

PRESERVICE TEACHERS' ATTITUDES TOWARD AND KNOWLEDGE ABOUT
COOPERATIVE LEARNING IN KUWAIT: A QUASI- EXPERIMENTAL STUDY

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The issue of developing effective teacher preparation and professional programs by providing effective teaching and learning strategies to prepare teachers to teach in more challenging ways and change their old ways of teaching to more powerful ones has gained great attention around the world. Cooperative learning was one of the astonishing strategies introduced by many researchers to prepare effective teachers and to solve many educational problems. Teacher educators have taken different approaches to help teachers learn and change in powerful ways. They have focused on the knowledge and attitudes of teachers in promoting their adoption of new practices through educational courses, workshops, and training. After introducing the cooperative learning strategy through a training workshop, this study investigated the knowledge of and attitude of teachers at the College of Basic Education (CBE) in Kuwait towards cooperative learning as a new teaching and learning strategy.

The literature reviewed the historical and practical use, theoretical roots, different models, and outcomes of cooperative learning. In addition, (1) teachers' knowledge and attitudes as factors affecting implementation and (2) preservice teacher preparation and training in the use of cooperative learning were reviewed.

An attitude survey and a knowledge test were developed based on Bouas, (1993) survey and test. Additionally, an interview guide and a demographic data survey were all used to collect data. The survey and the test were translated into the Arabic language.

Ninety-one responses of participants in two experimental classes and one control class were analyzed. Twenty-one participants were interviewed. A significant difference in knowledge of and attitude towards cooperative learning was found between experimental classes and the control class ($p < .05$ for both knowledge and attitude).

In conclusion, the training workshop affected preservice teachers' knowledge of and attitudes toward the cooperative learning strategy. Therefore, the researcher suggested that cooperative learning should be introduced in the College of Basic Education in Kuwait and the University of Kuwait as another teaching and learning strategy.

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CHAPTER I

INTRODUCTION

Nature and Significance of the Problem

Educational organizations, researchers, and practitioners have witnessed a period of intense pressure to change schools. The pressure has increased since the early 1980s to change colleges of education and teacher preparation. The reason is, as Fullan (1991) points, “Educational change depends on what teachers think and do, it’s as simple and as complex as that” (p. 117). The main question is whether or not schools and teachers are well prepared to meet the knowledge challenges and whether they affect students’ learning. Different publications argued about changes in the educational issues and teacher education because the teacher is both the cause and the cure of the educational problems. The pressure for changes in education and teacher preparation have continued through the 1990s and persisted into the new millennium to focus on the reformation and integration of teacher development and school improvement. The most important question is not what changes need to be made, but how these changes can be achieved.

Researchers working within the educational domain have created new structures and put forward schemes and ideas toward substantial educational change. “Educational change involves learning how to do something new. Given this, if there is any single factor crucial to change it is professional development” (Fullan, 1991, p. 289). As Guskey (1994) indicates,

Never before in the history of education has there been greater recognition of the importance of professional development. Every proposal to reform,

restructure, or transform schools emphasizes professional development as a primary vehicle in efforts to bring about needed change (p.42).

Researchers and teacher educators have taken different approaches to help teachers learn and change in powerful ways. They have focused on the knowledge, beliefs, and attitudes of teachers in promoting their adoption of new practices or innovations. Researchers have suggested that teachers' behaviors and decisions to change are influenced by individual knowledge, beliefs, and attitudes acquired from experience in relation to change (Richardson, 1990). Professional development for inservice or preservice teachers has been considered the best strategy to help teachers implement new changes, innovations, or practices. Professional development has a substantial effect as a strategy to implement instructional improvements (Fullan, 1991, p.21).

One approach to professional development is to establish teachers' learning experiences and knowledge. Teachers' learning experiences and knowledge can be developed through ongoing workshops and activities focused on instructional practices (Putnam and Borko, 2000). Darling-Hammond (1996) states, "Teachers should have ongoing opportunities to update their skills," (p. 197). Furthermore, teacher preparation and professional programs should develop effective strategies to prepare teachers to teach in more challenging ways.

Out of the need for (1) high-quality teacher education programs, which include and introduce innovative teaching models, strategies, or practices, (2) new instructional strategies to be adopted by teachers, and (3) the great deal of discussion about how to prepare future teachers, the plan for this study evolved regarding the use of cooperative learning as a teaching/learning strategy within educational institutions in Kuwait. Despite

the popularity of cooperative learning in the U.S. and other countries, neither preservice nor inservice teachers in Kuwait have experienced or received much if any training in using cooperative learning as a teaching/learning strategy. Therefore, the focus of the study was on introducing the cooperative learning strategy to preservice teachers in the College of Basic Education in Kuwait.

Change in Practice

The term “change” is used for a broad range of new experiences in education, such as a new instructional methodology or a new professional development model. A change is defined as something that is “changed in a significant and substantial respect,” “a new total package practice,” or “ideas and practices or materials not yet adopted by a specified percentage,” (Chin and Downey, 1973, p. 522). Innovation, on the other hand, is something that affects the behavior, or anything that is perceived as a new or different by the individuals involved (Chin and Downey, 1973). Daft and Becker (1978) distinguished between the terms “change” and “innovation,” (p. 5). Change is the adoption of something different; innovation is the adoption of something new. Related to the present study, change and innovation are used in relation to the new instructional practice, cooperative learning.

The emphasis of the change literature since the early 1970s has been on the implementation process. Fullan (1991, p. 37) states that the implementation of educational change entails “change in practice.” If a given educational change was to be implemented, the difficulty of defining and accomplishing the actual change begins to emerge. The difficulty is that educational change is not a single component, even if we keep the analysis at the simplest level, such as innovation in a classroom. Fullan adds that

innovation is “multidimensional;” there are at least three dimensions to implement any new program or practice. The three dimensions are:

1. Possible use of new or revised “materials;”
2. Possible use of new “teaching approaches;” and
3. Possible alteration of “beliefs;”

All three dimensions of change are necessary because together they represent the means of achieving a specific new program or practice.

Cooperative Learning

“There was once a time when it was taken for granted that a quiet class was a learning class, when principals walked down the hall expecting to be able to hear a pin drop” (Slavin, 1991a, p. 71). Today, however, those classes have been changed when an innovative, practical teaching model has been introduced to teachers. One teaching innovation, which has been introduced to teachers over the last twenty-five years, is cooperative learning. Cooperative learning strategy is an important strategy, which has been considered to be a promising development (Brandt, 1990); it has been recommended as the “solution for an astonishing array of educational problems” (Slavin, 1991). This model is adaptable and comprehensive; it blends the goals of social integration and academic inquiry. Teachers can use it in all subject areas, with all age levels, when they long for the establishment and problem-solving aspects of knowledge rather than the use of prepared, planned information (Joyce and Weil, 1996, p. 87). Cooperative learning has a broad application across grade levels, themes of curriculum, and a wide variety of students (Kagan, 1989/90). The use of the cooperative learning strategy, though, demands an extreme change from the traditional teaching approach. The teacher’s role is changed

from the primary knowledge and information provider to facilitator and guide to resources and group processes (Johnson, Johnson, and Holubec, 1990).

Preservice Teachers and Professional Development

Among the most significant findings, as a result of the educational reform efforts, has been the recognition that teachers are vital elements in making change successful and that they are the fundamental force in creating schools in which all students can achieve higher standards through active learning processes (Kochan, 2000). Brody and Davidson (1998) point out that:

A highly effective way to create sustained implementation of cooperative learning, or any new approach for learning and teaching, is to focus on the teacher. The major work in transforming schools begins and ends with teachers because they stay the longest, have the most contact with students, and potentially have the power to change the social relationships of the school and classroom (p. 5).

Significant educational improvement attempts have been closely connected to high-quality teacher education and professional development programs. Teacher education and professional development are different faces of one coin to support the need for change and to impact teachers' implementation of new teaching models or practice. Additionally, professional development approaches change teachers' beliefs and practice and serve as a path for personal development and growth (Kochan, 2000).

Furthermore, in order to have a pedagogical and attitudinal change toward cooperative learning as a new practice and increase the acceptance of using cooperative learning, Johnson and Johnson (1985) suggest that inservice and preservice teachers need to be taught strategies to structure cooperative learning. Therefore, teacher educators and professional developers are challenged to provide preservice teachers with the required

pedagogy and skills, which influence their knowledge, beliefs, and attitudes toward cooperative learning and help them implementing the strategy.

Teachers' Attitudes

Cohen (1993), who used Dillman's 1978 definition of attitudes, states, "An attitude describes a person's feelings. Attitudes questions are evaluative. They require people to decide whether they have positive or negative feelings about an object or concept" (p. 8). Campbell (1982) comments,

It is important that the influence of individual factors such as teachers' attitudes should not be underestimated, especially at primary school level, where at least some of the curriculum change is based in the individual teacher's classroom, and may, therefore, be under the teacher's own control to a considerable extent (p. 221).

The College of Basic Education (CBE) in Kuwait

The College of Basic Education (CBE) was given its present name during the academic year 1986/87. This college is the culmination of a history extending from 1949, when expansive efforts were made to establish an institution for the training of male and female primary school and kindergarten teachers in Kuwait. The results of these efforts were the opening of teachers' institutes in 1962. These institutes were in operation until 1973, when they were closed, yielding to the newly established male and female Teacher Education Institute, which has grown to its present size with the name changed to the College of Basic Education (<http://www.paaet.edu.kw/cbe.htm>).

The objectives of the college are as following:

1. To prepare the skilled national cadre needed to teach in the primary and kindergarten schools of the country.

2. To qualify these cadres in the various specialties needed by the Ministry of Education.
3. To study the requirements of the Ministry of Education and to foster a close link between the appropriate divisions of the Ministry of Education and the College of Basic Education (<http://www.paet.edu.kw/cbe.htm>).

The College of Basic Education offers programs in the following specializations:

- Islamic Education
- Arabic Language
- Mathematics
- Science
- Physical Education and Sports
- Art Education
- Librarianship and Educational Technology
- Kindergarten (females only)
- Home Economics (females only)
- Electricity
- Interior Design (females only)
- Music

A secondary school graduate can enter the college for a four-year period (i.e. eight semesters) to receive a bachelors' degree. The college operates under the credit hour system, which requires that the student successfully complete one hundred-thirty credit hours and have a cumulative grade point average of 1.5 or over in order to graduate from the CBE. The Ministry of Education employs successful graduates as teachers in the

primary and kindergarten schools of the nation of Kuwait

(<http://www.paaet.edu.kw/cbe.htm>).

CBE and Cooperative Learning

Based on my four years in the College of Basic Education in Kuwait, none of my instructors used any type of cooperative learning approaches or any activities that groups of students had to work together to reach the shared goals. Working together on assigned activities was seen as cheating. As Hintz (1990) points out:

Incorporating the cooperative learning model into the classroom is indeed innovative. Students helping other students on a regular basis is usually seen as cheating. American society gives recognition to individual achievement. Teachers continually admonish students, “Keep your eyes on your own paper” or “No talking.” To change one’s philosophy about where students can obtain information, what the teacher’s role in the classroom is, and even what learning looks and sounds like so that it follows the cooperative learning model requires the drastic, all-encompassing impact of change...(p.11).

What Hintz points out applies to students in all educational levels in Kuwait. As mentioned previously, during their studies through all these educational levels, students in Kuwait are not allowed to work together cooperatively. Students’ helping each other on a regular basis is seen as cheating because Kuwaiti society recognizes individual work and individual accomplishment. When students are graduated from the CBA, they enter the educational system this time as teachers. If nothing has changed their image of teachers and teaching, they will teach in the same way they were taught. Their teachers taught them in this the same way from their elementary school through college years. Now that it is their turn, the cycle of teaching will be repeated, and these new teachers will follow the old steps and the prior beliefs about teaching when teaching their students.

Statement of the Problem

Out of the need for high-quality teacher education programs, which include and introduce innovative teaching models, strategies, or practices, there has been a great deal of discussion about how to prepare future teachers. Out of the need for new instructional strategies to be adopted by teachers, the plan for this study evolved. Cooperative learning is widely recognized as an innovative teaching and learning strategy. As Brody (1998) states,

Cooperative learning is a case in point. Some refer to it as a generic tool for teaching, adaptable to any teaching/learning situation. Others consider it a philosophy in itself. Some even argue that changing to a cooperative, or a collaborative perspective, requires a shift in sensibility, a shift in fundamental assumptions and beliefs about learning, knowing, and authority. There is truth in each view, but how teachers implement cooperative learning depends partly on the particular beliefs about education they hold, as well as the match between the models they are implementing or learning, and their beliefs. While many cooperative learning training programs are well-grounded in research and theory, we need to provide more opportunities for teachers to reflect on the range of implicit assumptions in the innovation in relation to their own beliefs and personal constructions (p. 26).

Ellis and Fouts (1993) write in their book, Research on Educational Innovations, the following:

Cooperative learning is one of biggest, if not the biggest, educational innovations of our time. It has permeated all levels of teacher training from preservice to inservice...It is touted from Israel to New Zealand, from Sweden to Japan (p.117).

Despite the popularity of cooperative learning, neither preservice nor inservice teachers in Kuwait have experienced or received much if any training in using cooperative learning as a teaching/learning strategy.

The intent of the author of this study was to select a training workshop for implementation in Kuwait, analyze Kuwaiti preservice teachers' knowledge about and attitudes toward cooperative learning, and then make further recommendations for improving cooperative learning training for teachers in Kuwait.

Showers, Joyce, and Bennet (1987) summarize the research on the effectiveness of training on professional development in a meta-analysis of approximately 200 research studies. One of their conclusion is that teachers can take useful information back to their classrooms when training includes four parts: (a) presentation of theory, (b) demonstration of the new strategy, (c) initial practice in the workshop, and (d) prompt feedback about their efforts.

The focus of this study was a training workshop, which presented different cooperative learning approaches/models authored by David and Roger Johnson, Robert Slavin, and Spencer Kagan. The training workshop included the main points listed below. (See Appendix A for detailed points.)

- What is cooperative learning? (Definition, types of cooperative learning groups, and the five elements of cooperative learning.)
- Research findings on cooperative learning. (Different articles, which have been written by different authors, were discussed.)
- Identifying the essential social skills needed for cooperation.
- Demonstrating selected cooperative learning approaches/models by viewing different videotaped cases.

- How to plan a cooperative learning lesson? (In this step of the workshop, participants learned how to plan a cooperative learning lesson by viewing a videotape of program 2 in the ASCD Cooperative Learning Series.)
- Planning a cooperative leaning lesson. (Participants were divided into groups to plan their own lesson, share it with others, and get feedback.)

Purpose of the Study

The purpose of the study was to examine and analyze the effects of a cooperative learning training workshop on (1) participants' attitudes toward cooperative learning, (2) participants' knowledge about cooperative learning and its academic and social benefits, and (3) participants' knowledge/attitudes/aspirations related to organizing their future classrooms for cooperative learning. This study determined if the cooperative learning training workshop (1) affected the attitudes of preservice teachers in the College of Basic Education in Kuwait, (2) provided them with the knowledge about social and academic benefits of cooperative learning, and (3) provided them with the knowledge of organizing this teaching/learning model in their future classrooms.

Research Questions

The following research questions were addressed in this study regarding the training workshop on cooperative learning:

1. What is the effect of a cooperative learning training workshop on preservice teachers' attitudes toward this teaching/learning strategy?
2. What is the effect of a cooperative learning training workshop on participants' knowledge about the strategy and its academic and social benefits? (Academic benefits include higher achievement, better critical thinking, higher-level

reasoning, more time on task, and a more positive attitude toward school. Social benefits include higher self-esteem, improved social interaction, greater social support, more positive relationships, and greater acceptance of others.)

3. After participating in the cooperative learning workshop/training program, what ideas/perceptions/expectations do preservice teachers have regarding their own knowledge, attitude, and aspiration to implement cooperative learning in their future classrooms?

Significance of the Study

In her article, “Teacher Learning That Supports Student Learning,” Linda Darling-Hammond (1998) answers these questions: “What do teachers need to know to teach all students according to today’s standards? What kinds of preservice training and on going professional development will make teacher success more likely?” (p. 7). To answer these questions, she urges teachers to use a variety of teaching strategies to achieve different educational goals. Further, teachers need to know about collaboration, how to structure positive interaction among students to power their shared learning, and how to collaborate with other teachers. She adds that training inquiry helps teachers learn “how to look at the world from different perspectives and to use this knowledge to reach diverse learners,” (p. 9).

In their educational methods classes, preservice teachers in the College of Education at Kuwait University and the College of Basic Education have not been exposed to cooperative learning as an instructional strategy. Dr. Abdullah, the Vice Dean for Academic Affairs and Graduate Studies verifies this assertion. (See Appendix B.)

This study is significant because it analyzed the perceptions and attitudes toward cooperative learning and the constructed knowledge regarding the implementation of this teaching/learning strategy of preservice teachers in the College of Basic Education in Kuwait. Findings from this study provide information about the effectiveness of this workshop to familiarize preservice teachers in Kuwait with this new teaching strategy. It assists teacher educators in Kuwait in making decisions about the knowledge construction of preservice teacher educators with respect to cooperative learning. In addition, it helps teacher educators in Kuwait to determine whether to incorporate the cooperative learning strategy as an instructional method in their courses. Also, the study helps teacher educators in Kuwait in designing other future workshops relating to new models of teaching and learning. Consequently, the results of effective teacher education and preparation should contribute to the improvement of students' learning through enhanced teacher performance as well as providing opportunities for professional growth for educators (Sparks and Loucks-Horsley, 1990).

Definition of Terms

Cooperative learning - a research-based instructional strategy or a social model of teaching designed to improve students' learning through their work together in small, structured, mixed-ability learning groups to achieve common goals (Johnson and Johnson, 1994; Slavin, R. 1996).

Innovation - introduction of a new practice.

Professional development (synonymous with staff development) - a process of providing opportunities for teachers to learn and improve their knowledge of “what” to teach and their skills of “how” to teach.

Workshop - a learning experience which provides small-to-moderate-sized groups with structured activities, including presentations focused on a given topic or skill (Levine and Broude, 1989).

Assumptions

It is assumed that:

1. Preservice teachers participating in the study are limited in their background knowledge about cooperative learning.
2. Participants will answer the knowledge test and the attitude survey in an accurate and honest manner.
3. The participants will answer the interview questions candidly.
4. The self-reports interviews will reflect the participants' reactions and thoughts about the strategy and the workshop.

Limitations of the Study

The scope of the investigation will be limited to one educational methods class in the College of Basic Education in Kuwait. Thus, the following limitations apply:

1. Only elementary preservice teachers registered in the selected methods class will be involved in the study.
2. Only selected cooperative learning approaches will be incorporated in the workshop of the study. These will include: (1) Johnson and Johnson's learning together approach and its five basic elements, (2) Slavin's STAD approach, and (3) Kagan's Pairs Check, Formation, Team-Pair-Solo, Turn Toss, and Group Discussion structures.

3. The findings will be limited to the sample population and may not generalize to other preservice teachers in Kuwait or elsewhere.
4. The study will not attempt to ascertain the extent to which participants actually implemented the cooperative learning strategy in real-world classrooms after training or their post-implementation knowledge and attitudes toward cooperative learning.

CHAPTER II

REVIEW OF RELATED LITERATURE

Introduction

Cooperative learning has been shown to be an effective teaching and learning strategy to improve student achievement and social skills. To provide a theoretical basis for the study of preservice teachers' attitudes toward and knowledge about cooperative learning in the College of Basic Education (CBE) in Kuwait after training in cooperative learning, eight sections of related research will be reviewed:

1. Cooperative Learning and History of the Practical Use of Cooperative Learning
2. Theoretical Roots of Cooperative Learning
3. Different Models of Cooperative Learning
4. Cooperative Learning Outcomes
5. Teachers' Knowledge and Attitudes as Factors Affecting the Implementation of Cooperative Learning as Innovation
6. Preservice Teacher Preparation, Training, and Professional Development in the Use of Cooperative Learning
7. The Use of Media (Videotapes) to Introduce the New Teaching Strategy and Promote Its Use
8. Professional Development Projects for Cooperative Learning.

Cooperative Learning and History of the Practical Use of Cooperative Learning

Cooperative Learning

“There was once a time when it was taken for granted that a quiet class was a learning class, when principals walked down the hall expecting to be able to hear a pin drop” (Slavin, 1991a, p. 71). In those classes,

Children sit for 12 years ... where the implicit goal is to listen to the teacher and memorize the information in order to regurgitate it on a test. Little or no attention is paid to the learning process, even though much research exists documenting that real understanding is a case of active restructuring on the part of the learner. Restructuring occurs through engagement in problem posing as well as problem solving, inference making and investigation, resolving of contradictions, and reflecting. These processes all mandate far more active learners, as well as a different model of education than the one subscribed to at present by most institutions. Rather than being powerless and dependent on the institution, learners need to be empowered to think and learn for themselves. Thus, learning needs to be conceived of as something a learner does, not something that is done to a learner (Catherine Fosnot, cited in Johnson, Johnson, & Holubec, 1994b, p. 7).

Today, however, those classes have been changed when innovative, practical teaching model has been introduced to teachers, cooperative learning.

Cooperative learning has been defined as an instructional strategy of using small groups through which students work together to accomplish shared goals and maximize their own and each other's learning (Johnson, Johnson, and Holubec, 1994a, 1994b).

Cooperation results in students (1) aspiring for mutual benefit so that all group members benefit from each other's efforts, (2) realizing that all group members share the same fate, (3) knowing that one's performance is jointly caused by oneself and group members, and (4) celebrating and feeling proud when a group member is recognized for accomplishment (Johnson, Johnson, and Holubec, 1994b).

History of the Practical Use of Cooperative Learning

Cooperative learning is not a new idea. “Social psychological research on cooperative learning dates back to the 1920s, but research on specific applications of cooperative learning to the classroom did not begin until the early 1970s” (Slavin, 1983; 1990, p. 2; 1995, p. 4). It has a long and rich history of practical use. The Talmud clearly states that in order to learn the Talmud one needs three things: a copy of the Talmud, a teacher, and a learning partner. Quintillion argued that students could benefit from teaching each other. The Roman philosopher, Seneca, supported cooperative learning through his statement “When you teach, you learn twice.” Johann Amos Comenius (1592-1678) believed that students would benefit both by teaching and being taught by other students. Joseph Lancaster and Andrew Bell made wide use of cooperative learning groups in England in the late 1700s. Their idea was brought to America when a Lancastrian school opened in New York City in 1806. Additionally, in the early 1800s in the United States, the Common School Movement placed a strong emphasis on cooperative learning. In fact, cooperative learning had strong advocates and widely used to promote educational goals during different periods. Colonel Francis Parker was one of the most successful advocates of cooperative learning. He believed that children are natural collaborators. Parker also believed that individuals’ abilities to contribute to the society increases through joint efforts and democracy, which frees the development of individuality. More than 30,000 people a year visited in order to examine his use of cooperative learning procedures when he was superintendent of the public schools in Quincy, Massachusetts (1875-1880). The concept of cooperation was announced by John

Dewey (1915-1956), who called for a democratic society through out the first half of the twentieth century. John Dewey promoted the use of cooperation in the schools. He believed that if children are to learn to live in a democracy and cooperatively, they must experience the process of democracy and cooperation in the classroom life. Herbert Thelen followed the work of Dewey and supported group work. In the mid-1960s, Johnson and Johnson began training teachers in the use of cooperative learning at the University of Minnesota. In the early 1970s, David DeVries and Keith Edwards developed Teams-Games-Tournaments (TGT) at Johns Hopkins University, and Sholmo Sharan developed the group investigation procedure for cooperative learning groups. In the late 1970s, Robert Slavin extended DeVries and Edwards' work by modifying computer-assisted instruction into Team-Assisted Instruction (TAI) and modifying TGT into Student-Team-Achievement-Divisions (STAD). At the same time, Spencer Kagan developed the Co-op Co-op procedure. In 1978, Elliot Aronson and his associates developed the original Jigsaw procedure. In 1986, Elizabeth Cohen developed the Complex Instruction a method of cooperative learning based on expectation-states theory. And in 1988, Donald Dansereau developed a number of cooperative procedures, which he calls scripts (Johnson and Johnson, 1991, Johnson, Johnson, and Holubec, 1994b).

Theoretical Roots of Cooperative Learning

Cooperative learning has a rich history of theory, research, and actual classroom use, which makes it one of the most notable of all instructional practices. On one hand, Johnson, Johnson, and Holubec (1994b) have provided the social interdependence theory, cognitive developmental theory, and behavioral learning theory as three general theoretical perspectives that have guided the research on cooperative learning. Slavin

(1990, 1995), on the other hand, has suggested the cognitive theory and the motivational theory (behavioral theory), only as two major theoretical perspectives to guide the research on cooperative learning and answer the question, “Why should students who work in cooperative groups learn more than those in traditionally organized classes?”

Social Interdependence Theory

Cooperative learning focuses on *social interdependence*. In the early 1900s, Kurt Kafka, one of the founders of the Gestalt school of psychology, proposed that groups were dynamic wholes and that the interdependence among the members of those groups varied. In 1920s and 1930s, Kurt Lewin, one of Kafka’s colleagues, polished his ideas. Lewin stated that the core of a group is the interdependence among members that results in the group being a “dynamic whole.” A change in the state of any subgroup or member changes the state of any other subgroup or member. The innate state of tension among group members motivates them to accomplish the desired shared goals. In the late 1940s, Morton Deutsch, one of Lewin’s students, formulated the theory of cooperation and competition, which Johnson and Johnson have extended into the *social interdependence theory*.

The assumption of the social interdependence perspective is that the individual’s interaction and his/her interaction outcomes are determined depending on the way social interdependence is structured. Positive interdependence (cooperation) promotes interaction as individuals facilitate and encourage each other’s efforts. Negative interdependence (competition) causes conflict in the interaction as individuals discourage and impede each other’s effort to achieve. In the absence of interdependence

(individualistic efforts), there is no interaction and individuals work independently (Johnson, Johnson, and Holubec, 1994b).

Cognitive Development Theory

The *cognitive developmental perspective* is mainly based on the work of Piaget and Vygotsky. In 1926, Piaget believed that social knowledge in the form of values, language, rules, symbol systems, and morality can be learned only through interactions with others. When individuals cooperate in the environment, socio-cognitive conflict occurs that creates “cognitive disequilibrium.” When participants cooperate, they engage in discussion in which (1) cognitive arguments occur and are resolved and (2) insufficient reasoning is exposed and modified. Piaget held that active experience, maturation, self-regulation, and social transmission are essential factors in cognitive development. The social transmission means that a child understands the transmitted information. Interaction with peers is important in social transmission since children often are able to describe things to each other in ways that adults cannot.

Similar to Piaget, Vygotsky (1978) understood the important link between social transmission and cognitive development. Vygotsky stated, “ Human learning presupposes a specific social nature and a process by which children grow into the intellectual life of those around them” (p. 88). Vygotsky’s notion of the *zone of proximal development*, the distance between the actual level of development and the possible development that can be reached with adult guidance or in collaboration with more capable peers, is vital to his ideas of the social construction of knowledge and to the understanding of how working with peers can be academically beneficial.

The controversy theory and the cognitive restructuring theory (cognitive elaboration), which is also known as information processing theory, are related to the cognitive developmental theory.

Controversy theorists believe that being challenged with contradictory points of view creates conceptual conflict and uncertainty, which creates an information search and “reconceptualization” resulting in a more thoughtful and polished conclusion. Discussing each others’ points of view does three things: explodes new ideas; brings confliction in a way that increases understanding, retention, and integration of different points of view; and provides opportunities for peer feedback, encouragement, and support.

Cognitive restructuring theorists believe that if information to be retained in the memory, related to information already in memory, and incorporated into existing cognitive structures, the learner must (1) engage in some kind of elaboration of the material and (2) cognitively rehearse and restructure the material. For example, students can write an outline of a lecture or explain the material to someone else (Johnson, Johnson, and Holubec, 1994b, Slavin, 1990, 1995, Baloche, 1998).

Behavioral Learning Theory

The *behavioral learning theory (motivational theory)* perspective focuses on the impact of group rewards and reinforcers on learning. The assumption of this theory is that actions followed by rewards will be repeated. Behavioral learning theorist Skinner focused on group contingencies, while Bandura focused on imitation. Recently, Slavin has emphasized the need for group rewards to motivate students to learn in cooperative learning groups (Johnson, Johnson, and Holubec, 1994b,). Slavin mentions that “rewarding groups based on group performance (or the sum of individual performances)

creates an interpersonal reward structure in which group members will give or withhold social reinforcers (such as praise and encouragement) in response to groupmates' task-related efforts" (Slavin, 1990, p. 14; 1995, p. 16).

Different Models of Cooperative Learning

Cooperative learning has broad styles that range from highly structured to very informal. All of the cooperative learning methods or styles have many common aspects. They are designed for students to work in pairs or small groups instead of in whole group instruction. They are decentralized in authority and classroom focus and have different teacher-student interaction pattern from the traditional classroom. They shift from a competitive or individualistic goal structure to a cooperative goal structure. All of the methods need the teacher to carefully plan and structure the method for her/his classroom. The teacher should understand the differences between the methods so that she/he can select the appropriate method to be implemented.

Learning Together (Johnson & Johnson)

David and Roger Johnson are the directors of the Cooperative Learning Center at the University of Minnesota. They have combined backgrounds in education and social psychology, and their work integrates theory and practice. Their approach is curriculum-free, was developed for use in kindergarten-through university-level classrooms, and can be included in all subject areas (Johnson, Johnson, & Holubec, 1994b).

According to Johnson, Johnson, and Holubec (1994a,b), Learning Together is the instructional use of small groups in which students work together to accomplish shared goals and to maximize their own and each other's learning. It emphasizes cooperative effort, with teams of two to four members forming heterogeneous groups. When students

learn together, they recognize that all group members share a common fate. They perceive that they cannot reach their learning goals unless other group members reach their learning goals too.

Johnson, Johnson, and Holubec provide five essential elements of Learning Together. These elements are:

- Positive Interdependence – students believe they are responsible for both their learning and the team members. The teacher can structure positive interdependence by assigning roles for each student, requiring a single group product, providing each group member the same reward when the group achieves its goals, and dividing the resources and materials between group members so that each member needs to work with his group mates to get all the needed resources and materials.
- Face-to-Face Interaction – students explain their learning and help each other with their assignments. Their interaction enables them to encourage and facilitate each other's efforts to achieve and complete tasks. Johnson and Johnson propose that groups should begin small in size (i.e. 2-4), when students are just beginning to work together and develop their skills. They also suggest heterogeneous groups in ability, gender, and race.
- Individual Accountability – students demonstrate mastery of materials. The teacher should have a way to determine what each student has learned, as well as what the group has accomplished. The teacher can determine the accomplishment of individual accountability by random selection of student papers if each student

is doing the group work, random oral quizzes of students, or written quizzes or examinations at the end of the group's work.

- **Social Skills** – students communicate effectively, build and maintain trust, and resolve conflicts. Students should learn these skills to run the group work smoothly. Setting a social skills goal along with the academic goal lets students know it is important to the teacher and establishing the skills through role playing, modeling, and discussing the components of particular social skill are two ways that Johnsons suggesting to teach the needed skills.
- **Group Processing Skills** – groups periodically assess their progress and analyze how to improve their effectiveness when setting goals for their next task together. The process of the assessment can be through their small groups or as a whole class using oral discussion or written forms. For example, groups can describe what member actions are helpful and unhelpful and what behavior to continue or change.

Johnson, Johnson, and Holubec define four types of cooperative learning: formal groups, informal groups, cooperative base groups, and cooperative learning script groups. Each type is described below.

Formal Cooperative Learning Groups

Formal groups last from one class period to several weeks. Formal groups can be used in any subject area, any curriculum, and for any task. Teacher who is using formal groups must (1) specifies lesson objectives, (2) makes pre-instructional decisions, (3) explains the task and the positive interdependence to students, (4) monitors students' learning and get involved when its necessary to provide assistance, and (5) evaluates

students' learning and help them process how well their groups performed. Formal groups ensure students active involvement by organizing the material, summarizing it, explaining it, and integrating it into their conceptual structures.

Informal Cooperative Learning Groups

Informal groups last from a few minutes to one class period. Can be used during direct teaching (demonstrations, lectures, videos, and films) to focus students' attention on specific material, set their mood to learning, set expectations about the lesson, ensure students cognitive process of the material, and provide conclusion to an instructional session. Students in informal groups engage in three-to-five minute focused discussion before and after a lecture and two-to-three minute turn-to-your-partner discussions throughout a lecture. Like formal groups, informal groups ensure students active involvement.

Cooperative Base Groups

Base groups long term period, lasts for at least a year. Base groups are heterogeneous groups with stable membership. The purpose is allowing the members to give each other the help, support, assistance, encouragement, and long-term, committed relationships that each needs to work hard and succeed academically. Base groups, also, help students to grow cognitively and socially in healthy ways.

Cooperative Learning Scripts

Cooperative learning scripts are used to structure repetitive classroom routines, which structured cooperatively. They provide a cooperative learning foundation for the class. Teacher can use scripts to conduct repetitive lessons, such as writing reports or giving presentations. They can also be used to manage classroom routines, such as

checking homework or reviewing tests. When scripts are planned and conducted several times, they become automatic activities and routines that make cooperation easier (Johnson, Johnson, and Holubec, 1994a, 1994b; Slavin, 1990, 1995).

Student Team Learning (Slavin)

At John Hopkins University, Robert Slavin has extended the work of other cooperative learning leaders (such as DeVries and Edwards and Aronson) and developed other cooperative learning methods. Slavin's approach is curriculum-specific, and his methods are highly structured. His approach can be used at all grade levels; however, specific methods or games should be used according to content area, academic objectives, and grade level. Slavin (1995) states, "team rewards, individual accountability, and equal opportunities for success" (p.5) are the essential elements in all of his main cooperative learning methods (i.e. STAD, TGT, TAI, CIRC, and Jigsaw II). The STAD method, which has been used in the training workshop, is described below.

Student Team-Achievement Divisions (STAD)

STAD is a combination of group cooperation and intergroup competition. It begins with the teacher directly presenting a lesson. Then, heterogeneous groups of four or five work in teams to help each other to master the materials presented by the teacher and complete a set of worksheets on the lesson. Students take quizzes on the learned materials alone. Their improvement over their past averages contributes to a team score. The highest scoring teams are publicly recognized in a weekly newsletter. (Slavin, 1983, 1990, 1991b, 1995)

Structures (Kagan)

During his academic work at UCLA and VC Riverside, Spencer Kagan developed another cooperative learning approach. He offered a collection of structures, which can be implemented by teachers. In an effort to improve racial relations in addition to addressing academic needs in heterogeneous classrooms, each of his structures was designed to meet specific academic and social needs. “The structural approach is based on the use of a wide range of simple instructional strategies, or structures,” and “Different structures engage different intelligences and appeal to different learning styles” (Kagan, Kagan, & Kagan, 2000, p. 7). These structures can be used with any subject matter as in the Johnsons’ approach. The difference between Johnsons’ approach and Kagan’s structures is that in Johnson’s approach, the teacher is required to build positive interdependence and individual accountability into his/her lesson. However, in Kagan’s structures these elements are already included as parts of the structure and can be reached through the different steps of the structure. All of the structures have academic and social functions. Kagan uses particular structures for students to practice particular social skills.

The Kagan Structural Approach is an integrated approach to teaching. It integrates the effective educational practices of cooperative learning, multiple intelligences, brain-compatible learning, second language learning, and inclusion. And it integrates essential life skills –thinking skills, communication skills, social skills– in the process of acquiring content knowledge and reaching the standards (Kagan, Kagan, & Kagan, 2000, p. 8).

The teacher’s role involves selecting a particular structure or structures, which will meet a given academic or social goal to teach the students. This approach presents structures with very specific behaviors that a teacher needs to master one at a time for use with the students instead of general principles within an entire method, which are all at once.

Group size depends on the selected structure. Some structures set students up in pair, but most are for groups of four. Kagan does not specify face-to-face verbal interaction, even though it was built into some of the structures. Neither does he specify processing as an element in his structures. Some of his structures are: Pairs Check, Formation, Team-Pair-Solo, Turn Toss, and Group Discussion.

Pairs Check

Pairs Check is a highly structured process, usually used for practicing new learning. In Pairs Check structure, students work in pairs within groups of four. One student in each pair solves the first problem, while the other acts as coach. Roles are switched in each pair for the second problem. After each two problems, the first pair checks with the second pair of the team and works out any disagreement before proceeding to the next two problems.

Formation

Formation is used in teams or with the whole class. In formation, students develop the senses of their bodily position and cooperative skills. Students work together to form shapes or figures with their bodies by holding hands or using large rope or rubber band. In the beginning the teacher can use outline to help students form the shapes. As the students become more skilled in creating formations, the teacher no longer needs to draw outlines for the students. Students can form stationary or mobile figures. For example, after creating a kite, the students can show how it flies in the breeze.

Team-Pair-Solo

Team-Pair-Solo is a powerful way to utilize Vygotsky's concept of Zone of Proximal Development. As Vygotsky said, "What children can do together today, they

can do alone tomorrow” (cited in Johnson, Johnson, & Holubec, 1994b, p. 30). In Team-pair-Solo, students work together on problems as a team. After having the support of solving problems as a team, the team breaks into pairs to solve similar problems. Then, the pairs break apart and every student solves a similar problem alone.

Turn Toss

Turn Toss is well suited to enhancing understanding of basic concepts of numbers, including simple functions and computation. In turn Toss, each team has one small ball or stress apple. Students toss the ball to teammates to take turn at solving the given problem or giving the next response. Turn Toss ensures more lively, equal participation (Kagan, 1985a, 1985b; Kagan, Kagan, & Kagan, 2000; Andrini, 1998, Lyman, 1993).

Group Discussion

Group Discussion is suited for student interaction. It can be used to discuss an issue, a topic, or a question presented by the teacher. It has two steps. In step one, the teacher announces a topic to be discussed. In step two, students discuss the topic in their teams. Then, they share their ideas with the class (Andrini, 1998).

Cooperative Learning Outcomes

Cooperative learning has been shown to have several educational outcomes that have beneficial impact on students. Some of the outcomes are related to academic achievement, social interaction, racial relations, handicaps and mainstreaming, self-esteem, time on task, and liking of class and school.

Academic Achievement

Different studies demonstrate an increase in students' academic achievement when they participate in cooperative learning structures versus competitive and individualistic models of teaching and learning. In their review, Joyce and Showers (1995) found that the results of cooperative learning studies are overwhelmingly positive and that nearly every study has had from modest to very high effects. In addition, they found that the more greatly cooperative the environment, the greater the effects and the more complex the outcomes, such as higher order problem solving and processing of information (p. 72).

When using cooperative learning structures, low-achieving students usually experience benefits, and high-achieving students maintain top performance (Slavin, 1990, 1995; Kagan, 1992). A meta-analysis of over 375 studies on cooperative learning and achievement was done by Johnson and Johnson in 1991. When all of the studies were included, they found that average student learning within a cooperative environment was about two-thirds of a standard deviation above average student learning within a competitive environment (effect size = 0.66) or an individualistic environment (effect size = 0.63). When only the high-quality studies were included in the analysis, the effect sizes were 0.86 and 0.59, respectively. Moreover, they found that cooperative learning resulted in creation of more new solutions and ideas, more higher-level reasoning, and better transfer of what is learned within one situation to another than did competitive or individualistic learning (p. 39). In addition, Johnson, Johnson, and Holubec (1994b) found that the interpersonal exchange within cooperative learning promotes the use of metacognitive strategies, higher-level thinking strategies, and higher-level reasoning.

Moreover, students in cooperative learning listen to others' perspectives and ideas, give each other feedback, engage in intellectual conflict, and explain what they learn to groupmates (p. 21).

Social Interaction

From his research on cooperative learning, Slavin (1995) concluded that cooperative learning engages students in pleasant activities together, increases contact between them, gives students a shared basis of similarity, and has them work toward common shared goals which will increase the positive affect among students (p. 66). He added, "The preponderance of the evidence...certainly supports the conclusion that cooperative learning promotes positive relationships between students" (p.67). Cohen (1986) found a relationship between achievement and social status. The heterogeneous grouping increases the social interaction and develops strong status that has positive effects on students' efforts and participation (p. 148). Kagan (1992) also found increases in social interaction among students when using cooperative learning structures. Sharan and Sharan (1992) found that the participation between groups from different backgrounds tends to be unequal in most group discussions; however, when students have had training in cooperative learning, more equal participation has been observed (p. 145).

Racial Relations

Johnson and Johnson (1981) found that interaction, liking, helping, and free-time interaction all increased across gender and race in a study with 51 inner-city fourth graders. They add that cooperative learning is an essential prerequisite for managing diversity within the classroom and promoting positive cross-ethnic relationships

(Johnson, Johnson, & Holubec 1994b). “Cooperative learning can, in fact, have a profound impact on intergroup relations” (Slavin, 1995, p. 51). It is a perfect solution to provide students of different ethnic groups with opportunities for cooperative interactions within their groups and with other classmates in general. Furthermore, cooperation promotes student friendships outside their own respective racial groups (Kagan, 1992; Slavin, 1995).

Handicaps and Mainstreaming

Slavin (1995) comments,

If the classroom is changed so that cooperation rather than competition is emphasized and so that academically handicapped students can make a meaningful contribution to the success of a cooperative group, acceptance of such students seem likely to increase (p. 55).

Slavin also reported different studies which show greater acceptance of students with handicaps and which show that mainstreamed academically handicapped students achieve better in cooperative learning than in traditionally organized classrooms.

Johnson and Johnson (1981a) reported that acceptance of handicapped students as work partners among students in cooperative learning condition is more than among students in an individualistic one. In their other report (1981b), Johnson and Johnson noted several findings. In the cooperative condition, the communication between disabled students and those without disabilities was much better. The other finding was that students shared free time and gathered outside of the structured activities when they were teamed which is evidence that the positive effect does transfer beyond the classroom.

Self-esteem

Student self-esteem may increase from participation in cooperative learning (Slavin, 1995; Kagan, 1992). In eleven of fifteen studies about cooperative learning and self-esteem, Slavin noted positive effects on some aspects of self-esteem. Cooperative learning effects on students' self-esteem are probably specific to the setting, and different structures may increase self-esteem for different reasons. When students feel that they are valuable to their classmates or groups, their self-esteem seems to increase. For instance, in Jigsaw, students feel needed and valuable for their team because they have information that the others don't which is needed to complete the work. Johnson, Johnson, and Holubec (1994b) in their review and meta-analysis of studies on self-esteem, found that (1) over eighty were comparing the impact of cooperative, competitive, and individualistic experiences on self-esteem and (2) that cooperative learning improved students' self-esteem on average about half a standard deviation over competitive or individualistic methods.

Time on Task

Slavin (1995) reports on several studies measuring time on task and indicating that students involved in cooperative learning spend a greater proportion of their classroom time engaged in their work (p. 64). Johnson, Johnson, and Holubec (1994a) reviewed nearly 600 experimental studies and over 100 correlational studies conducted on cooperative, competitive, and individualistic efforts to learn. From their review, they found multiple outcomes preferring cooperative learning and classified into three major categories. One of the resulted categories is "greater effort to achieve." One of the

outcomes in this category is time on task. They found that students spend more time on-task in cooperative learning situation than in other situations (p. 11).

Liking of Class and School

Research evidence on this liking of class and school is more inconsistent as Slavin (1995) reports. He found that in some studies the liking of class or school is significantly greater in cooperative learning than in other methods. However, other studies found no difference between different methods. Slavin thinks the reason is due to the fact that students were being asked to give their general feelings and not to compare experiences with different methods (p. 65). Johnson and Johnson (1991) state that students who participate in cooperative learning groups have better attitudes toward each other, school, teacher, and academic subjects (p. 44).

Teachers' Knowledge and Attitudes as Factors Affecting the Implementation of Cooperative Learning as Innovation

Student learning is not likely to improve without a change in educators' knowledge, skills, practices, and ultimately their attitudes and beliefs (Guskey, 1986), and educators should have applicable professional development knowledge and skills if they are to help improve schools to meet the complex educational challenges of the 1990s and beyond (Sparks, 1992).

Knowledge

Knowledge has been defined as “an objective body of information whose existence is unrelated to human subjectivity ...” (Sharan, cited in Brody, 1998).

Lieberman and Miller (2000) state that teachers are receivers of two kinds of knowledge: knowledge created by research that needs to be implemented and knowledge created in

the process of action and reflection on practice. They also identify seven transitions that teachers need to make. One of them is teacher transition from a “weak knowledge base to a stronger, broader one” (p. 52) by drawing their teaching from a wealth of information and basic research to guide their practice. Lieberman and Miller add that schools are being required to produce students who show understanding as well as skills and knowledge. Therefore, the research community is in agreement about the premises that promote this kind of learning and the instructional practices that move students beyond recognition, recall, reproduction and toward analysis, production, synthesis, and evaluation. These premises are that students learn based by constructing the knowledge, by making connections through guided practice and interaction with others, and according to their own development nature. To apply these premises, a significant shift in practice is required, along with recognition of what is more needed and less needed to happen in instruction. This shift does not mean replacing and abandoning the old practices; rather, it requires teachers to, “Add new alternatives to a wider repertoire of choices, allowing them to alternate among a rich array of activities, creating a richer and more complex balance” (Zemelman, Daniels, & Hyde, cited in Lieberman & Miller, 2000, p. 56).

Furthermore, many believe that educators have collected enough literature and experience to make the case for high-quality preservice and teacher preparation education and effective professional development. The collected literature and experience has documented the importance of teacher’s growth and development by learning from outside knowledge (e.g., books, research, workshops, conferences, reform ideas, consultants, and speakers) and inside knowledge (e.g., from each other, from helping in

developing assessment tools, from analyzing their own practice, and from looking at students work). This form of professional development is important in order for teachers to collect evidence on the effects of their teaching practices, as well as build “teacher knowledge” to be put next to “researcher knowledge” (Lieberman & Miller, 2000).

Rolheiser and Stevahn (1998) have similar thoughts as Lieberman and Miller about teachers’ knowledge. They state that formal teacher programs should reflect both theoretical knowledge and practical experience. For the cooperative group learning to be more likely to work in the classroom, teachers should comprehend the different theoretical roots of cooperative learning during their training. Rolheiser and Stevahn divided the theoretical knowledge into learning theories, research outcomes, and core elements that make groups work. Knowledge of learning theories provides a basis for understanding different cooperative learning models, which reflect different assumptions about motivation and cognition. Knowledge of research-validated outcomes provides teachers with well-grounded expectations for students’ success and progress. Knowledge of core cooperative learning elements helps teachers in designing productive cooperative learning groups since all models agree on the five fundamental elements: interdependence, interaction, accountability, social skills, processing. In this case, the role of the program leader is to help teachers build a bridge between theory and practice.

Attitudes

Although there is a difference in the definitions of attitude and belief, for the purpose of this study, attitudes and beliefs will be considered to have the same meaning. Attitudes have been defined by Fishbein and Ajzen (1975) as “learned predisposition [s] to respond in a consistently favorable or unfavorable manner [s] with respect to a given

object” (p 10). Moreover, attitudes are capable of being developed, and they are “organized through experience” (Fishbein, 1967, p. 8).

Cohen (1993) used Dillman’s definition of beliefs and attitudes. She stated:

A belief is an assessment of what a person perceives as a true or false, or of what he/she perceives to exist or not to exist. There is no value judgment connected to beliefs. In some cases belief questions assess people’s knowledge about facts. In some cases belief questions assess people’s perceptions of past, present, or future reality. An attitude describes a person’s feelings. Attitude questions are evaluative. They require people to decide whether they have positive or negative feelings about an object or concept (p. 8)

Teachers’ beliefs have been identified as one factor in the adoption of change or innovation. Brody (1998) states that beliefs have great impact on what teachers do in the classroom, how they conceptualize their instruction, and how they learn from their experiences. Brody believes that beliefs are important for practice, and she agrees with Deford (cited in Brody) that beliefs are “conceptual representations that signify to its holder a reality or given state of affairs of sufficient validity, truth, and/or trustworthiness to warrant reliance upon it as a guide to personal thought and action” (p. 25). She adds that beliefs generate a set of personal conceptions that guide a teacher in interacting with new practices and ideas; therefore, teacher educators and professional developers need to understand how teachers will adopt an innovation such as cooperative learning from the point of view of the teachers’ system of beliefs.

Sparks (1988) reported that teachers’ philosophical acceptance of a practice constituted a critical factor in the variation of implementing a new practice. She noted variation among teachers in the adoption of an innovation, even when the content of the training and organizational factors were constant. She claimed that the differences in

teacher beliefs could explain this discrepancy. In a mail-in questionnaire, Cohen (1993) found that teachers who were high and medium implementers of cooperative learning had high beliefs about the acquisition of knowledge through social interaction and positive attitudes about its outcomes and its ease of use.

Guskey (1987) studied the relationship between selected teacher perceptions known to be common between highly effective teachers and teacher attitudes toward the implementation of new instructional practices. He found strong significant relations between perceptions of teachers that are generally associated with instructional effectiveness, and attitudes toward the implementation of instructional innovations.

Hintz (1990) measured teachers' attitudes through her interviews with teachers who had been trained in cooperative learning. She found that teachers who were high implementers felt that cooperative learning fit with different educational approaches.

Both Cohen and Hintz agree with Sparks that attitude toward cooperative learning was among the instrumental factors in accounting for variations in the levels of implementing cooperative learning.

Preservice Teacher Preparation, Training, and Professional Development
in the Use of Cooperative Learning

Teacher preparation courses have traditionally overlooked the issue of structuring student-student interaction. As a result, teachers have not learned to intentionally create the type of interaction they want between students in their classrooms. ...Also traditionally neglected in teacher preparation courses is the whole issue of cooperation. Teacher training institutions spend little time helping teachers learn how to deliver cooperative skills to students. They place more emphasis on competition and individualization. As a result, many teachers know more about individualization and competition than they do about cooperation (Moorman, Dishon, & O'Leary, 1984, p. 44).

Guyton (2000) states, “Powerful teacher education is that which produces good teachers who are able to teach all the children who come to their classrooms” (p. x).

Lyman and Foyle (1990) affirmed, “...there are still colleges of education that graduate teachers and principals who are not equipped with the skills necessary for effective collaboration and cooperation” (p.12). Lyman and Foyle emphasize the incorporation of the necessary skills to implement interaction methods such as cooperative learning in every teacher education program. Johnson and Johnson (1985) asserted that despite the documentation of the effectiveness of cooperative learning, this teaching strategy got little attention in teacher education. Bouas (1993, 1996) expresses, “teacher educators face the challenge of how best to insure that preservice teachers acquire the knowledge and skill to enable them to implement cooperative learning and at the same time influence them to want to learn to use the model” (1993, p. 3 & 1996, p. 46).

Fullan (1990) states, “...[Professional] development and successful innovation or improvement are intimately related” (p. 3). Kochan (2000) adds, “Effective professional development is an important aspect of helping to change the teaching role” (p.4). In order to have an effective and significant change in a given teaching practice, Richardson (1990) suggests that teachers should be reflective about the practical knowledge they gain, their ways of thinking, and the research premises related to the practice.

One approach to professional development is to establish teachers’ learning experiences and knowledge through ongoing workshops and activities focused on instructional practices (Putnam and Borko, 2000). An effective approach to establish learning takes place when members of the professional development team introduce the

materials and activities in the workshop session, then teachers attempt to perform the ideas in their classrooms; later on, the group members discuss their experiences in a following workshop session (Putnam and Borko, 2000). Putnam and Borko (2000) add that since preservice teachers do not have their own classrooms in which to place learning activities and have inadequate teaching experiences from which to draw in discussion of pedagogical issues, teacher educators have to rely upon university-course experiences to present coordinated opportunities for preservice teachers to learn innovative ideas and practices, as well as to reflect and obtain feedback on their teaching.

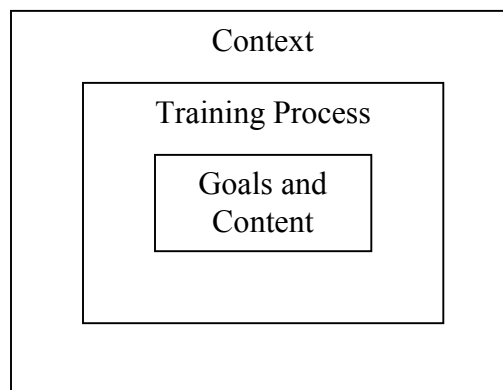
Teachers' learning experiences in K-12 classrooms typically require actual engagement in the activities of teaching, while their learning experiences in university courses usually involve reading and discussing ideas. Putnam and Borko (2000) suggest that case-based teaching is another approach for preservice professional development that creates a meaningful setting for teacher learning. Instead of putting teachers in actual classroom settings, professional development leaders can use cases to provide explicit encounters in hypothetical settings. Case-based learning experiences in these hypothetical settings may afford critical analysis and reflection that is not possible otherwise when the teacher is not actually acting in the setting. Some proponents of case-based learning suggest,

Cases have several advantages over other activities used in preservice and inservice teacher education. As with actual classroom experiences, they allow teachers to explore the richness and complexity of genuine pedagogical problems. Cases, however, provide shared experiences for teachers to examine together, using multiple perspectives and frameworks. They also afford the teacher educator more control over the situations and issues that teachers encounter, and the opportunity to prepare in advance for discussion and other activities in which the case materials are used (Putnam and Borko, 2000, p. 8).

Cases vary in the complexity or richness of classroom life depicted, but they limit the information presented. Media, such as videotape, can express more of the complexity of classroom events than written cases and can provide rich set of materials documenting classroom teaching and learning (Putnam and Borko, 2000).

Professional development is described by Little, Sparks, and Loucks-Horsley (cited in Fullan, 1990) as activities or processes with the intent to improve performance, understanding, skills, or attitudes in present or future roles. Sparks (1983) states professional development can be visualized as a nested process "...that includes goals and content, the training process, and the context" (p. 65). Figure 1 shows how these factors are interrelated.

Figure 1. Staff Development: A Nested Process



Note. Adapted from "Synthesis of Research on Staff Development for Effective Teaching" by G. M. Sparks, Educational Leadership, 41 (3), p. 65.

The goals and content in Spark's nest represent what should be taught to teachers that will improve their instruction and learning. The training process represents a delivery system for professional development. The context represents the organizational context. The importance of this element is discussed by Sparks and Loucks-Horsley (1990). They

point out that the key factors in the organizational context are school and district climate, leadership attitudes and behaviors, district policies and systems, and involvement of participants.

According to Joyce and Showers (1980, 1988), the content and training design of professional development programs need to include the major components of training based on research.

1. Presentation of Theory – is the presentation of rationale, conceptual base, and verbal description of an approach. Theory can be presented by using lectures, videos, journal articles, and discussions. The effect of theory includes raised awareness and increase conceptual control.
2. Modeling or Demonstration – is the enactment of the strategy through live modeling using media (television or video tapes) role-playing, and/or demonstration in real settings with children or adults. The effect of modeling includes significant effect on awareness and some effect on knowledge. The effect of demonstration is increased mastery of theory.
3. Practice – is simulated activities with small groups to practice the new skill or the strategy. The effect of practice is to provide an efficient way to apply prior awareness and knowledge levels of the strategy and acquire the needed skills.
4. Feedback – is a structured system for observation and provides opportunity for reflection on the observation. The effect of feedback, at least regular and consistent feedback, is to make and maintain change in the approach.

5. Open-Ended Feedback – is informal discussion following observation. The effect of open-ended feedback is uneven impact with more awareness and readiness for more complex activities of the strategy.
6. Coaching – is (1) the analysis of the content and the approach to be taught and (2) the plans to help students adapt to the new approach.

Showers, Joyce, & Bennet (1987) summarize the research on the effectiveness of training on professional development in a meta-analysis of approximately 200 research studies and conclude that:

- 1- What the teacher thinks about teaching determines what the teacher does when teaching. In training teachers, therefore, we must provide more than “going through the motions” (p. 79) of teaching.
- 2- Almost all teachers can take useful information back to their classrooms when training includes four parts: (a) presentation of theory, (b) demonstration of the new strategy, (c) initial practice in the workshop, and (d) prompt feedback about their efforts.
- 3- Teachers are likely to keep and use new strategies and concepts if they receive coaching (either expert or peer) while they are trying the new ideas in their classrooms.
- 4- Competent teachers with high self-esteem usually benefit more from training than their less competent, less confident colleagues.
- 5- Flexibility in thinking helps teachers learn new skills and incorporate them into their repertoires of tried and true methods.

- 6- Individual teaching styles and value orientations do not often affect teachers' abilities to learn from staff development.
- 7- A basic level of knowledge or skill in a new approach is necessary before teachers can "buy in" to it.
- 8- Initial enthusiasm for training is reassuring to the organizers but has relatively little influence upon learning.
- 9- It doesn't seem to matter where or when training is held, and it doesn't really matter what the role of the trainer is (administrator, teacher, or professor). What does matter is the training design.
- 10- Similarly, the effects of training do not depend on whether teachers organize and direct the program, although social cohesion and shared understandings do facilitate teachers' willingness to try new ideas (p. 79).

Research in the area of professional development has provided answers to questions about forms of training activities, most effective group size, outline of activities, and the effects of teacher attitudes and characteristics toward change. These guidelines for the training design of professional development programs provide opportunities for teachers to increase their repertoires of teaching skills and the effective use of these skills in their classrooms. Joyce and Showers (1980) specify four levels of training impact: awareness, concept understanding, skill attainment, and applications/problem solving.

The Use of Media (Videotapes) to Introduce the New Teaching Strategy and Promote Its Implementation

Researchers agree that media plays role in modeling and demonstrating new skills and strategies. Heinich, Molenda, Russell, and Smaldino (1999) indicate that the role of visuals is very important in instruction or training. Visuals provide a concrete “referent” for ideas. Visuals can inspire trainees by catching and holding their attention and generating emotional responses. Visuals can make the presented information, which is difficult to understand, simpler. Finally, visuals present information in different modality, giving the trainees chance to understand visually what they might miss verbally (p. 64). Some of the several advantages that have been mentioned by Heinich, Molenda, Russell, and Smaldino are:

- Skill Learning – research indicates that mastery of new skills requires repeated observation.
- Affective Learning – video can be useful in shaping personal and social attitudes.
- Problem Solving – video can be useful in presenting information for open-ended discussion and problem solving.
- Establishing Commonality – by viewing a video program together, a divergent group of people can build up a common base of experience to discuss an issue effectively (p. 184-185).

Putnam and Borko (2000) cited many studies that recommend “case-based” teaching, modeling and demonstration, to provide learning experiences to preservice teachers. Cases allow preservice and inservice teachers to explore the richness and complexity of real educational experiences. They added that media, such as videotape,

can deliver this richness and complexity. Sykes and Bird, Brooks and Kopp, and Shulman (cited in Rowley and Hart, 2000) have all written about video-based cases as vehicles for delivering case-based instruction. Rowley and Hart (2000) explored the differences between print format and video format case studies as used in the preservice teachers' professional development. They found that 72% of the teachers preferred the video version. Teachers preferred the video because it provides insight into human interactions, communications, attitudes, and feelings.

Joyce and Showers (1988) report the content and training design of professional development programs need to be research based with these components: (1) presentation of theory or description of the new skill or strategy, (2) modeling or demonstrations of the skills or strategies, modeling can be via video tapes, role play, or simulation, (3) practice in simulated and real setting, (4) structured feedback to observe and reflect on observations, (5) open-ended feedback to provide information about performance, and (6) coaching with follow-up to insure effective implementation.

Wetzel, Radtke, and Stern (1994) state, "Video has been proven to be a useful tool in teacher education. It has been successfully used for providing demonstrations and feedback in "micro-teaching" practice sessions for training teaching skills" (p.88). Video is capable of conveying a wide range of educational content. Video is also capable of conveying many teaching techniques (p. 200). Wetzel, Radtke, and Stern cite various studies on the use of video in teacher education. Koran et al. (cited in Wetzel, Radtke, & Stern, 1994) found that using video to model a teaching skill produced better teaching performance than using a written form (p. 88). They also cite other reviewers who confirm positive results for using videotapes for demonstration and feedback. Cohen et al

(cited in Wetzel, Radtke, & Stern, 1994) examined several studies that involved feedback for teacher skill acquisition or training. Cohen et al reported a moderate positive effect size of .41 standard deviation units to use these techniques (p. 88). Video-based instruction has been found effective for providing demonstration and modeling of skills and as a form of feedback in teacher education (p. 204). Video can also be used as a tool to demonstrate behaviors needed to be modeled in teacher education (Wetzel, Radtke, & Stern, 1994, p. 205).

Professional Development Projects for Cooperative Learning

Researcher and teacher educators have agreed that training is important to introduce new instructional strategies to preservice and inservice teachers. Training is also important for professional development. During training sessions, teachers acquire new teaching skills and knowledge, practice the skills, and obtain feedback. Sparks and Loucks-Horsley (1990) include awareness or knowledge and skill development as outcomes of a training session. Change in attitudes, transfer of training, and “executive control” are additional outcomes noted by Joyce and Showers (cited in Sparks and Loucks-Horsley, 1990). “It is the trainer’s role to select activities that will aid teachers in achieving the desired outcomes” (Sparks & Loucks-Horsley, 1990, p. 13).

Several professional development projects have been conducted to help teachers implement cooperative learning. Davidson, Weissglass, and Robertson (1990) provide four types of professional development projects in cooperative learning. Out of four, two models are discussed.

The first is a graduate seminar model with 3-hour, weekly meetings for a full, 14-week semester. Classroom teachers, college faculty, resource teachers, curriculum

specialists, and supervisors are all professionals who participate in the seminar. The seminar has a strong practicum feature that allows teachers to implement the cooperative learning approach in their classes. Peer observation and coaching are used to support the implementation. Kagan's cooperative structures are used to help teachers implement the open-ended exploration, inquiry/discovery, and laboratory investigation approaches. The rationale for and base research of cooperative learning, major approaches and steps to begin with in cooperative learning, group formation and physical room arrangement, classbuilding and teambuilding, and assessment and evaluation issues are some of the topics are covered in the seminar.

The second is a workshop model for cooperative learning. A one-day awareness-level workshop that is a miniature version of the seminar described above is given. The workshop has four major components: (a) demonstration of different cooperative learning structures and approaches, (b) consideration of a number of practical implementation issues, (c) identification of resource materials for cooperative learning, and (d) the formation of a support system among participants who meet in pair to discuss implementation concerns and to share ideas for lessons. Davidson, Weissglass, and Robertson state, "A one-day awareness-level workshop cannot be as effective as an ongoing seminar, project, or extended staff development model. It can, however, strongly motivate many professionals to begin using cooperative learning" (p. 14). They add support system and follow-up can increase the probability of implementation.

Putnam and Markovchick (1989) described another staff development project on cooperative learning to improve quality of instruction for disabled and nondisabled students. For their project, Putnam and Markovchick involved the teachers to propose a

training model that suit them as adult learners. Their training project activities included a one-day workshop before school started. A two-day conference with a national expert in cooperative learning was held. Monthly seminars with university consultants were held to deliver information on cooperative learning and to observe the teachers conducting cooperative activities in their classes. In addition, sessions were designed to share ideas and to solve problems related to cooperative learning and social integration. These seminars and sessions worked as a support structure to enhance the implementation of the strategy.

The Association for Supervision and Curriculum Development has produced a cooperative learning training manual under the supervision of Robert E. Slavin as director. The manual provides activities for workshop sessions in conjunction with a series of five video programs. The main goals of the video series are: providing fundamental knowledge of cooperative learning and its benefits, basic understanding of how to plan and teach cooperative learning, and resources to expand and refine the trainers knowledge and skills. The video programs are:

- Program (1) “Learning to Work Together” – introduces cooperative learning, illustrates the basic elements of effective cooperative learning, and identifies the benefits.
- Program (2) “Planning and Implementing Cooperative Lessons” – presents a five-step process for planning a cooperative learning lesson by modifying an existing lesson. It also integrates positive interdependence, individual accountability, and social skills into the lesson.

- Program (3) “Teaching Social Skills” – shows how to teach students the social skills necessary for effective group interaction.
- Program (4) “ Three Frameworks: STAD, TGT, and Jigsaw II” – introduces three additional approaches that teachers can use for cooperative learning lessons.
- Program (5) “A Sample Lesson” – presents a complete cooperative learning lesson.

The manual contains activity guidelines, facilitator notes, and handouts for conducting successful training sessions (ASCD, 1990).

Summary

The review of literature was in eight areas: (1) cooperative learning and history of the practical use of cooperative learning, (2) theoretical roots of cooperative learning, (3) different models of cooperative learning, (4) cooperative learning outcomes, (5) teachers’ knowledge and attitudes as factors affecting the implementation of cooperative learning as innovation, (6) preservice teacher preparation, training, and professional development in the use of cooperative learning, (7) the use of media (videotapes) to introduce the new teaching strategy and promote its use, and (8) professional development projects for cooperative learning. The literature provided evidence that a new instructional method or strategy, such as cooperative learning, needs to be introduced to preservice student teachers as well as inservice teachers in order to increase their teaching repertoires and, as a result, increase students’ academic achievement, social interactions, psychological health, and positive relationships. Brody and Davidson (1998) point out that,

A highly effective way to create sustained implementation of cooperative learning, or any new approach for learning and teaching, is to focus on the teacher. The major work in transforming schools begins and ends with

teachers because they stay the longest, have the most contact with students, and potentially have the power to change the social relationships of the school and classroom (p. 5).

Darling-Hammond (1990) asserts that the successful adoption of an innovation or change depends on teachers' beliefs and attitudes as well as environmental conditions.

The purpose of professional development is to improve knowledge, skills, and attitudes (Sparks & Loucks-Horsley, 1990). High-quality professional development is the vehicle for educational improvement because student learning is unlikely to improve without a change in teachers' knowledge, skills, practices, and their attitudes and beliefs (Guskey, 1986). Teachers are the key to enhancing students' learning. Darling-Hammond (1997) states that teacher knowledge and skills make a significant difference in student achievement. The purpose of training according to Showers, Joyce, and Bennet (1987) is:

Not simply to generate the external visible teaching 'moves' that bring that practice to bear in the instructional setting but to generate the conditions that enable the practice to be selected and used appropriately and integratively (p. 85).

This study examined the change in attitudes toward and knowledge about cooperative learning of preservice teachers who were attending the College of Basic Education in Kuwait, after their participation in a training workshop about the strategy featuring the following:

- What is cooperative learning?
 - Definition,
 - Types of cooperative learning, and
 - Five elements of cooperative learning.

- Research findings on cooperative learning. Different articles, which have been written by different authors, will be discussed.
- Identifying the essential social skills needed for cooperation.
- Demonstrating selected cooperative learning approaches/models by viewing different video taped cases (i.e. STAD, Pairs Check, Formation, Team-Pair-Solo, Turn Toss, and Group Discussion.)
- How to plan a cooperative learning lesson?
- Planning a cooperative learning lesson.

CHAPTER III

RESEARCH QUESTIONS, DESIGN, AND PROCEDURES

Introduction

The primary purpose of the study was to investigate the effects of a workshop on the preservice teacher's knowledge and attitudes, identified in the literature as contributing to the preservice teacher's willingness to implement the cooperative learning strategy in her/ his classroom. A training workshop on cooperative learning in the College of Basic Education (CBE) was conducted for preservice teachers who were enrolled in methods classes during the spring 2001 semester.

The purpose of this chapter is to present the research questions, research design, description of the training workshop program, and procedures of the study (population/sample, instrumentation, data collection, data analysis).

Research Questions

The following questions were addressed in this study regarding a training workshop on cooperative learning

1. What is the effect of a cooperative learning training workshop on preservice teachers' attitudes toward this teaching/learning strategy?
2. What is the effect of a cooperative learning training workshop on participants' knowledge about the strategy and its academic and social benefits? (Academic benefits include higher achievement, better critical thinking, higher-level reasoning, more time on task, and a more positive attitude toward school. Social benefits include higher self-esteem, improved social interaction, greater social support, more positive relationships, and greater acceptance of others).

3. After participating in the cooperative learning training workshop, what ideas/perceptions/expectations do preservice teachers have regarding their own knowledge, attitude, and aspiration to implement cooperative learning in their future classrooms?

Research Design

The intent of this study was to examine the effects of a cooperative learning training workshop, which was implemented in the College of Basic Education in Kuwait, on the preservice teachers' (1) attitudes toward cooperative learning, (2) knowledge about its academic and social benefits, and (3) the knowledge of how to organize and incorporate this instructional teaching model into their future classrooms.

Data was obtained from the following sources:

1. a pre-post Likert scale Attitude Survey regarding cooperative learning,
2. a pre-post true-false Test of Knowledge about cooperative learning,
3. the Teacher Demographic Data instrument, and
4. interviews with the preservice teachers who participated in this training/workshop about (a) the thing (s) most or least liked about cooperative learning, (b) how they perceive cooperative learning assists or hinders learning, (c) the benefits of cooperative learning, (d) whether they are able to plan for group work and to use it, (e) their thoughts about mixed-ability groups, and (f) their suggestions of how to prepare student teachers to use cooperative learning.

The quantitative data generated from the attitude survey and the knowledge test was analyzed using an appropriate statistical approach and was triangulated with the qualitative data from the interviews.

This study is a quasi-experimental research in which the treatment is a training workshop in cooperative learning vs. no training workshop in cooperative learning. The study uses a pretest- posttest non-equivalent control group design in which three classes were used. Two classes were employed as the experimental group and the third class was employed as a control group. The experimental group was exposed to a pretest, a treatment (cooperative learning training workshop) and a posttest. The control group was exposed to a pretest and a posttest, without receiving training in cooperative learning. The researcher sought answers to the research questions by using the cooperative learning training workshop as an independent variable and investigating the effects of the cooperative learning workshop on three dependent variables- attitude toward cooperative learning, knowledge of cooperative learning, and perceptions/expectations toward cooperative learning and likelihood of future implementation.

Data were collected from three major instruments and a fourth instrument for gathering demographic information on the subjects. The first instrument was a Likert scale survey questionnaire regarding preservice teachers' attitudes toward cooperative learning. The second instrument was a true/false test of preservice teachers' knowledge about cooperative learning and its academic and social benefits. Both the attitude survey and the true/false test of knowledge were completed by the sample three times, one time before the treatment/workshop and two times after the treatment/workshop. The third instrument was a structured informal group interview guide, which was conducted with selected subjects from the two classes of experimental group. The structured interviews focused on the thing (s) that the preservice teachers most or least liked about the training workshop and cooperative learning. Specifically, some of the questions were as follows:

How did they find it assists or hinders learning? What are the benefits of it? What did they think of mixed-ability groups? Are they able to plan for group work and to use cooperative learning in their future classes? What are their suggestions of how to prepare student teachers to use cooperative learning? The fourth instrument was designed to obtain demographic information and information regarding preservice teachers' background in cooperative learning.

Both quantitative and qualitative approaches were utilized to collect data for the purpose of describing preservice teachers' attitudes toward and knowledge about cooperative learning. The Likert scale attitude survey and the true/false test of knowledge were utilized as quantitative approaches to collect data. The structured interviews were utilized as qualitative approach to collect more in-depth data that get at underlying reasons and that answer "why" questions.

Description of the Training Workshop Program

The training workshop program represented the researcher's selection of the work of several developers of different approaches for cooperative learning. See Appendix C for the detailed description of the training workshop program and its content. The program was planned as a four-day training workshop, arranged in the following sequence: two awareness sessions the first two days; modeling and demonstration session the third day; and practice and feedback session the fourth day. Each session took place during the educational methods classes' time, which was scheduled two days a week across two weeks during the spring semester. Each class runs approximately one and one-half hours. As Joyce and Showers (1980, 1988) state, the content and training design of professional development programs need to include presentation of theory, modeling and

demonstration, and practice and feedback. The workshop implemented in this study followed this guideline.

- What is cooperative learning?
 - Definition,
 - Types of cooperative learning groups (formal groups, informal groups, base groups, and cooperative structures), and
 - Five elements of cooperative learning (positive interdependence, face-to-face, individual accountability, social skills, and group processing).
- Research findings on cooperative learning. Different articles, which have been written by different authors, will be discussed. These articles are:
 - Synthesis of Research on Cooperative Learning by Slavin, R. (1991a).
 - Outcomes of Cooperation in The New Circles of Learning: cooperation in the Classroom and School (p. 19-24) by Johnson, Johnson, and Holubec (1994).
 - Social skills for successful group work by Johnson and Johnson (1989/90).
 - On cooperative learning: A conversation with Spencer Kagan by Brandt (1989/90).
 - Cooperative learning: The first year by Edwards and Stout (1989/90).
- Identifying the essential social skills needed for cooperation. For example:
 - Stay with the group,
 - Talking in normal quiet voices,
 - Taking turns,
 - Sharing materials,

- Listening to each other,
 - Involving everyone, and
 - Contributing ideas.
- Demonstrating selected cooperative learning approaches/models by viewing different video taped cases (i.e. STAD, Pairs Check, Formation, Team-Pair-Solo, Turn Toss, and Group Discussion).
 - How to plan a cooperative learning lesson? By following these five steps:
 - Identify lesson,
 - Organizational decision,
 - Establish objectives and tasks,
 - Monitor and process, and
 - Evaluate lesson.

Planning a cooperative learning lesson.

All pretests and posttests were administered during periods that were separated from the instructional/workshop periods. The group interviews were conducted in the week following the training workshop.

Description of the Population/Sample

The population of this study was comprised of preservice teachers in the College of Basic Education in Kuwait. This college prepares the national cadre needed to teach in the primary and kindergarten schools.

The sample of the study consisted of preservice teachers, who were enrolled in three intact educational methods classes and who were willing to participate in the training program. The sample contained female preservice teachers only. The sample did

not contain any males since these colleges are sex segregated and these classes were in the female College of Education. Two classes served as an experimental group, and one class served as a control group. Treatments (experimental and control) were randomly assigned to the three classrooms. Experimental class 1 contained 40 preservice teachers, experimental class 2 contained 20 preservice teachers, and the control class contained 31 preservice teachers. The total sample of this study was 91 preservice teachers. Appendix D provides details about the demographics of the sample.

Instrumentation

Four instruments were used to obtain data: the Attitude Survey, true/false Test of Knowledge, Informal Group Interview Guide, and Teacher Demographic Data Survey.

Two instruments, the Likert Attitude Survey and the true/false Test of Knowledge, were administered three times, once as a pretest before the training sessions and twice after the training sessions as posttest 1 and posttest 2. Posttest 1 was administered to compare the groups' data before and after the workshop, and posttest 2 was administered to estimate the reliability of the measures by using the test-retest method. The Group Interview Guide instrument was conducted after the training workshop sessions. The Teacher Demographic Data Survey instrument was administered one time before the training sessions.

The Attitude Survey (Appendix F) investigated teachers' attitudes toward cooperative learning and was originally developed by Bouas (1993). Permission to use this instrument was granted by the developer. A copy of the letter granting this permission is in Appendix E. The attitude survey contained the definition of cooperative learning as "Students working together in small groups to maximize their own and each

other's learning and achieve shared goals" to help participants focus on the type of cooperative learning that has been meant by in this study. The attitude survey is a 10-item instrument, using a Likert scale of 7, ranging from 1-strongly disagree to 7-strongly agree. All of the items of this survey except items 3,4, and 5 are related to the elements of positive interdependence and individual accountability of cooperative learning. Item 3 is related to other benefit of cooperative learning. Item 3 relates to the belief that heterogeneous ability groups improve academic achievement and the likeability of others with different levels of ability (Johnson & Johnson, 1991). Items 4 and 5 assess the degree of change in participants' self-efficacy regarding implementation of the strategy and educational intents related to the strategy. The researcher made some minor changes to the original instrument after translating the instrument into Arabic (See the Arabic version in Appendix G.) The researcher changed the definition of cooperative learning originally used by the developer to another definition used by Johnson and Johnson. In addition, the researcher changed the layout of the instrument to make it easier to follow (See the revised instrument in Appendix F.)

The instrument used to investigate teachers' knowledge about academic and social benefits of cooperative learning was the true/false Test of Knowledge (Appendix H). It was developed by the researcher based on a true/false test of cooperative learning knowledge developed by Bouas (1993). The researcher did not use the original test developed by Bouas because of difficulties in having the same meaning in some translated items and the awkwardness of some sentences after translation. The other reason was the need to eliminate certain items that were culturally biased for use in Kuwait, such as item 3. Item 3 in Bouas's Test reads "cooperative learning deters racial

prejudice among students.” In Kuwait there is not such differences in ethnicity or religions as it is in the USA, so I could not say that there is prejudice towards others as I thought it was meant in Bouas’s item. Therefore, the researcher developed a revised instrument that was culturally more acceptable and more meaningful after translation into Arabic (See Arabic version in Appendix I.) In the new knowledge test instrument, the researcher omitted the biased item and added three more items to have a 12-item instrument testing teachers’ knowledge about the academic and social benefits of cooperative learning.

Item 1 in Bouas’s test reads “students’ academic achievement suffers as a result of group work” has been modified to “group work affects students’ academic achievement negatively” as item 10 in the researcher’s test. Item 2 which reads “cooperative learning results in students having a more positive attitude toward school” has been modified to “cooperative learning leads students to feel positively toward school” as item 12 in the researcher’s test. Item 4 which reads “cooperative learning leads to decreased students’ productivity because students socialize more and do not stay on task” has been modified to “cooperative learning decreases students’ productivity because they socialize instead of performing their tasks” as item 6 in the researcher’s test. Item 5 which reads “cooperative learning causes frustration in brighter learners because they are “held back in making progress” by the presence of slower learners in a given group” has been modified to “cooperative learning discourages high achievement students and holds back their progress because of the presence of low achievement students in the group” as item 5 in the researcher’s test. Item 6 which reads “cooperative learning encourages a positive attitude toward academic work” has been modified to

cooperative learning increases students' enthusiasm and positive attitude toward academic work" as item 7 in the researcher's test. Item 7 which reads "self-esteem of low level students suffers in cooperative learning activities" has been modified to "cooperative learning decreases the self-esteem of low achievement students" as item 11 in the researcher's test. Item 8 which reads "cooperative learning improves peer relations among students of different ability levels" has been modified to "students' social relationships become more positive as a result of group work" as item 1 in the researcher's test. Item 9 which reads "group work causes students to be less dependent on the teacher for their learning" has been modified to "group work causes students to be more dependent on the teacher in their learning" as item 4 in the researcher's test. Item 10 which reads "the reward and structure of the group task should be intertwined in order for group work to be most affective" has been modified to "group work will be more effective if the activity design and reward are combined" as item 8 in the researcher's test. Items 2, 3, and 9 were added into the researcher's test. Item 2 reads "cooperative learning motivates students with different ability levels to master academic materials." Item 3 reads "group work encourages students to create new ideas and to use higher-level thinking strategies." Item 9 reads "cooperative learning improves communication and respect of others' opinions among students."

The researcher formulated the new items of the true/false Test of Knowledge based on the research on academic and social outcomes as reported in the variety of reviews and syntheses of research on cooperative learning, which have been done by different leaders in the field of cooperative learning. The researcher used these reports as sources to create the test items. Those leaders and their works are: Slavin (1989/1990,

1990, 1991a, 1995), who did different syntheses of studies on cooperative learning and reported them in books or journals; Johnson, Johnson, and Holubec (1994a, 1994b), who reviewed over 550 experimental and 100 correlational research studies on cooperative, competitive, and individualistic efforts and did a meta-analysis of over 375 experimental studies on achievement; Davidson (1990), who reviewed 70 studies comparing cooperative learning with traditional instruction in mathematics; Kagan (1985a, 1989/90), who reported on the academic and social functions of different cooperative structures and their effects on learning; Sharan and Sharan (1989/90), who summarized 10 large-scale experimental studies implementing cooperative learning in general and group investigation in particular; and Vermette (1998), who did a presentation of at least three studies for each cooperative learning outcome (See Appendix J for information regarding correspondence between test items and research reports.)

The “Don’t Know” column in the Test of Knowledge was included in the instrument to deter respondents from guessing. As Gall, Borg, and Gall (1996) point out, “One method of dealing with respondents’ possible lack of familiarity with a topic is to include a ‘no opinion’ option as one of the response alternatives” for each item (p. 297).

Bouas (1996) mentioned that she did a pilot study on her cooperative learning attitude and knowledge, but no statistical data was run on the true/false test or the Likert scale survey. She stated that both instruments have face and content validity. When research results “... are aimed at getting simple and straightforward information from participants in a program...” (p. 47), face validity is a preference, according to Patton (cited in Bouas, 1996). Bouas added that the true/false test and Likert survey were based

on the cooperative learning literature; she asserted that the instruments had content validity as defined by McMillan and Schumacher (cited in Bouas, 1996).

For the purpose of this study, the researcher translated both instruments, the Attitude Survey and true/false Test of Knowledge, into Arabic. (See Appendix G for the Attitude Survey and Appendix I for the True/False Test of Knowledge.) Both instruments were reviewed by instructors in the University of Kuwait and the College of Basic Education to check the clarity and appropriateness of the items and the translation. In addition, my major professor judged the clarity of instruction and clarity of terminology and definitions utilized. Slight revision of the instruments' layout and some terminology changes were made based on these instructors' suggestions and recommendations. (See Appendix K for changes made.)

The researcher proposes face and content validity for both the true/false Test of Knowledge and the Attitude Survey. "Face validity refers to the degree to which a test appears to measure what it purports to measure" (Gay, 1996, p. 140). "Content validity is the degree to which a test measures an intended content area" (Gay, 1996, p. 139). The researcher used different resources and literature written by the experts of the field as content resources from which to draw the test items. Gay (1996) states that the content validity of a test can be determined by expert judgment. "Usually experts in the area covered by the test are asked to assess its content validity. These experts carefully review the process used in developing the test as well as the test itself and make a judgment concerning how well items represent the intended content area" (Gay, 1996, p. 140). The researcher has e-mailed Dr. Spencer Kagan and asked for his judgment of the instruments: the Attitude Survey, the true/false Test of Knowledge, and the Interview

Guide. Kagan's respond was "your survey seems interesting and I will be interested in knowing the results. The results, of course, depend on the quality of the training the student teachers receive. Poor training will erode confidence and willingness to implement; good training increase it." The researcher appreciates Kagan's quick response and honors his judgment. (See Appendix L for both, the researcher's e-mail to Dr Kagan and Dr Kagan's response.) In addition, Gall, Borg, and Gall (1996) state, "The validity of a questionnaire or interview can be checked by using the methods of triangulation" (p. 291). Triangulation is the process of using multiple data-collection methods, and/or data sources to cross-check information and makes the findings more consistent and credible (Gay, 1996; Gall, Borg, & Gall, 1996). The researcher cross-checked the information from the different instruments. The interview questions were identical to the items of the Attitude Survey and the true/false Test of Knowledge. The researcher triangulated the data by first, analyzing the data from the Attitude Survey and the true/false Test of Knowledge. Second, analyzing the data from the interviews into identical categories. Then, the researcher cross-checked the categorized data from the interviews with data from the other two surveys to identify if the data had commonalities or there was any differences.

In order to provide evidence of face validity and basic reliability of the instruments used in this study, a pilot study was conducted with a group of 20 preservice teachers. The pilot group was similar to the group that was used in the actual study. The internal consistency reliability of the pre attitude survey and the pre-test of knowledge was investigated. The statistical program, SPSS, was utilized to run the data. The 10-item, Attitude Survey's internal consistency reliability was estimated by employing the

Cronbach's coefficient alpha. The overall internal consistency reliability was .82, which is very good reliability. The reliability was also estimated using the Spearman-Brown prophecy formula for split-half reliability. The reliability was .79, which is respectable reliability. The 12-item, true/false Test of Knowledge's internal consistency reliability was estimated by employing the Cronbach's coefficient alpha. The overall internal consistency reliability was .65, which is minimally acceptable. Gall, Borg, and Gall (1996) report, "A lower level of item reliability is acceptable when the data are to be analyzed and reported at the group level than at the level of individual respondents" (p. 291). The reliability was also estimated using Spearman-Brown prophecy formula for the split-half reliability. The reliability was .79, which is respectable reliability. The acceptance of these reliabilities was according to DeVellis's (1991) guidelines regarding acceptable reliabilities for research instrument scales. DeVellis (1991) evaluated reliabilities as follows:

Below .60	Unacceptable
Between .60 and .65	Undesirable
Between .65 and .70	Minimally acceptable
Between .70 and .80	Respectable
Between .80 and .90	Very good
Much above .90	Consider shortening the scale (p. 85)

The Informal Group Interview Guide instrument (Appendix M) was developed by the researcher to gain more insight into teachers' attitudes toward cooperative learning, knowledge of cooperative learning, and aspiration to use cooperative learning in their future classrooms (See Arabic version in Appendix N). The answers of the interview questions were meant to support the data from the other two instruments and to further

reveal the training sessions' effects on changing preservice teachers' attitudes toward and knowledge about the academic and social benefits of cooperative learning. Gay (1996) states that getting a more complete picture of what is being searched and having a way to cross-check the information are two purposes which interviews serve. The interview questions covered the following:

- Participants' general feelings about the cooperative learning workshop
- Participants' general feelings about cooperative learning
- Participants' beliefs about whether cooperative learning assists or hinders learning
- Participants' beliefs about cooperative learning's psychological and social benefits
- Participants' feelings about heterogeneous or homogeneous grouping in cooperative learning
- Participants' beliefs about using a rewarding system with cooperative learning
- Participants' beliefs about formation of groups using cooperative learning elements
- Participants' feelings of competency in planning and implementing the strategy in their classrooms
- Participants' future plans for effective group work
- Participants' suggestions on how to prepare future student teachers for using cooperative learning

Gall, Borg, and Gall (1996) suggest that the key to triangulation is to use different approaches to generate the findings we are seeking. They state, "If you generated a finding by a qualitative method, perhaps you can check it by using a quantitative data-

collection method” (p. 575). The qualitative data obtained from interviews were triangulated with the quantitative data from the Attitude Survey and the true/false Test of Knowledge. Consistency from triangulation validated the findings and made them more credible as Gall, Borg, and Gall (1996) have suggested.

The Teacher Demographic Data Survey instrument (Appendix O) was developed by the researcher to obtain descriptive data on the sample (See Arabic version in Appendix P). The purpose of this instrument was to gain more information about the participants. Specially, it was meant to determine whether any of them had been previously introduced to the cooperative learning strategy and to determine background characteristics of the participants. It includes basic questions about the participants, such as their major, methods classes they have taken, when they plan to do their field experience, and whether they have been previously introduced to cooperative learning. The researcher intended to use this instrument to assure the control over extraneous variables other than the independent, manipulated variable (training or no training in cooperative learning).

Data Collection

The data was collected from the pre-posttest Likert Attitude Survey, the pre-posttest true/false Test of Knowledge, the posttest only Informal Group Interview Guide, and the Teacher Demographic Data.

The Likert scale Attitude Survey and true/false Test of Knowledge were administered three times, once as pretest before the training sessions and twice after the training sessions, as posttest 1 and posttest 2. Posttest 1 was administered to compare the groups’ data before and after the workshop, and posttest 2 was administered to estimate

the reliability by using test-retest method. The researcher used the SPSS program to estimate the test-retest reliability for both instruments. The test-retest reliability was estimated by calculating the correlation coefficient between the scores on the posttest 1 and the scores on posttest 2 for both the Attitude Survey and the Test of Knowledge. The Attitude Survey's test-retest correlation coefficient was estimated as .983. The Test of Knowledge's test-retest correlation coefficient was estimated as .998. Both instruments have a narrow brief definition of cooperative learning; however, the researcher provided a broader definition based on Johnson and Johnson's definition of cooperative learning. The definition was as follows: "Cooperative learning is the instructional use of small groups that allows students to work together to maximize their own and each other's learning and accomplish shared goals through social interaction." The reason for this broader definition was to help participants focus on the type of cooperative learning which the researcher meant in this study.

The Teacher Demographic Data instrument was administered before the training sessions as well. It included basic questions about the participants, such as their major, methods classes they have taken, when they plan to do their field experience, and whether they have been previously introduced to cooperative learning.

The design of the study was explained to participants so that they would be aware of potential further involvement in the study through interviews. Participating in the interviews was voluntary. The researcher asked for subjects who were willing to participate voluntarily in the interviews from both experimental classes. The interviews were conducted with the participated subjects from the experimental classes after collecting data from the posttest Attitude Survey and the true/false Test of Knowledge.

Twelve subjects volunteered to participate into the group interview from the first experimental class and nine subjects volunteered to participate into the group interview from the second experimental class.

Data Analysis

The researcher used a sample of three educational methods classes, with one methods class serving as control group and the other two methods classes serving as experimental groups. The researcher administered the pretest Likert Attitude Survey and the pretest true/false Test of Knowledge for all classes, the control class and the experimental classes. In addition, the Teacher Demographic Data instrument was administered to all classes. The researcher presented the training workshop to both experimental classes. Then, the posttest Likert Attitude Survey and the posttest true/false Test of Knowledge were administered to all classes.

Results from the Attitude Survey, the true/false test of Knowledge, and the Informal Group Interview Guide were analyzed in addition to the Teacher Demographic Data Survey instrument in order to answer the three research questions identified in chapter one. Descriptive statistics, crosstabulation, plus appropriate measures of analysis of variance at the .05 level of statistical significance were applied to the data.

The data were coded and statistical procedures were conducted by using the SPSS program. A Multivariate Analysis of Variance with a Wilks' Lambda test of significance was used to determine differences in means of the factors between those who participated and did not participated in the cooperative learning training workshop. Post hoc results were examined using the Tukey's HSD statistics in order to examine pairwise statistical differences.

A crosstabulation table with the Chi-Square test of significance within table cells was used to compare the expected differences in levels of application of cooperative learning in the future by those who participated and did not participate in the workshop and the actual number of responses reported by participants and non-participants.

Frequency tables, percentages (rounded to the nearest whole number), and charts were used to analyze the demographic component from the Teacher Demographic Data Survey instrument of the study.

The quantitative data was triangulated with the interview data. The researcher looked for patterns in participants' attitudes and perceptions in their knowledge about cooperative learning, organized the patterns in meaningful units, and then sorted the units into categories. Categories were analyzed to find commonalities and uniqueness in content in light of the research questions. The researcher followed Gillham's (2000) procedure to analyze the content of the interview questions. (See Appendix Q for Gillham's (2000) procedure.) In addition, an independent analyzer provided assistance for reviewing and categorizing the responses from the interview questions. The researcher and the independent analyzer were totally identical in their agreement about the categories of the interview data content. This method assured greater validity in categorizing and interpreting responses. Finally the researcher triangulated quantitative and qualitative data to help answer the research questions.

CHAPTER IV

PRESENTATION AND ANALYSIS OF DATA

The purpose of the study was to examine and analyze the effects of a cooperative learning training workshop on (1) participants' attitudes toward cooperative learning, (2) participants' knowledge about cooperative learning and its academic and social benefits, and (3) participants' attitudes toward cooperative learning including their perceived competency with the strategy and perceived likelihood of future strategy implementation in their respective classrooms.

This study addressed the following research questions regarding the training workshop on cooperative learning:

1. What is the effect of a cooperative learning training workshop on preservice teachers' attitudes toward this teaching/learning strategy?
2. What is the effect of a cooperative learning training workshop on participants' knowledge about the strategy and its academic and social benefits? (Academic benefits include higher achievement, better critical thinking, higher-level reasoning, more time on task, and a more positive attitude toward school. Social benefits include higher self-esteem, improved social interaction, greater social support, more positive relationships, and greater acceptance of others).
3. After participating in the cooperative learning workshop/training program, what ideas/perceptions/expectations do preservice teachers have regarding their own

knowledge, attitude, and aspiration to implement cooperative learning in their future classrooms?

The data reported in chapter four were used to answer the research questions and were collected through an Attitude Survey (see Appendix F), a true/false Test of Knowledge (see Appendix H), an Informal Group Interview Guide (see Appendix M), and the Teacher Demographic Data Survey (see Appendix O). Ninety-one participants responded to the attitude survey and the knowledge test, and twenty-one participants were interviewed.

Chapter four contains two sections: (1) quantitative findings and (2) qualitative findings.

Quantitative Findings

Different statistical analyses were used to report the findings pertaining to the research questions. In order to verify the significance of the treatment, the researcher used the gain scores. Gall, Borg, and Gall (1996) state, “If the independent variable has an effect, the effect should be reflected as a change between students’ scores on the measure that was administered prior to the experimental treatment (the pretest) and their scores on the measure administered after it ends (the posttest). The posttest score minus the pretest score is called a gain score (also called a change or difference score)” (p. 532).

The means of the knowledge gain scores and the attitude gain scores for each group were calculated (see Table 1). The knowledge gain scores means of experimental class1 (group #1) and experimental class2 (group #2) were comparable to each other, but deviated from the knowledge gain scores mean of the control class3 (group #3). Similarly, the attitude gain scores means of experimental class1 (group #1) and

experimental class2 (group #2) were comparable to each other, but deviated from the attitude gain score mean of the control class3 (group #3).

Table 1

		<u>Descriptive Statistics</u>		
	Group Number	Mean	Std. Deviation	N
Knowledge gain	1	.4438	.1430	40
	2	.4333	.0921	20
	3	.0000	.0373	31
	Total	.2903	.2348	91
Attitude gain	1	2.3800	.5326	40
	2	2.6400	.5165	20
	3	.0968	.2258	31
	Total	1.6593	1.2173	91

Multivariate Analysis of Variance (MANOVA)

“Multivariate analysis of variance (MANOVA) is a generalization of ANOVA to a situation in which there are several DVs” (Tabachnick and Fidell, 2001, p. 322).

Tabachnick and Fidell (2001) add, “MANOVA emphasizes the mean differences and statistical significance of differences among groups,” and “tests whether mean differences among groups on a combination of DVs are likely to have occurred by chance” (p. 322). The multivariate Analysis of Variance with the Wilk’s Lambda test of significance was used to determine if there was a statistical difference in the means of the

experimental and control groups' gain scores when analyzed in relation to the two dependent variables — knowledge of and attitudes towards cooperative learning.

The results of the analysis, regarding significant difference in the experimental and control groups' means, indicated a statistical significance with $p < .05$. The significance found is more than could be attributed to chance. See Table 2.

Table 2

Multivariate Analysis of Variance (MANOVA)

Effect		Value	F	Hypothesis df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.956	949.096b	2.000	87.000	.000*	.956
	Wilks' Lambda	.044	949.096b	2.000	87.000	.000*	.956
	Hotelling's Trace	21.818	949.096b	2.000	87.000	.000*	.956
	Roy's Largest Root	21.818	949.096b	2.000	87.000	.000*	.956
GROUP	Pillai's Trace	.943	39.233	4.000	176.000	.000*	.471
	Wilks' Lambda	.082	108.647b	4.000	174.000	.000*	.714
	Hotelling's Trace	10.934	235.083	4.000	172.000	.000*	.845
	Roy's Largest Root	10.907	479.893c	2.000	88.000	.000*	.916

a Computed using alpha = .05

b Exact statistic

c The statistic is an upper bound on F that yields a lower bound on the significance level.

d Design: Intercept+GROUP

* Significance ($p < .05$)

As the Wilks' Lambda does not identify the dependent variables with significant differences in means, univariate ANOVAs were conducted as a follow-up procedure on the differences of the groups' gain scores means. "ANOVA tests whether mean differences among groups on a single DV are likely to have occurred by chance" (Tabachnick and Fidell, 2001, p. 322). The results of the tests indicated that the knowledge variable demonstrated a significant difference with $p < .05$ in the gain scores means of the groups (see table 3). Also, the attitude variable demonstrated a significant difference with $p < .05$ in the gain scores means of the groups (see table 4). The univariate ANOVAs identified individual significance for both variables — knowledge of and attitude towards cooperative learning.

Table 3

Univariate Analysis of Variance (ANOVA) (Knowledge Gain Scores) / Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	GAINKW	3.964b	2	1.982	174.426	.000*	.799
Intercept	GAINKW	7.172	1	7.172	631.262	.000*	.878
GROUP	GAINKW	3.964	2	1.982	174.426	.000*	.799
Error	GAINKW	1.000	88	.0114			
Total	GAINKW	12.632	91				
Corrected Total	GAINKW	4.963	90				

a Computed using alpha = .05

b R Squared = .799 (Adjusted R Squared = .794)

* Significance ($p < .05$)

Table 4

Univariate Analysis of Variance (ANOVA) (Attitude Gain Scores) / Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	GAINATT	115.698 ^c	2	57.849	288.235	.000*	.868
Intercept	GAINATT	244.097	1	244.097	1216.223	.000*	.933
GROUP	GAINATT	115.698	2	57.849	288.235	.000*	.868
Error	GAINATT	17.662	88	.201			
Total	GAINATT	383.920	91				
Corrected Total	GAINATT	133.360	90				

a Computed using alpha = .05

c R Squared = .868 (Adjusted R Squared = .865)

* Significance ($p < .05$)

Post Hoc Tests

Tukey's HSD was used to conduct pairwise comparisons on each of the significant variables, knowledge gain score and attitude gain score, by group. See Table 5 for total comparisons between the three classes, two experimental classes (1,2) and the control class (3). Post hoc comparison of the groups on knowledge gain score revealed that the mean of the experimental class1 (group #1) was (a) significantly different from the control class3 (group #3) with $p < .05$ but (b) not significantly different from the experimental class2 (group #2) at the .05 level of significance. Likewise, the knowledge gain score's mean of the experimental class2 (group #2) was (a) significantly different from the control class3 (group #3) with $p < .05$ but (b) not significantly different from the

experimental class1 (group #1) at the .05 level of significance. See Figure 2 for this trend illustration

Table 5

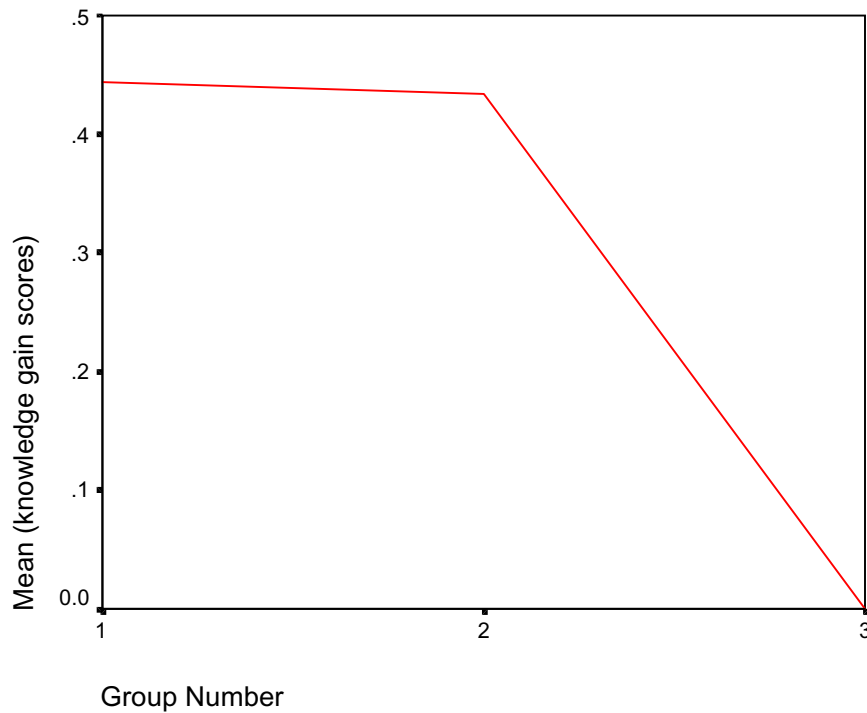
<u>Multiple Comparisons</u>							
Tukey HSD							
Dependent Variable	(I) Group Number	(J) Group Number	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
(knowledge gain scores)							
GAINKW	1	2	.0104	.0292	.932	-.0592	.0800
		3	.4438*	.0255	.000*	.3829	.5046
	2	1	-.0104	.0292	.932	-.0800	.0592
		3	.4333*	.0306	.000*	.3605	.5062
	3	1	-.4438*	.0255	.000*	-.5046	-.3829
		2	-.4333*	.0306	.000*	-.5062	-.3605
(Attitude gain scores)							
GAINATT	1	2	-.2600	.1227	.092	-.5525	.0325
		3	2.2832*	.1072	.000*	2.0277	2.5388
	2	1	.2600	.1227	.092	-.0325	.5525
		3	2.5432*	.1285	.000*	2.2369	2.8495
	3	1	-2.2832*	.1072	.000*	-2.5388	-2.0277
		2	-2.5432*	.1285	.000*	-2.8495	-2.2369

Based on observed means.

* The mean difference is significant at the .05 level.

Figure 2:

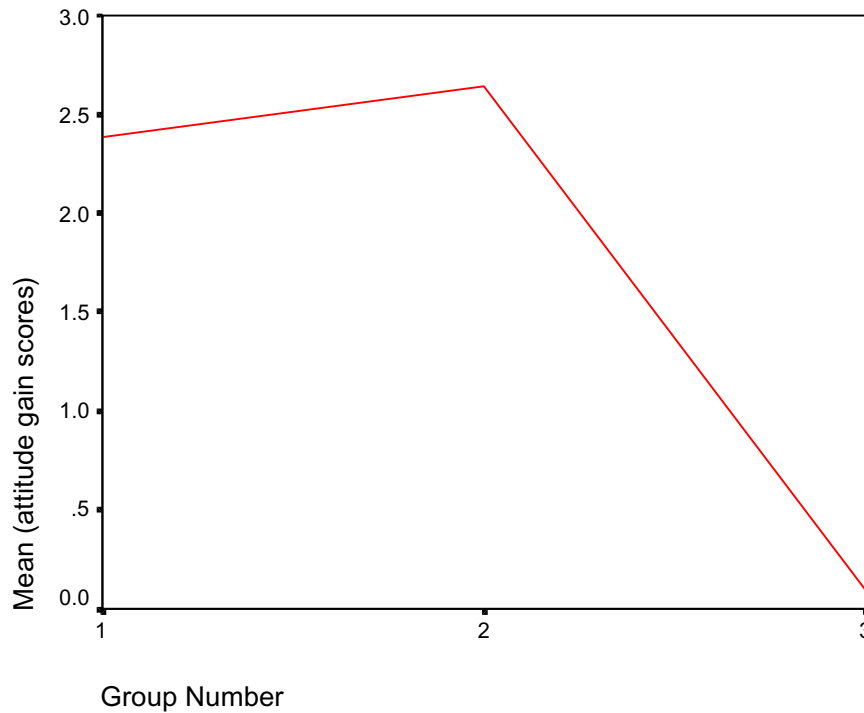
Knowledge Gain Scores Means Differences Between Groups



With respect to the other variable, attitude towards cooperative learning, post hoc comparison of the groups on attitude gain score revealed that the mean of the experimental class1 (group #1) was (a) significantly different from the control class3 (group #3) with $p < .05$ but (b) not significantly different from the experimental class2 (group #2) at the .05 level of significance. Likewise, the attitude gain score's mean of the experimental class2 (group #2) was (a) significantly different from the control class3 (group #3) with $p < .05$ but (b) not significantly different from experimental class1 (group #1) at the .05 level of significance. See Figure 3 for this trend illustration.

Figure 3:

Attitude Gain Scores Means Differences Between Groups



Crosstabs and Chi-Square

Crosstabulation was used to answer research question 3, which reads, “After participation in the cooperative learning workshop/training program, what ideas/perceptions/expectations do preservice teachers have regarding their own knowledge, attitude, and aspiration to implement cooperative learning in their future classrooms?,” Answers to question number 5 in the Attitude Survey (Appendix F), which reads, “I think I will use cooperative learning as a teaching strategy very frequently,” were used to determine if the participants would like to implement cooperative learning in their future classes. Participants were divided into two participation levels. Level 1

included the control group participants who did not participate in the workshop, and level 2 included the experimental group participants (i.e. two experimental classes) who participated in the workshop. The Attitude Survey rating scale of 1-7 was used as a scale of seven levels of application in which 1 was the weakest level of application and 7 was the strongest level of application.

Crosstab structure of 2×7 was used to measure the association between levels of participation and levels of application. See Table 6. The model had a likelihood ratio chi-square $\chi^2(6) = 54.766$, $p < .05$. There was a significant association between levels of participation and levels of application. See Table 7. Of the control group, 3 participants (3.3 %) reported that their level of application would be level 1 (weakest) on the scale of 7 levels of application; 1 participant (1.1 %) reported that her level of application would be level 2; 2 participants (2.2 %) reported that their level of application would be level 3; 11 participants (12.1 %) reported that their level of application would be level 4 (neutral); and 14 participants (15.4 %) reported that their level of application would be level 5. None of the participants in the control group reported their level of application as 6 or 7 (strongest).

Of those in the experimental group, none of the participants (0 %) reported that their level of application would be level 1 (weakest) on the scale of 7 levels of application; 2 participants (2.2 %) reported that their level of application would be level 2; another 2 participants (2.2 %) reported that their level of application would be level 3; 2 more participants (2.2 %) reported that their level of application would be level 4 (neutral); 16 participants (17.6 %) reported that their level of application would be level 5; 23 participants (25.3 %) reported that their level of application would be level 6; and

15 participants (16.5 %) reported that their level of application would be level 7 (strongest) on the scale of 7 levels of application. The counted frequencies (observed) were sufficiently different from the expected frequencies, which reject the null hypothesis of no difference between the control group and the experimental group. The likelihood ratio chi-square of the model was $\chi^2 (6) = 54.766, p < .05$. There was a significant association between levels of participation and levels of application. See Table 7.

Table 6

Levels of participation * Levels of application on a scale of 1 to 7 Crosstabulation

			Levels of application on a scale of 1 to 7						Total	
			1 = weakest	2	3	4	5	6		7 = strongest
levels of participation	Control Group	Count	3	1	2	11	14	0	0	31
		Expected Count	1.0	1.0	1.4	4.4	10.2	7.8	5.1	31.0
		% within levels of participation	9.7%	3.2%	6.5%	35.5%	45.2%	.0%	.0%	100%
		% within Levels of application on a scale of 1 to 7	100.0%	33.3%	50.0%	84.6%	46.7%	.0%	.0%	34.1%
		% of Total	3.3%	1.1%	2.2%	12.1%	15.4%	.0%	.0%	34.1%
	Experimental Group	Count	0	2	2	2	16	23	15	60
		Expected Count	2.0	2.0	2.6	8.6	19.8	15.2	9.9	60.0
		% within levels of participation	.0%	3.3%	3.3%	3.3%	26.7%	38.3%	25.0%	100%
		% within Levels of application on a scale of 1 to 7	.0%	66.7%	50.0%	15.4%	53.3%	100%	100.0%	65.9%
		% of Total	.0%	2.2%	2.2%	2.2%	17.6%	25.3%	16.5%	65.9%
Total	Count	3	3	4	13	30	23	15	91	
	Expected Count	3.0	3.0	4.0	13.0	30.0	23.0	15.0	91.0	
	% within levels of participation	3.3%	3.3%	4.4%	14.3%	33.0%	25.3%	16.5%	100%	
	% within Levels of application on a scale of 1 to 7	100.0%	100%	100%	100%	100%	100%	100.0%	100%	
	% of Total	3.3%	3.3%	4.4%	14.3%	33.0%	25.3%	16.5%	100%	

Table 7

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	42.803 ^a	6	.000
Likelihood Ratio	54.766	6	.000
Linear-by-Linear Association	27.009	1	.000
N of Valid Cases	91		

a. 7 cells (50.0%) have expected count less than 5. The minimum expected count is 1.02.

Quantitative Findings Summary

Multivariate Analysis of Variance established a significant difference in the groups' gain scores means in relation to both variables — knowledge of and attitude towards cooperative learning (Table 2). Univariate analyses indicated that both variables significantly influenced the means of groups (Table 3 & 4).

Post hoc tests identified the significant differences in pairwise comparisons between both experimental classes and the control class in relation to the variables of cooperative learning (knowledge and attitude). The post hoc indicated that there was no significant difference between the means of both experimental classes on the knowledge and attitude gain scores; however, the means of both experimental classes on the knowledge and attitude gain scores were significantly different from the mean of the control class on the knowledge and attitude gain scores (Table 5).

The Crosstab and Chi-Square indicated significant association between levels of participation and levels of application. The crosstab revealed that the counted frequencies

(observed) were sufficiently different from the expected frequencies, which rejected the null hypothesis of no difference between the control group and the experimental group (Table 6 & 7).

Qualitative Findings

The responses to the interview questions on the Informal Group Interview Guide (see Appendix M) were categorized using Gillham's steps (see Appendix Q). Findings from interviews confirmed the quantitative findings. The researcher categorized the interview questions into three parts related to the three research questions. Interview questions 1-5 related to the first research question (attitudes toward cooperative learning), questions 6-11 related to the second research question (knowledge of cooperative learning), and questions 12-15 related to the third research question (future likelihood of implementation).

Interview Questions 1-5

Responses to the interview Q1, which reads, "What did you like most about the cooperative learning workshop?" were categorized as in Table 8. Interviewees tended to give more than one response to the thing they liked most about the workshop. Seventeen of the 21 participants stated that they liked the videotapes, which presented the variety of cooperative learning models and the uses of them in the classroom. Fifteen participants thought the workshop activities were interesting. Fourteen participants liked the work done in groups. Twelve participants commented on the instructor's positive ways of presenting the strategy, explaining it to them, and connecting it to teachers' experiences and daily life in schools. Ten participants liked the workshop because it presented a new

teaching/learning strategy. Two participants thought it opened the discussion of different educational issues.

Responses	Frequencies
Videotapes	17
Activities	15
Working in groups	14
Instructor's way of presentation/explanation/connection to daily experiences	12
New strategy	10
Discussion of different educational issues	2

Responses to interview Q2, which reads, “What did you like least about the cooperative learning workshop?,” were categorized as in Table 9. Sixteen of the 21 participants felt the duration of the workshop was short, and they expressed a desire to have more time to do more activities, ask other questions, and learn more about this strategy. One participant said she did not like to answer the questions related to the research on this strategy after reading the articles. One participant mentioned that she did not like the laziness of a few students during the activities. Three of the 21 said they liked everything about the workshop and that there was not anything they did not like.

Responses	Frequencies
Short time	16
Nothing	3
Answering the questions related to the research on the strategy after reading the articles	1
The laziness of few students	1

Responses to interview Q3, which reads, “What feature/component of the workshop most influenced your current attitude toward cooperative learning?,” were categorized as in Table 10. Eighteen of 21 participants thought the models presented in actual classroom sittings attracted them most. Fourteen participants stated that experiencing group activities illustrated the strategy. Fourteen participants liked working with others, sharing ideas, sharing thoughts, and discussing their viewpoints about the strategy with others. Thirteen participants felt that (a) the instructor’s knowledge about this strategy (apparent in her answering the participants’ questions and giving feedback) and (b) the materials and the steps of presenting the strategy were very effective in influencing their attitude toward cooperative learning. Nine participants enjoyed the workshop atmosphere and having the chance to discuss the strategy. Nine participants thought that the articles presenting the various strategy models and the research studies about the strategy gave them a better understanding.

Table 10

Individual Responses from Informal Group Interview to Q3.
 What feature/component of the workshop most influenced your
 current attitude toward cooperative learning?

Responses	Frequencies
Models presented in the videotapes	18
Group activities	14
Working in groups/sharing ideas, viewpoints, and thoughts	14
Instructor's knowledge/presentation/materials	13
Having the chance to discuss the strategy	9
Articles/research and related studies	9

Responses to interview Q4, which reads, "What did you like most about cooperative learning?," were categorized as in Table 11. All 21 participants indicated that cooperative learning builds friendships and closer relationships between students and that they actually experienced this during the workshop because "we did not know all of the students in our class, but now we know all." Eighteen of 21 participants stated that self-esteem and self-confidence are important issues in the classroom and that cooperative learning helps take care of these issues. Fifteen participants mentioned that working in cooperative groups increases cooperation in class and out of class. Fourteen participants liked cooperative learning because working with others makes you like them, care about them, and try to help them. Twelve participants pointed out that all types of students can succeed, share, and provide help. Twelve participants asserted that cooperative learning makes everyone responsible for his/her part in the group work and responsible for helping others with their parts. Ten participants thought cooperative learning makes the classroom more active and alive; students get involved more and contribute to their work.

Responses	Frequencies
Builds friendships/close relationships	21
Increases self-esteem/self-confidence	18
Increases cooperation	15
Increases loving of others/caring about others/helping others	14
Success for all/All sharing/helping each other	12
Responsible for self and others/divided responsibilities and work	12
Active classrooms/more student involvement/ more contribution	10

Responses to interview Q5, which reads, “What did you like least about cooperative learning?,” were categorized as in Table 12. Twenty of 21 participants singled out the need for more/additional training as the thing they least liked about cooperative learning because, without more training, they could not use it as efficiently. Sixteen participants thought it would be time consuming in the beginning if you were not familiar with the strategy, but with more time and more training, it would be easier to use. Twelve participants reported cooperative learning as a hard/difficult strategy. Ten participants thought it required more teacher than student effort to succeed. Four participants stated that cooperative learning required specific elements to follow in order to succeed. Three participants felt they had nothing to say or that there was nothing they disliked about the strategy.

Responses	Frequencies
Need more training	20
Time consuming, if not familiar with it	16
Hard strategy	12
More teacher effort	10
Specific elements to succeed	4
Nothing	3

Interview Question 6-11

Responses to interview Q6, which reads, “Do you find cooperative learning assists or hinders learning? How?,” were categorized as in Table 13. All participants thought cooperative learning assists learning because of the richness and strengths it has in its models and benefits. At the same time, all of the participants thought cooperative learning might hinder learning. The reasons they mentioned were if the teacher does not have enough knowledge or good training on how, when, why, and what to use of this strategy. Some participants mentioned other reasons that cooperative learning might hinder learning. Five participants said that, without support from the school and the students themselves, cooperative learning might hinder learning. Six participants mentioned the teacher not being able to control the students’ behavior during group work, which might hinder learning. Two participants stated that if the teacher was not able to set some kind of routine in students’ work as a group, that problem might hinder learning. One participant thought if the teacher used the strategy without getting positive results with her students, that meant the teacher might have misused the strategy thus hindering the learning.

Responses	Frequencies
Assists learning	21
Might hinder if no enough knowledge or training	21
Might hinder if no school or students' support	5
Might hinder if not able to control students	6
Might hinder if not set group work routine	2
Might hinder if misuse the strategy and no positive results	1

Responses to interview Q7, which reads, “What do you think the major benefit of cooperative learning is?,” were categorized as in Table 14. Eleven of 21 participants stated that cooperative learning is beneficial in increasing the academic achievement of students with different ability levels. Nine participants mentioned that: above average students can help other students; low average students do not feel shy from sharing or introverted by not sharing; and students can learn from each other by explaining the subject and discussing it. Seven participants indicated that in cooperative groups the work can be done much faster, more efficiently, and more accurately. Five participants agreed that communication between students increases in cooperative learning groups, that students react to each others’ ideas, and that students express their thoughts more confidently. Five participants believed that levels of thinking and reasoning increase when using cooperative learning because each student adds to others’ thinking and because gathering together all these ideas results in new and better ideas. Four participants reported that students’ liking of school would increase and that absenteeism would decrease because students like having others providing help to them and not

having to do all the work alone. Four participants stated that the strategy can be used in all subjects and for different activities. Two participants mentioned that students would gain the same material, be able to comprehend the information, and be able to use it in different situations.

Responses	Frequencies
Academic achievement	11
Above average students help others/learning from each other/explaining to each other	9
Faster/more efficient/accurate work	7
Communication/reaction/expression of one's self	5
Higher level thinking and reasoning	5
Reduced absenteeism/increases likeness of school	4
Can be used in all subjects	4
Same information/more retention/more comprehension	2

Responses to interview Q8, which reads, “What do you think the major weakness of cooperative learning is?,” were categorized as in Table 15. Seventeen participants believed that not everyone can use this strategy successfully, even with some training; they believed that to be able to use it successfully, one needs to have long-term training. Fourteen participants thought that the strategy would not be accepted by everyone (especially all school faculty) and that some would agree to use it (at least try it), but others might not. Nine participants indicated that the strategy is not popular in the country and that not everyone is familiar with its elements. Five participants stated that some students may take advantage of the group work by not doing their part and that these students may get away with this unless the teacher monitors the students very well.

Two participants mentioned that cooperative learning groups need special classroom arrangements that may discourage some teachers from using it.

Responses	Frequencies
Not everyone can use it	17
Not everyone accept/agree to/ believe in it	14
Not popular as teaching-learning strategy/not everyone familiar with it	9
Some students take advantage of it	5
Class arrangements	2

Responses to interview Q9, which reads, “What psychological and social benefits would you like your students to experience in the future as a result of cooperative learning? Will they experience these benefits more when they work as a group compared to as an individual? How?,” were categorized as in Table 16. Eighteen of 21 participants mentioned self-confidence as one of the most beneficial consequences of cooperative learning they would like their future students to have. Sixteen participants stated communication and interaction with others are important skills and that everyone should have these skills. Fourteen participants thought that building relationships inside and outside the class are both important because students see each other everywhere, not only in classes. Ten participants stated cooperation with other students is necessary and that supporting each other is critical. Eight participants reported trusting one’s self and trusting others is important to be able to live with others. Seven participants indicated that feeling responsible as an individual and as a member in a group is very important because we live in this whole society as a group. Five participants felt that caring and committed

relationships decrease the feelings of being an unwelcome person. Three participants believed that the acceptance of others and the feelings of being accepted by others are very important to live a stable life. All participants agreed that these benefits are better learned and experienced as students work in groups because these benefits cannot be learned in isolation. All participants said that no one can live alone; we need others to live with. Nineteen participants mentioned the need to communicate with others can be met through group work. Eighteen participants stated that getting help and feeling supported can be achieved by relating to a group. Seventeen participants indicated that to be cared about, be loved, and be accepted you need others. Seventeen participants felt that we need to believe in ourselves, and this happens when others believe in us. So all these things cannot happen without being a member in a society or a group.

Table 16

Individual Responses from Informal Group Interview to Q9.
 What psychological and social benefits would you like your students to experience in the future as a result of cooperative learning? Will they experience these benefits more when they work as a group compared to as an individual? How?

Responses to part1	Frequencies
Self-confidence	18
Communication skills/interaction skills	16
Building relationships inside/outside class	14
Cooperation with others/support	10
Trusting	8
Individual and group responsibility	7
Caring about other/committed relationships	5
Acceptance of others	3

Responses to part2	
As a group	21
As individual	0

Responses to part3	21
Need to live with others	19
Need to communicate	18
Feel supported/ can get help	17
Be cared about/ be loved/be accepted	17
Believe in ourselves	

Responses to interview Q10, which reads, “How do you think cooperative learning work should be rewarded?,” were categorized as in Table 17. All participants agreed that cooperative learning work is a two-fold situation. Therefore, the work of a group should be first rewarded as group work by rewarding the whole group. Secondly, each member of the group should be rewarded because this group work did not come about without the effort of each individual working together as a team. So when using cooperative learning, we should use both the group and individual rewarding system.

Table 17
Individual Responses from Informal Group Interview to Q10.
How do you think cooperative learning work should be rewarded?

Responses	Frequencies
As a group work	21
As individual effort	21

Responses to interview Q11, which reads, “How do you feel about heterogeneous grouping compared to homogeneous grouping in cooperative learning?,” were categorized as in table 18. All participants indicated a preference for heterogeneous grouping when using cooperative learning so that each group would have students with different ability levels, differentiated ideas, thoughts, and viewpoints. Fifteen participants reported that heterogeneous grouping means success for below average students who

succeed by learning from others. Fifteen participants indicated that below average students feel the support, commitment, and caring from others in the heterogeneous group. Fourteen participants stated that heterogeneous grouping means a variety of communication and interaction levels. Twelve participants mentioned that heterogeneous grouping means different levels of thinking skills. Eight participants said that in heterogeneous group, above average students explain and support others. Seven participants thought that heterogeneous grouping motivates students to share and contribute because not all of them are the same in their learning levels. However, in homogeneous groups, all group members are the same. Sixteen participants said there is no motivation in homogeneous groups. Fourteen participants mentioned that there is no reinforcement or encouragement in homogeneous groups. Eleven participants stated that there is no one to impress.

Table 18

Individual Responses from Informal Group Interview to Q11.
How do you feel about heterogeneous grouping compared to homogeneous grouping in cooperative learning?

Responses to part1	Frequencies
Different ability levels	21
Differentiated ideas/thoughts/viewpoints	21
Below average succeed by learning from others	15
Below average feel support/commitment/caring from others	15
Variety of communication/interaction levels	14
Different levels of thinking skills	12
Above average explain and support others	8
Motivates to share and contribute	7

Responses to part2	
No motivation	16
No reinforcement or encouragement	14
No one to impress	11

Interview Questions 12-15

Responses to interview Q12, which reads, “Do you think you will be able to use cooperative learning when you start teaching? Why?,” were categorized as in Table 19. Seven of 21 participants felt that they will be able to use the cooperative strategy when they graduate and start teaching because they know the main idea. Twelve pointed out that they could use the strategy when they start teaching, but they thought they would need more training in different sittings to master the use of the strategy. Two participants stated that they would be unable to use the strategy when they start teaching because they would need a book that includes everything about this strategy to use as a reference for them to answer all of their questions at any time.

Table 19

Individual Responses from Informal Group Interview to Q12.
Do you think you will be able to use cooperative learning when
you start teaching? Why?

Responses	Frequencies
Yes/know the main idea	7
Yes/but need more training	12
No/need a reference to answer all the questions	2

Responses to interview Q13, which reads, “If you are going to use cooperative learning, how will you use it?,” were categorized as in Table 20. Twelve of 21 participants said they would implement cooperative learning with different math activities, presentation of new concepts, using manipulatives, and practicing math problems. These same participants stated that they would use it in science experiments and group projects. For participants who were majoring in math, their minor would be

science and vice versa. Three participants indicated that they would use cooperative learning for group reading assignments, drill in spelling and vocabulary, and for group writing projects. Two thought that they could use it for social studies projects. Three participants responded that cooperative learning could be joyful for group reading and story presentations. One participant thought that cooperative groups could help in teaching cooking. One participant mentioned the use of cooperative learning groups in art classes to do group projects and painting. One participant mentioned that P.E. could not be successful without working with others, so it would be very useful to use cooperative learning groups to do group dances and games.

Table 20
Individual Responses from Informal Group Interview to Q13.
If you are going to use cooperative learning, how will you use it?

Responses	Frequencies
Math activities/practice problems/written and word problems/manipulatives	12
Science experiments and projects	12
Language arts (reading/vocabulary/writing)	3
Library (group reading and story presentation)	3
Social Study (group projects)	2
Home Economic (group cooking)	1
Art (group art projects/group painting)	1
P.E. aerobic dances and games	1

Responses to interview Q14, which reads, “How do you think you can plan for effective group work?,” were categorized as in Table 21. They suggest specific steps participants would follow to plan for effective group work. All participants said, before starting to use group work, they would need to study their students’ abilities, skills, and levels of knowledge and to divide their students into heterogeneous groups to ensure quality and mixed abilities. All participants said they would use different types of

grouping (formal, informal) depending on time and activities. Seventeen participants stated that, after a while, they would change the groups into other mixed groups, with different members so everyone gets to know all other students in their classes. All participants agreed that they should prepare the subject and materials in advance with specific educational and social goals to be able to concentrate on achieving these goals during teaching time. All participants mentioned that, during group work, they would need to monitor the students and their involvement with each other. All participants believed in the use of group rewards as well as individual rewards. Fifteen participants believed in giving some time for competition between groups to increase students' active involvement. In the end, all participants said they needed to find out if the group work was successful or not and do changes as needed.

Table 21

Individual Responses from Informal Group Interview to Q14.
How do you think you can plan for effective group work?

Responses	Frequencies
Study students abilities/skills/levels of knowledge	21
Divide students into heterogeneous groups	21
Use different types of grouping depending on time/activities	21
Change groups into other mixed groups	17
Prepare materials in advance	21
Monitor students involvement	21
Group rewards and individual rewards	21
Groups competition	15
Do changes as needed	21

Responses to interview Q15, which reads, “What do you suggest should be done in the educational methods classes to help prepare student teachers to use cooperative learning in their future classrooms?,” were categorized as in Table 22. Twelve of 21 participants suggested that the cooperative learning strategy is a rich instructional

strategy with a variety of models and information; therefore, it should be taught as a required instructional course to help prepare preservice teachers to use it in their future classrooms. This required course should include the literature part about the cooperative learning strategy and a practical part to demonstrate the use of it. Nine out of those twelve participants said that preservice teachers need a mentor in the field to give them feedback. Those nine participants were doing their field experience. Five participants thought it would take a long time to prepare the required course, so, in the mean time, a whole chapter should be prepared and included in the required book to be ready to start teaching it. Four participants stated that the cooperative learning strategy could be an elective course, but, at the same time, it should be included as a chapter in the required book as an alternative teaching strategy. All participants agreed that the college instructors should use this strategy in their classes to serve as a real model.

Table 22

Individual Responses from Informal Group Interview to Q15.
 What do you suggest should be done in the educational methods classes to help prepare student teachers to use cooperative learning in their future classrooms?

Responses	Frequencies
Required course (includes literature part and practical part)	12
Mentor in the field/feedback	9
A chapter in the required book	5
Elective course plus a chapter in the regular required courses	4
Instructors use the strategy to serve as a model	21

Qualitative Findings Summary

The findings indicated that the videotapes and the group activities were the things participants most liked about the cooperative learning workshop because they demonstrated the strategy easily. These same things were the things most mentioned to

affect their attitudes toward cooperative learning. Participants thought that the duration of the workshop was too short, and they indicated they would like to have had more time to learn more. Building friendships, self-esteem, and self-confidence were the things most liked about cooperative learning. The need for lots of training was the thing they liked least about cooperative learning strategy. Participants agreed that cooperative learning assists learning because of all the educational, psychological, and social benefits that students can gain from working as a group. At the same time, participants thought that cooperative learning might hinder learning if the teacher does not have enough knowledge about the strategy and good training on how, when, why, what to use of this strategy. Participants indicated that the major weakness of cooperative learning was that not everyone has the ability to use it without good, long-term training. Participants agreed on rewarding cooperative group work as a group and individually. They believed that heterogeneous ability grouping was best when using groups. Some participants felt that they would be able to use the strategy when they start teaching; others felt they could use it, but they needed more training. Participants mentioned a variety of subjects and planned activities to effectively use cooperative learning in their classes. Their suggestions to prepare preservice teachers for using the strategy in the future were divided between having it as a required course, an elective course, and as a chapter in the required book.

CHAPTER V

FINDINGS, CONCLUSIONS, INFERENCES, AND RECOMMENDATIONS

The summary of findings, conclusions, and recommendations of the study are presented in three sections in this chapter. A summary of the study is provided in the first section. Conclusions drawn from the findings are presented in the second section, and recommendations for future research, based on the findings and conclusions, are offered in the third section.

Summary of Findings

The purpose of the study was to examine and analyze the effects of a cooperative learning training workshop on (1) participants' attitudes toward cooperative learning, (2) participants' knowledge about cooperative learning and its academic and social benefits, and (3) participants' knowledge/attitudes/aspiration related to organizing their future classrooms for cooperative learning.

The first component of the study was the demographic portion, which included gathering and compiling data on the general demographic characteristics of the preservice teachers who participated in the training workshop. Of the 91 participants, 30 were enrolled in the college in 1997, 33 were majoring in science, 30 were majoring in math, 38 had taken one methods class, 32 were doing their field experience, and 70 were not introduced to cooperative learning and had no previous knowledge about cooperative learning.

The second component of the study was the quantitative portion, which included the following research questions: (1) What is the effect of a cooperative learning training workshop on preservice teachers' attitudes toward this teaching/learning strategy? (2) What is the effect of a cooperative learning training workshop on participants' knowledge about the strategy and its academic and social benefits? (Academic benefits include higher achievement, better critical thinking, higher-level reasoning, more time on task, and a more positive attitude toward school. Social benefits include higher self-esteem, improved social interaction, greater social support, more positive relationships, and greater acceptance of others), (3) After participating in the cooperative learning training workshop, what ideas/perceptions/expectations do preservice teachers have regarding their own knowledge, attitude, and aspiration to implement cooperative learning in their future classrooms?

The third component of the study was the qualitative portion. It included the interpretive analysis of the previously listed research questions.

The literature review was organized into eight parts: (1) Cooperative Learning and History of the Practical Use of Cooperative Learning, (2) Theoretical Roots of Cooperative Learning, (3) Different Models of Cooperative Learning, (4) Cooperative Learning Outcomes, (5) Teachers' Knowledge and Attitudes as Factors Affecting the Implementation of Cooperative Learning as Innovation, (6) Preservice Teacher Preparation, Training, and Professional Development in the Use of Cooperative Learning, (7) The Use of Media (Videotapes) to Introduce the New Teaching Strategy and Promote Its Use, and (8) Professional Development Projects for Cooperative Learning.

Statistical data for the study were gathered through four instruments. The instruments were as follows: (a) Attitude Survey, (b) True/False Test of Knowledge, (c) Teacher Demographic Data Survey, and (d) Informal Group Interview Guide. A sample of 91 preservice teachers enrolled in three methods classes was used. There were 40 participants in the experimental class 1, 20 participants in the experimental class 2, and 31 participants in the control class. Frequency counts, percentages, and charts were used to analyze the demographic data. MANOVAs, ANOVAs, and a Crosstabulation Table with Chi-Square were used to analyze the quantitative data. Responses to the informal group interview questions, constituting qualitative data, were categorized, tallied, and interpreted.

The demographic data findings elaborate that the participants were enrolled in the college from the year 1994 until 2000. Participants' majors were varying. Thirty-three participants were majoring in science, thirty in mathematics, eight in language arts, seven in home economics, four in art education, three in technology, three in Islamic education, two in athletics, and one in library. Thirty-eight of the participants had taken 1 methods class, seventeen had taken 2 methods classes, five had taken 3 methods classes, and thirty-one had taken all the required methods classes. Twenty-one of the participants did not know when they are going to do their field experience, thirty-two were doing their field experience at the time of the study, ten were to do their field experience in fall 2001, eighteen were to do their field experience in the year 2002, and ten were to do their field experience in the year 2003. Finally, seventy participants had not been introduced to cooperative learning, so their level of knowledge would be level 0. Twenty-one participants had been introduced to "group work" rather than cooperative learning, which

would be level 1 as defined by the researcher previously. One participant of the twenty-one thought that she knew a little about cooperative learning, which would be level 2 as defined by the researcher previously. See Appendix D for a detailed description of the demographics of the sample.

The findings, resulting from the data analysis, answered the three research questions: (1) What is the effect of a cooperative learning training workshop on preservice teachers' attitudes toward this teaching/learning strategy? (2) What is the effect of a cooperative learning training workshop on participants' knowledge about the strategy and its academic and social benefits? (Academic benefits include higher achievement, better critical thinking, higher-level reasoning, more time on task, and a more positive attitude toward school. Social benefits include higher self-esteem, improved social interaction, greater social support, more positive relationships, and greater acceptance of others), (3) After participating in the cooperative learning training workshop, what ideas/perceptions/expectations do preservice teachers have regarding their own knowledge, attitude, and aspiration to implement cooperative learning in their future classrooms?

The quantitative findings demonstrate that the knowledge and attitudes of the preservice teachers, who participated in the workshop, were significantly influenced. Both variables, knowledge of and attitude toward cooperative learning were significantly higher for the experimental group versus the control group. The multivariate analysis of variance established a significant difference in the groups' gain score means in relation to both variables-knowledge of and attitude towards cooperative learning (Table 2). The univariate analyses indicated that both variables significantly influenced the means of the

groups (Table 3 & 4). The post hoc tests identified the significant differences in pairwise comparisons between both experimental classes and the control class in relation to the variables of cooperative learning (knowledge and attitude). The post hoc indicated that there was no significant difference between the means of both experimental classes on the knowledge and attitude gain scores; however, the means of both experimental classes on the knowledge and attitude gain scores were significantly different from the mean of the control class on the knowledge and attitude gain scores (Table 5). The crosstab and the chi-square indicated significant association between levels of participation and levels of application. The crosstab revealed that the counted frequencies (observed) were sufficiently different from the expected frequencies, which rejected the null hypothesis of no difference between the control group and the experimental group (Table 6 & 7). The data analysis indicated that, on the rating scale of 1 to 7 (1=weakest and 7=strongest) of the level of application, 16.5% of the workshop participants had the strongest, positive attitudes toward the use of cooperative learning in their future classrooms; 25.3% of the participants reported level 6 as their level of use in the future; 17.6% of the participants reported level 5 as their level of use in the future; 2.2% of the participants reported levels 4,3, and 2 as their levels of use in the future. .0% of the participants reported level 1 as their level of use in the future. The findings indicated that at least every participant would try to use the cooperative learning strategy in her future classroom.

The quantitative findings were supported through the qualitative findings. The qualitative findings indicated that the videotapes and the group activities were the things participants most liked about the cooperative learning workshop because they demonstrated the strategy easily. These same things were the things most mentioned to

affect their attitudes toward cooperative learning. Participants thought that the duration of the workshop was too short, and they indicated they would like to have had more time to learn more. Building friendships, self-esteem, and self-confidence were the things most liked about cooperative learning. The need for lots of training was the thing they liked least about cooperative learning strategy. Participants agreed that cooperative learning assists learning because of all the educational, psychological, and social benefits that students can gain from working as a group. At the same time, participants thought that cooperative learning might hinder learning if the teacher does not have enough knowledge about the strategy and good training on how, when, why, and what to use of this strategy. Participants indicated that the major weakness of cooperative learning was that not everyone has the ability to use it without good, long-term training. Participants agreed on rewarding cooperative group work as a group and individually. They believed that heterogeneous ability grouping was best when using groups. Some participants felt that they would be able to use the strategy when they start teaching; others felt they could use it, but they needed more training. Participants mentioned a variety of subjects and planned activities to effectively use cooperative learning in their classes. Their suggestions to prepare preservice teachers for using the strategy in the future were divided between having it as a required course, an elective course, and as a chapter in the required book.

Conclusions and Implications

The following conclusions and implications were formulated based upon the findings of the study.

Preservice teachers who experience training in cooperative learning gain a high knowledge about cooperative learning as a teaching/learning strategy. This conclusion is a reflection of what Putnam and Borko (2000) report — that one way to professional development is to establish teachers' learning experiences and knowledge through ongoing workshops and activities focused on instructional practices. Also, preservice teachers who experience training in cooperative learning gain positive attitudes toward cooperative learning as a teaching/learning strategy. The findings of change in attitude and transfer of training as outcomes of a training session are also noted by Joyce and Showers (cited in Sparks and Loucks-Horsley, 1990). Moreover, a cooperative learning training workshop influences preservice teachers positively toward future implementation of the strategy in their classrooms. Showers, Joyce, and Bennet (1987) document that the purpose of training is to “generate the conditions that enable the practice to be selected and used appropriately” (p. 85). The training workshop can be short but still effective. Thus, formal preservice training in cooperative learning has the potential of promoting educational change in Kuwait.

As in past studies, staff development for preservice (and inservice) teachers is a critical element to any educational change effort. Training for preservice (and inservice) teachers is important in presenting the importance and the implementation of any educational theory or practice. Fullan (1991) points out this finding and states that

professional development for inservice or preservice teachers has been considered the best strategy to help teachers implement new changes, innovations, or practices.

Media and group activities can play important roles during the cooperative learning workshop. They are influential factors on the preservice teachers' knowledge of and attitude towards cooperative learning. This conclusion is similar to ones made by other scholars. As Koran et al. (cited in Wetzel, Radtke, & Stern, 1994) state, using video to model a teaching skill produces better teaching performance than using a written form (p. 88). Moreover, Showers, Joyce, and Bennet (1987) conclude from their meta-analysis that teachers can take useful information back to their classrooms when training includes initial practice in the workshop.

Preservice teachers with different majors feel the usefulness and the positive effects of cooperative learning in their future classrooms. Preservice teachers trained in cooperative learning indicate that the cooperative learning strategy is very rich in its different approaches and models and that it can be used for any content at any grade level. This is not surprising because Joyce and Weil (1996) mention that cooperative learning can be used in all subject areas and with all age levels. As well, Kagan (1989/90) states that cooperative learning has a broad application across grade levels, themes of curriculum, and a wide variety of students. Thus, it appears that cooperative learning has the potential for wide applicability across many subjects taught in Kuwait.

Preservice teachers with training in cooperative learning may feel that, with the richness of cooperative learning as a teaching and learning strategy, it is still hard/difficult and they need more training. In addition, cooperative learning is like any other new strategy, which not everyone can use it, and not everyone will like it. Thus,

there may be many barriers to promoting change and the use of cooperative learning in Kuwait. However, as Joyce and Showers report, the content and training design of professional development programs need to include structured feedback to observe and reflect on observation, open-ended feedback to provide information about performance, and coaching with follow-up to insure effective implementation. This is exactly what participants perceive as their needs in order to effectively implement the cooperative learning strategy.

Preservice teachers trained in cooperative learning point out the need for more training in the use of the strategy and its components and elements. Some of the preservice teachers want the strategy to be taught as a required course or as a whole chapter in the required book in the college with a follow up in the field, while others wanted the strategy to be taught as an elective course. Widespread use and sustained use would be better promoted with longer training and planned follow-ups to training.

Preservice teachers in this college are not familiar with the cooperative learning strategy, its components, and elements. However, of those surveyed, there were preservice teachers (i.e. the control group) who had little knowledge about cooperative learning and group work gained from their field experience; and with more negative attitudes toward the strategy. Thus, formal training is required for change.

The design of the study was quasi-experimental, using a purposive sample of preservice teachers in three methods classes. Results should be interpreted with caution; generalization to a wider population or other population should not be assumed. However, the results are positive and should be considered as evidence that preservice teachers in Kuwait who have participated in the workshop have some knowledge to

implement the strategy, have a positive attitude toward the strategy, and have an expectation of using the strategy in their future classrooms.

Recommendations for Practice

The study's findings and conclusions provided a base for the following recommendations for practice:

Cooperative learning should be modeled and practiced in the colleges and the university classrooms by the instructors in their various courses in Kuwait, not only the colleges of education. The researcher thinks it is a challenge to teacher educators to encourage those teachers to feel positively toward the cooperative learning strategy and to equip them with the necessary skills and knowledge to enable them to use it and be willing to implement it in their classrooms. Teacher preparation programs in Kuwait, specifically in the colleges of education, should include cooperative learning as a part of the curriculum. Teacher training and development programs for inservice teachers in Kuwait should include cooperative learning as a part of the curriculum.

Training follow-up is necessary in Kuwait to reinforce teachers' limited knowledge levels and their implementation of cooperative learning after the actual training. Follow-ups should be considered in Kuwait as long-term support for teachers implementing cooperative learning to provide teachers with the opportunity to address their needs and limitations. Long-term support can be through mentors, peer coaching, and sharing ideas and thoughts throughout teachers' group discussions. In addition, school curriculum designers in Kuwait should revise the curriculum of k-12 and include plans in the teacher's book for implementing cooperative learning through all grade levels.

Recommendations for Future Research

The study's findings and conclusions provided a basis for the following research recommendations:

1. The present study should be replicated using a broader sample in different settings for broader generalization. For example, the present study could be replicated, except with an equal number of teachers (preservice or inservice) with similar characteristics used in the groups, to provide stronger verification of the relationship between cooperative learning training and teachers' knowledge of and attitude towards cooperative learning.
2. A comparison study of two different teaching strategies, (i.e. cooperative learning strategy vs. traditional teaching), using the same training structure should be conducted to determine if the type of the strategy affects levels of implementation.
3. A comparison study of different durations and levels of training (i.e. providing information only about the strategy, providing information and hands-on activities without follow-up, providing information and hands-on activities with follow-up) for the same strategy should be conducted to determine if duration and levels of training affects knowledge and attitudes.
4. A study should be conducted using same training structures but different facilitators to determine whether the training facilitator makes any difference.
5. A study should be conducted that measures the results of the initial training and then measure the results after actual implementation. A longitudinal study should be conducted to measure the effect of cooperative learning training on knowledge retention, attitude change, and degree/level of implementation over time.

6. Gender was not considered in this study. A study should be conducted to measure gender differences in relation to training in the cooperative learning strategy.
7. In future studies, with respect to the quantitative portion of these studies, pretest-posttest comparisons of the experimental group may serve as the best indicators of the quality of the experimental training program. In the study described in this dissertation, the qualitative data results may have served as a better and clearer quality indicator results (i.e. the use of gain scores and the comparison of experimental versus control groups).

APPENDCIES

APPENDIX

(A)

THE DETAILED MAIN POINTS OF THE TRAINING WORKSHOP

THE DETAILED MAIN POINTS OF THE TRAINING WORKSHOP

- ❖ What is cooperative learning?
 - Definition,
 - Types of cooperative learning groups (formal groups, informal groups, base groups, and cooperative structures), and
 - Five elements of cooperative learning (positive interdependence, face-to-face, individual accountability, social skills, and group processing).
- ❖ Research findings on cooperative learning. Different articles, which have been written by different authors, will be discussed. These articles are:
 - *Synthesis of Research on Cooperative Learning* by Slavin (1991a).
 - Outcomes of Cooperation in *The New Circles of Learning: cooperation in the Classroom and School* (p. 19-24) by Johnson, Johnson, and Holubec (1994).
 - *Social skills for successful group work* by Johnson and Johnson (1989/90).
 - *On cooperative learning: A conversation with Spencer Kagan* by Brandt (1989/90).
 - *Cooperative learning: The first year* by Edwards and Stout (1989/90).
- ❖ Identifying the essential social skills needed for cooperation. Some of the essential social skills are:
 - Moving desks quietly into place,
 - Sitting face-to-face,
 - Stay with the group,

- Talking in normal quiet voices,
 - Taking turns,
 - Sharing materials,
 - Listening to each other,
 - Involving everyone,
 - Contributing ideas,
 - Offering help,
 - Encouraging each other,
 - Excepting others ideas,
 - Resolving conflict, and
 - Reaching consensus.
- ❖ Demonstrating selected cooperative learning approaches/models by viewing different video taped cases.
- STAD (Student Teams-Achievement Division) is demonstrated by a 9th grade science teacher and includes four steps:
 1. Teaching
 2. Team Study
 3. Testing
 4. Team Recognition (Program 4 in ASCD, 1990).
 - Pairs Check is demonstrated by a 5th grade math teacher and includes five steps:

1. Pair Work – student “A” works on a problem and student “B” coaches and provides help. Then, student “B” praises student “A” after the completion of the problem.
 2. Reverse Roles – student “B” works on the second problem and student “A” coaches and provides help when needed. Then, student “A” praises student “B” after completion of the problem.
 3. Pairs Check – the pair pairs up with another pair to form a team of four. The two pairs compare their answers on the two problems.
 4. Team Celebrates- i.e. handshake.
 5. Pairs Continue – team breaks into the same pairs again and do two more problems. They go through these five steps until they finish all problems (Kagan & Kagan, 2000 and Kagan, Kagan, & Kagan, 2000).
- Formation is demonstrated by a 3rd grade math teacher and includes two steps:
 1. Teacher Announce Formation – the teacher announces a mathematical concept, such as number, shape, or graph.
 2. Students Create Formation – the whole class work together to form the concept using their bodies. Students sometimes are allowed to speak with each other to coordinate efforts. Sometimes they can use body language only and gestures. In addition to their bodies, students can use large rope or rubber band to create the formation (Kagan & Kagan, 2000 and Kagan, Kagan, & Kagan, 2000).

- Team-Pair-Solo is demonstrated by Laurie Kagan who is teaching teachers how to use the structure with a coin activity. In this activity, teachers work to form \$ 1.00 with 15 coins. This structure includes three steps:
 1. Team Work – a group of four works together to solve a problem.
Teammates check to make sure everyone understands how to solve the problem.
 2. Pair Work – the team breaks into pairs. Each pair works together to solve a similar problem.
 3. Solo Work – partners break up and each student works alone to solve the next problem (Kagan & Kagan, 2000 and Kagan, Kagan, & Kagan, 2000).
- Turn Toss is demonstrated by 2nd grade math teacher and includes five steps:
 1. Teacher States the Rules – rules for turn toss should be announced in the beginning of the activity:
 - Underhand tosses only,
 - Make sure teammate is ready to catch,
 - No toss-back (Students are not allowed to toss the ball back to the person who threw it last),
 - No fixed patterns (Students should toss to a different person each time), and
 - Try for an equal number of catches for each teammate.

2. Teammate Asks Question and Tosses Ball – a team member asks a question relating to the topic or starts a sequence (i.e. multiplication tables).
 3. Teammate Catches and Responds – the teammate who catches the ball answers the question or gives the next item in the sequence.
 4. Next Teammate Catches and Responds – next member does the same.
 5. Teammates Continue – teammates continue to toss the ball and answer questions until their teacher calls to stop (Kagan & Kagan, 2000 and Kagan, Kagan, & Kagan, 2000).
- Group Discussion will be demonstrated by the participants themselves in the second session and includes two steps:
 1. The teacher announces a topic to be discussed.
 2. Students discuss the topic in their teams. Then, they share their ideas with the class (Andrini, 1998).
- ❖ How to plan a cooperative learning lesson? In this step of the workshop, participants will learn how to plan a cooperative learning lesson by viewing a videotape of program 2 in the ASCD Cooperative Learning Series. In this videotape a 7th grade teacher and a 11/12th grade teacher demonstrates the steps of planning a lesson cooperatively. The steps of planning a lesson are:
- Identify lesson.
 - Organizational decision (i.e. group size, group assignment, room arrangement, individual roles, and materials).

- Establish objectives and tasks, which should clearly be communicated to students in the beginning of each lesson (i.e. academic and social objectives, positive interdependence, individual accountability, expected behavior, and criteria for success).
 - Monitor and process. Monitoring, is the time that the teacher facilitates learning, circulate around the class to help students who need help, and plan what to observe and how to record the observation. Processing is the time when the class discovers how well they worked together to meet the objectives. This feedback helps students to draw conclusion about how their group performed.
 - Evaluate lesson. In this step, the teacher needs to know how to evaluate the effectiveness of the lesson and has the opportunity to:
 - Analyze how the lesson went and what to do differently next time?
 - How successful were the students at mastering the academic tasks?
 - How well each group functioned?
 - Which student needs more help?
 - Talking to colleague about the lesson can help analyzing the lesson
(Program 2 in ASCD, 1990).
- ❖ Planning a cooperative leaning lesson. Participants will be divided into groups to plan their own lesson, share it with others, and get feedback.

APPENDIX

(B)

DR. ABDULLAH'S, THE VICE DEAN FOR ACADEMIC AFFAIRS AND
GRADUATE STUDIES, LETTER

DR. ABDULLAH'S, THE VICE DEAN FOR ACADEMIC AFFAIRS AND
GRADUATE STUDIES, LETTER



KUWAIT UNIVERSITY
COLLEGE OF EDUCATION
Office of the vice-dean for academic
affairs and graduate studies



جامعة الكويت
كلية التربية
مكتب مساعد العميد للشؤون
الأكاديمية والدراسات العليا

الرقم

التاريخ ٢٠٠٥ / ١٢ / ٢٣

TO WHOM IT MAY CONCERN

Please be informed that College of Education at Kuwait University does not provide, formally, any course, or program specially designed to prepare teachers to implement " The Cooperative Teaching " method, which defined as " A method of instruction in which students work together in small groups to accomplish shared objectives". Such method, of course, might take different shapes in the field of teaching exceptional children.

For further information, please do not hesitate to contact my office.

Ahmad A. Abdullah Ph.D

The Vice Dean for the Academic Affairs and
Graduate Studies

أ. د. أحمد عبدالله
مساعد العميد للشؤون الأكاديمية
والدراسات العليا

APPENDIX

(C)

DESCRIPTION AND CONTENT OF THE TRAINING WORKSHOP PROGRAM

DESCRIPTION AND CONTENT OF THE TRAINING WORKSHOP PROGRAM

The program was structured by the use of cooperative groups during the instruction to provide a working model of cooperation and serve as a strong collegial support tool. Some of the content and objectives were taken from the training manual developed by the ASCD (1990). In addition, the following books and articles were used as resources:

- *The new circles of learning: Cooperation in the classroom and school* by Johnson, Johnson, and Holubec (1994b).
- *Student team learning: A practical guide to cooperative learning (3rd ed)* by Slavin (1991b).
- *Synthesis of Research on Cooperative Learning* by Slavin (1991a).
- *Reaching standards through cooperative learning* by Kagan, Kagan, and Kagan (2000).
- *Cooperative learning and mathematics* by Andrini (1998).

The following are the objectives of the program:

Definition of Cooperative Learning. Participants will compare cooperative, competitive, and individualistic learning to gain a clear understanding of what cooperative learning is and how does it differ from traditional classroom grouping.

Teacher's Role in Conducting Cooperative Learning. Participants will learn and apply a step-by-step procedure for conducting cooperative learning situations and classroom groupings.

Facilitating Students' Development of Collaborative Skills. Participants will learn how to promote students' development of collaborative skills, especially leadership and trust, so students function effectively in cooperative learning groups.

Research Support for the Use of Cooperative Learning Strategies. Participants will learn and apply the basic rationale for implementing cooperative learning so that they can converse about it to interested colleagues and other educators.

Methods of Cooperative Learning. Participants will experience, learn, and apply Learning Together (Johnson & Johnson); STAD (Slavin); and Pairs Check, Formation, Team-Pair-Solo, Turn Toss, and Group Discussion (Kagan) as different methods of cooperative learning.

Modifying Existing Curriculum/Lesson to Implement Cooperative Learning. Any lesson can be modified to be taught cooperatively. Participants will bring in existing curriculum materials or lessons and work together to restructure existing competitive and individualistic lessons into cooperative ones.

Basic Elements of the program

The content of the training program is based on the assumption that “Teacher-student and student-materials interaction are forms of interaction within instructional situations; however, the interaction that most influences students’ performance in instructional situations is student-student interaction” (Johnson & Johnson, 1991, p.2-3). Johnsons (1991) also state, “The way in which teachers structure interdependence among students’ learning goals determines how students interact with each other, which, in turn, largely determines the cognitive and affective outcomes of instruction” (p.3). This

workshop will emphasize and cover the five elements that are defined by Johnsons as its basic elements.

Johnson, Johnson, and Holubec (1994b) described the basic elements of cooperative learning in The New Circles of Learning: Cooperation in the Classroom as follows:

Positive Interdependence. A perception by students that they need each other to complete the group task and achieve their goals. The structure of mutual goals, joint rewards, shared resources, information, and materials, assigned roles, and assigned tasks will help create this understanding.

Face-To-Face Promotive Interaction. Positive educational outcomes and interdependence result from “promotive interaction” and verbal exchanges that occur among students in cooperative learning groups. Providing and receiving help and feedback, exchanging information, and elaborating are important forms of verbal and promotive interaction.

Individual Accountability. Cooperative learning depends on the fair share of each member; therefore, each member should understand the material and understand the task. It is important to assess individual learning and give feedback to the individual and the group to assist, support, and encourage the individual. Random oral examination, individual tests, and having one student explain the material to another are ways of structuring individual accountability.

Interpersonal and Small-Group Skills. Students live in competitive and individualistic classrooms without the social skills they need to cooperate effectively with others. Teachers need to teach trust, proper communication, leadership, conflict control,

and acceptance of others to students and motivate them to use these skills in their groups to perform effectively.

Group Processing. Processing means reflecting on the group work. The teacher allocates time and gives procedures for the groups to analyze how well their groups functioned and how well they used the social skills. Processing helps students achieve, feel successful, and work cooperatively with classmates. Feedback helps students improve their effectiveness and omit unhelpful actions.

First-Day Session

First-day session is an awareness session. The content of the first-day session will include the first program objective: definition of cooperative learning, the basic elements of cooperative learning, and playing the video program (1) from the ASCD Cooperative Learning Series (1990). The first-day session will take place in the assigned, experimental, educational methods class and runs for an hour and half.

Activity #1

- 1) The facilitator will divide the class into groups (based on the number of enrolled preservice teachers) and will ask them to answer the following questions:
 - a. What do you think cooperative learning is?
 - b. How cooperative learning differs from the traditional learning?
 - c. What do you think the academic and social benefits of cooperative learning?

[Groups will have five minutes to answer these questions]

- 2) The facilitator will ask each group to share and discuss their answers with the whole class.

[The facilitator will assign ten minutes for this whole class discussion]

The facilitator will not comment on the answers if they are right or wrong. However, the chance will be given for the participants to analyze their answers when they view the video program (1) next.

3) The facilitator will display the video program (1) from the ASCD Cooperative Learning Series (1990). The video program runs for 20 minutes and answers the questions:

- What is cooperative learning?
- How does it differ from individualistic and competitive learning?
- What does research say about cooperative learning groups' outcomes

Activity #2

1) The facilitator will ask participants to work on some activities in competitive, individualistic, and cooperative manners as follows:

- Competitive

I need to know who is the fastest, smartest, and the best in the class by solving the following codes.

1. 9 12 15 22 5 13 25 3 15 21 14 20 18 25 11 21 23 1 9 20 ...

I L O V E M Y C O U N T R Y K U W A I T ...

The pattern for this code is -----

[The code answer is: each number corresponds to each letter in the alphabet]

2. H T A M S I T C E J B U S E T I R O V A F Y M

M Y F A V O R A T E S U B J E C T I S M A T H

The pattern for this code is -----

[The code answer is: the sentence is written backwards]

3. I wonder if you would like to play with the ice or just eat whipped cream.

I like ice cream.

[The code answer is: every fifth word id part of the sentence]

[*Facilitator will allow two minutes for participants to answer*]

- Individualistic

Now, move your chairs back from your group. I want each person to solve the codes alone without disturbing others.

[*Facilitator will allow two minutes for participants to answer*]

- Cooperative

Pull your chairs together with your earlier group and be very close to each other. Now I want each group to use one worksheet to workout the codes together and one set of solutions. Now you are a team and your work involves:

(1) Each of you should share his/her ideas of how to solve all code patterns and states what you think the patterns are.

(2) Each of you should be able to explain to me how you solved the codes and what the patterns are.

(3) Each of you should be sure that other teammates can solve the codes and are able to explain the patterns.

(4) When you reach a consensus on the codes, when you can explain the patterns, and when you are sure that each member

in your team can explain them, and then write your names on the bottom of the page.

- (5) On the back of the sheet, rate how well you shared your ideas, rate the group work, identify what helped each of you to share, and what could you do differently next time.

You can ask your teammates for help. If no one on your team can answer the questions, then all of you raise your hands, and I will help you.

[Facilitator will allow ten – fifteen minutes until the groups finish their work]

- 2) After the fifteen minutes, the facilitator will discuss the codes and their patterns with the class.

Activity #3

The facilitator will use the overhead projector to discuss the following points:

- Cooperative learning is the instructional strategy of using small groups that allows students to work together to maximize their own and each other's learning. In cooperative learning, students work together to achieve common goals. In cooperative learning, students seek outcomes beneficial to themselves and all other group members.

- Cooperative learning is different than the traditional instruction.

Traditional instruction can be divided into two types: competitive and individualistic. The competitive structure answers the question, who can do the best? In the competitive instruction (as the first codes activity), the student

Think _____ Feel

I can't do this Scared

I have to get help by cheating Sick

I will not try because I am not the smartest Angry

I will win because I am the smartest Nervous

This is fun, I am the best Excited

The individualistic structure is a structure of does your best on your own.

In the individualistic instruction (as the second activity), the student

Think _____ Feel

I don't have to do all Confident

Good no pressure Bored

I am bored Relaxed

There is no hurry to finish Anxious

The cooperative structure is a structure of team effort. In the cooperative

instruction (as the third activity), the student

Think _____ Feel

This is interesting Confident, if I can't

This is fun solve it, they can

I don't have to do all the work Enjoyable

This is not a real class, we can talk

This is cheating

- Cooperative learning has specific characteristics or elements to be defined as cooperative group work. These elements are:

- 1) “One worksheet, one set of solutions, and each of you be sure that every team member can explain the patterns.” This element of cooperative learning is called *positive interdependence*.
- 2) “Each of you should be able to explain to me how you solved the codes and what the patterns are.” This element of cooperative learning is called *individual accountability*. This is why it is not cheating because everyone is responsible for his/her learning.
- 3) “Each of you should share his/her ideas of how to solve all code patterns and states what you think the patterns are.” This element of cooperative learning is called *small-group skill* or *social skills*.
- 4) “You can ask your teammates for help.” This element of cooperative learning is called *face-to-face promotive interaction*.
- 5) “On the back of the sheet, rate how well you shared your ideas, rate the group work, identify what helped each of you to share, and what could you do differently next time.” This element of cooperative learning is called *processing*.

At the end of the session, different articles will be handed to the groups to be part of the next session groups’ discussion. Groups will be asked to answer the questions:

- What does research says about cooperative learning?
- What are the research findings regarding the benefits of using cooperative learning?
- What is the teacher’s role in a cooperative learning structure?
- What are the social skills needed for cooperative learning group work?

These articles are:

- *Synthesis of Research on Cooperative Learning* by Slavin, R. (1991a).
- *Research on cooperative learning: consensus and controversy* by Slavin (1989/90).
- Outcomes of Cooperation in *The New Circles of Learning: cooperation in the Classroom and School* (p. 19-24) by Johnson, Johnson, and Holubec (1994).
- *Social skills for successful group work* by Johnson and Johnson (1989/90).
- *The structural approach to cooperative learning* by Kagan (1989/90).
- *On cooperative learning: A conversation with Spencer Kagan* by Brandt (1989/90).
- *Cooperative learning: The first year* by Edwards and Stout (1989/90).

Second-Day Session

Second-day session is another awareness session. The content of the second-day session will include group discussion and whole-class discussion regarding four program objectives: research findings and support for the use of cooperative learning, teacher's role in conducting cooperative learning, facilitating students' development of collaborative skills, and selected methods of cooperative learning. Group discussion and whole class discussion will use the articles handed out during the previous session. In addition, there will be a modeling and demonstration of some of the cooperative learning methods. One of the methods is Slavin's STAD cooperative learning approach. This method will be modeled and demonstrated by using mathematical activity. Part of the

video program (4) from ASCD Series also will be used to further model the STAD approach. To use the remaining of the time, the “Reaching standards through cooperative learning,” videotape, represented by Spencer Kagan and Laurie Kagan (2000) will be viewed. By viewing this tape, participants will view the Pairs Check cooperative learning structure. The second-day session will take place in the assigned, experimental, educational methods class and runs for an hour and half.

Activity #1

1) The class will get into groups (from last session). The facilitator will ask participants to discuss in teams and summarize their answers to the previously asked questions:

- What does research says about cooperative learning?
- What are the research findings regarding the benefits of using cooperative learning?
- What is the teacher’s role in a cooperative learning structure?
- What are the social skills needed for cooperative learning group work?

[The facilitator will allow ten minutes to complete the activity]

2) The facilitator will ask the groups to share their answers with the whole class.

[The facilitator will use ten minutes for the whole class to share answers]

3) The facilitator will state that the form of the previous activity is one type of cooperative learning structures called *group discussion*.

Activity #2

The facilitator will use an overhead projector to emphasize the answers to two of the previous question. The first, what does research says about cooperative learning? The

second, what are the research findings regarding the benefits of using cooperative learning? The other two questions: “What is the teacher’s role in a cooperative learning structure?” and “What are the social skills needed for cooperative learning group work?” will be emphasized again in the next session.

- 1) “Cooperative learning has been suggested as the solution for an astonishing array of educational problems: it is often cited as a means of emphasizing thinking skills and increasing higher-order learning; as an alternative to ability grouping, remediation, or special education; as a means of improving race relations and acceptance of mainstreamed students; and as a way to prepare students for an increasingly collaborative work force” (Slavin, 1991a).
- 2) Cooperative learning has been shown to have several educational outcomes that have beneficial impact on students. Some of the outcomes are related to academic achievement, social interaction, racial relations, handicaps and mainstreaming, self-esteem, time on task, and liking of class and school. These outcomes or benefits are:
 - Academic benefits through interpersonal exchange
 - Promotes the use of metacognitive strategies
 - Higher-level thinking strategies
 - Higher-level reasoning
 - Listening to others’ perspectives and ideas
 - Give each other feedback
 - Engage in intellectual conflict
 - Explain what they learn to groupmates

(Adapted from Johnson, Johnson, & Holubec, 1994b)

- Social benefits through group work
 - Caring and committed relationships
 - Personal and academic support
 - Valuing of diversity
 - Cohesion

(Adapted from Johnson, Johnson, & Holubec, 1994b)

- Racial benefits
 - Acceptance of others with different backgrounds
 - Acceptance of others from different ethnic groups
 - Acceptance of other from different socioeconomic levels
 - Acceptance of mainstreamed academically and handicapped
 - Increase time on task
- Psychological benefits
 - Increase self-esteem
 - Increase self-confidence
 - Increase liking of teacher
 - Increase liking of class
 - Increase liking of school
 - Reduces absenteeism
 - Reduces dropouts

(Adapted from Slavin, 1995)

Activity #3

The next step in today's session is to work on the Magic Square Worksheet, and each group will:

1. Get a worksheet and a Team Summary Sheet.
2. Each of you should share his/her ideas of how to solve the magic squares.
3. Each of you should be able to explain to me how you solved the magic squares.
4. Each of you should be sure that other teammates are able to solve the magic squares.
5. When you are sure that each member in your team can solve the magic squares be prepared to take a quiz on your own.
6. Your score will be counted for individual grade and team points.
7. Each team will have five minutes to work on the activity. Then, everyone will have five minutes to solve his/her worksheet.
8. Each magic square solved correctly will have 50 points.
9. Use the Team Summary Sheet to fill in your scores and find out the team average.

The Magic Square Worksheet

Fill in the following square so that all sums (rows, columns, and main diagonals) are the same, using the given numbers.

1) 5-13

2) 28-36

The Answer Key

1) 5-13

6	13	8
11	9	7
10	5	12

2) 28-36

29	36	31
34	32	30
33	28	35

The Magic Square Quiz

Fill in the following square so that all sums (rows, columns, and main diagonals) are the same, using the given numbers.

1) 12-20

2) 15-23

The Answer Key

1) 12-20

13	20	15
18	16	14
17	12	19

2) 15-23

16	23	18
21	19	17
20	15	22

The Team Summary Sheet

Team Name-----

Team Members 1 2 3 4 5

Total Team Score					
*Team Average					
Team Award					

(Adapted from *Cooperative learning (2nd ed)* by Slavin, 1995, p. 91)

*Team Average = Total Team Score ÷ Number of Team Members

*Team Award depends on the criterion that has been set by the teacher for each test.

It can be as good team, great team, or super team.

What we just have done is another kind of cooperative learning approach. This approach is called *Student Teams-Achievement Divisions* or *STAD*. It has been extended and revised by Robert Slavin.

Activity #4

Now, it's the fun time. We are going to view videotape. The tape is a case of demonstrating the use of STAD with nine graders in a science class. The tape will run

approximately for 12 minutes (program 4 from ASCD series). You need to pay attention to the SATD four steps. We will discuss them after viewing the tape.

- In groups, you have two minutes to discuss the STAD four steps.

- Now, each group tells me one step to write them on the board. These steps are:

- Teaching
- Team study
- Testing
- Team recognition

Third-Day Session

The content of the third-day session will include modeling and demonstration. Three program objectives will be emphasized again. These objectives are: teacher's role in conducting cooperative learning, facilitating students' development of collaborative skills, and selected methods of cooperative learning. These objectives will be modeled and demonstrated by viewing videotaped cases in actual classrooms. The first videotape is "Reaching standards through cooperative learning," represented by Spencer Kagan and Laurie Kagan (2000). The second videotape is program (2) from the ASCD Series (1990). Program (2) demonstrates the steps of planning a cooperative lesson.

Activity #1

Our first activity is viewing the Kagans videotape to familiarize our selves with other methods of cooperative learning structures. We will view four methods of cooperative learning structures. These structures are: Pairs Check, Formation, Team-Pair-Solo, and Turn Toss. Each structure's demonstration will take about 4-5 minutes. You

need to view the tape carefully so that you will be able to share with your groupmates the different steps of each structure.

- 1) You need to discuss in your groups the steps of each of the four structures.

[Facilitator will allow ten minutes for this activity]

- 2) Now, I will share with you these simple steps.

The steps of:

a. Pairs Check

- Pair Work – student A works
- Reverse Roles- student B works
- Pairs Check
- Team Celebrates
- Pairs Continue

OR

- Both students take turns in solving the problems, then they check their answers with the other pair in their group.

b. Formation

- Teacher Announce Formation
- Students Create Formation

c. Team-Pair-Solo

- Team Work
- Pair Work
- Solo Work

d. Turn Toss

- Teacher States the Rules
- Teammate Asks Question and Tosses Ball
- Teammate Catches and Responds

- Next Teammate Catches and Responds
- Teammates Continue until their teacher calls to stop

Activity #2

Now, we are going to view another videotape, which demonstrates five major steps to help teachers plan a cooperative learning lesson. These steps are: identifying a lesson, organizational decision, establishing objectives and tasks, monitoring and processing, and evaluating the lesson. Moreover, it demonstrates the teacher's role and the students' social skills in a cooperative learning situation. This videotape will run approximately for 35 minutes. A seventh-grade teacher and an eleventh/twelfth-grade teacher will demonstrate their role through these steps and how they expect students to socially act. After viewing the tape you will discuss the steps in your groups. Be sure to understand them because each group will prepare one cooperative leaning lesson to share with the class next session.

After viewing the videotape, the facilitator will discuss these steps with the whole class. Then, the facilitator will ask each group to prepare a cooperative lesson to share next session.

Fourth-Day Session

The content of the fourth-day will include practice and feedback. The last objective of the program, modifying existing lesson to implement cooperative learning, will be the focus. Each group will demonstrate their lesson in front of the other groups; then each group will share them by providing feedback. The fifth element in cooperative learning, group processing, will be demonstrated by asking each group to analyze and reflect on their group members work and if they functioned well.

APPENDIX
(D)
DEMOGRAPHICS

DEMOGRAPHICS

The demographic section was constructed to gather descriptive data of the sample. Frequency, percentages (rounded to the nearest whole number), and charts were constructed to analyze the data gathered from Teacher Demographic Data Instrument. The purpose of this instrument was to gain more information about the participants, especially whether any of them had been introduced to the cooperative learning strategy. Data represents participants' years of enrollment in the college, their majors, the number of methods classes they have taken, when they were planning on doing their field experience, if they had been introduced to cooperative learning before the training workshop, and their level of knowledge about cooperative learning.

Table 23 provides a frequency and percentages of the different years of enrollment for participants in the study. See Figure 4 for illustration.

Table 23

Frequencies and Percentages of Participants' Years of Enrollment

Year of Enrollment		
1994	2	2%
1995	3	3%
1996	15	16%
1997	30	33%
1998	26	29%
1999	13	14%
2000	2	2%

Figure 4: Participants' Years of Enrollment

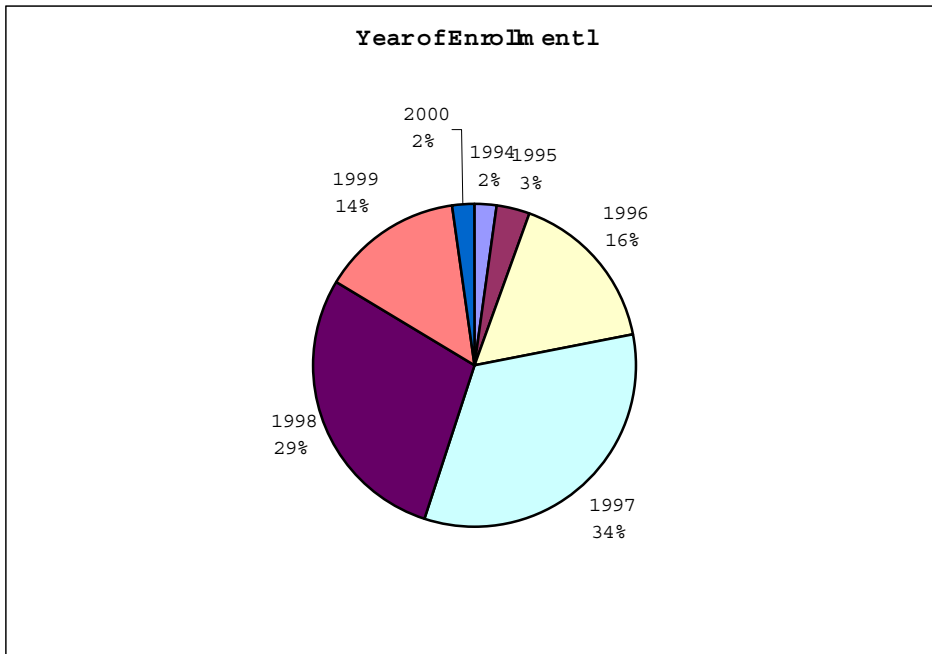


Table 24 provides frequencies and percentages of the different majors of participants in the study. See Figure 5 for illustration.

Table 24

Frequencies and Percentages of Participants' College Majors

Majors		
Language	8	9%
Islamic Education	3	3%
Math	30	33%
Science	33	36%
Technology	3	3%
Athletic	2	2%
Home Economics	7	8%
Art	4	4%
Library	1	1%

Figure 5: Participants' College Majors

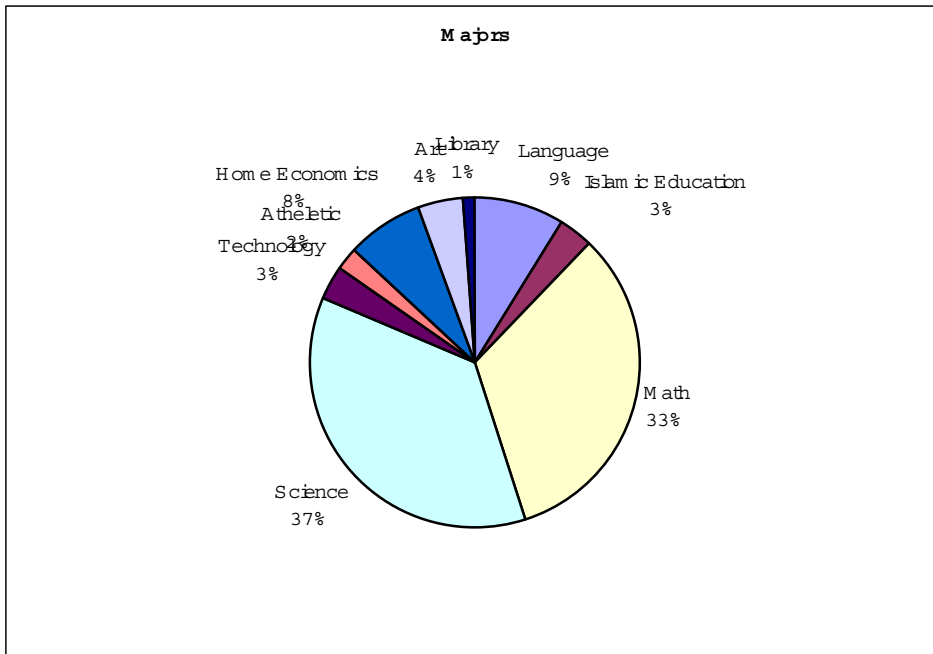


Table 25 provides frequencies and percentages of the number of methods classes that participants in the study had taken. Preservice teachers take specific methods classes before they are able to do their field experience. See Figure 6 for illustration.

Table 25

Frequencies and Percentages of Participants' Number of Methods Classes They Have Taken

Number of Methods Classes		
Number of Methods Class/1	38	42%
Number of Methods Class/2	17	19%
Number of Methods Class/3	5	5%
Number of Methods Class/4	31	34%

Figure 6: Participants' Number of Methods Classes

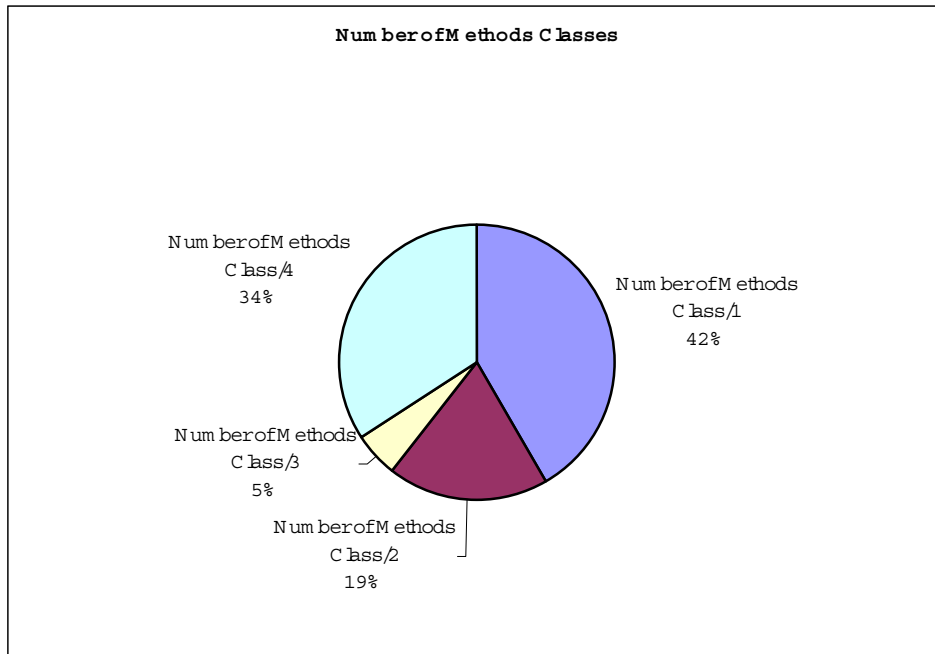


Table 26 provides frequencies and percentages of the semester that participants in the study were planning on doing their field experience. See Figure 7 for illustration.

Table 26

Frequencies and Percentages of Participants' Intended Field Experience Semester

Field Experience Semester		
Experience Semester/Don't Know	21	23%
Experience Semester/ Fall2001	10	11%
Experience Semester/ spring2001	32	35%
Experience Semester/2002	18	20%
Experience Semester/2003	10	11%

Figure 7: Participants' Intended Field Experience Semester

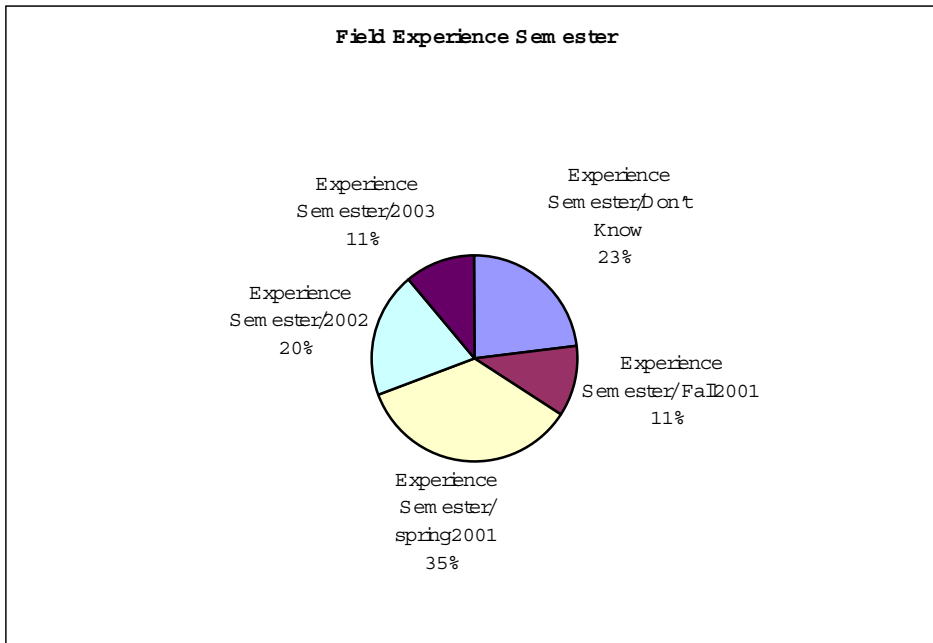


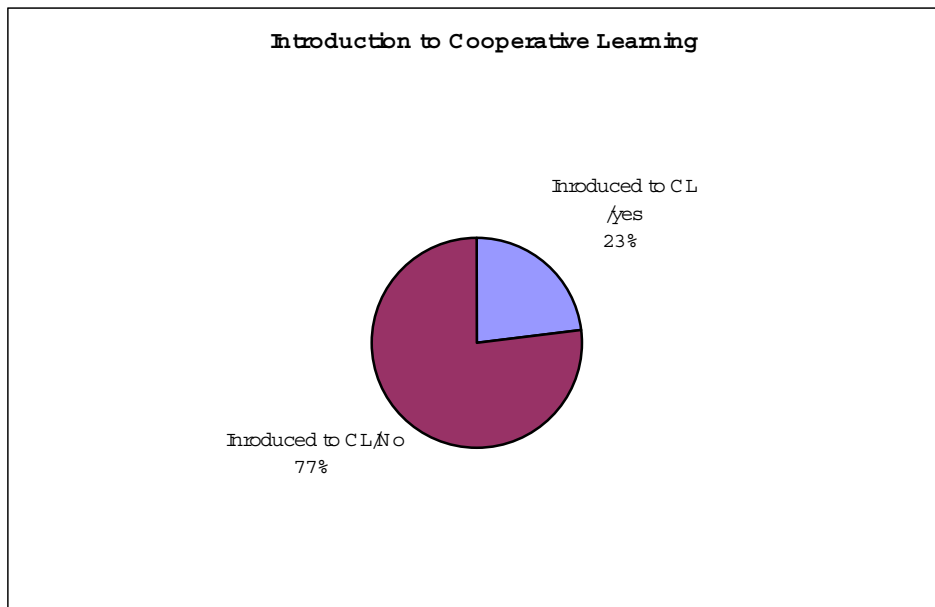
Table 27 provides frequencies and percentages of participants in the study who may or may not have been introduced to cooperative learning before the training workshop. See Figure 8 for illustration.

Table 27

Frequencies and Percentages of Participants' Introduction to Cooperative Learning

Introduction to Cooperative Learning		
Introduced to CL /yes	21	23%
Introduced to CL/No	70	77%

Figure 8: Participants' Introduction to Cooperative Learning



The researcher found out that participants who answered this question affirmatively were not really introduced to cooperative learning as defined in this study. They said “yes” because their science teachers were using groups while doing science experiments because of the lack of materials, the design of the science labs, or just to change the sitting routine. A few participants used group work to solve math problems in their college calculus class just to save time in preparing them for their test, but they did not use it in their classes as it is defined by any cooperative learning advocate.

In addition, being in the field with inservice teachers gave some of them the chance to learn some information and experience some activities using cooperative learning because some inservice teachers had already been introduced to this strategy by other researchers who were doing their studies.

However, these inservice teachers and the participants did not have enough information on how to use this strategy successfully, and they had not any training. Therefore, all of them were complaining about using it in their classes.

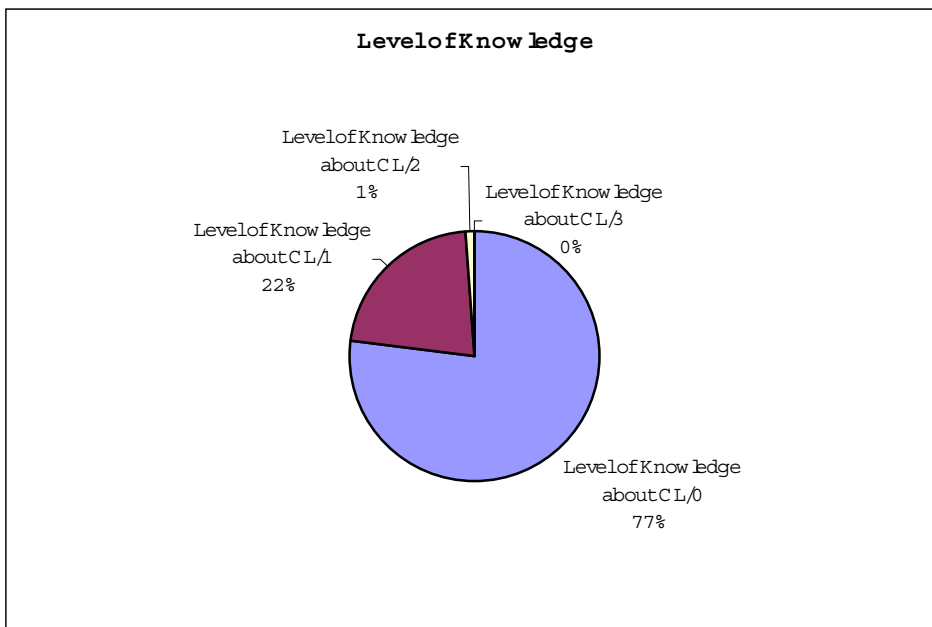
Table 28 provides frequencies and percentages of the participants' level of knowledge about cooperative learning before the training workshop. See Figure 9 for illustration.

Table 28

Frequencies and Percentages of Participants' Level of Knowledge About Cooperative Learning

Level of Knowledge		
Level of Knowledge about CL/0	70	77%
Level of Knowledge about CL/1	20	22%
Level of Knowledge about CL/2	1	1%
Level of Knowledge about CL/3	0	0%

Figure 9: Participants' Level of Knowledge About Cooperative Learning



The researcher divided the level of knowledge about cooperative learning into four levels. Level 0 means that the participant did not have any knowledge about cooperative learning. Level 1 means that the participant knew something/anything about cooperative learning (i.e. students work together, share materials and ideas, do the work as a group). Level 2 means that the participant was familiar with some of the cooperative learning elements (Positive Interdependence, Face-To-Face Promotive Interaction, Individual Accountability, Interpersonal and Small-Group Skills, and Group Processing), how to arrange cooperative learning groups (number of students, homogeneity or heterogeneity), and types of cooperative learning groups (formal, informal, base groups). Level 3 means that the participant knew all the information about cooperative learning that the researcher was intended to teach in the workshop.

Demographic Summary

Participants were enrolled in the college from the year 1994 until 2000. Participants' majors were varying. Thirty-three participants were majoring in science, thirty in mathematics, eight in language arts, seven in home economics, four in art education, three in technology, three in Islamic education, two in athletics, and one in library. Thirty-eight of the participants had taken 1 methods class, seventeen had taken 2 methods classes, five had taken 3 methods classes, and thirty-one had taken all the required methods classes. Twenty-one of the participants did not know when they were going to do their field experience, thirty-two were doing their field experience at the time of the study, ten were to do their field experience in fall 2001, eighteen were to do their field experience in the year 2002, and ten were to do their field experience in the year 2003. Finally, seventy participants had not been introduced to cooperative learning in

which their level of knowledge would be level 0. Twenty-one participants had been introduced to “group work” rather than cooperative learning, which would be level 1 as defined by the researcher previously. One participant of the twenty-one thought that she knew a little about cooperative learning, which would be level 2 as defined by the researcher previously.

APPENDIX

(E)

A COPY OF THE PERMISSION LETTER TO USE THE INSTRUMENTS

A COPY OF THE PERMISSION LETTER TO USE THE INSTRUMENTS

CURRICULUM AND INSTRUCTION
Brown Hall 230
660/562-1779/562-1239



December 13, 2000

Afeefa Aldawoud
2009 Lake Fork Circle
Denton, TX 76210

Dear Afeefa,

Your request to use data from my cooperative learning survey is met with approval. I am very pleased to allow permission to have this instrument used to support your study.

Best wishes are extended to you in the pursuit of your doctoral degree. You are welcome to contact me should you need any clarification on the survey.

Sincerely,

A handwritten signature in cursive script that reads "Jean Bouas".

Jean Bouas, Ph.D.
Department of Curriculum & Instruction
660/562-1771 jbouas@mail.nwmissouri.edu

badm prms. ltr 12 13 00

The Educator as Facilitator of Life-Long Learning in a World of Diversity and Change

800 University Drive

Maryville, Missouri 64468-6001

APPENDIX

(F)

THE ATTITUDE SURVEY

THE ATTITUDE SURVEY

Name: _____

Date: / /

Student Teacher's Attitude Toward "Cooperative Learning"

Directions: Please circle the number that best represents your belief about "cooperative learning" (Students working together in small groups to maximize their own and each other's learning and achieve shared goals).

- Use the scale of 1-7 with (1) represents "Strongly Disagree",
 - (2) represents "Disagree",
 - (3) represents "Probably Disagree",
 - (4) represents "Neutral",
 - (5) represents "Probably Agree",
 - (6) represents "Agree",
 - and (7) represents "Strongly Agree".
-
-

1- I think cooperative group work lightens the work load for all group members because the responsibility for completion of a task is shared.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

2- I like small group learning because it reduces competitiveness and builds fellowships.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

3- I think students should be grouped so that members are of different ability levels.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

4- I feel competent to plan cooperative learning activities for my students in the future.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

5- I think I will use cooperative learning as a teaching strategy very frequently.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

6- When I am involved as a student in cooperative learning activities, I feel closer to my classmates as a result of the group work.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

7- When working in a group, I think I put more effort into performing well on assignments because I feel an obligation toward other group members.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

8- I think it is easy to trust other group members to carry their share of the group work load.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

9- I think group learning helps students learn to be tolerant and considerate of the opinions of others.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

10- I find it easy to become involved in learning when working in a small group.

Strongly Disagree 1 2 3 4 5 6 7 Strongly Agree

Thank you for your participation

*** THE ORIGINAL COPY DEVELOPED BY BOUAS.

Name:

Date:

Survey

Directions: Use a scale of 1-7 with “1” representing “strongly disagree” (unquestionably wrong or inaccurate) and “7” representing “strongly agree” (unquestionably correct or accurate) to indicate your agreement or disagreement with each of the following statements. Circle the number that most closely represents your believe regarding each statement.

- 1 2 3 4 5 6 7 A- I think cooperative group work lightens the work load for all group members because the responsibility for completion of a task is shared.
- 1 2 3 4 5 6 7 B- I like small group learning because it reduces competitiveness and builds camaraderie.
- 1 2 3 4 5 6 7 C- I think students should be grouped so that all members are about the same ability level.
- 1 2 3 4 5 6 7 D- I feel competent to plan cooperative learning activities for my students in my grade interest /major (which is -----
-----).
- 1 2 3 4 5 6 7 E- I think I will use cooperative learning as a teaching strategy very frequently.
- 1 2 3 4 5 6 7 F- When I am involved as a student in cooperative learning activity, I feel closer to my classmates as a result of the group work.
- 1 2 3 4 5 6 7 G- When working in learning teams, I think I put forth more effort to perform well on assignments because I feel an obligation toward other group members to do well.
- 1 2 3 4 5 6 7 H- I think it is easy to trust other group members to carry Their share of the group work load.
- 1 2 3 4 5 6 7 I- I think group learning helps students learn to be tolerant and considerate of the opinions of other group members.
- 1 2 3 4 5 6 7 J- I find it easy to become involved in learning when working in a small group.

APPENDIX

(G)

THE ARABIC VERSION OF THE ATTITUDE SURVEY

THE ARABIC VERSION OF THE ATTITUDE SURVEY

الاسم: _____ التاريخ: / /

رأي الطالبة المعلمة في التعلم التعاوني

التعليمات: الرجاء وضع دائرة (O) حول الرقم الذي يعبر عن افضل تمثيل لرأيك عن "التعلم التعاوني" (حيث يعمل التلاميذ معا في مجموعات صغيرة لزيادة تعلمهم و تعلم الآخرين و لإنجاز أهداف مشتركة).

- استخدمي المقياس 1-7 ، حيث
- (1) يعبر عن "أعارض بشدة"
 - (2) يعبر عن "أعارض"
 - (3) يعبر عن "ربما أعارض"
 - (4) يعبر عن "محايد"
 - (5) يعبر عن "ربما أوافق"
 - (6) يعبر عن "أوافق"
 - (7) يعبر عن "أوافق بشدة".

1- أعتقد أن العمل الجماعي التعاوني يخفف عبء العمل لكل أعضاء المجموعة لان مسئولية إكمال المهمة متشاركة.

أعارض بشدة 1 2 3 4 5 6 7 أوافق بشدة

2- أحب التعلم في مجموعة صغيرة لأنه يقلل المنافسة و يبني صداقات.

أعارض بشدة 1 2 3 4 5 6 7 أوافق بشدة

3- أعتقد أن الطلاب يجب أن يصنفوا في مجموعات بحيث يكون أعضاء المجموعة ذوي قدرات مختلفة.

أعارض بشدة 1 2 3 4 5 6 7 أوافق بشدة

4- أحس بكفائي لإعداد أنشطة تعليمية تعاونية لتلاميذي في المستقبل.

أعارض بشدة 1 2 3 4 5 6 7 أوافق بشدة

5- أعتقد أنني سوف استخدم التعلم التعاوني كاستراتيجية تدريس بشكل اعتيادي.

أعارض بشدة 1 2 3 4 5 6 7 أوافق بشدة

6- عندما أشارك كطالبة في أنشطة تعليمية تعاونية أحس بتقاربي من زميلاتي في الفصل نتيجة العمل الجماعي.

أعارض بشدة 1 2 3 4 5 6 7 أوافق بشدة

7- عندما أعمل في مجموعة، اعتقد أنني ابذل مجهودا أكثر لإنجاز أفضل للمهام لأنني اشعر بالتزامي نحو أعضاء المجموعة الآخرين.

أعارض بشدة 1 2 3 4 5 6 7 أوافق بشدة

8- أعتقد أنه يسهل الثقة بأعضاء المجموعة الآخرين بتحمل حصصهم من عبء عمل المجموعة.

أعارض بشدة 1 2 3 4 5 6 7 أوافق بشدة

9- أعتقد أن التعلم الجماعي يساعد الطلاب على تعلم التسامح و مراعاة آراء الآخرين.

أعارض بشدة 1 2 3 4 5 6 7 أوافق بشدة

10- أجد أنه من السهل أن أشارك في التعلم عندما اعمل في مجموعة صغيرة.

أعارض بشدة 1 2 3 4 5 6 7 أوافق بشدة

شكرا لمشاركتك

APPENDIX

(H)

THE TRUE/FALSE TEST OF KNOWLEDGE

THE TRUE/FALSE TEST OF KNOWLEDGE

***Developed by Afeefa Aldawoud based on Bouas's test

Name: _____

Date: / /

Preservice Teacher's Knowledge about "Cooperative Learning" as a Teaching Strategy

Directions: Please circle the correct letter corresponding to each statement:

- “T” in front of the items that you believe are true about “cooperative learning”
(Students working together in small groups to maximize their own and each other's learning and achieve shared goals)
- “F” in front of the items that you believe are false/not true about “cooperative learning.”
- “DK” if you don't know whether the item is true or not true about “cooperative learning.”

1- Students' social relationships become more positive as a result of group work.	T	F	DK
2- Cooperative learning motivates students with different ability levels to master academic materials.	T	F	DK
3- Group work encourages students to create new ideas and to use higher-level thinking strategies.	T	F	DK
4- Group work causes students to be more dependent on the teacher in their learning.	T	F	DK
5- Cooperative learning discourages high achievement students and holds back their progress because of the presence of low achievement students in the group.	T	F	DK
6- Cooperative learning decreases students' productivity because they socialize instead of performing their tasks.	T	F	DK
7- Cooperative learning increases students' enthusiasm and positive attitude toward academic work.	T	F	DK

8- Group work will be more effective if the activity design and reward are combined.	T	F	DK
9- Cooperative learning improves communication and respect of others' opinions among students.	T	F	DK
10- Group work affects students' academic achievement negatively.	T	F	DK
11- Cooperative learning decreases the self-esteem of low achievement students.	T	F	DK
12- Cooperative learning leads students to feel positively toward school.	T	F	DK

ANSWER KEY TO THE TEST OF KNOWLEDGE

***Developed by Afeefa Aldawoud based on Bouas's test

Name: _____

Date: / /

Preservice Teacher's Knowledge about "Cooperative Learning" as a Teaching Strategy

Directions: Please circle the correct letter corresponding to each statement:

- “T” in front of the items that you believe are true about “cooperative learning”
(Students working together in small groups to maximize their own and each other's learning and achieve shared goals)
- “F” in front of the items that you believe are false/not true about “cooperative learning.”
- “DK” if you don't know whether the item is true or not true about “cooperative learning.”

1- Students' social relationships become more positive as a result of group work.	<u>T</u>	F	DK
2- Cooperative learning motivates students with different ability levels to master academic materials.	<u>T</u>	F	DK
3- Group work encourages students to create new ideas and to use higher-level thinking strategies.	<u>T</u>	F	DK
4- Group work causes students to be more dependent on the teacher in their learning.	T	<u>F</u>	DK
5- Cooperative learning discourages high achievement students and holds back their progress because of the presence of low achievement students in the group.	T	<u>F</u>	DK
6- Cooperative learning decreases students' productivity because they socialize instead of performing their tasks.	T	<u>F</u>	DK
7- Cooperative learning increases students' enthusiasm and positive attitude toward academic work.	<u>T</u>	F	DK

8- Group work will be more effective if the activity design and reward are combined.	<u>T</u>	F	DK
9- Cooperative learning improves communication and respect of others' opinions among students.	<u>T</u>	F	DK
10- Group work affects students' academic achievement negatively.	T	<u>F</u>	DK
11- Cooperative learning decreases the self-esteem of low achievement students.	T	<u>F</u>	DK
12- Cooperative learning leads students to feel positively toward school.	<u>T</u>	F	DK

*** The original copy developed by Bouas (1993) which has been modified for this study

Student Name:

TEST YOUR KNOWLEDGE OF “COOPERATIVE LEARNING” AS A TEACHING STRATEGY

Directions: Circle the “T” in front of the items that you believe are true about cooperative learning (working in small groups on an assigned task in a classroom). Circle the “F” in front the items that you believe to be false regarding cooperative learning. If you do not know whether the item is true or false circle “DK” for don’t know.

- T F DK 1. Students’ academic achievement suffers as a result of group work.
- T F DK 2. Cooperative learning results in students having a more positive attitude toward school.
- T F DK 3. Cooperative learning deters racial prejudice among students.
- T F DK 4. Cooperative learning leads to decreased students’ productivity because students socialize more and do not stay on task.
- T F DK 5. Cooperative learning causes frustration in brighter learners because they are “held back in making progress” by the presence of slower learners in a given group.
- T F DK 6. Cooperative learning encourages a positive attitude toward academic work.
- T F DK 7. Self-esteem of low level students suffers in cooperative learning activities.
- T F DK 8. Cooperative learning improves peer relations among students of different ability levels.
- T F DK 9. Group work causes students to be less dependent on the teacher for their learning.
- T F DK 10. The reward and structure of the group task should be intertwined in order for group work to be most effective.

APPENDIX

(I)

THE ARABIC VERSION OF THE TRUE/FALSE TEST OF KNOWLEDGE

THE ARABIC VERSION OF THE TRUE/FALSE TEST OF KNOWLEDGE

اسم الطالبة:

التاريخ:

اختبار معرفة الطالبة عن "التعلم التعاوني" كطريقة للتعليم

التعليمات: الرجاء وضع دائرة (O) حول

- 1- "صح" أمام البنود التي تعتقدن أنها صحيحة عن التعلم التعاوني (حيث يعمل التلاميذ معا في مجموعات صغيرة لزيادة تعلمهم وتعلم الآخرين و لإنجاز أهداف مشتركة).
- 2- "خطأ" أمام البنود التي تعتقدن أنها غير صحيحة عن التعلم التعاوني.
- 3- "لا أعلم" إن لم تكوني علي علم ما إذا كان البند صحيحا أم غير صحيح عن التعلم التعاوني.

1- علاقات الطلاب الاجتماعية تصبح أكثر إيجابية نتيجة العمل الجماعي.	صح	خطأ	لا أعلم
2- التعلم التعاوني يحث الطلاب ذوي القدرات المختلفة على التفوق في المواد الأكاديمية.	صح	خطأ	لا أعلم
3- العمل الجماعي يشجع الطلاب على ابتداع أفكار جديدة و استخدام مستوى أعلى من التفكير الاستراتيجي.	صح	خطأ	لا أعلم
4- العمل الجماعي يتسبب في أن يكون الطلاب أكثر اعتمادا على المدرسة في تعلمهم .	صح	خطأ	لا أعلم
5- التعلم التعاوني يثبط عزم التلاميذ المتفوقين و يعيق تقدمهم لتواجد طلاب ضعاف في المجموعة.	صح	خطأ	لا أعلم
6- التعلم التعاوني يقلل إنتاجية الطلاب لأنهم يقيمون علاقات اجتماعية بدلا من أداء مهامهم.	صح	خطأ	لا أعلم
7- التعلم التعاوني يزيد حماس الطلاب و شعورهم الإيجابي نحو العمل الأكاديمي.	صح	خطأ	لا أعلم
8- العمل الجماعي يصبح أكثر فاعلية إذا كان تصميم النشاط و المكافأة مترابط.	صح	خطأ	لا أعلم
9- التعلم التعاوني ينمي المحادثة و احترام آراء الآخرين بين الطلاب.	صح	خطأ	لا أعلم
10- العمل الجماعي يؤثر سلبيا على الإنجاز الأكاديمي للطلاب.	صح	خطأ	لا أعلم
11- التعلم التعاوني يقلل الاعتماد بالنفس للطلاب الضعاف.	صح	خطأ	لا أعلم
12- التعلم التعاوني يؤدي إلى شعور الطلاب إيجابيا نحو المدرسة.	صح	خطأ	لا أعلم

APPENDIX

(J)

CORRESPONDENCE BETWEEN TEST OF KNOWLEDGE ITEMS AND
RESEARCH ON COOPERATIVE LEARNING

CORRESPONDENCE BETWEEN TEST OF KNOWLEDGE ITEMS AND
RESEARCH ON COOPERATIVE LEARNING

Test References

The following references are used to obtain the research based outcomes regarding cooperative learning which been used to construct the knowledge test.

<u>No.</u>	<u>Reference</u>
1.	Davidson, N. (1990). Introduction and overview. In N. Davidson (Ed), <u>Cooperative learning in mathematics: A handbook for teachers</u> (pp.1-18). Addison-Wesley, Inc.
2.	Johnson, D., Johnson, R., & Holubec, E. (1994a). <u>Cooperative learning in the classroom</u> . Alexandria, VA: Association for Supervision and Curriculum Development. ------(1994b). <u>The new circles of learning: Cooperation in the classroom and school</u> . Alexandria, VA: Association for Supervision and Curriculum Development.
3.	Kagan, S. (1985a). Dimensions of cooperative classroom structures. In R. Slavin, S. Sharan, S. Kagan, R. Hertz-Lazarowitz, C. Webb, & R. Schmuck (Eds), <u>Learning to cooperate, cooperate to learn</u> (pp. 67- 96). New York: Plenum Press. ------(1989/90). The structural approach to cooperative learning. <u>Educational Leadership</u> , 47, (4), 12-15.
4.	Sharan, Y., & Sharan, S. (1989/90). Group investigation expands cooperative learning. <u>Educational Leadership</u> , 47 (4), 17-21.
5.	Slavin, R. (1989/90). Research on cooperative learning: Consensus and controversy. <u>Educational Leadership</u> , 47 (4), 52-54. ------(1990). <u>Cooperative learning: Theory, research and practice</u> . Englewood Cliffs, New Jersey: Prentice-Hall, Inc. ------(1991a). Synthesis of research on cooperative learning. <u>Educational Leadership</u> , 48 (5), 71-82. ------(1995). <u>Cooperative learning: Theory, research, and practice</u> (2 nd ed). Needham Heights, Mass: Allyn and Bacon.
6.	Vermette, P. J. (1998). <u>Making cooperative learning work: Student teams in K-12 classrooms</u> . Upper Saddle River, NJ: Prentice-Hall, Inc.

<u>Ref. No.</u>	<u>Item</u>
1,2,3,4,5,6	Students' social relationships become more positive as a result of group work.
1,2,3,4,5,6	Cooperative learning motivates students with different ability levels to master academic materials.
2,6	Group work encourages students to create new ideas and to use higher-level thinking strategies.
2,4,5	Group work causes students to be more dependent on the teacher in their learning.
2,5	Cooperative learning discourages high achievement students and holds back their progress because of the presence of low achievement students in the group.
2,4,5	Cooperative learning decreases students' productivity because they socialize instead of performing their tasks.
2,5	Cooperative learning increases students' enthusiasm and positive attitude toward academic work.
2,3,5	Group work will be more effective if the activity design and reward are combined.
2,5	Cooperative learning improves communication and respect of others opinion among students.
1,2,3,4,5,6	Group work affects students' academic achievement negatively.
1,2,5,6	Cooperative learning decreases self-esteem of low achievement students.
2,3,5	Cooperative learning leads students to feel positively toward school.

APPENDIX
(K)
TERMINOLOGY CHANGES

TERMINOLOGY CHANGES

1. Attitude Survey

Q. No.	Originally	Modified
2.	Camaraderie	Fellowships
3.	All members are about the same ability level	Members are of different ability levels
4.	My grade interest /major (which is -----)	The future
7.	In learning teams	In a group
7.	Put forth more effort	Put more effort
7.	To do well	(Cancelled)
9.	Other group members	Others

See Appendix F for comparison in layout and definition.

2. True/False test of Knowledge

See Appendix H for total comparison.

APPENDIX

(L)

THE RESEARCHER'S E-MAIL TO DR. KAGAN AND DR. KAGAN'S RESPONSE

THE RESEARCHER'S E-MAIL TO DR. KAGAN AND DR. KAGAN'S RESPONSE

February 14, 2001

Dr. Spencer Kagan
1160 Calle Cordillera
San Clemente, CA 92673

Dear Dr. Kagan,

I am a doctoral candidate at the University of North Texas. I am conducting a study in the College of Education in Kuwait to find out the degree of change in the preservice student teachers' knowledge about and attitudes toward cooperative learning after their participation in a cooperative learning workshop. In my research, I plan to address the following three questions:

1. Does the cooperative learning training workshop program influence preservice teachers' attitudes toward this teaching/learning strategy?
2. Does the cooperative learning training workshop program influence participants' knowledge about the strategy and its academic and social benefits?
3. After participating in the cooperative learning training workshop program, what perceptions do preservice teachers have regarding aspiration and knowledge to implement cooperative learning in their future classrooms?

Enclosed are my proposed attitude survey, true/false test of knowledge, and interviews guide for all participated student teachers (see attached file). I would appreciate it if you could review these instruments and provide feedback to me regarding your thoughts as to the validity of these questions and make any suggestions that might help to clarify what needs to be asked during the interviews. The actual implementation of the study will be in March 2001.

I appreciate your time. Please e-mail me or send your comments. Thank you.

Sincerely,

Afeefa Aldawoud
2009 Lake Fork Circle
Denton, TX 76210 aha0001@jove.acs.unt.edu

DR. KAGAN'S E-MAIL TO THE RESEARCHER

Date Thu, 15 Feb 2001 12:52:47 -0800
From Spencer Kagan <Spencer@KaganOnline.com>
To aha0001@unt.edu
Subject your survey

Dear Afeefa,

Your survey seems interesting and I will be interested in knowing the results. The results, of course, depend on the quality of the training the student teachers receive. Poor training will erode confidence and willingness to implement; good training increase it.

Do let me know how many student teachers are involved and what kind of training they will receive.

Thanks

Dr. Spencer Kagan
Director, Kagan Publishing & Professional Development

E-MAIL: Spencer@KaganOnline.com

HOME OFFICE: Four Cresta Del Sol, San Clemente, CA 92673
Phone: (949) 493-5591
Fax: (949) 493-3239

MAIN OFFICE: 1160 Calle Cordillera, San Clemente, CA 92673
Publishing (Books, Learning Resources)
Phone: 1(800) WEE COOP or 1(800) 933-2667
Fax: 949/ 369-6311
E-mail: Publishing@KaganOnline.com
Professional Development (Workshops, Consulting)
Phone: 1(800) COOP LRN or 1(800) 266-7576
Fax: 949/ 369-6599
E-mail: Training@KaganOnline.com

WWW: <http://www.KaganOnline.com>

APPENDIX

(M)

INFORMAL GROUP INTERVIEW GUIDE

INFORMAL GROUP INTERVIEW GUIDE

(To be used with student teachers at the end of the workshop).

- You participated in a workshop of cooperative learning as teaching strategy/method.
 - 1- What did you like most about the cooperative learning workshop?
 - 2- What did you like least about the cooperative learning workshop?
 - 3- What feature/component of the workshop most influenced your current attitude toward cooperative learning?
 - 4- What did you like most about cooperative learning?
 - 5- What did you like least about cooperative learning?
 - 6- Do you find cooperative learning assists or hinders learning? How?
 - 7- What do you think the major benefit of cooperative learning is?
 - 8- What do you think the major weakness of cooperative learning is?
 - 9- What psychological and social benefits would you like your students to experience in the future as a result of cooperative learning?
Will they experience these benefits more when they work as a group compared to as an individual? How?
 - 10- How do you think cooperative learning work should be rewarded?
 - 11- How do you feel about heterogeneous grouping compared to homogeneous grouping in cooperative learning?
 - 12- Do you think you will be able to use cooperative learning when you start teaching? Why?
 - 13- If you are going to use cooperative learning, how will you use it?
 - 14- How do you think you can plan for effective group work?
 - 15- What do you suggest should be done in the educational methods classes to help prepare student teachers to use cooperative learning in their future classrooms?

APPENDIX

(N)

THE ARABIC VERSION OF THE INFORMAL GROUP INTERVIEW GUIDE

THE ARABIC VERSION OF THE INFORMAL GROUP INTERVIEW GUIDE

دليل المقابلة الجماعية

لقد حضرت ورشة عمل عن التعلم التعاوني كاستراتيجية/ طريقة تدريس:

- 1- ما الذي أحببته أكثر عن ورشة (محاضرات) التعلم التعاوني؟
- 2- ما الذي أحببته أقل عن ورشة (محاضرات) التعلم التعاوني؟
- 3- ما هو الجزء الذي تم تقديمه في الورشة والذي أثر على رأيك نحو التعلم التعاوني؟
- 4- ما الذي أحببته أكثر عن التعلم التعاوني؟
- 5- ما الذي أحببته أقل عن التعلم التعاوني؟
- 6- كيف تجد التعلم التعاوني كمساعد على أو كمعيق عن التعلم؟
- 7- ما هي المنفعة الرئيسية للتعلم التعاوني باعتقادك؟
- 8- ما هو الضعف الرئيسي للتعلم التعاوني باعتقادك؟
- 9- ما هي المنافع النفسية والاجتماعية التي تحبين أن يجربها طلابك في المستقبل كنتيجة للتعلم التعاوني؟ هل سيجربون هذه المنافع أكثر عندما يعملون كمجموعة مقارنة بالعمل الانفرادي؟ كيف؟
- 10- كيف يجب مكافأة العمل الجماعي باعتقادك؟
- 11- كيف تشعرين نحو استخدام مجموعات متباينة (مختلفة القدرات) مقارنة بمجموعات متجانسة (متشابهة القدرات) في التعلم التعاوني؟
- 12- هل تعتقدين أنه بإمكانك استخدام التعلم التعاوني عندما تبدئين التدريس؟ لماذا؟
- 13- إن كنت ستستخدمين التعلم التعاوني، كيف ستستخدمينه؟
- 14- كيف تعتقدين أنه بإمكانك تخطيط عمل جماعي فعال؟
- 15- ماذا تقترحين أن يُعمل في مقرر طرق التدريس ليساعد في إعداد الطالبة المعلمة لاستخدام العمل التعاوني في فصولها في المستقبل؟

APPENDIX

(O)

TEACHER DEMOGRAPHIC DATA SURVEY

TEACHER DEMOGRAPHIC DATA SURVEY

Please provide information regarding the following questions:

1. When was your first semester of enrollment in the college?-----

2. What is your major?-----

3. How many method classes have you taken?-----

What are they?-----

4. In what semester do you plan to do your field experience?-----

5. Have you been introduced to cooperative learning as a teaching strategy prior to this workshop?

YES

NO

If yes, what/how much did you already know?-----

APPENDIX

(P)

THE ARABIC VERSION OF THE TEACHER DEMOGRAPHIC DATA SURVEY

THE ARABIC VERSION OF THE TEACHER DEMOGRAPHIC DATA SURVEY

استبيان معلومات الطالبة المعلمة

الرجاء اعطاء المعلومات المطلوبة في الأسئلة التالية:

- 1- في أي سنة تم قبولك في الكلية؟ -----
- 2- ما هو تخصصك الرئيسي؟ -----
- 3- ما هو عدد مقررات المناهج/طرق التدريس التي اجتزتها؟-----
ما هي هذه المقررات؟ -----

- 4- في أي فصل دراسي تنوين القيام بالتربية العملية؟ -----
- 5- هل تم عرض استراتيجية التعلم التعاوني عليك في وقت سابق لهذه الورشة؟
نعم لا

إذا كانت الاجابة على السؤال السابق بنعم،

ما هو مدى معرفتك/ماذا تعرفين عن استراتيجية التعلم التعاوني قبل الورشة؟

APPENDIX

(Q)

GILLHAM'S PROCEDURE TO ANALYZE THE CONTENT OF THE INTERVIEW

QUESTIONS

GILLHAM'S PROCEDURE TO ANALYZE THE CONTENT OF THE INTERVIEW QUESTIONS

Gillham (2000) provides a procedure to analyze the content of open questions as follows:

1. Take each person in turn.
2. Go through each one, highlight *substantive* statements – the statements that make a key point, that really say something.
3. As you mark out the substantive statements you will find categories forming in your mind. Note this process but don't do anything about it at this stage.
4. Take a break, reflecting on what you have just done. This is to give your impressions a chance to settle, without becoming too fixed.
5. Now comes the more difficult, creative stage. Go back to the beginning and, going through the highlighted statements, try to derive a set of categories. Give each category a simple heading. To begin with, simply list these categories. You will get a lot from the first set of answers, more from the next, but progressively fewer as you work through them all because individuals will be making many essentially similar points.
6. Now look at your list of categories and ask yourself whether some of them could be combined under one heading or, alternatively, split up. As you are compiling the list you will sense that some of the headings you have noted down are not adequate or appropriate in some way.

7. Go through the set of responses again, with your list of categories beside you, checking each statement against the category list to see if it has somewhere to go. Place a question mark by those statements you cannot readily assign to any category. Modify the wording of the category heading (or reverse them entirely) so that they fit the statements. Add new categories if necessary. When you have done this you will have something like a workable list.
8. Enter your categories in an analysis grid (see figure below). The category heading go along the top, the names or code for the respondents down the side. It might make sense to have two separate analysis sheets, one for positive and one for negative statements.

Categories

etc

Respondents	1	2	3	4	5
1					
2					
3					
4					
5					
6					
7					
8					
9					

etc

Analysis grid for content analysis (Adapted from Gillham, 2000).

9. Go through the sets of answers, assigning each one (where possible) to a category. Answers you cannot assign have to be dealt with separately – if only as unclassifiable. Put the *number* of the category against the statement on the original written answer: this tells you that you have entered it, and where it has gone. On the grid you can either tick the relevant box (this person made a statement that fits this category) or write in the actual statement. Doing this has a lot to recommend it: it brings the summary to life, conveys the range of answers that come under it and provides material for the qualitative analysis that comes later.

With your analysed data on the grid you can now see it clearly enough to write up the analysis of the answers to that particular question. You write this up in two ways: as a *qualitative*, i.e. descriptive, interpretive, analysis of what people said, and as a *quantitative* analysis, e.g. levels of agreement or disagreement (p. 66-69).

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