulated attributes if brainstormed. (Final paraphrasing stage).

_____12. Keep it simple. (Kiss)

Examples of Concepts

1.	Hexagon	8.	Symbol
2.	Noun	9.	Fulcrum
3.	Verb	10.	Civil War
4.	Color	11.	Revolution
5.	Triangle	12.	Deviance
6.	Multiply	13.	Lever
7.	Simile	14.	Octagon

Examples of Multiple Discrimination

1. Rocks
2. Cars
3. People
4. Alphabet

CHECKLIST FOR RULES FOR APPLICATION

(Rule Learning, Problem Solving)

_____1. Count number of individual moves in task - if too many split task up. (For teacher only).

_____2. Teacher demonstrates <u>whole</u> task with descriptive information to learner. <u>State Rule</u>.

_____3. Teacher takes task a part. -Start with stimulus situation. -Recall parts- (Brake-light-flash).

_____4. Teach student to identify goal situation. (10 feet for every 10 miles/ hour).

_____5. Have students identify discrepancies between 3 and 4. (Use prior task only). (Do not use any Interference).

_____6. Develop rule as verbal chain. (i before e except after c).

_____7. Teach operative by itself. (Putting on brakes).

_____8. Put all phases together - have student talk his way through with help of teacher.

_____9. Have students <u>talk</u> and <u>do</u> complete application without teacher assistance if possible.

_____10. Review-drill-practice-using different
- a. stimulus situations (generalize)
- b. operations

_____11. Test with different situations like problem solving activities.

_____12. Exit Test (Go to #7 in the Instructional Moves).

Remember:

A. Two step process to apply a rule.
- a. acquire rule (classifying events)
- b. apply it

B. Words within the rule are the pre-requisite skills.

C. Problem-solving is applying rules to a new situation which occurs after the rules are learned.

D. Principles are relationships between <u>two</u> or <u>more</u> concepts.

Examples: Water-boil
If you heat water to 212 degrees then water will boil.
Birds fly South in the winter. (Series of concepts).
Love Thy Neighbor.
4 rules in adding

$$\begin{array}{r} 19 \\ \underline{12} \\ 31 \end{array}$$

1. Add right hand columns
2. Place one down
3. Carry
4. Add

Symbol
* = Correct
O = Not Correct
DNA = Does Not Apply
(Write comments in space
to the right of each item).

_____
Evaluator

_____
Person Being Evaluated

LEARNING THEORIES
T.E. 505
EVALUATION INSTRUMENT
FOR OBJECTIVE 3

I. Instructional Moves

_____ 1. Rapport

_____ 2. Pre-test
_____ a. Task
_____ b. Prerequisites

_____ 3. Objective (State)

_____ 4. Rationale
_____ Does it motivate
_____ Meet 3 of 4 criteria

_____ 5. Commitment

6. Instruction

_____ Association
_____ 1.
_____ 2.
_____ 3.
_____ 4.
_____ 5.

_____ Classification
_____ 1.___ a.___ b.
_____ 2.
_____ 3.
_____ 4.
_____ 5.
_____ 6.
_____ 7.
_____ 8.
_____ 9.
_____ 10.
_____ 11.

_____ Application
_____ 1.
_____ 2.
_____ 3.
_____ 4.
_____ 5.
_____ 6.
_____ 7.
_____ 8.
_____ 9.
_____ 10.
_____ 11.

_____ 7. Exit Test

Attach to Persons Paper

APPENDIX M

COGNITIVE LEARNING THEORY:

JEROME BRUNER

Dr. Douglas Hansen

Saginaw State Valley University

COGNITIVE LEARNING THEORY
JEROME
BRUNER

Teaching for Thinking Responses

A. Responses that Inhibit Thinking
   1. Responses that bring closure:
      Agrees/disagrees
      Doesn't give student a chance to think
      Tells student what teacher thinks
      Talks too much; explains it his or her way
      Cuts student off
   2. Responses that undermine student's confidence:
      Heckles
      Sarcastic
      Put idea down

B. Responses that Limit Thinking
      looks for single, correct answer/method
      leads student to "right" answer
      tells student what to do
      gives data

C. Responses that Teach Thinking
   1. Responses that promote reflection:
      repeats statement so student can consider it
      paraphrases statement/reflects main idea
      asks for student's idea
   2. Responses that encourage analysis:
      asks for an example
      asks about assumptions
      asks how the idea originated
      asks about the value of the idea
      asks about alternatives
      asks that comparisons be made
      asks for data to be classified
      asks for data to support the idea
   3. Responses that challenge:
      asks for hypotheses to be given
      asks that data be interpreted
      asks for criteria to be identified
      asks that principles be applied to new situations
      asks for predictions
      asks how a theory may be tested
      asks for the creation of new schemes

SUGGESTIONS FOR CREATING AN ATMOSPHERE CONDUCIVE TO THINKING/PROBLEM-SOLVING

1. Support and reinforce ideas and responses of students.

2. Use errors in thinking as a positive opportunity to help students again process the errors and meet acceptable standards in a supportive atmosphere.

3. Adapt classroom procedures to student interest and ideas whenever possible.

4. Allow time for students to think about and develop their creative ideas. Not all creativity occurs immediately and spontaneously.

5. Create a climate of mutual respect and acceptance between students and teachers, so that students can share, develop and learn together and from one another as well as independently.

6. Be aware of the many facets of thinking. Thinking can be encouraged and developed in all curricular areas and disciplines.

7. Encourage divergent learning activities. Be a resource provider and facilitator. Encourage students to explore alternatives.

8. Listen with and to your students. A warm supportive atmosphere provides freedom and security in exploratory thinking.

9. Allow students to make choices and be part of the decision-making process. Let them have a part in the control of their education and learning experiences.

10. Let everyone get involved, and demonstrate the value of involvement by supporting student ideas and solutions to problems and projects.

11. Encourage students to seek clarity and precision of language from each other and the teacher.

12. Encourage students to process information by diagrams, and other aids to help form their thinking.

13. Encourage students to continually check for accuracy of information by positively questioning information provided.

14. Utilize some of the following tactics: a. use "thinking-pair-share", b. survey the whole class, c. play devil's advocate, d. have students call on other students to respond, e. without judgment, and f. cue student responses to secure many alternatives.

The following list are skills that need to be developed in earlier group work and need frequent reinforcement.

1. Encourage Others
2. Use Names
3. Invite Participation
4. Stay in Own Space
5. Follow Directions
6. Ask Questions
7. Ask Others for Help
8. Give Ideas
9. Respond to ideas
10. Use Eye Contact
11. Stay On Task
12. Disagree Politely
13. Summarize
14. Seek Opinions
15. Help Others Without Giving the Answer
16. Check for Understanding
17. Check for Agreement
18. Criticize the Idea/Not the Person
19. Praise
20. Say Nice Things
21. Put Away Materials
22. Take Turns
23. Share Materials
24. Ask for What You Want
25. Wait for Your Turn

BRUNER'S
Teaching On
Explanatory-Understanding
Level

1. Keep objectives clear. (This does not mean prior announcements of conclusions as [sec] desirable; such action would destroy the "discovery aspect" of learning).

2. Understand the proper role of practice. (Does not mean repetitive drills, in identical form. The subject performs the act a little differently each time and observes or experiences the consequences).

3. Practice productive motivational techniques. (Learning becomes spontaneous).

4. Pace students and lesson advantageously. (Any subject matter worth confronting students with is worth careful, penetrating, thorough study. Categorizing, generalizing, and structuring cannot be rushed).

5. Proper use of a lesson plan. (Bruner says nothing about them. Most feel a tentative plan for each class session should exist).

IF A STUDENT IS TO UNDERSTAND A PRINCIPLE, THE STUDENT CAN

1. State it in his own words.

2. Give an example of it.

3. Recognize it in various guises and circumstances.

4. Discern the behavior or lack of behavior that may represent it.

5. See the relationships between it and other principles or generalization.

6. See the uses to which it may be put.

7. Use it in diverse situations.

8. Anticipate the consequences of its applications.

9. State a principle that is opposite to it.

PROBLEMS
Dyads or Triads Problem Solving

Problem Solver
Tell what he or she is thinking at every step as he or she proceeds to solve the problem.
Listener

a. checks continually for accuracy.
b. points out errors but doesn't correct them.
c. insists on vocalization.
d. if necessary, asks problem solver to wait.
e. encourages problem solver to persist.
f. seeks clarity and precision of language.
g. encourage risk taking.
h. give person time to think.
i. diagram or use other processes necessary to help you from your thinking.

1. What will be the day after the day after tomorrow if the day before the day before yesterday was Wednesday?

2. Which letter is as far away from K in the alphabet as J is from G?
   1. K 2. M. 3. N 4. G 5. L

3. If you are facing east and turn left, then make an about face and turn left again, in which direction are you facing?
   a. east b. north c. west d. south e. southwest

4. 20 is to 30 as 10 is to _____?
   a. 5 b. 25 c. 60 d. 15 e. 10

5. Cross out the letter after the letter in the word SELDOM which is in the same position in the word as it is in the alphabet.

6. A journey always involves a _____?
   a. person b. destination c. distance d. vehicle e. preparation

7. How many sixths are in 12/2?
   a. 6 b. 1 c. 36 d. 4 e. 24

8. A train travels 50 miles when a car travels 40 miles. How many miles will the train travel when the car travels 60 miles?
   a. 60 b. 50 c. 70 d. 75 e. 80

9. Write the 3 letters which should come next in this series?
   B A A C E E D I I E M M F ___ ___ ___

BRUNER'S

CLASSIFICATION Checklist

CONSIDERATIONS TO BE MET IN CONCEPTUALIZING EXPERIENCES

1. Here we have some facts that seem unconnected. Identify them into some generalized topics according to their similarities and differences.

2. We have reached several generalizations concerning this topic. Try to see if you can combine them into ( ) number of categories.

3. You know the ( ) number of categories. Can you make one inclusive conceptualization concerning these categories.

4. After conceptualizing the known facts (categories), define the concept.

5. After conceptualizing, we have invented a generalization. See how many presently unknown but possible facts you can deduce from the generalization.

6. If you have more than one concept and generalization, actively seek consensus to a common concept by drawing parallel ideas from those presented. Facilitate toward your goal by seeking one concept and then have all paraphrase to the conceptualization level. If you do not reach consensus, then you might have two concepts and generalizations.

CLASSIFICATION

AN EXAMPLE OF A MODIFIED BRUNER MODEL

C1. Whole class setting, students asked to write about something they know about (concept). It should be something meaningful (an experience, a statistic, etc.) and something they can share.

C2. Students form groups of four and share their experiences. (Reading)

C3. Each group will generate common elements of (conceptual) found within their writings (limit time).

C4. From the list of common elements, each group will isolate (number) key elements (words/phrases). Recorder writes them on the board when requested.

C5. The class reconvenes as a whole and each group reporter will need his groups list of key elements. The class analyzes the similarities, differences, and idiosyncracies of all key elements and derive a consensus list of key elements that are embraced by the concept (_____). The teacher acts as facilitator.

C6. Each student generates their definition of the concept based on the consensus list.

C7. Students meet in their same groups of four with their individual definitions. They will compare, discuss, and analyze all the definitions as to their similarities, differences and idiosyncracies.

C8. Each group develops their own definition of the concept. The recorder writes the group definition on the board.

C9. The class reconvenes as a whole. They discuss the definitions and generate the most complete definition of the concept to be used throughout the unit.

BRUNER'S

Application Checklist
CONSIDERATIONS TO BE MET IN AN INQUIRY LEARNING EXPERIENCE

1. Provide the initial experience to interest students in inquiring about a problem, concept, situation or idea. The use of media, role-playing, or puzzling demonstrations are generally successful investigative starters. Learning centers with a number of viable options provide an excellent beginning.

2. Provide the students with manipulative situations and materials to begin avenues of exploration. Games, media, files, sourcebooks and discussions are all good starters.

3. Supply information sources for student's questions. Outside sources, field trips, speakers, peers and the teacher are good supplements to written sources. The community and the world at large are fair game in the information seeking stage.

4. Provide materials and equipment that will spark and encourage student experimentation and production.

5. Provide time for students to manipulate, discuss, experiment, fail and succeed.

6. Provide guidance, reassurance, and reinforcement for student ideas and hypothesis.

7. Reward and encourage acceptable solutions and solution strategies. Use failing experiences as instructional motivators. Have children question why a solution will not work and ask open-ended questions. A supportive climate will spawn the best results.

AN EXAMPLE OF A BRUNER'S APPLICATION MODEL

Is a tomato a fruit or a vegetable?

a. What is similar
b. What is different?
c. Conclusions
d. Definitions of

categorizing and generalizing

Tomato

Fruit	Vegetable
Similarities	Similarities
Differences	Differences
Definition	Definition

Categorizing Examples:

Peas
Bean
Corn
Pineapple
Pepper
Onion
Cauliflower
Broccoli
Potato
Cucumber
Squash
Etc.

Extras: Conflict
Is the sun a planet or a star?

II. PROBLEM-SOLVING MODEL
1. P.S.I. Model

I.	UNDERSTANDING THE PROBLEM	
II.	EXPLORING ALTERNATIVES	
III.	EXAMINING THE CONSEQUENCES	DECISION-MAKING MODEL
IV.	SELECTING A SOLUTION	
V.	DESIGNING A PLAN	
VI.	USING THE PLAN	IMPLEMENTATION MODEL
VII.	EVALUATING THE RESULTS	

2. Thinking Skills in the P.S.I. Model

I.	UNDERSTANDING	-Defining, Identifying, Comprehending, Clarifying
II.	ALTERNATIVES	-Divergent Thinking, Recall, Creative Thinking
III.	CONSEQUENCES	-Critical Thinking, Convergent Thinking, Evaluating
IV.	SELECTING	-Choosing, Prioritizing, Compromising
V.	DESIGNING	-Contracting, Forecasting, Organizing, Planning
VI.	USING	-Timelining, Contracting, Goal Setting
VII.	EVALUATING	-Critical Thinking, Assessing, Goal Setting

Adopted from Problem-Solving Instruction Trainers Manual

APPENDIX N

PARTICIPANT OBSERVATION /INTERVIEW CONSENT FORMS

PARTICIPANT OBSERVATION/INTERVIEW CONSENT FORM

LEARNING THEORIES (TE505/SVSU)
Cooperative Learning in an Adult Learning Setting
Dissertation Research Study

I freely agree to participate in the research study, "Learning Theories TE505: Cooperative Learning in an Adult Learning Setting," classroom observations and interviews to be conducted during ( ) Fall Semester, 1991 ( ) Winter Semester, 1992 and regular class sessions on Wednesdays 4:00 p.m. - 7:00 p.m. as outlined in the Saginaw Valley State University class schedule booklet for Fall, 1991 and Winter, 1992.

I understand that the study involves observations of Cooperative Learning in an adult learning setting for its implications to Cooperative Adult Learning. Also, that observations and interviews hope to make the participants thinking (insights, perceptions, motivations and experiences) as well as the instructors thinking and methods visible.

I know that the data being collected will be used for fulfillment of Rose M. Beane's dissertation at Michigan State University.

The purpose and procedures of this project have been explained to me by way of an abstract and I understand that my participation includes the following activities:

( ) I will allow the researcher to observe, interview and survey me about the course TE505. I understand that observations and interviews will only relate to the course TE505 (though I may choose to make other information and materials available to the researcher at my own discretion) and that the at any time, I may withdraw from participation in the study.

( ) I freely volunteer to be interviewed outside of class as mutually agreed and to maintain a brief dialogic journal of my insights, perceptions, motivations and experiences working in the cooperative support groups in class.

( ) I will allow the researcher to audio tape TE505 class sessions, in-class group activities and one-on-one interviews TE505.

I understand that the researcher will keep written records confidential and audio tapes of observations, group activities and interviews with me and others and that these records will not be available to me or to others. Also, that written records will be coded for referencing and only the researcher will know the participants identities.

I further understand that the data collected will be used in Rose M. Beane's dissertation. Any other use will be cleared on a case-by-case basis.

Signature: _____ Date: _____

PROFESSOR'S OBSERVATION/INTERVIEW CONSENT FORM

LEARNING THEORIES FOR TEACHERS (TE505/SVSU)
Cooperative Learning in an Adult Learning Setting
Dissertation Research

I agree to participate in the research study, "Learning Theories TE505: Cooperative Learning in an Adult Learning Setting," classroom observations to be conducted during: ( ) Fall Semester, 1991 ( ) Winter Semester, 1992 during regular class sessions on Wednesdays 4:00 p.m. - 7:00 p.m. as outlined in the Saginaw Valley State University, Fall, 1991 and Winter, 1992 course schedule.

I understand that the study involves observations of TE505 class sessions, group activities and interviews related to the course. I understand that the study involves observations of cooperative learning in an adult learning setting in higher education for its implications to adult learning. Also, that observations and interviews hope to make participants thinking (insights, perceptions, motivations and experiences) about TE505 visible. The purpose of this research has been explained, and as a professor and participant involved in this study, I understand I am expected to do the following:

1. Allow my class to be observed and audio taped as I facilitate the teaching/ learning transaction.

2. Allow the researcher to interview volunteers.

3. Participate in interviews related to TE505 and share course material. Interviews will be scheduled at mutually agreed times and locations.

I also understand that I will receive the following benefits as a result of my collaborative participation:

- I will have the opportunity to discuss and gain information and insight into my own facilitating practices which promote cooperative adult learning.

I further understand that the following precautions will be taken to protect against any abuse of confidentiality of data resulting from this study:

1. All data collected will be kept confidential and reported without any individual identification of teacher and students.

2. I may withdraw my participation at any time without recrimination.

Signature _____ Date _____

PARTICIPANT OBSERVATION/INTERVIEW CONSENT FORM

EXISTING DATA - EDUCATIONAL FIELDWORK RESEARCH - TE 922/923
Graduate Student Permission for Other Uses of Existing Data Consent Form

I freely agreed to participate in the research study, TE 505: Cooperative Adult Learning, classroom observations that was conducted during winter semester, 1991 during the regular class sessions on Wednesdays 4:00 p.m. - 7:00 p.m. on schedule dates from January 6 through April 10, 1991.

I understood that this research was being done in fulfillment of Rose M. Beane's TE 922 and TE 923 Fieldwork Research in Educational Settings II & III classes at Michigan State University with Dr. Doug Campbell. I also understood that originally the data collected was going to be used in Rose Beane's formal project for TE 922 and TE 923.

The purpose and the procedures of this project were explained to me and I agreed to participate and signed the original consent form "Attachment B - Graduate Student Observation/Interview Consent Form".

Now, I understand that Rose is asking my consent to use the data already collected from the TE 922/923 research project TE 505: Cooperative Adult Learning for another use. Also, the purpose and procedures for the new use of data, the data already collected have been explained to me and I understand that the other use means:

*The data already collected winter semester, 1991 will be used to supplement data that will be collected for Rose Beane's doctoral dissertation. Any other use will be cleared on a case-by-case basis through the standard clearance procedures to insure that those involved are not misrepresented.

*Data already collected includes class and group observation field notes and tape recordings, interview notes and tape recordings, course materials and documents; volunteer respondent's group materials, individual assignments, journals, interview notes and tape recordings.

*That all confidentiality guarantees will be maintained in this subsequent consent to use the data for other uses.

*I may withdraw my permission for this other use of the data at any time.

*I understand that the researcher will keep confidential written records and audio tapes of her observations and interviews with me and others and that these records will not be available to me or to others. I understand that my identity will be revealed but all others will be kept confidential and coding will be used to reference participants and volunteer respondents. Student identities will only be known to the principal researcher.

Signature:_____ Date:_____

PARTICIPANT OBSERVATION/INTERVIEW CONSENT FORM

EXISTING DATA - EDUCATIONAL FIELDWORK RESEARCH - TE 922/923
Instructor Permission for Other Uses of Existing Data Consent Form

I freely agreed to participate in the research study, TE 505: Cooperative Adult Learning, classroom observations that was conducted during winter semester, 1991 during the regular class sessions on Wednesdays 4:00 p.m. - 7:00 p.m. on schedule dates from January 6 through April 10, 1991.

I understood that this research was being done in fulfillment of Rose M. Beane's TE 922 and TE 923 Fieldwork Research in Educational Settings II & III classes at Michigan State University with Dr. Doug Campbell. I also understood that originally the data collected was going to be used in Rose Beane's formal project for TE 922 and TE 923.

The purpose and the procedures of this project were explained to me and I agreed to participate and signed the original consent form "Attachment C - Instructor Consent Form".

Now, I understand that Rose is asking my consent to use the data already collected from the TE 922/923 research project TE 505: Cooperative Adult Learning for another use. Also, the purpose and procedures for the new use of data, the data already collected have been explained to me and I understand that the other use means:

*The data already collected winter semester, 1991 will be used to supplement data that will be collected for Rose Beane's doctoral dissertation. Any other use will be cleared on a case-by-case basis through the standard clearance procedures to insure that those involved are not misrepresented.

*Data already collected includes class and group observation field notes and tape recordings, interview notes and tape recordings, course materials and documents; volunteer respondent's group materials, individual assignments, journals, interview notes and tape recordings.

*That all confidentiality guarantees will be maintained in this subsequent consent to use the data for other uses.

*I may withdraw my permission for this other use of the data at any time.

*I understand that the researcher will keep confidential written records and audio tapes of her observations and interviews with me and others and that these records will not be available to me or to others. I understand that my identity will be revealed but all others will be kept confidential and coding will be used to reference participants and volunteer respondents. Student identities will only be known to the principal researcher.

Signature:_____ Date:_____

APPENDIX O

EXISTING DATA CONSENT LETTERS

ROSE MARGARET BEANE
3142 SHATTUCK, APT. #6
SAGINAW, MICHIGAN 48603
(517) 791-1462

7/16/91

Dr. Doug Hansen
S.V.S.U.
Ryder Center
2250 Pierce Rd.
University, MI 48710

Dear Dr. Hansen

Please review the attached permission consent form regarding the data I collected winter term, 1991 for the "Learning Theories for Teachers" course (TE505).

If you remember, I explained the last night of class, I would like your permission to use the data I already collected to supplement data I will collect for my dissertation. If you agree, please sign the consent form and return it to me in the addressed, postage-paid envelope provided.

I appreciate your permission and once again reaffirm the guarantees of confidentiality. Your name will be used but no names or identifying characteristics of respondents of participants will be used and all references to classroom observations, group discussions and interviews will be coded.

I would like your signed permission consent form back by July 30, 1991.
Please expect a call in a week to discuss any concerns and as a reminder.

Sincerely

Rose Margaret Beane

APPENDIX P

HUMAN SUBJECTS COMMITTEE APPROVAL

MICHIGAN STATE UNIVERSITY

OFFICE OF VICE PRESIDENT FOR RESEARCH
AND DEAN OF THE GRADUATE SCHOOL

EAST LANSING • MICHIGAN • 48824-1046

March 3, 1992

Rose Margaret Beane
3142 Shattuck #4
Saginaw, MI 48603

RE: COOPERATIVE LEARNING IN AN ADULT LEARNING SETTING, IRB #91-565

Dear Ms. Beane:

The above project is exempt from full UCRIHS review. The proposed research protocol has been reviewed by another committee member. The rights and welfare of human subjects appear to be protected and you have approval to conduct the research.

You are reminded that UCRIHS approval is valid for one calendar year. If you plan to continue this project beyond one year, please make provisions for obtaining appropriate UCRIHS approval one month prior to February 26, 1993.

Any changes in procedures involving human subjects must be reviewed by UCRIHS prior to initiation of the change. UCRIHS must also be notifed promptly of any problems (unexpected side effects, complaints, etc.) involving human subjects during the course of the work.

Thank you for bringing this project to my attention. If I can be of any future help, please do not hesitate to let me know.

Sincerely,

David E. Wright, Ph.D., Chair
University Committee on Research Involving
Human Subjects (UCRIHS)

DEW/deo

cc: Dr. James Snoddy

MSU is an Affirmative Action/Equal Opportunity Institution

MICHIGAN STATE UNIVERSITY

OFFICE OF VICE PRESIDENT FOR RESEARCH
AND DEAN OF THE GRADUATE SCHOOL

EAST LANSING • MICHIGAN • 48824-1046

June 11, 1991

Rose Margaret Beane
3142 Shattuck, #6
Saginaw, MI 48603

RE: COOPERATIVE LEARNING WITH ADULT LEARNERS IN A FORMAL HIGHER EDUCATION SETTING, IRB #91-266

Dear Ms. Beane:

I am pleased to advise that because of the nature of the proposed research, it was eligible for expedited review. This process has been completed, the rights and welfare of the human subjects appear to be adequately protected, and your project is therefore approved.

You are reminded that UCRIHS approval is valid for one calendar year. If you plan to continue this project beyond one year, please make provisions for obtaining appropriate UCRIHS approval prior to June 6, 1992.

Any changes in procedures involving human subjects must be reviewed by the UCRIHS prior to initiation of the change. UCRIHS must also be notified promptly of any problems (unexpected side effects, complaints, etc.) involving human subjects during the course of the work.

Thank you for bringing this project to our attention. If we can be of any future help, please do not hesitate to let us know.

Sincerely,

David E. Wright

David E. Wright, Ph.D., Chair
University Committee on Research
Involving Human Subjects (UCRIHS)

DEW/deo

cc: Dr. James E. Snoddy

MSU is an Affirmative Action/Equal Opportunity Institution

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