Cooperative Learning: Does it Work and do Students Like it?

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COOPERATIVE LEARNING:
DOES IT WORK AND DO STUDENTS LIKE IT?

Thomas Neal Vander Stelt

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ABSTRACT

Cooperative Learning:

Does It work and Do Students Like It?

Thomas N. Vander Stelt

This study compares a teacher-centered approach to learning with a cooperative learning method in order to discover if either method has greater ability to deliver academic success in a fourth grade geography unit. In addition, the study examines the students’ preferences for or against the teacher-centered method and the cooperative method.

There has been some movement toward cooperative learning methods in the school in which this study takes place, but there is also some reluctance of some teachers to try it because they feel that the time it takes is not worth the results it brings. This study includes an experiment where two fourth grade classrooms, one using a teacher-centered method and the other using a cooperative learning method, are compared to determine which of the two methods brings more academic success in a geography unit. A second part of the experiment will examine the students’ attitudes about cooperative learning and which approach they prefer. Research and theory will be used to gain some understanding of the methods used to teach the students.
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CHAPTER ONE
Problem Statement

Students who are not motivated to learn will not learn. This fact has frustrated teachers and researchers for years as they seek to find methods and classroom incentives to encourage students to learn. “In educational terms, furthermore, motivation can be seen as a process that can (a) lead students into experiences in which learning can occur; (b) energize and activate students and keep them reasonably alert; (c) keep their attention focused in one direction at a time” (Yelon, 1977, p. 295). Classroom incentives refer to “methods teachers use to motivate students to do academic work and learn academic material” (Slavin, 1984, p. 53).

One of our goals, as educators, is to develop incentives that will excite students into wanting to learn. For this study I will research two basic methods that have been used in our school in recent years. They are traditional or teacher-centered methods and cooperative learning.

Just what is meant by traditional methods? These are often thought of as "what we have always done". John Dewey’s description is:

Since the subject-matter as well as standards of proper conduct are handed down from the past, the attitude of pupils must, upon the whole, be one of docility, receptivity, and obedience. Books, especially textbooks, are the chief representatives of lore and wisdom of the past, while teachers are the organs through which pupils are brought into effective connection with material. Teachers are the agents through which knowledge and skills are communicated and rules of conduct enforced (Dewey, 1938, p.18).
The teacher, in this method, carries the heavy burden of not only teaching the student, but also being the prime motivator of the student. The student acts as a passive receiver of information.

A recent alternative is generating much interest among schools and teachers. Cooperative learning does not describe the teacher as the only one seeking, finding, and sharing information. "In cooperative learning methods, students work in small learning groups and are rewarded for doing well as a group" (Slavin, 1984, p. 54). In this method students can have opportunities to teach as well as be taught. The students can motivate one another.

Perhaps the most important issue that must be addressed is which method of learning best meets the needs of students including those at the learning extremes. Will traditional methods or cooperative learning best supply low achievers and high ability students with what they need to be academically and socially successful in school?

Importance and Rationale

For years, many educators have been relying on traditional teaching methods to prepare students. Children have been "surviving" this way of teaching and some have been successful in society after high school graduation. Teachers have been taught using traditional methods of teaching or have learned to rely on it after they have taught in a school system for years. However, times change and society's demands for the education of children changes accordingly. Does it seem logical to assume that yesterday's methods will provide adequate training for today's youth in a changing world? It seems unlikely. Christian educators must find methods that are successful in four areas. First, these methods must provide ways to bring about academic
achievement for all children not only those students with average ability, but also the low achiever, high achiever and the gifted. Second, methods should be motivating and whenever possible, be methods which students prefer or enjoy. Third, these methods must prepare students for life after high school graduation. Finally, these methods must be consistent with a Christian perspective on teaching.

In the first area, the main purpose for the existence of schools is to pass on information and skills to students. How well students process this information and learn these skills is called achievement. The methods we use for teaching must provide all students with the most academic achievement possible. Methods must be such that they prove to be the best possible options, as supported by research, for preparing students for future academics. Educators should never choose a particular teaching method simply because it is the way it has always been done.

In the second area, it is reasonable to assume that students will perform better if they are taught with methods that they enjoy. It makes sense that if you like something you will be more motivated to pursue it. If a method causes children to be happy or if they see it as fun, students will give a better effort. Methods for achievement must be those that give students confidence and build their self-esteem. “Students who view themselves positively and have confidence in their ability generally work harder on classroom tasks and strive to succeed” (Hudgins, 1983, p. 397). Therefore, teaching methods should, whenever possible, be those that are first preferred by the students and then by the teacher.

Preparing students for life after graduation is a third area that must be addressed. The United States is a capitalistic society where competition seems to
carry a high value. Most competition, however, is done at a team level whether it be professional sports or corporate business. In order for success to occur, cooperation between team members is necessary.

For the creation of a democratic society we need an educational system where the process of moral-intellectual development is in practice as well as in theory a cooperative transaction of inquiry engaged in by free, independent human beings who treat ideas and the heritage of the past as means and methods for the further enrichment of life, quantitatively and qualitatively, who use the good attained for the discovery and establishment of something better (Dworkin, 1959, p. 134).

In this sense, schools and the methods they use should mirror the society in which students live. This is consistent with biblical premises which encourage people to work together for the benefit of all mankind and to God’s glory, rather than against each other.

Fourth, Christian schools must pursue academic achievement, classroom motivation, and the preparation of students for life after graduation from a biblical perspective. Methods used to achieve in a Christian school must be those that are compatible with God’s Word as written in the Bible. Parents are reminded that they are to bring their children up “in the training and the instruction of the Lord” (Bible, Eph. 6:4 NIV). A teacher of their children must use methods that are consistent with this concept in order to keep the parent/teacher trust. Paul tells us to “Be joyful; pray continually; give thanks in all circumstances, for this is God’s will for you in Christ Jesus” (Bible, II Thes. 5:16, NIV). God wants us to be happy. We can assume that He wants students and teachers to enjoy the education process. Therefore, we must find methods that provide motivation and joy. The Bible calls us to “serve one another in love” (Bible, Gal. 5:13, NIV) for in this way we also serve God.
Educational methods used in Christian schools must be those that best prepare students to serve God and others after they reach adulthood.

Background of the Study

Before comparing the success of cooperative learning methods with the success of traditional methods, it will be helpful to understand earlier challenges to the traditional methods of teaching. John Dewey's progressive ideas of education persuaded many to examine the methods in which children were taught. He was not satisfied with traditional ways because they viewed knowledge as static and the teacher as the instrument by which that knowledge was passed on to a passive learner. His progressive philosophy of education is based on the belief that a child can only learn through experience or play and that a teacher is only needed to guide the child in that play. Learning can only take place by experience and the best learning occurs when experience led to more experience. Dewey once paraphrased Lincoln's great speech when he said his philosophy of education is "one of education of, by, and for experience" (Dewey, 1938, p. 29).

Whether Dewey was correct or not, his ideas led others to challenge traditional ways of educating children. The open classroom came out of the progressive thought of Dewey's time. Predating both the open classroom and Dewey was the work of Maria Montessori and her development of schools in 1907. Montessori, like Dewey and the open classroom, rejected traditional methods being used to teach children. Today there are many representatives of progressive student centered schools functioning across the United States. The fact that these schools exist tells us that there is discontent with schools using traditional methods.
The United States has always been concerned with keeping up with other countries academically. In the 1950's through the 1970's it was the Russians. In the 1980's and 1990's it is the Japanese. In order to keep up with the Russians we started our children in school earlier and tracked them according to their ability. The attempt here was to speed up the learning process and to prepare those children with high ability for math and science positions. Still grouping according to ability was usually done in a traditional format and enjoyed only limited success.

Ability grouping is still used in today's educational system. Most schools offer pull out programs such as a resource room or remedial reading that offer ability grouping for students who are struggling in the classroom. Some, such as Susan Demirsky Allan promote ability grouping for gifted and high ability children when her research concludes that, "gifted and high-ability children show positive academic effects from some forms of homogeneous grouping (Allan, 1991). However, Slavin finds that ability grouping is not worthwhile. "I find no evidence to support Allan's conclusion that ability grouping is worthwhile for high achievers and find much to recommend cooperative programs for these (and other) students" (Slavin, 1991, p. 68).

In addition to this ability grouping is another and quite different concept of grouping. There is a push in many schools today that calls for mainstreaming and inclusive education for all students. This has provided a challenge for classroom teachers to find methods of teaching that will be the most beneficial to all students that are members of the classrooms. Whether that includes every end of the spectrum at all times, simply those with average ability, or any combination of these learners. Can traditional methods, which tend to motivate students by competition, meet this challenge and meld a class together?
The concept of cooperative learning has been present for many years although it wasn't received much attention until recent years. Cooperative learning uses heterogeneous groups working together toward group goals while students are also held individually accountable. Proponents for this method include Robert E. Slavin and David Johnson and Roger Johnson. The theory behind cooperative learning is that students will not only learn more information, but that they will learn to cooperate in problem solving or in goal achieving. These are qualities highly prized by business and expected in their future employees. They want team players. If cooperation is high on the list of requirements for success after graduation, it stands to reason that educators should teach using methods that include cooperation. The questions now become, can cooperative learning provide a way to prepare students academically and affectively for service after graduation, and is this method more productive than the prevailing traditional method?

Statement of Purpose

The purpose of this study is to examine traditional methods and cooperative learning. In chapter two, I will first use research to identify what researchers and educators believe to be the strengths and weaknesses of both traditional methods and cooperative learning. I will then examine the reasons why some educational movements have challenged the effectiveness of these methods. I will conclude chapter two with a comparison of traditional methods and cooperative learning and discussion on how these methods effect students of high and low ability.

The third chapter of this study will describe the study I am conducting to learn more about the benefits and limitations of cooperative learning. This
study will serve as a pilot to determine if more research having to do with cooperative learning in fourth grade geography classes is necessary, especially in the study school or schools with similar attributes of the study school.
CHAPTER 2
Traditional Methods of Education

Much of what educators have traditionally done in their classrooms is characterized by a teacher-centered approach. Some characteristics of teacher-centered approaches are the authoritarian teacher, the great reliance on the textbook as the source of knowledge, and students who act as passive receivers of information. Competition between individual students for grades and rewards is often another characteristic of this approach. Traditional methods are continually attacked by various researchers and educators, yet these methods survive these attacks and continue to be some of the main means of training students in our school systems today. What are the limitations of traditional methods in teaching? What might be the benefits of alternative approaches such as cooperative learning? The research on both will be examined here.

Challenges to Traditional Methods

What are the perceived strengths of traditional methods that allow them to remain an important way in which we educate our youth today? Most of what is seen as strengths in traditional methodology lies within the perceived control that the teachers and administrators have in curriculum and of the students' behavior. Other items seen as a strengths are the beliefs that a static curriculum allows for continuity and systematically taught skills, and that
teaching in whole class groups saves time and energy for the teacher. It must be noted that these perceived strengths are strengths that are most beneficial for the school and the teacher, not the student. It is therein that we find the limitations of traditional methods of teaching. What about the student? This is the question that Maria Montessori, John Dewey, and others have tried to address in more progressive methods of education. I will use their thoughts and ideas to examine more closely some of the perceived weaknesses of traditional methods.

Maria Montessori

In the early 1900's, Maria Montessori examined Italy's schools and was frustrated by the methods in which young children were taught. Children were being taught using traditional methods where the teacher chose what to teach, when to teach, and how to teach. When she observed children further, she devised her own way of teaching according to what she learned. The Montessori schools were founded in what were called Children's Houses for three to six year olds. These schools have since expanded to include all levels. Montessori believed that children needed some freedom to choose what they were going to learn, when they would learn it, and how they would learn it. This learning would most often take place while children were manipulating resources, and it often took place when the child was alone or in small groups rather than in whole class instruction with the teacher as the ultimate source of knowledge. In the Children's Houses the children had some control over their education unlike children taught by authoritarian traditional methods.

A basic requirement for a scientific educational program must therefore be a school that will permit a child to freely develop his own personal life. If a system of education is to rise from a study of the individual student, it will have to come about in this way, that is, from the observation of free children who are watched and studied but not repressed (Costellos, 1972, p. 19).
Montessori sees any effort of a teacher to teach a child in a style that is not natural to that child or to teach a child when he is not ready to learn becomes a waste of time for the teacher and the student.

We have clearly shown that the child has a need to observe, to reflect, to learn, to concentrate, to isolate himself, and also from time to time to suspend his activities in silence. And we have done this so clearly that we can say with all confidence that the idea that a small child is in the state of rest when he is outside a place suited for his education is erroneous. Rather, it is our duty to direct a child's activities, sparing him useless efforts which would dissipate his energies, divert his instinctive search for knowledge, and be a frequent cause of nervous disorders and a hindrance to his growth. The education of even a very small child, therefore, does not aim at preparing him from school but for life (Costellos, 1972, the opening).

In the Montessori method it becomes impossible to call the teacher authoritarian and the child a passive learner. The teacher becomes an observer and a guide who provides materials and direction for the child. The child in the Montessori method directs his or her learning. The child can to a great degree choose what to learn, when to learn it, and how to learn it.

John Dewey

John Dewey, in the 1930's, wrote John Dewey: Experience and Education which supports the early forms of progressive education like that of Maria Montessori. He theorized that a child could only truly learn from experience. He does admit that only quality experiences give true knowledge. “Any experience is mis-educative that has the effect of arresting or distorting the growth of further experience" (Dewey, 1938, p. 25). Dewey believed that to teach using the traditional methods would not provide the experiences necessary for the child to learn. He felt the child had to have some freedom to choose what he would learn and how he would learn it. Traditional methods
use an authoritarian form of instruction; therefore it would seem that there would be little opportunity for students to freely discover through creating their own experiences. The textbook as the major source of knowledge also limits the number of quality experiences a child has. Because quality experiences bring true knowledge in Dewey’s theory, it seems unlikely that the reading of textbooks would stimulate students to greater experiences and therefore more knowledge. Dewey’s philosophy seems to be in direct contradiction with the traditional methods that many schools use today.

To imposition from above is opposed to expression and cultivation of individuality; to external discipline is opposed free activity; to learning from tests and teachers, learning through experience; to acquisition of isolated skills and techniques by drill, is opposed acquisition of them as a means of attaining ends which make direct vital appeal; to preparation for a more or less remote future is opposed making the most of the opportunities of present life; to static aims and materials is opposed acquaintance with a changing world (Dewey, 1938, p. 19).

Dewey clearly points out his position for more progressive education while stating his distaste for what goes on in the traditional classroom. His work started a revolution in the American school systems. He made many educators and researchers examine what was being done in the classroom and look for other alternatives to the existing traditional methods of teaching American children.

The Open Classroom

Following the progressive movement was the formation of the open classroom. The open classroom is characterized by the teacher as facilitator and the active student learner who has many opportunities to choose his or her interest area in order to learn concepts and skills. In the open classroom approach, students are given much time to manipulate apparatus to facilitate
learning. Again the problems of teacher authority, student freedom, and source of knowledge appear to be the stimulus that fostered the open classroom movement. The concept of teacher being the all knowing master of knowledge for students and the authoritarian manner in which this knowledge is taught does not fit into the scheme of learning for those who advocate the open classroom. "The role of the teacher is not to control his pupils but rather to enable them to make choices and pursue what interests them. In an open classroom a pupil functions according to his sense of himself rather than what he is expected to be" (Kohl, 1969, p. 20). The traditional classroom does not allow for many opportunities for students to discover knowledge. "Nothing is accomplished by mechanical and silent acceptance of the status quo by those whose business it is to see that children of all ages receive the best education possible" (Hassett, 1972, p. 3). Those who support the open classroom endorse the concept the student must be an active learner as opposed to the passive learner found in the traditional classroom. Furthermore, it is the mission of the teacher to "encourage the child toward inventive activity with whatever interests him at his own level of development" (Hassett, 1972, p. 6). It must be noted that many teachers in traditional classrooms have adapted "open" ideas into their way of teaching. Still the advocates see the traditional classroom as a place that does not make much sense.

Our schools are crazy. They do not serve the interests of adults, and they do not serve the interests of young people. They teach 'objective' knowledge and its corollary, obedience to authority. They teach avoidance of conflict and obeisance to tradition in the guise of history. They teach equality and democracy while castrating students and controlling teachers. Most of all they teach people to pretend that they are saying what they think and feel. To break away from stupid schooling is no easy matter for teacher and student. It is a lonely and long fight to escape from believing that one needs to do what people say one should do and that one
ought to be the person one is expected to be. Yet to make such an escape is a step toward beginning again and becoming the teachers we never knew we could be (Kohl, 1969, p. 116).

Kohl promises that changing from a traditional situation would be difficult but worth the effort. Teachers and students can become part of a learning team where all members ideas are equally accepted and where learning becomes a new and refreshing experience rather than a static set of knowledge taught by an authoritarian teacher. Myrlis Hershey, in her book Teacher was a White Witch describes her satisfaction of taking the time and effort to change. “Verily, brick by brick we built our ‘school-room’. As the children came to believe that they were important human beings in a significant world, they chose to become involved in mixing ‘mortar’ (meaningful activities) and laying ‘bricks’ of honest understanding” (Hershey, 1973, p. 141).

The works of Maria Montessori, John Dewey, and the open classroom advocates support the beliefs that three major problems occur within the traditional method of teaching that causes opposition. First, The authoritarian teacher, who is the main source of knowledge and rules, binds the student to what this teacher or sometimes school sees as important to learn. Second, the student becomes a passive learner who has little say about what is taught, and therefore often becomes unmotivated to learn materials chosen by the teacher or school because these materials do not interest the student. Third, books become the main source of knowledge and real opportunities for quality learning experiences are few. Those using traditional methods have attempted to move toward more progressive ways of teaching using such techniques as interest groups, ability groups, and individualized learning, but they usually did this in a very traditional framework which is problematic. Some of these
problems will be addressed later in this paper in conjunction with cooperative learning.

Cooperative Learning

"Cooperative learning differs from traditional learning scenarios in three basic way: (a) In cooperative learning, 2 or more persons study together, as opposed to students' normal tendencies to study alone; (b) there exists no teacher/student relationship (participants play equal roles); and (c) presumably none of the participants are expert in the information being studied" (Hall, 1988). There is some debate as to what makes for good cooperative learning, but all researchers seem to agree that you can not just throw children together and expect them to learn. Johnson and Johnson believe there must be five basic elements in every lesson in order for cooperative learning to be successful.

1. Positive interdependence- students must believe that they are responsible for both their own learning and the learning of the other members of their group;
2. Face to face pro motive interaction- students must have the opportunity to explain what they are learning to each other and to help each other understand and complete assignments;
3. Individual accountability- each student must demonstrate mastery of the assigned work;
4. Social skills- each student must communicate effectively, provide leadership for the group's members and resolve conflict within the group constructively;
5. Group processing- groups must stop periodically and assess how well they are working and how their effectiveness may be improved (Johnson and Johnson, 1989, p. 80).

There are a variety of definitions of cooperative learning. When I write of cooperative learning, I am referring to small heterogeneous groups who work together for a common purpose in order to achieve a goal. In this arrangement
the teacher is viewed as a resource person who guides teams of students through various learning activities. These activities may be those which the teacher has provided for the team in order to learn a given concept, or it may be an activity that the team has thought up themselves in order to learn a given concept or to better understand a concept in which they themselves have chosen. To analyze the purported strengths and weaknesses of cooperative learning I will use the book Learning Together and Alone: Cooperation, Competition, and Individualization written by Johnson and Johnson in 1975. In this book, the authors use “myths” stated against cooperative learning to describe the thoughts and feelings of some educators and researchers concerning the use of cooperative learning. After discussing the perceived weaknesses of cooperative learning using these myths, I will use literature and research from advocates of cooperative learning to refute the myths before comparing traditional and cooperative methods.

Myths Against Cooperative Learning

The first myth to be considered is the idea that in using cooperation all students in the group must work together at all times, and the student who wants to work by himself for a while is forbidden to do so. It is possible that an instructor may force his students to work in such a manner, but to do so would be as thoughtless as asking the child who prefers to work in groups to only work individually. “In a cooperative goal structure a division of labor is always possible in which different students work on different sub tasks. Such a division of labor allows students to work by themselves much of the time and join the group only to synthesize everyone’s contributions” (Johnson & Johnson, 1975, p. 54). It is possible to work in teams and yet provide many opportunities to work individually, in pairs, or in other groups. If individual accountability is
introduced to the cooperative learning methods then it is essential that the individual does have some time to learn and synthesize information on his or her own. (All students must be accountable for working on the task” (Lyman, 1993, p. 21).

The second myth claims that cooperation among students will enslave the gifted while giving the slower student a free ride. Certainly the potential for this myth to become a reality is possible if the teacher allows grades and rewards to be based only on the accomplishments of the group. In order to avoid this myth from becoming a reality, it is necessary for two conditions to take place. “First, the cooperating groups must have a group goal that is important to them. Second, the success of the group must depend on the individual learning of all group members. That is, there must be individual accountability as well as group accountability” (Slavin, 1988, p. 31). If students are held individually accountable, it stands to reason that the gifted student can not be enslaved to the slower learner. Although there is evidence suggesting that the gifted and high achievers are needed as models to low ability students, there are also those who believe that modeling between children of different abilities is over rated. Schunk found that “children typically model their behavior after the behavior of other children of similar ability who are coping well with school” (Allan, 1991, p. 64). I contend that there is truth in both these arguments. Students need superior role models to see how certain tasks are accomplished, but once this skills are recognized they look toward their intellectual peers to see how they have gone about incorporating the skills into their lives. Also “there is considerable evidence that achievement of bright students increases when they participate in heterogeneous groups. In addition, they develop social skills and democratic values that are beneficial to society as well as to
each individual” (Johnson & Johnson, 1975, p. 55). My assessment on this is that though rewards can be given for group achievements, rarely should grades be given as a group reward. Grades must remain a separate reward based on how well the individual has worked in the group, how well he has processed the information the group has been working with, and how well he does on individual worksheets or tests based on the information that the group has been working on. By using cooperative groups in this format it becomes very difficult for the individual to get the so called free ride.

The third myth argues that students who do not contribute to the group’s work or who in some way reduce the group’s performance will be punished by other group members. This is based on the principle that “individual consequences versus shared consequences are contingent on the performance of low achieving group members” (Wodarski, 1973, p. 285). Again the potential for this myth to become true is a concern that educators must consider. However, it seems that most of this potential can be dealt with and dismissed by simply making some logical precautions. If grades are received based on the group’s work, certainly high achievers are going to become frustrated when low achievers drag down their scores. This can be avoided by not tying group work to grades and making grades contingent on what the individual has done within the group.

Much like an individual on a corporate team is granted raises and promotions based on his or her value to the team, so should grades be awarded. Not every member is as valuable to the success of the team, yet the team needs the talents that each member brings for the effort to be successful. Herein lies the problem. If groups are in competition with other groups it is necessary for all members to do their very best in order to achieve the most
group success. If a group perceives themselves to be losers the members of the group may hold someone responsible for that perception and punish that individual. It is entirely possible that the person who is blamed could be a gifted learner who showed lack of concern for the group or a low achiever who does not have the ability to do a superior job. In either case, it seems that two things must take place so a “student punishing student” situation does not occur. First of all it is most important to foster a team atmosphere in each group. That is, the individuals must see themselves as a team that can perform a given task or achieve a certain goal better together than apart. Second, the educator must insure that all teams are “winners”. To do this the teacher must provide incentives which truly motivate students to do their best. There must be rewards for all teams whether they are first or last. There must be levels of rewards to inspire the teams to shoot for the better prize Whether it is the first, second, or last prize. Using the above tactics should avoid most if not all punishment between group members. This does not mean that students will not socially disapprove of the team member who is not trying. Those who aren’t trying will be encouraged to try and rightly so. Learning to take criticism as well as praise is a necessary skill that all must learn and this can be best done within a supportive group of peers. Group building activities should be used to teach students skills to deal with praise and criticism before cooperative learning can be truly successful. “Students must be encouraged to work together, to support other students, and to interact socially with students who are different in personality, cultural background, gender, and ethnicity” (Lyman, 1993, p. 19). Students must also learn to accept differences of academic ability.

Myth number four states that some students out of apathy will do no work or learn nothing and yet receive the rewards of other’s work. If apathy is the
problem which causes students not to work or not to learn, then we must be concerned with what causes apathy.

Within the traditional competitive goal structure, many students become apathetic and refuse to work, not because they are lazy, but because of the nature of a competitive situation in which most students "lose" most of the time. Within a cooperative goal structure, the opportunity for every student to experience psychological success and receive support from his peers will minimize the possibility of student apathy (Johnson & Johnson, 1975, p. 55).

If competition is the blame for apathy, what about groups competing with one another for rewards? In a group competition, the individual team member does not feel threatened while competing against other individuals. The team member realizes that though his performance helps to make or break team spirit and success, his performance is only one of the individual performances and therefore he can not take full blame for the failure of the team to take first prize, nor can he accept full responsibility for the victory. Team competition buffers the individual from apathy. Furthermore we can look at who best motivates students. Research has found that most students are not best motivated by parents or teachers but by their peers. They do "not seem motivated by teacher or parental approval, but they were concerned, as are most children and adolescents, about performing well in front of their peers" (Watson & Rangel, 1989, p. 266). Cooperative groups can help to give students motivation to perform and thus dispel the apathy myth in cooperative learning.

Myth number five claims cooperative goal structures will result in students doing the things they do best and neglecting the skills and knowledge that are difficult for them. This myth seems to be inherent in human behavior. Most of us are apprehensive about trying new things. Still we must consider when individuals feel best about trying new things. It seems that most
individuals would prefer to have a mentor or a friend who can help guide them through the steps to master a particular skill or concept. "There is a great deal of satisfaction to be gained in extending your competence and learning new information and skills when there is a supportive and helpful learning climate" (Johnson & Johnson, 1975, p. 56). A cooperative learning group, when properly trained, can provide a very supportive and safe atmosphere in which members can try new skills and learn difficult material.

The sixth myth contends that if students work together cooperatively they will lose their personal identities because the group will force them to conform to its standards. "You establish your personal identity through cooperative interaction with others, by noticing your uniqueness, and differentiating yourself from others" (Johnson & Johnson, 1975, p. 56). If an individual lived in isolation from other persons his personality would become quite meaningless. It is through our engaging in social activity that we find out who we are. We must be able to critique our own behaviors in the context of others to discover our own individual attributes both positive and negative.

Traditional methods and cooperative learning have advocates and opponents. However, it appears that research has a much greater support base for the use of cooperative learning as compared to traditional methodology. With this in mind I will go on to examine why cooperative learning has become the next method to try to usurp tradition's authority in education. Is cooperative learning a fad? Is it the method that will bring the traditional methods to an end? Or is it just another useful tool that educators have at their disposal to teach and prepare our children and young people for the future?
Traditional Methods Versus Cooperative Learning

In comparing traditional methods with cooperative learning, I must return to the four areas that Christian educators must be aware of when choosing methods and techniques in which to teach their students. Those areas include: academic achievement for all students, student preferences with regard to the method in which he or she would like to be taught, student preparation for life after high school graduation, and a Christian perspective of education. I will examine these four areas in light of competition and cooperation and how they relate to the two methods being researched. Do students learn more under competitive methods or cooperative methods of instruction? Which method will give students greater opportunities for choices in what is to be learned and how it will be learned? Which method will provide the greater amount of motivation and bring forth higher self-esteem while doing so? I will examine these questions by exploring what researchers say about competition and cooperation.

American culture has made an assumption that competition is a main ingredient needed to motivate students to learn, build character, and have success in the world today and in the future. In recent years many in education have found reasons to believe that competition is unnecessary and may be a detriment to the very things it claims to support. It is my stance that the traditional method of teaching is highly competitive and that within this competition lies a major problem that needs attention.

Most of the time, students work independently, and they are continually in competition with one another for grades, praise, and recognition. Such competition does not have the positive features of a contest between well-matched adversaries, because in the classroom, winners and losers can be predicted fairly reliably the
day they first come into class: those who have succeeded in the past will probably succeed and those who have failed will probably fail (Slavin, 1985, p. 5).

Many believe that proper use of cooperative learning techniques may be the solution to many of these problems. Johnson and Johnson see five major assumptions or myths about competition that are not supported by research and have offered cooperative methods as the preferred alternative.

Assumptions about Competition

The first assumption operates on the idea that our society is very competitive and that in order for students to survive they must be educated within a competitive learning situation. In many traditional classrooms, goals are established on a class basis and individuals compete within the class to gain grades and other rewards. For instance when grades are given on a class curve, all students compete for grades. “One pupil’s aim or goal, is in opposition to that of all the others in that a pupil’s obtaining the highest grade automatically determines to some degree the fate of each of the others, just as the best pupil’s fate depends on the others’ doing worse” (Slavin, 1985, p. 18). The problem is that when it comes to academics not all students are able to do well enough to compete with those students with high ability. Everyone in the competitive situation does not win; there are losers. Always losing often brings apathy to the low ability child causing this student to lose interest in learning. Though our world is full of competition, most of that competition is between groups. “Cooperation is a fundamental concern of educators. The increasing complexity of social conditions locally and worldwide has brought to the forefront the importance of learning to cooperate. Recent educational thought
and research have shown the power of cooperating to learn” (Schmuck, 1985, p. 1). Cooperation is becoming the more standard method in which our world competes; therefore it stands to reason that cooperation should be more and more the preferred method by which we teach our youth. “Group interaction develops communication skills (speaking and listening) and social skills, which become the primary tool for task accomplishment and success as a group” (Foyle, 1991, p. 17). It is very likely that students can work and learn together, but many opponents of cooperative learning feel that some students will gain whether they work or not. This can happen if all rewards for group work are group rewards. Something must bind each student to the task at hand.

"Individual accountability requires personal investment and builds individual responsibility for learning” (Foyle, 1991, p. 17). Students can find the courage to take risks in group situations that they might not in individual competitive situations. They can be motivated by group rewards while being held accountable as an individual through grades and other rewards not tied to the group success. The competition myth seems to have lost its power to influence many educators. Cooperation on the other hand, though not perfect seems to have found a significant following. After all, "Without cooperation among persons, no group, no family, no organization, and no school could exist" (Johnson & Johnson, 1975, p. 45).

According to the second assumption, not only is our success in the world, but also our success in school dependent on competing with other individuals. This theory seems to be inspired by the belief that competition among individuals motivates the individual to learn more and therefore succeed. Many researchers find no merit in this concept and in fact deny the ability of competition to bring success. "Quality of performance goes down under
competitive goal structures and a person who is superior in one situation may be inferior in another" (Johnson & Johnson, 1975, p.46). Certain homogeneous groupings can also bring high levels of competition which lower confidence in ability and then lower achievement. For instance "When students with chronic low performance records are grouped together, their low academic expectations for themselves and each other can preclude satisfactory instructional results" (Allen, 1984, p. 60). Some in education would endorse some ability grouping among those with high ability or among the academically gifted. While there are indications that the gifted can benefit from some sorts of accelerated or enrichment classes, Slavin found that students of all abilities learn better in heterogeneous cooperative groups. In his work "those in the top third, middle third, and low third have all gained consistently, relative to similar students in control classes, as long as the cooperative learning program in use provides group goals and individual accountability" (Slavin, 1991, p. 70). If traditional methods of teaching individuals or ability groups breeds competition, and if that competition causes achievement to go down, it stands to reason that cooperative learning methods should at least be experimented with so as to give a school program a chance to be better.

A third assumption contains the idea that competition builds character and makes students tough and ready for real life. This appears to be a very subjective concept at best. Though there are tough people who happen to compete, it is very difficult to tell whether it is the competition that has made them tough. Certainly involvement in competition can prepare a student for competing, but if our world is becoming an ever more cooperative world, it would seem that it would be more advisable to spend our time preparing our young people for work in that more cooperative world by teaching how to
cooperate, and that starting in the school learning situation. There appears to be no research which supports the idea that competition prepares students for the real world. If people work together in group situations to solve problems and do business outside the academic world that is what we as educators must be preparing our students to do. “Because schools socialize children to assume adult roles, and because cooperation is so much a part of adult life, one might expect that cooperative activity would be emphasized” (Slavin, 1985, p. 5). The traditional method of instruction seems too full of competition to adequately produce graduates who are ready and willing to cooperate.

The fourth assumption claims that students prefer competitive situations to cooperative situations. It may be that a little competition can be fun, but too often it results in situations where the children who do not win (the losers) develop apathy and refuse to do their best in future competitions for fear of failing. Indeed recent studies “have shown that students prefer cooperatively structured situations to competitive ones, especially if they have had experience in cooperative learning situations” (Johnson & Johnson, 1975, p. 48). Anne Jenkins' sixth grade class disliked the traditional style in which she taught them. They became bored and unmotivated and were not able to learn sufficiently. Many were slow learners and felt threatened by traditional methods that included high levels of individual competitive situations. Jenkins decided to try using cooperative learning in groups. Jenkins was surprised to find that not only did her students do better academically, but they had also begun to enjoy school. She found vast improvement in her most difficult student, Sean. Under cooperative learning her “students remarked that they liked their class and their classmates better. Sean said that not only was he doing better, but he had more friends. Furthermore, his friends were helping him to do better in class”
It must be underscored that this classroom involved many low achievers who might appreciate the help that superior students in their group could give them. On the other hand students with high ability do sometimes complain about the slower student holding them back or lowering their grades because of the lower student's lack of ability or participation. Much of this can be avoided by making sure that academic rewards of the group be based only on individual success within the group. Group incentives should not be grade based. Much of the rest can be avoided by preparing the students to be a community that cares for each other and needs each other for each talent that every student brings to the group. Teachers can provide students of high ability with enrichment projects that the student is interested in. The cooperative method seems to mirror the real world more closely than the traditional method so it seems that it would be wise to encourage even the bright student to be cooperative.

The fifth assumption asserts that competition is needed to build self-confidence and self-esteem. In the competitive setting there is always going to be winners and losers. "The winners must be full of self confidence and be proud" (Johnson & Johnson, 1975, p. 49). The loser likely feels horrible and has begun to lose both his self-esteem and confidence. John Holt wrote:

We destroy the disinterested (I do not mean uninterested) love of learning in children, which is so strong when they are small, by encouraging and compelling them to work for petty and contemptible rewards-gold stars, or papers marked 100 and tacked to the wall, or A's on report cards, or honor rolls, or dean's lists, or Phi Beta Kappa keys-in short, for the ignoble satisfaction for feeling that they are better than someone else. (Holt, 1964, p. 208).

The sensitive issues of self-esteem and self confidence must be dealt with by preparing students for life after graduation in a manner that makes them
feel good about themselves. Persons must feel that their contributions are worth something to their school community and as adults to their working and living communities. In order for this to take place we must teach students to not only value themselves and their work, but also others and their contributions. Cooperative learning methods seem to have superior ability over traditional methods to train students to accept and use these values and attitudes.

Cooperative Learning: Other Opinions

Like all teaching methods, cooperative learning has its problems. One problem involves the disagreement among advocates of cooperative learning as to what constitutes good cooperative learning. Among these problems is the matter of rewards. Another is the problem of the “gifted”.

Rewards: Extrinsic or Intrinsic

Some like Slavin are much in favor of using extrinsic rewards for incentives to motivate students to learn. On the surface these rewards appear to do just that. But Kohn finds extrinsic rewards to be nothing more than bribes that are harmful over time. “Over the long run they may actually reduce the quality of many kinds of performance” (Kohn, 1991, p. 83). While extrinsic motivation works in the short run, it may work negatively against the learner in the long run. In terms of motivational power, no artificial inducement can match the strength of intrinsic interest in a task” (Kohn, 1991, p. 83). However, Slavin feels that extrinsic rewards are needed to learn some skills and facts which students perceive as boring. Others seem to view skills and facts as unnecessary. They aim for what they perceive to be higher-order achievement and overall development.
“This broader vision requires three conditions: (1) learning that is challenging and interesting because it builds on children’s natural efforts to make sense of the world; (2) a curriculum attentive to their social and ethical, as well as cognitive, development; and (3) a school environment that meets their needs for belonging and contributing” (Schaps & Lewis, 1991, p.81).

Both camps have strong points to make. Those who believe that learning itself should be the ultimate reward base this on an ideal that does not seem to coincide with reality. If it is possible to provide a curriculum attentive to social and ethical, as well as cognitive development and was interesting to each child and met each student’s need for belonging and contributing, I would jump whole heartedly into Schap’s camp. To satisfy the interests of each student would necessitate an individual curriculum for each student. Where it is possible to individualize to a degree in a classroom, some uninteresting things are going to be taught to all children. In our society, whether we like it or not, not many people would continue to work where they do just because it is interesting. The nature of American society demands that we receive extrinsic reward for our efforts. Our culture works because of them. How can we expect students to succeed using only intrinsic rewards when adults do not? The reality is that some facts and skills are needed to bring about higher-order achievement. It seems then that though intrinsic rewards are preferred, extrinsic rewards are just going to work better in some cases. Three questions should guide our use of extrinsic rewards in the classroom.

1. Are there forms of group rewards that minimize possible negative effects on intrinsic motivation?
2. Under what conditions will reliance on intrinsic motivation be most likely to achieve our academic goals?
3. Under what conditions may extrinsic group rewards continue to be necessary and useful? (Graves, 1991, p. 77).
The Gifted and High Achiever

Another area of concern is that of the gifted. Some believe that the gifted do not receive the opportunity to expand their achievement while working in cooperative groups. They believe the gifted and high achievers are slowed as they have to wait for the low achievers. Kulik and Kulik (1989) discovered positive evidence that when the gifted were regrouped in gifted programs where specialized curriculum and materials were used, they performed better academically. “Five of seven studies in the studies in the best-evidence synthesis found that students learned more in regrouped than in heterogeneous classes, while two found negative results” (Allan, 1991, p. 61). The question of what caused them to do better comes to mind. Was it the homogeneous gifted group or the specialized curriculum and materials? Also would average and low ability students make similar gains using similar curriculum and materials? And finally is it possible that if heterogeneous cooperative groups were allowed to use this curriculum and the materials that go along with it that all the students would make even greater gains? Perhaps there is more study to be done in this area to find out what is truly making the differences in the Kuliks' research.

While Slavin agrees with Allan that the grouping of gifted students for acceleration purposes in some cases is appropriate, he does not favor ability grouping for the purposes of enrichment. He believes enrichment is equally appropriate for all students. “I am in favor of acceleration programs (especially in mathematics) for the gifted... But I see no evidence or logic to support separate enrichment programs for gifted students” (Slavin, 1991, p. 70). The argument here seems to be more with whether or not cooperative learning should be in homogeneous or heterogeneous groups. If part of the educator's plan is to build community within a varied classroom it seems that
heterogeneous groupings would accomplish this goal better than homogeneous groups. If the goal is to achieve only academically through cooperative learning then the make up of the group does not seem to matter.

Allan seems to believe that even high achievers should learn mostly within their academic peer group. Slavin disagrees. He claims research done by Kulik and Kulik to compare heterogeneous cooperative groups against high achievers in ability groups were not valid because the groups were not randomly chosen. Although the ability groups showed insignificant gains over the heterogeneous cooperative groups in the Kulik studies, the study done by Mikkelson in 1962 showed small differences favoring the heterogeneous cooperative groups. This study was done with a more appropriate random sample. Joyce, in his study found that even the gifted and high achievers made gains using cooperative learning. Although academic gains when compared to other approaches were not great they did gain. He could not find any evidence to suggest that cooperative learning could be harmful. "The literature contains stunning examples where students of a wide range of academic histories profited dramatically from the environment of a very cooperative classroom" (Joyce, 1991, p. 73). Joyce reminds us that though cooperative learning is a powerful tool, it is only one of the tools available to educators. No doubt, some disseminators of cooperative approaches over claim their research and advocate greater use of specific techniques than is reasonable, but no experts on cooperative learning suggest that any one technique will be effective all day long" (Joyce, 1991, p. 73).

Research Summary

It is most important in a Christian school that the methods chosen to
teach students who are God's children are methods that recognize God as all powerful and show respect and dignity toward students while remaining a teacher in authority but not an authoritarian. The cooperative learning method seems to be supportive of these ideas. Within this method one can recognize God as being all mighty as it sees the teacher as a team member with the students preparing them for life after graduation. The teacher is a servant to God and his students, while at the same time being an authority figure over his students. The students are on the same team and are in training to serve God and others now and in the world after they graduate. The cooperative method seems to be more in line with the Christian principles of love for God and love for neighbor; whereas the traditional method seems to breed a sense that those who are superior academically are superior people in general.

Research tends to favor cooperation as a better alternative to the more competitive traditional methods of teaching and learning. "It is cooperation that is most productive in creating fruitful learning climates and promoting the accomplishment of most cognitive and affective outcomes" (Johnson & Johnson, 1975, p. 39). Are these claims justified or has the research been manipulated to say what the proponents want to believe? Tradition still holds many supporters in its fold. Is it because cooperative learning and other alternative methods really do not deliver what they claim; or is it because teachers, administrators, and education boards are afraid to change their methodology? Can cooperative learning techniques better prepare students with low, middle, or high ability to achieve at a rate higher than the traditional method? In the pilot experiment I will observe and report on in the third chapter, I hope to find some indications to support or refute the claims of cooperative learning.
CHAPTER 3

The purpose of this pilot experiment was to examine the ability of cooperative learning to teach students academic concepts and skills. It was also the aim of the study to analyze students feelings toward cooperative learning. The results of this study will help to make decisions about future experiments of a similar nature in the pilot school.

The experiment that was conducted in conjunction with this study was performed in a community of six to seven thousand citizens. The people were generally middle class. The city is a bedroom community where many of the residents commute to other cities to work. Farming is still an important part of the people's employment. The population is mainly Caucasian. Most of the people attend churches of the Christian faith. The students involved in the experiment were from two fourth grade classrooms in a Christian school.

My role in the school is one of five fourth grade teachers who make up a team in the same building. I will be one of the teachers who will be involved in the experiment. I teach the classroom which will be taught using a cooperative learning method.

The experiment which I conducted was performed during a geography unit on the South census region of the United States. This project was completed over a period of five to six weeks during the months of December 1994 and January 1995. The experiment was to help determine if there is sufficient evidence to support the use of cooperative learning methods and
techniques over a more traditional teacher-centered approach. Two types of
data were gathered and evaluated as to whether or not one method or the other
is able to produce greater academic gains. A student survey and group
discussion were used to assess which method students prefer and why. The
results of this experiment will help to determine if the cooperative learning
methods used are worth the time and effort of the teacher for the possible gains.

Project Components and Activities

In this section I will describe the teachers involved, the student samples,
and the two classrooms. I will also describe the unit to be taught during this
experiment and the variety of techniques used in both classrooms. The
instruments used to evaluate the academic success of both classrooms and the
student preferences of the cooperative classroom will also be explained.

The Teachers

Both teachers in the study are interested in cooperative learning as an
alternative method to use in the classroom. Both tend to use traditional
approaches to teaching and desire to expand their array of teaching methods
so as to be better prepared to serve a variety of students. For this reason, both
teachers have agreed to teach their respective classrooms to the best of their
abilities to determine if cooperative learning techniques are worth the time and
effort to use in class. To determine whether or not cooperative learning is a
valuable tool to use in the classroom, a pretest and a post test will be given.
Percentage gains will be examined to decide which group did better
academically. In addition, a survey will be given to the students involved in the
cooperative classroom and analyzed to determine whether students prefer the
teacher-centered method or the cooperative method. Both teachers in the
experiment were males in their mid to upper thirties. The teacher/researcher in the cooperative group (Group A) has had eight years of classroom experience in fourth grade while the teacher in the traditional group (Group B) has had thirteen years of experience in fourth grade. The teacher who will teach Group A has had training in cooperative learning in his undergraduate education and has used some of these techniques in his teaching regularly. The teacher in Group B has had no formal training in cooperative learning, but does use some cooperative techniques in his teaching.

The Students

The students in the school and in the experiment are nearly all from Caucasian middle-class homes. They are predominately from families who are members of a church in the reformed faith. They generally follow Christian principles as stated in the Bible, and they expect that their children's teachers will too.

This experiment includes two classrooms of fourth graders. There are twenty-five students in each group. The students, while not randomly assigned to their classroom, represented the diversity within the school. Each class had about the same amount of boys and girls, about the same amount of low, middle, and high achievers, and about the same amount of students needing academic support. Each class had a similar racial mix.

Classroom Organization

Classroom A is organized in a manner that encourages cooperative work within the group setting. Students' desks are arranged in groups of five called pods (See Appendix 1). The students are encouraged to work together on particular tasks in order to learn concepts in the unit on geography of the South.

Classroom B is organized in the traditional fashion where desks are
placed in rows of four to six facing the front of the classroom. This arrangement helps to foster individual learning and a teacher-centered approach. (See Appendix 2).

The Curriculum

The study was done within a unit on the South census region of the United States. This unit can be found in Geography: Our Country and Our World by Scott, Foresman, 1991. The unit consists of three chapters that took about two weeks each to complete. The first chapter focuses on the physical geography of the South. The three lessons were based on land and water, weather and climate, and natural vegetation and resources in the South. The second chapter is a summary of the history of the South. It contains two lessons, one on Indians and settlers and the other on the South of the 1800s. The third chapter writes about what the South is like today. The four lessons are: Cities in the Region, Farming The Land, Centers of Manufacturing, and Going South.

Methods and Techniques

Group A was taught using cooperative learning techniques such as Teams-Games-Tournament (TGT), Jigsaw, paired reading and peer teaching. TGT was the main motivational technique used with this group. TGT is a method where students work together in small groups to learn concepts or perform skills and then drill each other to remember the information for games (Appendix 3). The members would compete in the games against members of other teams for points and prizes. In this study five groups of five students each became the teams. Teams were divided evenly according to sex and academic ability especially in relation to geography.

After working to learn concepts and information in a chapter, the students
played in competitive games in which they brought points back to the team that would be compiled for the total tournament. After completing three rounds, one for each chapter, the points for each team were totaled. After each round, a chart and a letter displaying both team and individual accomplishments was posted to motivate students (See appendices 4 and 5). At the end of the tournament prizes were distributed according to the place the team came in. First prize were books for the team members on the winning team. Second and third place teams received pencils and rulers. Fourth and fifth place teams won bookmarks. All received mini candy bars for their efforts. Also given were certificates of achievement. TGT was chosen as the main method of cooperative learning because of its past success. When compared to traditional instruction cooperative learning methods had "generally superior effects on academic achievement, interpersonal concern, race relations, and peer norms helpful in academic achievement (Allen, 1984, p. 60).

Jigsaw was a technique used to learn information. This technique was used in two or three variations. In one lesson teams were instructed to break in two groups of two or three students each. One group was to peer read the section on land forms in chapter 7, while the other group was to read the section on bodies of water. Both groups were to form questions about their respective sections then come together with the whole team and tell about what they read. They would then drill each other on what they had learned. Another variation encouraged a member from each of the five teams to read and help each other learn material about the South during the 1800s. After learning their section, the members would return to their own team to tell and drill each other on what they had learned. The thought for this variation was that although the members of the section groups were on different teams, they should be willing to help
even their competitors and promote class harmony before going back to their
own group and studying. A third variation was used to promote the individual
importance of each member of the team. In this variation, each member of the
team was assigned a major city of the South as found in chapter 9. The team
member would become the expert on the city he or she was assigned and then
teach it to the other team members. Team members would then drill each other
on the five cities to prepare for the next game session. Jigsaw was chosen as a
cooperative learning technique because of its ability to give individuals
responsibility and as well as the opportunity it gives individuals to become
specialists and valuable assets to their team members.

Peer reading was used quite often in the study to cover material.
Sometimes it was used as a total team reading method and sometimes just
between two or three members depending on the assignment. The idea in
using peer reading was that many students have difficulty with content area text
and often need support in learning new words and their meanings. "Some
cooperative partnerships are more effective then others. For example, students
low in verbal ability perform best when paired with a partner of higher verbal
ability" (Dansereau, 1987). The student who is the superior reader is supposed
to be able to help his less capable team member with a minimum of
embarrassment to the slower reader. "The technique allows for tutees to be
supported through texts of higher readability levels than they would be able to
read independently, thereby ensuring adequate stimulation and participation for
the tutor, who also has an important role in promoting understanding by
discussion and questioning" (Topping, 1989, p.490). Along with the peer
reading is a close relative, peer teaching. It too was chosen as a technique
because students tend to know much of what they know because of what they
learn from their peers. Peer approval is very important within cooperative methods of learning and can be a great motivator.

Group B was taught using a teacher-centered method. The main component of this method was an outlining procedure. Each of the chapters in this group was outlined according to the main headings in each chapter. To prepare for the outlining students read as individuals silently or in a whole class orally. Students then answered (written or orally) questions at the end of each lesson or a class discussion was held as a means of checking understanding of the lesson’s key concepts and vocabulary. The students in Group B counted on the teacher and the text to determine what was important to learn in each lesson.

In both Group A and Group B, the same texts and materials were available to use in the lessons. Audio and visual media were also used. In each case the teachers were careful to make sure all the same videos, films, and audio programs were used in each group.

**Analysis Techniques**

In this study there were two basic ways that were used used to measure students’ academic success. A pretest and a post test were used to measure percentage gains from the beginning to end of the study unit on the South. These tests were created by four fourth grade teachers at the study school. The tests were made using vocabulary and concepts from the geography text. The tests were done in a multiple choice format giving three choices to each question. The questions were formed using definitions and in a context format (See appendices 6 and 7).

Quiz results of Group A’s cooperative learning unit of the South were also compared to their quiz results of an earlier teacher-centered unit on the
Northeast. This was done to gain more information about cooperative learning versus teacher-centered approaches. The teacher-centered Northeast unit was taught using the same method that Group B used learned about the South.

Grade scores on the quizzes were given a numerical value and then averaged. Each student’s Northeast and South average scores were compared.

To discover which method of the two the students preferred, a survey was given to Group A to compare previously taught teacher-centered units to the TGT cooperative unit (See appendix 8). In addition the teacher informally interviewed the students of Group A about their feelings and thoughts of the TGT cooperative unit. Group B was not included in the survey or discussion because it had not been involved in a complete cooperative unit recently. Therefore, it was thought that they were unable to make a fair comparison.

Methodology, Data and Results

The unit on the South was taught to both Group A and Group B starting on the same day in December, and ending with a post test on the same day in January. To begin the study the two teachers gave the pretest to both Group A and Group B. Two days after the unit on the South was completed the teachers administered the post test. Students were not given the opportunity to study for the post test in either group. The researcher then compared the percentage gains between Group A and Group B for differences. Because the researcher was interested in the ability of the two methods to teach both high and low achievers, the teachers were asked to rank their five highest achievers and five lowest achievers. The results of these groups were compared to see if one of the two teaching methods tend to be more favorable to the learning extremes. There were no truly academically gifted students in this study so I do not directly
address that group in my conclusions. The comparison of high and low
achievers also involved the comparing of percentage gains among these
subgroups.

In addition to the comparison between Group A and Group B, Group A’s
Quiz results in the cooperative unit on the South will be compared to the results
of a unit on the Northeast that they had earlier in the year. The Northeast unit
was taught using a teacher-centered method much like the one used to teach
the unit on the South to Group B.

Group A, the cooperative group was also given a questionnaire to
discover their preferences as to whether they would rather be taught by
cooperative learning methods or by teacher-centered individual student
methods. Questions on the survey and in discussion focused on the students’
reasons for liking one method over the other. Students in Group A were able to
make this comparison because of their experience using the teacher-centered
approach in the earlier unit on the Northeast.

Results and Discussion

The average pretest score for Group A was 56.8%, while the average
pretest score for Group B was 55.04%. The average post test score for Group A
was 91.04%, compared with the Group B post test score of 79.84%. Group A
had an average gain of 34.24% while Group B had an average gain of 24.8%.
Group A averaged a 9.44% greater gain than did Group B (See appendices 9
and 10).

The average pretest score for the high achievers in Group A was 67.2%,
while the average pretest score for the high achievers in Group B was also
67.2%. The average post test score for the high achievers in Group A was 99%,
while the average post test score for the high achievers in Group B was 90.4%.
Group A had an average gain of 31.8%, while Group B had an average gain of 23.2%. Group A averaged an 8.6% greater gain than did Group B (See appendix 11).

The average pretest score for the low achievers in Group A was 51.2%, while the average pretest score for the low achievers in Group B was 47.2%. The average post test score for the low achievers in Group A was 78.4%, while the average post test score for the low achievers in Group B was 75.2%. Group A had an average gain of 27.2%, while Group B had an average gain of 28%. Group B averaged a .8% greater gain than did Group A (See appendix 12).

Unit Comparison for Group A

Grades for the teacher-centered Northeast unit and grades from the cooperative South unit were averaged for each individual in Group A to examine gains or losses found from one unit to another. Out of twenty-five students; seventeen gained, seven lost, and one remained the same. The seventeen students who gained were able to gain on average nearly 2/3 of a grade. The seven who lost lost less than 1/3 of a grade. Twelve students had significant gains of 1/3 of a grade or greater and three had significant losses of 1/3 grade or greater. The student with the greatest gain went from a D to a B minus, while the student with the largest loss went from an A to a B plus. (See Appendix 12 for numerical values).

Survey Results

Question number one on the questionnaire showed that twenty-one out of the twenty-five students in Group A preferred working in groups rather than working alone. Question two showed that eighteen believed that they actually learned more in cooperative groups than while working alone in a teacher-centered classroom. Six felt they learned better on their own and one was noncommittal.
Question three dealt with what children liked about working alone. The common responses in favor of the traditional setting are as follows. "It is more quiet." "I’m able to finish my work faster." "Nobody argues with me." "I can think for myself." "I’d rather read alone."

Question four asked what the students did not like about working alone. Sample responses include: "I feel uncomfortable." "I don’t have any one to help me when I get stuck." "The teacher sometimes can’t get to me and help because there is so many other students." "I have a hard time finishing on time." "There’s no one to talk over answers with." "I can’t find as many details on my own as I do in groups." "There is no one to help point out mistakes."

Question five asked what the students liked about working in cooperative groups. Some answers were: "I can question others." "Others help me find and understand the answers." "I can hear what others think." "We get more review and can remember more." "The work is shared." "I like the team work." "I like to discuss and find out that sometimes there is more than one right answer." "I finish more quickly with help." "I like reading the assignments with my teammates. They help me learn words and understand what is read better." "I like the games between teams." "I get to know people." "I can talk with my friends."

Question six pertained to what the students did not like about cooperative learning. These quotes tell how the students felt. "We get off track sometimes." "Sometimes we argue." "Some kids talk out of turn." "It can be hard to concentrate on your work." "Some kids make fun of your mistakes."

Analysis of Discussion with Students

It was not surprising to find that many students did like the cooperative learning because it gave them opportunities to get involved in social activities
incidentally; but it was more interesting to me that most of those who preferred the cooperative method preferred it largely because they felt they learned more with the help of others. Oddly enough three of the students who thought they learned more not only scored quite high on the post test, but also showed some of the highest gains in the cooperative unit on the South as compared with a unit taught using a similar teacher-centered method as was used to teach Group B. When told of this they conceded that maybe they do learn more in cooperative groups, but still prefer to learn alone. In conversation I also found that the main problems in cooperative learning for most of the students were that at times noise levels got quite high and sometimes classmates argued during games and group activities. These students said that if the noise could be lessened and the arguing cut back, they would like cooperative learning better than the teacher-centered method.

Conclusions and Limitations

With the data collected and the results in, I was able to draw conclusions in both the academic and social/ emotional realms with regard to cooperative learning as compared to the teacher-centered method of teaching in the study unit on the South. Again I used the pretest and post test percentage gained comparisons of Group A and Group B to determine academic differences of groups learning from the same unit but being taught with different methods. A comparison of quiz scores from the Northeast (teacher-centered unit) and the South (cooperative unit) for Group A was also used to determine the academic differences of cooperative learning methods. The student survey and group discussions were used to determine the students' preferred method of learning, teacher-centered or cooperative.
Academic Results

On average the cooperative Group A were able to score higher on percentage gains from pretest to post test scores than the teacher-centered Group B. High ability students in Group A were able to gain just slightly less (about 1 percentage point) on their percentage gains than all of Group A. Again they scored higher than their Group B counterparts. Lower ability students in both groups had virtually the same gains. However it must be noted that one low ability student from Group A, missed nearly two weeks of the six week unit on the South due to illness. If average gains of the other four lowest ability students in Group A were used, Group A again scored higher than Group B by about five percent. The comparison of Group A scores with Group B scores appears to confirm that cooperative learning methods have high ability to teach the kind of students represented in the study. Both low ability and high ability students who were taught using cooperative methods seem to do generally better than their fellow students taught using a teacher-centered approach.

Group A comparisons between the quiz results of the Northeast teacher-centered unit with the South cooperative unit, seemed to conclude that most children will do better in learning situations that are cooperative. High ability students did basically the same in both of the units. They averaged one-third grade above to one-third grade below from one unit to the other. Low and average learners tended to score about two-thirds of a grade better in cooperative learning situations.

Limitations

From these findings it seems it is safe to conclude that cooperative methods should be used because they seem to give better academic results to
a greater variety of students. It must be remembered that the conclusions here apply to students who are generally white, middle-class fourth graders who live by basically the same Christian values. The size of the population that took part in the study also limits the conclusions that can be drawn from the study. However, it does seem that the results of this study and others on cooperative learning do suggest that cooperative learning methods are worthy and valuable methods to use in order to teach students academic facts and concepts. It should be a preferred method to the teacher-centered models that are commonly being used in many school systems.

Conclusions

Do students prefer learning in a cooperative setting as compared to a teacher-centered setting? The answer appears to be yes. In this study 84 percent of the students said they preferred cooperative learning groups to the individual learning that took place in the teacher-centered model of learning. Another 12 percent said they would prefer cooperative learning groups if noise and arguing were reduced. It seems that as the students and the teacher become more familiar with their roles in the cooperative setting, they would learn to eliminate most of the unproductive noise that sometimes sneaks in with the learning noises that do accompany the cooperative learning method. Although the students in Group A were well acquainted with cooperative learning methods, it is possible they view it favorably because it was the last method in which they were taught geography. Certainly all is not perfect with cooperative learning, but it does seem to have the ability to motivate students to learn. It allows for students to share ideas and to get help from classmates. Students can feel good about themselves as they find they are needed to complete a group project or activity. The competition they do have is between
groups and is not as threatening to the individual. The competition they do have mirrors the social and business worlds they will enter when they leave our school systems. Even if the academic benefits were not evident, it would be of much value to use some cooperative activities for their ability to motivate, their ability to bring about confidence and self-esteem, and their ability to imitate the real world. It is a necessity that all groups do have group goals that will motivate the team, but grades should be given on the merits of the individual’s work within the group otherwise group dissension can occur. The teams must know that they need each other, but academically they sink or swim on their own. It seems that group rewards and individual accountability are ingredients that must be included in a cooperative learning setting or the cooperative learning will fail.

Recommendations

After conducting this study, the researcher felt confident in the ability of cooperative learning methods to teach students in a way that will bring about generally higher academic scores while doing so with motivation and individual self-esteem. He recommends that teachers use it in their classrooms. It can be more noisy than the traditional setting, but the noise can be worth it for their students if they can learn to distinguish between learning noise and fooling around. If an educator can learn to work in an environment that has active students, then that teacher is a candidate to teach using cooperative learning methods. If the teacher has not taught using cooperative methods before, he or she should first either receive training as to how one teaches using these methods or at least receive instruction from a colleague who is familiar with and uses cooperative learning. “Imagine what could be done with a class of twenty-
five teachers!" (Behounek, 1988, P. 13). However, to jump in without training or help may cause a teacher to not give cooperative methods a fair chance and jumping in could lead to frustration. Even worse would be if the teacher did not understand the workings of cooperative learning, thus leaving not only one's self frustrated, but also leaving students confused. Poor cooperative learning methods are not good substitutes for the best teacher-centered methods. Start small and add more as you go. Cooperative learning is still only one of the teaching tools available. It seems necessary to use it, but only as one of many teaching tools.

The researcher is also interested in the consistency of the ability of cooperative learning to bring about academic success in schools possessing similar attributes as those of the study school. It is believed it would be helpful to try similar studies in similar schools to see if the results there would be consistent to the findings at the study school. The researcher is also interested in doing a year to year study of cooperative learning using similar tactics to determine if the findings from this study would be consistent with next year's fourth grade. It is necessary to continually test and search to make sure we as educators are using the best tools available to teach today's youth in an ever changing world.

Dissemination

Because the researcher is interested in cooperative learning as a means of transmitting knowledge and skills, he plans to make this report available to his colleagues in two ways. First, he would like to give a short oral presentation at his monthly staff meeting to discuss his findings. Second, he plans to make a copy of this study available in the teacher portion of his school library.
REFERENCES


Cooperative Learning Classroom

Group A

Appendix 1
Appendix 2

Teacher-centered Classroom

Group B
COOPERATIVE LEARNING TERMS

Teams- Games- Tournaments (TGT): TGT is a method of motivation used to get students involved in the learning of facts and concepts in a group setting. After class presentations and team practice students play games against members of other teams for points. TGT suggests games be played with three opposing players but these numbers can work with numbers as high as five. These players can be bumped up or down into competitive games where players are more evenly matched. Games are formed using questions about the learned material. Three games make a tournament. Awards are given to teams according to how many points a team receives at the end of the tournament. Acknowledgment of team and individual achievement in the tournament are released in a class newsletter.

Jigsaw: Jigsaw is a technique used to learn narrative material in a group setting. Individuals in a team learn different sections of a narrative selection with members from other teams. They become the expert of that portion of the selection. Then they go back into their teams and teach their team about the section in which they have become the expert. Jigsaw II is a modification of Jigsaw where the jigsaw activity is taught in a TGT setting.

Paired Reading: Paired reading is a technique used to get high achieving readers with low achieving readers for the purpose of helping the low achiever to understand text better. The high achiever is to be a model as well as a tutor to the low achiever. The benefit to the high achiever is the satisfying feeling that he or she helped. The high achiever is also thought to learn more as people tend to learn better material in which they teach.

Peer Teaching: Peer teaching is a technique that can be used to help students learn a concept or skill. Students who have mastered a concept or skill can be asked to help those students who are still trying to learn the concept or skill. The advantage of peer teaching is that students who need help can get it quicker, and it frees teachers to do things that may be more important at the time. Disadvantages may be that teachers may begin to rely too much on their better students, and these students may begin to feel used when they would rather be enriched themselves.
Appendix 4

TOURNAMENT TALK

It all came to an abrupt halt today, January 30, 1995. The combatants faced off for the third and final round of Teams, Games, and Tournaments and a victor was found; everybody! Yes that is right; everyone wins. All had a fun time as their teams battled for positions and prizes. Now all that is left is to announce the winners of the prizes.

The most mighty storm on earth is the Hurricanes, and they were able to blow past the Swamp Things with a score of 25 points for the day and a total of 64 points. The Swamp Things can wear their slime proudly even though they slipped into second place. They were the most consistent team with 21 points for the third straight time and ended with 63 total points. The Twisters wound up in third with 12 points for the day and a total of 50 for the tournament. The third round blew up in the Tornadoes’ faces as they were only able to accumulate 12 points giving them a total of 45. The Scorpions never provided much sting while receiving 14 points and a grand total of 42 points. Hang in there Scorpions. There may be other tournaments. You did well teams. Good work! Individual winners included three from the Hurricanes: Brian, Dave, and Lindsay. Other victors were Tara from the Twisters and Katie from the Swamp Things. Lindsay was the top individual point winner in Teams, Games, and Tournaments with 16 tournament points.
## Appendix 5

### TGT RESULTS

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The South
Pretest

1. A swamp is
   a. a boat used to transport goods from one place to another
   b. a low, wet area of land sometimes covered by water
   c. a body of water that feeds into a larger body of water

2. A tributary
   a. flows into a gulf.
   b. is a river or stream that joins a larger river.
   c. flows beside a larger river.

3. A drought
   a. is caused by the oceans.
   b. happens in July.
   c. is a long time without rain.

4. A refinery is
   a. a place where oil is made into useful products.
   b. a factory where fine china is made.
   c. a machine used to pump oil out of the ground.

5. The Piedmont is
   a. a famous horse race in Maryland.
   b. a small mountain range in the Appalachians.
   c. an area of rolling land between the Appalachians and the Coastal Plains.

6. The climate of the South census region is mostly
   a. hot and dry.
   b. cool and wet.
   c. warm and wet.

7. Which type of weather are you not likely to find in the South?
   a. tornado
   b. a northeaster
   c. a drought

8. What natural resources are you most likely to find in the South?
   a. oil and forests
   b. Iron and forests
   c. oil and granite
9. A frontier is
   a. the dangerous area in the front of an advancing army.
   b. the last edge of settled land.
   c. a person who wants to explore new places.

10. An export is
    a. a product sent out of a country for sale or use in another country.
    b. a product taken into a country for sale or use by its citizens.
    c. an area along the coast where ships can dock and unload goods.

11. He made tobacco a valuable export for the South.
    a. Daniel Boone
    b. John Rolfe
    c. Eli Whitney

12. An import is a product
    a. sold to another country.
    b. made by a port city.
    c. brought into a country from another country.

13. A slave is a
    a. person who owns a large farm.
    b. person who is owned by and made to do the work for other people.
    c. large sailing ship.

14. If you visited a plantation in the 1800's you might find
    a. people making leather shoes.
    b. tobacco or cotton growing.
    c. fishermen sorting fish.

15. He made a machine to pull the seeds out of cotton.
    a. Eli Whitney
    b. Daniel Boone.
    c. John Rolfe

16. A civil war
    a. never ends.
    b. is a fight between many countries.
    c. happens inside one country.

17. Our civil war was fought because
    a. of English taxes on the colonists' goods.
    b. the South wanted slavery and the North did not.
    c. the South would not sell oranges to the North at a fair price.

18. Cultivate means to
    a. prepare land for crops by plowing and planting.
    b. to water plants.
    c. to purchase land for farming.
19. Industry is
   a. a means of exploring a new, unsettled area.
   b. a way of raising crops.
   c. any branch of business, trade, or manufacturing.

20. A tourist is
   a. a person who plans trips.
   b. an airplane pilot.
   c. a person who travels for pleasure.

21. Synthetic goods
   a. are good for you.
   b. are made from chemicals.
   c. are natural resources.

22. The United States legislature makes laws
   a. in the Supreme Court.
   b. in the White House.
   c. at the Capitol building.

23. Irrigation is
   a. a long period of time without rain.
   b. the opening of gates to let livestock in the barnyard.
   c. saving water to use during dry time.

24. Which are major cities in the South census region?
   a. Los Angelos, Denver, and Cincinnati
   b. Houston, Atlanta, and New Orleans
   c. Miami, New York, and Memphis

25. Farm products in the South include
   a. hogs, oranges, and cotton.
   b. grapefruit, apples, and poultry.
   c. apples, peaches, and dairy cows.
Appendix 7

The South

Post Test

1. A tributary
   a. flows into a gulf.
   b. is a river or stream that joins a larger river.
   c. flows beside a larger river.

2. A drought
   a. is caused by the oceans.
   b. happens in July.
   c. is a long time without rain.

3. You are probably walking in a swamp if you see
   a. wet, spongy land covered in some parts by water.
   b. high, table like rock forms with unusual shapes.
   c. a rapidly moving stream feeding into a larger body of water.

4. The climate of the South census region is mostly
   a. cool and dry.
   b. warm and wet.
   c. hot and dry.

5. Which kind of weather are you not likely to find in the South?
   a. a blizzard.
   b. a hurricane.
   c. a tornado.

6. What natural resources are you most likely to find in the South?
   a. gold and granite.
   b. oil and forests.
   c. iron and coal.

7. A refinery
   a. is the fine tuning of a radio station.
   b. is a factory that turns crude oil into gasoline and heating oil.
   c. can pump oil out of the ground.

8. The Piedmont is
   a. an area of rolling hills that ends at the fall line.
   b. is the third leg of the Triple Crown of horse racing.
   c. is a mountain range in western Kentucky.
9. At one time, the Appalachian Mountains were considered a frontier because
   a. dangerous animals often attacked settlers in that area.
   b. there were only a few roads on which people often got stuck.
   c. no one had settled in the wilderness that was beyond them.

10. Citrus fruits could be called an export because
    a. the South raises a lot of oranges to sell to people in Michigan.
    b. many of them are sent and sold to other countries in the world.
    c. a ship could hold a lot of citrus fruit.

11. He made tobacco an important cash crop for the South.
    a. Daniel Boone
    b. Eli Whitney
    c. John Rolfe

12. He invented the cotton gin to pull the seeds out of cotton.
    a. John Rolfe
    b. Daniel Boone
    c. Eli Whitney

13. Which best describes a plantation?
    a. a factory where workers make leather shoes
    b. a large southern farm worked mainly by slaves
    c. a port where tobacco and cotton are shipped out of

14. A slave is a person who
    a. is owned by and made to work for other people.
    b. owns other people who work for him.
    c. builds ships for a living.

15. A civil war is
    a. a war between citizens of the same country.
    b. fought only in United States.
    c. fought only about land.

16. The Civil War was fought because
    a. the North believed slaves should be free.
    b. the North was angry because they could not have slaves.
    c. the South sold diseased chickens and hogs to the North.

17. An import is a product
    a. sent to another country.
    b. made for the wealthy plantation owners.
    c. brought into a country.

18. Synthetic goods
    a. are made artificially from chemicals.
    b. are found in the ground.
    c. are natural materials.
19. Tourism, oil refineries, and farming are
   a. industries found in the South.
   b. very important in the Everglades.
   c. always very dangerous to the environment.

20. To cultivate person prepares and uses land for
   a. making lumber.
   b. growing crops.
   c. mining minerals.

21. A person who travels for pleasure is a
   a. tourist.
   b. engineer.
   c. astronaut.

22. Irrigation is
   a. the bringing of water to land through canals, ditches, or pipes.
   b. used to dry out swamp land for farm use.
   c. building gates for livestock to enter a barnyard.

23. The United States Congress makes laws
   a. in the White House.
   b. at the Capitol building.
   c. in the Supreme Court.

24. Which are major cities in the South census area?
   a. Miami, Dallas, and Boston.
   c. Houston, Atlanta, and Washington D.C.

25. Which farm products come mostly from the South?
   a. grapefruit, chickens, and oranges.
   b. sugar cane, apples, and potatoes.
   c. hay, wheat, and cotton.
STUDENT SURVEY OF LEARNING METHODS

1. How would you rather learn, alone or in groups? ________________

2. Do you think you learn better when you are alone or in groups? ________________

3. What do you like about learning alone? ________________
   ________________
   ________________

4. What do you dislike about learning alone? ________________
   ________________
   ________________

5. What do you like about learning in groups? ________________
   ________________
   ________________

6. What do you dislike about learning in groups? ________________
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*Five High Achievers

**Five Low Achievers
## Appendix 10

### GROUP B TEST RESULTS

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**AVERAGE** 55.04 79.84 24.8

*Five High Achievers

**Five Low Achievers
# COMPARISONS OF HIGH AND LOW ACHIEVERS

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### Appendix 12

#### Comparison: Group A

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**Scale**

- A=0, A-=1, B+=2, B=3, B-=4, C+=5, C=6, C-=7
- 1.0=1/3 grade: D+=8, D=9, D-=10, E=11

---

68
January 19, 1995

Dear Tom,

It looks like you have an interesting project for the completion of your masters degree. The significance of cooperative learning and making use of its components will be interesting and challenging.

I am pleased to see you have the opportunity for making this comparison. The tools which you use for assessment are of specific interest to me.

You have my permission and support to explore both methods of instruction and their results.

In His Service,

Gordon DeKruyter, Principal
NAME: Thomas Neal Vander Stelt

MAJOR: (Choose only 1)

- Ed Tech
- Ele Ed
- Elem LD
- Sec/Adult
- G/T Ed
- Sec LD
- Early Child
- SpEd PPI

TITLE: Cooperative Learning: Does it Work and Do Students Like it?

PAPER TYPE: (Choose only 1)  

- Project
- Thesis

SEM/YR COMPLETED: Winter 1995

SUPERVISOR'S SIGNATURE OF APPROVAL

Using the ERIC thesaurus, choose as many descriptors (5 - 7 minimum) to describe the contents of your paper.

1. Cooperative Learning
2. Ability Grouping
3. Peer Tutoring
4. Paired Reading
5. Montessori
6. Gifted Students
7. Slavin
8. Johnson and Johnson
9. 
10. 

ABSTRACT: Two to three sentences that describe the contents of your paper.

This paper compares cooperative learning methods with traditional methods to determine which method students prefer. It looks at the academic success achieved using each approach as well as students' attitudes towards each approach. It includes pilot experimental results.

** Note: This page must be included as the last page in your master's paper.