

1990

## The impact of cooperative learning on student attitudes and achievement

Cheryl L. Finer  
*University of Northern Iowa*

*Let us know how access to this document benefits you*

Copyright ©1990 Cheryl L. Finer

Follow this and additional works at: <https://scholarworks.uni.edu/grp>



Part of the [Education Commons](#)

---

### Recommended Citation

Finer, Cheryl L., "The impact of cooperative learning on student attitudes and achievement" (1990).  
*Graduate Research Papers*. 2311.  
<https://scholarworks.uni.edu/grp/2311>

This Open Access Graduate Research Paper is brought to you for free and open access by the Student Work at UNI ScholarWorks. It has been accepted for inclusion in Graduate Research Papers by an authorized administrator of UNI ScholarWorks. For more information, please contact [scholarworks@uni.edu](mailto:scholarworks@uni.edu).

---

## The impact of cooperative learning on student attitudes and achievement

### Abstract

It is essential for teachers to know how and when to structure students' learning goals competitively, individualistically, or cooperatively. Each goal structure has its place. Goal structures determine the way in which students will interact with each other and how the teacher will achieve an instructional goal. It is important for students to learn which behaviors are expected in each situation. By using all three goal structures students learn how to collaboratively work with others, compete for fun and enjoyment, and work on their own. Johnson and Johnson ( 1987) stated that no aspect of teaching is more important than the appropriate use of goal structures. Teachers have no choice but to choose a goal structure for each lesson they teach.

THE IMPACT OF COOPERATIVE LEARNING ON  
STUDENT ATTITUDES AND ACHIEVEMENT

---

A Research Paper

Presented to

The Department of Educational Administration  
and Counseling

University of Northern Iowa

---

In Partial Fulfillment  
of the Requirements for the Degree  
Master of Arts in Education

---

by

Cheryl L. Finer

May 1990

This research paper by: Cheryl L. Finer

Entitled: THE IMPACT OF COOPERATIVE LEARNING ON STUDENT  
ATTITUDES AND ACHIEVEMENT

has been approved as meeting the research paper requirement  
for the Degree of Master of Arts in Education.

Norman McCumsey

March 29, 1990  
Date Approved

\_\_\_\_\_  
Adviser

Robert H. Decker

April 3, 1990  
Date Approved

\_\_\_\_\_  
Second Reader of Research Paper

Dale R. Jackson

April 4, 1990  
Date Received

\_\_\_\_\_  
Head, Department of Educational  
Administration and Counseling

It is essential for teachers to know how and when to structure students' learning goals competitively, individualistically, or cooperatively. Each goal structure has its place. Goal structures determine the way in which students will interact with each other and how the teacher will achieve an instructional goal. It is important for students to learn which behaviors are expected in each situation. By using all three goal structures students learn how to collaboratively work with others, compete for fun and enjoyment, and work on their own. Johnson and Johnson (1987) stated that no aspect of teaching is more important than the appropriate use of goal structures. Teachers have no choice but to choose a goal structure for each lesson they teach.

Teachers can select from three methods of structuring the student-student interactions in their classrooms: competitive, individualistic, and cooperative. According to Johnson and Johnson (1974) a competitive goal structure has students work against each other to achieve a goal that only one or few students may obtain. The traditional classroom overuses competition. A student's performance is constantly being compared to the performance of another student. When the student-student interactions in a classroom are structured competitively, someone wins and everyone else loses. Examples include: spelling bees, reading the most books, rewards for

finishing first, and grading on the curve. Competitive situations encourage individuals to prevent others from winning or accomplishing a goal.

The Johnsons stated that a competitive goal structure does little to foster interdependence and cooperation in a classroom. Students often developed negative attitudes toward individuals who were more successful than they were, as well as toward the teacher and the school. Schrom (1980) reported that the negative experiences of ninth-grade students in school led to attitude problems and was a major factor that influenced students to drop out of school. Students who were continually placed in a competitive situation did not learn for intrinsic reasons. Learning for its own sake was not rewarding. Winning was the reward (Andersen, Nelson, Fox, & Gruber, 1988).

The Johnsons (1987) felt that not all competition was harmful. If not overdone, it can be energy-producing and motivational. It can also be a timely change of pace. However, the inappropriate use and overuse of competition could have many destructive outcomes which interfere seriously with successful instruction (Johnson & Johnson, 1987).

The individualistic goal structure defined the student-student interaction so that there was no competition and no interdependence (Johnson & Johnson, 1975). As an

alternative to competition, individualized instruction became popular in the 1970s (Andersen, Nelson, Fox, & Gruber, 1988). In an individualized setting, students worked by themselves to accomplish a goal unrelated to the goals of others (Johnson & Johnson, 1987). An individualized program required the teacher to plan for each student based on an extensive evaluation of each student. According to the Johnsons (1987), every student must be instructed individually because no two students are working on the same task or at the same rate.

The main characteristic of an individualistic structure is that each student faced the learning situation alone. Examples included: students having a workbook page to complete, working on the computer, art activity to design, set of math problems to answer, or reading a story. With an individualistic goal structure, one student's accomplishments does not affect another student's accomplishment. Grades or other rewards are not tied to the classroom performance of other students. Andersen, Nelson, Fox, and Gruber (1988) maintained that each student could earn the desired grade, depending on the individual's accomplishment.

The Johnsons (1987) stated that individualized instruction would be most desirable under conditions in which it would be possible for each individual to achieve the goal. At times, students have to work individually. When students do

not interact with each other, they have no opportunity to practice skills needed to develop divergent thinking and decision-making. Further, students do not have the opportunity to learn to appreciate others or to practice getting along with their peers.

A third goal structure is cooperation. In the last twelve years there has been a substantial awakening of interest in applying principles of cooperation to the classroom as a primary means of teaching traditional school subjects (Slavin, 1980). A cooperative structuring of the student-student interaction was an effort to build interdependence (Johnson & Johnson, 1975). In a cooperative goal structure, students in heterogeneous groups work together to accomplish a common goal. Andersen, Nelson, Fox, and Gruber (1988) believed cooperative learning means more than high-achieving students helping slower students. Group members are concerned about the performance of all group members. Students are rewarded on the performance of the whole group. Every student must master the material and is individually accountable for contributing a share of work to the group. Examples of single products in cooperatively structured groups include: one math paper, one report, or learning one list of spelling words. Individuals within each group are tied together by the emphasis on a single product as well as a shared reward.

Rewards might include an extra recess, lining up first, bonus points, or a free period.

Johnson and Johnson (1985) determined that cooperative learning does not mean having students share materials in which each individual works on his own workbook page. Andersen, Nelson, Fox, and Gruber (1988) pointed out that in cooperative learning groups each member is responsible for helping other group members. Students learn vocabulary, solve math problems, or write a story together. Each student in the group might learn a part of the problem, then teach other group members their parts. All group members must be able to: know the answer, complete the task, and explain it.

In a cooperative learning situation, students are not only evaluated on the final product but also on how well they maintained good working relationships. In cooperative learning groups the social skills that students need in order to work collaboratively, such as leadership, communication, and conflict management, were taught directly (Johnson & Johnson, 1987). Teachers often assume that students already have the skills necessary to interact effectively in groups. These social skills need to be taught (Andersen, Nelson, Fox, & Gruber, 1988).

At the present time in education, the most under-utilized goal structure is cooperation (Johnson & Johnson, 1987). Cooperative learning had been relatively ignored by teachers even though it is by far the most important and powerful way to structure learning situations (Johnson & Johnson, 1987). Coleman (1961) and Glasser (1969) have stated that a major goal of school is to educate students to work cooperatively with others. "Ideally, a cooperative goal structure may be used sixty to seventy percent of the time, an individualistic goal structure, twenty percent of the time, and a competitive goal structure, ten to twenty percent of the time" (Johnson & Johnson, 1987, p. 18).

This paper examined the three goal structures that are essential for the process of learning to occur. In addition, this paper summarized the major aspects of cooperative learning. Specifically, this paper elaborated on the research of cooperative learning, primarily in the areas of achievement and social development. Sharan and Sharan (1987) revealed that cooperative learning encompasses a wide range of strategies for promoting academic learning through peer cooperation and communication. Slavin (1987) referred to cooperative learning as a set of instructional methods in which students worked in small, mixed-ability learning groups. These groups usually had four members. The groups' members

consisted of: one high achiever, two average achievers, and one low achiever. According to Slavin (1987), the students in each group were responsible not only for learning the material being taught in class, but also in helping their groupmates learn. A group goal was an important aspect of the cooperative learning process.

Many teachers believe that they are implementing cooperative learning when they place students into groups to learn. Putting students into groups to learn is not the same as structuring cooperation among students. In order for a lesson to be cooperative, Johnson, Johnson, and Holubec (1986), cited five essential elements that needed to be included. In a math class, a teacher might assign her students a set of math story problems to solve. Students are placed in groups of three or four. The instructional task is for the students to solve each story problem correctly and understand the correct strategy for doing so. The teacher now has the responsibility of implementing the five basic elements.

The Johnsons (1989) listed positive interdependence as the first basic element of a cooperative lesson. Positive interdependence exists when one perceives that one is linked with others in a way so that one cannot succeed unless the other members of the group succeed. Johnson and Johnson

(1989) believed that positive interdependence is the most important factor in structuring learning situations cooperatively. Within the math story problems lesson, positive interdependence is structured by group members agreeing on the answer and strategies for solving each problem.

Face-to-face promotive interaction among students was the second basic element of a cooperative lesson (Johnson & Johnson, 1989). The Johnsons (1989) defined promotive interaction as individuals encouraging and facilitating each other's efforts to complete tasks and achieve in order to reach the group's goals. This exists when students orally explain to each other how to solve problems, discuss with each other the nature of the concepts and strategies being learned, teach one's knowledge to classmates, and explain to each other the connections between present and past learning (Johnson & Johnson, 1989). The Johnsons (1989) discussed that face-to-face interaction was promotive in the sense that students helped, assisted, encouraged, and supported each other's efforts to learn. In the math lesson, the teacher must provide the time and encouragement for students to exchange ideas and help each other learn.

The Johnsons (1989) listed individual accountability for mastering the assigned materials as the third basic element of a cooperative lesson. Each group member has the

responsibility to learn the materials. The teacher needs to ensure that the performance of each individual student is assessed and the results given back to the group and the individual. It is important for the group to know who needs more assistance in completing the assignment. A common way to structure individual accountability would be to give a test to each student and randomly select one student's work to represent the entire group. In the math lesson, individual accountability is structured by having the teacher pick one answer sheet at random to score for the group and randomly asking one group member to explain how to solve one of the problems.

Social skills was the fourth basic element of a cooperative lesson according to the Johnsons (1989). Groups can not function effectively if students do not have and use the needed leadership, decision-making, trust-building, communication, and conflict-management skills (Johnson & Johnson, 1989). These skills have to be taught just as purposefully as academic skills. Many students who have never worked cooperatively in learning situations lack the needed social skills for doing so. Placing socially unskilled students in a learning group and telling them to cooperate will obviously not be successful. Johnson, Johnson, and Scott (1978) stated that students must be taught the

interpersonal and small group skills needed for high quality cooperation, and be motivated to use them. During the math lesson the teacher might emphasize for the day that students need to make sure all group members understand the problems. When the teacher sees the groups engaging in this skill, she verbally praises the group and puts a star on the group's paper.

In order to achieve, students in cooperative learning groups have to work together effectively. Effective group work is influenced by whether or not groups process how well they are achieving their goals and maintaining effective working relationships among members. Johnson, Johnson, Snider, and Yager (1986) listed group processing as the final element of a cooperative lesson. At the end of the math lesson the groups process their functioning by answering two questions:

"1. What is something each member did that was helpful for the group?

2. What is something each member could do to make the group even better tomorrow?" (Johnson, Johnson, Snider, & Yager, 1986, p. 392). Such processing also reminds students to practice collaborative skills consistently.

Some of the keys to successful processing are:

1. allowing sufficient time for it to take place.
2. making it specific rather than vague.

3. maintaining student involvement in processing.
4. reminding students to use their collaborative skills while they process.
5. ensuring that clear expectations of the purpose of processing have been communicated. (Johnson, Johnson, & Holubec, 1986, p. 51)

Students who are unmotivated to learn do not learn.

The principle behind cooperative learning methods was that by rewarding groups as well as individuals for their academic achievement, peer norms came to favor rather than oppose high achievements (Slavin, 1984). Small-group learning with students working cooperatively in the study of academic materials lead to superior achievements in problem-solving and higher-level thinking skills (Lazarowitz, Sharan, & Steinberg, 1980). These achievement gains were not at the expense of rote-learning skills as students in small groups seemed to do equally, if not better, on rote-level skills than students who had worked in traditional classroom settings (Lazarowitz, Sharan, & Steinberg, 1980).

According to Lazarowitz, Sharan, and Steinberg (1980) students benefited from the help of their peers and from the opportunity to hear and experience more ways to solve problems. Small groups provided a safe place for low achievers to become

involved in learning. Encouraged to cooperate, students were no longer left to succeed or fail on their own.

High achieving students also showed academic gains with small-group learning (Lazarowitz, Sharan, & Steinberg, 1980). In cooperative group, high achievers had the opportunity to clarify their own thought processes while explaining ideas to other group members. Group activities were often open-ended, problem-solving tasks that challenged students to extend their thinking.

The primary task of schools is to provide instruction effectively. An instructional innovation that does not improve instruction would be unlikely to be used in many schools, regardless of its other effects. Today schools are in an educational climate that is increasingly holding educational programs accountable for their effects on student achievement. Most of the cooperative learning programs were developed with the improvement of instruction as the primary goal (Slavin, 1983).

As varied as the cooperative learning methods are, there are two primary factors in the area of achievement that teachers must address. Specific group rewards based on members' learning and task specialization were two critical factors that achievement depended upon (Slavin, 1988). Slavin (1988) stated that group rewards must be based on the learning

of all group members if they were to result in increased learning for all group members. Task specialization refers to the use of techniques in which each group member is given a particular part of the group task to do. Group members depend on each other and cannot easily substitute for each other in completing the group task. For example, each student in a cooperative group is given a piece of information that his or her teammates do not receive. Students depended absolutely on their groupmates to get the information they will need to do well on their tests.

Slavin (1983) identified forty-six experiments on cooperative learning that were conducted in elementary and secondary classes. Criteria for being a part of this field experiment included a control group and having evaluated a cooperative learning method in regular elementary or secondary classes from two to twelve weeks. Of the forty-six studies, twenty-nine (63%) showed cooperative learning methods to have had significantly positive effects on student achievement (Slavin, 1983). Slavin (1983) found fifteen (33%) of the experiments made no differences on student achievement and two (4%) had a significantly higher achievement for a control group than for a cooperative treatment. There was a dramatic difference in achievement outcomes among the group study methods, depending on their use of rewards. Of

the twenty-seven studies that used group rewards for individual learning, twenty-four (89%) found positive effects on student achievement, while three (11%) found no differences (Slavin, 1983). According to Slavin (1983), cooperative learning methods that used specific group rewards based on group members' individual learning consistently increased achievement more than control methods.

The results for studies that used task specialization were less clear because only ten studies used this task structure (Slavin, 1983). Ziegler (1981) studied the use of both task specialization and group rewards for individual learning. Ziegler's study showed that strong student achievement was maintained in a five-month follow-up. Nine of the ten task specialization studies in which students were rewarded on the basis of group product found positive achievement results (Slavin, 1983). Slavin's research (1983) showed that cooperative learning methods that used task specialization could increase student achievement more than control methods. Presently, the data on task specialization are inconclusive and the positive results are limited to certain areas of social studies or related subjects.

The evidence from Slavin's field experiments (1983) on cooperative learning clearly suggested that student achievement can be enhanced by use of cooperative methods that used group

rewards. Hulten and DeVries (1976) also found that group rewards were critical to the achievement effects of cooperative learning.

Since the 1920s there has been a great deal of research on the relative effects of cooperative, competitive, and individualistic efforts on achievement and productivity. Deutsch (1962), Johnson and Johnson (1981), Sharan (1980), and Slavin (1977) completed two meta-analysis: one evaluated the effects of cooperative, competitive, and individualistic interactions on achievement and another examined the effects of the different interaction patterns on acceptance of differences in peers. These data suggested that cooperative learning experiences:

1. tended to promote more learning than did competitive or individualistic learning experiences.
2. compared to competitive and individualistic experiences, tended to promote higher motivation to learn, especially intrinsic motivation.
3. compared with competitive and individualistic experiences, tended to produce more positive attitudes toward the instructional experiences and the instructors.
4. were linked with higher levels of self-esteem and healthier processes for deriving conclusions about one's self-worth than are competitive or individualistic ones.

5. compared to competitive and individualistic ones, has been found to result in stronger perceptions that other students care about how much one learns, and that other students want to provide assistance.

Johnson and Johnson (1978) stated that many more learning outcomes were positively influenced by having students work cooperatively. The Johnsons (1978) indicated that cooperation should be the dominant interaction pattern in the classroom and they cited advantages of a predominantly cooperative setting over a predominantly competitive or individualistic setting. Johnson, Maruyama, Johnson, and Nelson (1981) determined that in a cooperative setting it was reasonable to expect increased achievement, more positive attitudes, and a climate for accepted differences.

Research indicates positive results from teaching students social skills and using cooperative learning groups throughout the school day. Students preferred cooperative learning groups over a competitive or individually structured classroom (Johnson & Johnson, 1987). "Cooperative interactions with others are essential for the development of trust, self-confidence, and personal identity, all of which are the foundations of mental health" (Knight, Peterson, & McGuire, 1982, p. 234). Social skills can be taught in a cooperative

goal structure provided a motivational context in which social skills could be learned and practiced.

In conclusion, the classroom goal structure greatly influences the way in which students interact with each other and with the teacher, which in turn affects the outcomes of instruction. Whenever a learning task is assigned, a clear cooperative, competitive, or individualistic goal structure should be given, so that students know how to behave appropriately. While all three goal structures are important and should be used, the dominant goal structure in any class should be cooperative.

Cooperative learning focuses on the development of a student's social competence and academic performance. This goal structure goes beyond improving instruction and increasing student achievement. Cooperative learning also teaches students the ability to cooperate with others as well as build and maintain stable families, careers, values, and contributions to society.

Knowledge and technical skills may be critical but are of little use if the student cannot apply these skills to cooperative interaction with other people. Teachers can teach technical knowledge in a realistic setting by having students work cooperatively with their classmates to complete

academic tasks. Learning to use one's knowledge in cooperative interaction with other people is vital.

The future requires teachers to open new windows to producing academic and social competence in students. Educators should be receptive to new approaches that will eliminate problems that interfere with teaching and learning. The positive results of cooperative learning allow educators to keep pace with the demands that society is placing on them.

## References

- Andersen, M., Nelson, R. L., Fox, R. G., & Gruber, S. E. (1988). Integrating cooperative learning and structured learning: Effective approaches to teaching social skills. Focus on Exceptional Children, 20(9), 1-8.
- Coleman, J. S. (1961). The adolescent society. New York: The Free Press of Glencoe.
- Deutsch, M. (1962). Cooperation and trust: Some theoretical notes. In M. Jones (Ed.), Nebraska Symposium on Motivation (Vol. 10), Lincoln: University of Nebraska Press.
- Glasser, W. (1969). Schools without failure. New York: Harper & Row.
- Hulten, B. H., & DeVries, D. L. (1976). Team competition and group practice: Effects on student achievement and attitudes (Report No. 212). Baltimore: The John Hopkins University, Center for Social Organization of Schools.
- Johnson, D. W., & Johnson, R. T. (1974). Instructional goal structure: Cooperative, competitive, or individualistic. Review of Educational Research, 44(2), 213-240.
- Johnson, D. W., & Johnson, R. T. (1975). The use of cooperative, competitive, and individualistic goal structure within the classroom. Englewood Cliffs, New Jersey: Prentice-Hall.

- Johnson, D. W., & Johnson, R. T. (1985). Student-student interaction: Ignored but powerful. Journal of Teacher Education, 36(4), 22-26.
- Johnson, D. W., & Johnson, R. T. (1987). Joining together: Group theory and group skills. Englewood Cliffs, New Jersey: Prentice-Hall.
- Johnson, D. W., & Johnson, R. T. (1987). Learning together and alone. Englewood Cliffs, New Jersey: Prentice Hall.
- Johnson, D. W., & Johnson, R. T. (1989). Leading the cooperative school. Edina, MN: Interaction Book Company.
- Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1986). Circles of learning. Alexandria: Association for Supervision and Curriculum Development.
- Johnson, D. W., Johnson, R. T., & Scott, L. (1978). The effects of cooperative and individualized instruction on student attitudes and achievement. The Journal of Social Psychology, 104, 207-216.
- Johnson, D. W., Johnson, R. T., Snider, B., & Yager, S. (1986). The impact of group processing on achievement in cooperative learning groups. The Journal of Social Psychology, 126(3), 389-397.

- Lazarowitz, R. H., Sharan, S., & Steinberg, R. (1980).  
Classroom learning styles and cooperative behavior of  
elementary school children. Journal of Educational  
Psychology, 72(1), 99-106.
- Schrom, L. K. (1980). Factors influencing year nine students'  
interactions to leave school. Melbourne, Australia:  
Victoria Institute of Secondary Education. (ERIC Document  
Reproduction Service No. ED 209 484).
- Sharan, S. (1980). Cooperative learning in small groups:  
Recent methods and effects of achievement, attitudes, and  
ethnic relations. Review of Educational Research,  
50(2), 241-271.
- Slavin, Y., & Sharan, S. (1987). Training teachers for  
cooperative learning. Educational Leadership, 45(3),  
20-25.
- Slavin, R. E. (1977). Classroom reward structure: Analytical  
and practical review. Review of Educational Research,  
47, 633-650.
- Slavin, R. E. (1980). Cooperative learning. Review of  
Educational Research, 50(2), 315-342.
- Slavin, R. E. (1983). When does cooperative learning  
increase student achievement? Psychological Bulletin,  
94(3), 429-445.

- Slavin, R. E. (1983). Cooperative learning, New York: Longman Inc.
- Slavin, R. E. (1984). Students motivating students to excel: Cooperative incentives, cooperative tasks, and student achievement. The Elementary School Journal, 85(1), 53-63.
- Slavin, R. E. (1987). Cooperative learning and the cooperative school. Educational Leadership 45(3), 7-13.
- Slavin, R. E. (1987). Cooperative learning: Where behavioral and humanistic approaches to classroom motivation meet. The Elementary School Journal, 88(1), 29-37.
- Slavin, R. E. (1988). Cooperative learning and student achievement. Educational Leadership, 46(2), 31-33.
- Ziegler, S. (1981). The effectiveness of cooperative learning teams for increasing cross ethnic friendship. Human Organization, 40, 264-268.