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# A study on the positive effect of cooperative learning on the status group problems in the classroom

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A STUDY ON THE POSITIVE EFFECT OF COOPERATIVE  
LEARNING ON THE STATUS GROUP PROBLEMS  
IN THE CLASSROOM

BY  
EUGENE D. TECCE

A THESIS

Submitted in partial fulfillment of the  
requirements of the Master of Science in  
Teaching Degree in the Graduate Division  
of Rowan College of New Jersey  
June 27, 1995

Approved by

Professor

Date Approved

*June 27, 1995*

## ABSTRACT

Eugene D. Tecce, Jr., A Study on the Positive Effect of Cooperative Learning on the Status Group Problems in the Classroom, Dr. Randall S. Robinson, Thesis Advisor, Masters of Science in Teaching  
June 27, 1995

The purpose of this study was to examine the effect that cooperative learning, and the teaching of group norms would have on the social ranking of the low status students in the elementary school classroom.

The sample was comprised of 48 fourth grade students. A treatment group consisting of 24 students, and a comparison group of 24 students were pretested and posttested using a sociometric instrument designed to examine the interpersonal relationship patterns of the students.

Introduction of a treatment designed to change the existing pattern of interaction was given to the treatment group. The treatment group met for 18 fifteen minute sessions which focused on the acquiring of the cooperative group skills necessary for quality peer interaction. In addition cooperative learning structures were utilized during regular class instruction time throughout the six week study. The comparison group was denied treatment.

After the treatment program the results were analyzed by compiling the averages of the net changes that occurred between the pretest and the posttest for both the treatment group and the comparison group. A t-Test for independent

samples was used as a discriminator of significant differences separating the net change averages of both groups. No significant differences were found.

The author determined that the results were inconclusive due to the short duration of the study, the lack of a random sample, and the limited time allowed for treatment.

#### MINI ABSTRACT

Eugene D. Tecce, Jr., A Study on the Positive Effect of Cooperative Learning on the Status Group Problems in the Classroom, Dr. Randall S. Robinson, Thesis Advisor, Masters of Science in Teaching  
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The purpose of this study was to examine the effect that cooperative learning, and the teaching of group norms would have on the social ranking of the low status students in the elementary school classroom.

A sociometric instrument designed to examine the interpersonal relationship patterns of the students was given as a pretest/posttest to a treatment group and a comparison group. After the treatment program the results were analyzed by comparing the average of net change between the pretest and posttest of both groups. There was no significant difference found between the two groups.

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## CHAPTER 1

### Scope of the Study

#### Introduction

Educators today are attempting to prepare students for a world that is interdependent, with economies that are information-based, and driven by complex technologies. The skills that are necessary to function in such a society are different than what has traditionally been taught in our schools. Schools are increasingly being asked to develop higher-level thinking skills, communication skills, and social skills (Kagen 1994). Spencer Kagen, David and Roger Johnson and many others in the fields of education, psychology, and sociology, believe that cooperative learning, as a teaching strategy, can be used as a tool in promoting interdependence, communication, and the social skills necessary to compete in today's marketplace. Professor of Education and Sociology at Stanford University, Elizabeth Cohen, believes that the dilemmas of groupwork, cooperation and anti-social behaviors, must be addressed in order for cooperative learning groups to have their desired effect on the learning process.

#### Significance of the Study

Johnson and Johnson (1992) give a brief history of

cooperative learning, and the study of the interdependence among group members. It had its beginnings in the field of social psychology in the early 1900's. In the 1940's, the first formal theory of cooperation and competition was formulated by Morton Deutsch. David Johnson, a disciple of Deutsch, along with his brother Roger compiled a review of over 550 experimental and 100 correlational studies conducted since 1898, on cooperative, competitive, and individualistic efforts (Johnson & Johnson 1989a). These two researchers have concluded that..."cooperative learning experiences promote greater interpersonal attraction among heterogeneous and homogeneous peers than do competitive or individualistic learning experiences." (Johnson, D., Johnson R., & Maruyama, G. 1983). Noted sociologist-researcher Elizabeth Cohen in her book Designing Group Work, hypothesizes that the promotion of positive interaction among group members can go a long way in solving the low status distinctions of racial minority, disabled, and other social unacceptable students in the classroom. The above assumptions and the personal observations of this researcher formed the basis for this study.

#### Statement of Problem

Status group distinctions in the classroom can have an adverse effect on the involvement of low status students in the social and academic processes of the classroom (Cohen

1994). Therefore, if these status distinctions can be positively altered, will these same low status students have a better chance of success, socially and academically, in school?

### Hypothesis

There will be no significant difference in the status ranking of low status students between fourth grade students subjected to sessions involving the development of social and cooperative skills and fourth grade students who were not afforded that opportunity.

### Limitations

This study is not inferable outside of its representative group due to the small size and brief length of the proposed study. In addition, adequate controls in the selection of the representative group was hampered by the inability of the researcher to random assign, because of pre-existing intact groups of students. The inexperience of the teacher/researcher in cooperative learning strategies also put limits on the generalizability of the study.

### Delimitation

The study is limited to a small, intact group from one elementary school in southern New Jersey.

To facilitate understanding of the research, precise meanings of terms are listed:

#### Definition of Terms

Sociometric test - An objective means of ascertaining the status and relationships of members in a group.

Cooperative learning - Positive interdependence, face to face promotive interaction, individual accountability, cooperative skills, monitoring, intervening, and processing (Johnson and Johnson 1991).

Prosocial values - Fairness, consideration, respect, helpfulness, and personal responsibility (Sharan 1994).

Group skills - The establishment of cooperative group norms to monitor behavior during group interaction.

Status Group Distinctions - Social rankings in the classroom based on social class, race, ethnic group, and sex (Cohen 1994). Also, perceptions caused by special competencies, or lack thereof, and physical appearances other than those stated above.

Heterogeneous groups - Groups that are formed with individuals of differing characteristics and status.

Structures - A content-free way of organizing the interaction of individuals in a classroom (Kagen 1994).

Cooperative Roles - Functions required in carrying out a group task, as well as strengthening and maintaining group life and activities (Kagen 1994)

## CHAPTER 2

### Review of Literature

#### Introduction

This study identified the status group problems that occurred in two groups of fourth grade students. It attempted to improve the interaction among group members during the group work process in the experimental group. The researcher contrasted the results of a posttest given to both the experimental group and the control group to ascertain if a change in the social rankings of low status students did occur. This chapter establishes the reality of status group distinctions within the classroom, and supports the assumption that cooperative learning and the teaching of group norms can have a positive impact upon the social ranking of the low status student.

#### History of Cooperative Learning

The use of small groups as an instructional tool is called cooperative learning. The key feature that distinguishes cooperative settings from other learning settings is the interaction among students (Webb, 1982). The Johnsons (1992) expound on the history of cooperative learning, as they have traced its roots as far back as the Jewish Talmud, and The Holy Bible where the wisdom of Solomon states:

Two are better than one, because they have a good reward for labor. For if they fall, one will lift up his companion. But woe to him who is alone when he falls, for he has no one to lift him up...Though one may be overpowered by another, two can withstand him. And a threefold cord is not quickly broken.  
Ecclesiastics 4: 9, 10, 12.

The first century philosopher Quintillion, and the Roman philosopher Seneca also advocated learning cooperatively through such statements as "when you teach you learn twice." Cooperative learning groups were used extensively by two Englishman, Joseph Lancaster and Andrew Bell, and brought to America in 1806. During the early years of public education in this country, both Francis Parker and John Dewey made use of cooperative learning groups in the classroom (Johnson & Johnson 1992). Social psychological theory in the 1900's growing out of the Gestalt School of Psychology, and more specifically Kurt Kofka, believed that groups and the interdependence of group members were dynamic wholes. Kurt Lewin in the 1920's and 1930's developed his theory of motivation, in which he believed that a state of tension within an individual motivates movement toward the accomplishments of desired goals. Morton Deutsch, a protege of Lewin in the 1940's, extended this theory by including how the tension system of different people may be inter-related. It was concluded from these theories that the drive for goal accomplishment motivates cooperative, competitive, and individualistic behavior (Johnson & Johnson et al 1981). Deutsch conceptualized three types of goal structures:

cooperative, competitive, and individualistic. He defined a cooperative social situation as, ..."one in which the goals of the separate individuals are so linked together that there is a positive correlation among their goal attainments."

This implied that an individual can attain his/her goals only if the other participants attain their goals. In this situation a person seeks an outcome that will be beneficial to all members of a cooperative group. The opposite is true of a competitive social situation. Here an individual can attain his/her goals only when the other participants do not attain their goals. In the individualistic situation it is irrelevant to an individual seeking after personal goals whether other individuals achieve their goals or not (Deutsch 1949, as cited by Johnson et al 1981).

Deutsch concluded that students participated more equally, and were more cooperative in cooperative groups than when placed in competitive settings (Deutsch 1949, 1960a, 1960b, as cited in Webb 1982, Johnson & Johnson 1992).

### Cooperative Learning Models

Spencer Kagen (1994) identifies three major schools of cooperative learning models: The Structural Approach (Kagen 1985), Learning Together (Johnson & Johnson 1985), and Curriculum Specific Packages such as Student/Teams Achievement Division (Slavin 1986), and Teams-Games-Tournament (Slavin 1986). Structures are inherent in both



the Curriculum Specific and the Learning Together models, albeit the Structural Approach and the Learning Together model emphasize social skills, whereas some of the curriculum specific approaches do not. Major differences separate the two former approaches from the latter approach. Specific curriculum materials are essential to the implementation of a curriculum specific approach. The opposite is true of the Learning Together and the Structural Approach. They are built upon the supposition that quality cooperative learning can occur without the use of specially designed curriculum materials (Kagen 1994).

The social interaction patterns of individuals in the classroom are established by the use of structures. An example of a traditional classroom structure would be what Kagen calls Whole-Class Question-Answer, where a competitive interaction is set up as students compete for the attention of the teacher. In contrast, an example of a cooperative learning structure would be what is referred to as Numbered Heads Together, in which all the elements of cooperation are present: teams, a management system, motivation, ability for students to cooperate and the experience of simultaneous interaction (Kagen 1994).

The Structural Approach distinguishes between structures (social organization), content, and activities. Learning Together model focuses on five principles: Positive

Interdependence, Face-to-Face Interaction, Individual Accountability, Interpersonal Skills, and Group Processing. Each lesson in The Learning Together model has specified academic and social skills objective. Structures that are content bound, and are tied together with specific curriculum materials are curriculum specific approaches (Kagen 1994).

#### Research on the Effectiveness of Cooperative Learning

David Johnson, a student of Morton Deutsch and now of the University of Minnesota, along with his brother Roger, have conducted research on cooperative learning for the last 20 years. In 35 of 37 studies on interpersonal attraction conducted by the Johnson, it was found that when students worked cooperatively in the classroom, they tended to like each other more (Kohn 1987). "By structuring positive interdependence among individuals a promotive interaction pattern characterized by help, assistance, encouragement, and support is created, which in turn results in...more positive attitudes and relationships, and greater psychological healthier and well being (Johnson & Johnson 1988)." Johnson, Maruyama, and Johnson (1983), completed a meta-analysis of more than 600 research studies on the interdependence and interpersonal attraction of heterogeneous and homogeneous individuals. They found that:

Cooperative learning experiences, compared with competitive and individualistic experiences, result in stronger beliefs that one is personally liked, supported,

and accepted by other students, that other students care about how much one learns

and that other students want to help one learn (pg. 33).

Based on a meta-analysis of 122 studies on cooperative learning in 1981, the Johnson hypothesized that achievement and productivity is increased through cooperative efforts to a much greater extent than through individualistic efforts.

### Quality of Groupwork

Small groups give students a unique opportunity for active learning and meaningful conversation (Nystrand, as cited by Cohen 1994). Previous studies conducted by Sharan 1980, and Slavin 1980, supported the assumptions that significant positive effects on achievement and racial relations could occur through the use of cooperative learning strategies. Elizabeth Cohen (1992) argues that the inconsistencies in the findings on cooperative learning suggest that advantages that are theoretically gained through cooperative learning can only occur under certain conditions.

The process of interaction in small groups and their various academic and social outcomes were examined more closely by Battistich, Solomon, and Delucchi (1993). They found that it was not just the implementation of small group learning in the classroom that motivated positive academic and social outcomes, but that it depended on the quality of group interaction that decides these outcomes. The quality

of interaction, and how to cultivate those forms of interaction between group members within the small group, has received less attention in cooperative learning studies than other benefits such as achievement (Webb 1985, as cited by Newman & Thompson 1987). Webb goes on to say,

...in general an individual's giving and receiving help within groups has no effect on individual achievement, but that the type of help given and received does...if students are to be helpful to one another in small groups, they need to learn how to ask for and how to provide constructive help.

Webb (1982) further states that cooperative settings are set apart from other learning situations by the very feature of interaction among students.

#### The Need for Collaborative and Social Skills

The above arguments support the need for the teacher in cooperative group settings to train his/her students in collaborative skills.

According to Dr. Spencer Kagen (Kagen 1994), success is dependent on social skills. Johnson and Johnson in their research on cooperative learning groups, (Lew, Mesch, Johnson & Johnson 1986) have trained students in collaborative skills such as: sharing ideas and information, keeping the group on task, praising and encouraging the contributions of others, and checking to make sure everyone in the group understood what was being taught. Basic social skills are

encouraged to be taught by Johnson & Johnson, Kagen, Cohen and others. They have found that in the process of discussing cooperative behaviors, and taking time for group reflection on their performance in a cooperative group, improvement in group interaction may result.

The need for both social skill, and cognitive skills was brought to the forefront of researchers by Barnes and Todd (1977, as cited by Cohen 1994). The social skills identified by the two researchers included the skills needed to manage competition and conflict, as well as the willingness to give mutual support. These are not the automatic consequence of cooperative learning. Deliberate instruction in the social skills required for positive group work is necessary to result in desired behaviors (Webb et al, 1986, as cited by Cohen, 1994).

#### Peer Acceptance and Societal Status in the Classroom

Self-concept and peer acceptance are two important issues that have been raised in connection with the proper placement of children (Doyle 1976). This would suggest that the process used to group students into cooperative groups should be given thoughtful consideration. "It has been shown that positive sociometric endorsement (high peer status) is positively related to self-concept...a healthy self-concept is positively related to achievement, and to sociometric status." (Doyle 1976). In addition to the above mentioned

status through peer-acceptance, classrooms exhibit one other kind of status that will affect student participation in small group work, and that is societal status (Cohen 1994, Designing Group Work). Elizabeth Cohen (1994) found the following:

Students create their own status orders as they play and interact with each other at school and outside of school. Those who have a higher social standing have high peer status and are likely to dominate classroom groups. Among students, peer status may be based on athletic competence or on attractiveness and popularity. Newcomers...are very likely to have a low social status. Those with a lower social standing are likely to be less active participants (pg 32).

Cohen further states:

...learning emerges from the chance to talk, interact, and contribute to the group discussion. Those who do not participate because they are of low status will learn less than they might have if they interact more (pg 36).

Assignments of low status may also be due to race, social class, sex, reading ability, or attractiveness.

Each one of these characteristics have attached to them a general expectation of competence. High status students are expected to be more competent than low status students. These expectations can result in a self-fulfilling prophecy where the higher status student comes to hold a higher rank in the status order that emerges from the group interaction, and those who hold a low status come to hold a low status in the status order (Cohen 1994, Designing Group Work).

Cohen describes the signs of low status behaviors in the following ways: little access to the group task, can't get their hands on the group's materials, physical separation from the group, less talking, and/or being ignored by the other group members. According to Cohen, this kind of treatment of the low status student by others in his/her group can result in a passivity on the part of the low status student, or other off task behaviors.

"Inequities in participation based on gender, race, and ethnicity within cooperative groups should be a source for serious concern for those who recommend cooperative learning for heterogeneous settings." (Cohen 1994). Status problems make small group discourse nonproductive according to at least two definitions of productivity: inequitable interaction as well as unequal learning outcomes (Cohen 1994).

Cohen further states:

When cooperative learning is used to improve intergroup relations, the concerns are not only that there be equal-status interaction, but also that students of different groups learn to treat each other as persons rather than as members of social categories (Cohen 1994).

### Summary

Mr. Kagen (1994), points out that the economy of the United States is fast being transformed into one that is driven by high technology. The norm in a high-tech workplace is interaction; interdependent teams working on complex

problems that no one individual can solve (Kagen 1994). The challenge facing public schools today is to teach individuals how to cooperate together in small groups. The fact is that small group work is being utilized in today's classrooms for many reasons. It may be being used as a method of improving academic performance, as a motivational device, a classroom management tool, or as a self-esteem builder, but little focus is being put upon how those groups are formed, or their interaction once they are formed.

This chapter has sought to establish the authenticity of status group problems in the elementary school classroom, and how it impacts on the quality of the interaction among cooperative group members. The facts clearly attest to the need to sociometrically group students when working cooperatively, and for the exigency of the teaching of group norms.



## CHAPTER 3

### Procedure and Design of the Study

#### Introduction

Research has shown that there is a sound basis for believing that cooperative group work can provide a myriad of benefits to the learning process from achievement, to motivation, to self-esteem and much more. The dilemma is in the quality of the interaction with a cooperative group. It has been shown by Elizabeth Cohen and others, to have a significant effect on whether the cooperative learning occurring will be any more productive than any other type of instruction.

The design of this study was an attempt by the researcher to introduce a program that would train students for cooperation, with the goal of constructing new norms or rules for behavior during the group work process.

#### Population and Sample

The population involved in this study were students from a southern New Jersey elementary school. The sample consisted of 48 fourth grade students, 24 of which were part of an intact classroom. These 24 formed the experimental group. The other 24 students were part of a departmentalized mathematics class comprised of students belonging to the

three remaining fourth grades in the school. These constituted the control group.

Within the experimental group were 5 resource room students mainstreamed into the regular classroom. The 24 students that formed the experimental group received the treatment. The 24 students who served as the control group were denied treatment. Both the experimental group, and the control group held their classes in the homeroom of the teacher/researcher.

#### Research Design and Procedure Used

The study was conducted using a quasi-experimental, two group pretest-posttest design. It was conducted over a six week period between March 29, 1995 and May 12, 1995.

In the experimental group six teams, consisting of four members of each team, were heterogeneously formed with considerations being given to gender, race, ability and positive, and negative choices on the sociometric tool. All the cooperative teams in this group were formed with students who were neither chosen positively, or negatively on the sociometric tool. This was done to avoid pairing best friends, or establishing already existing hostile relationships. The teams were assigned to include a low, high, and two medium status students. The control group teams were not given like consideration.

A 15 minute block of time 3 times a week at the end of

the school day was scheduled in order to administer treatment. Lesson plans based on the work of researcher Elizabeth Cohen in her book Designing Group Work, as well as teambuilding activities, and cooperative play structures from Spencer Kagen's book Cooperative Learning formed the basis of the treatment (See appendix A).

Two cooperative group norms were the focus of the six week study; helping, and encouraging. Teacher lead discussion was conducted as part of the treatment with the purpose of identifying, isolating, and facilitating conflict resolution.

Cooperative learning based on the Structural Approach of Spencer Kagen was incorporated into the lesson plans of the teacher/researcher throughout the six weeks of the study.

#### Description of the Instrument

The pretest and posttest were in the form of a sociometric questionnaire (See appendix B). This enabled the researcher to ascertain a sociogram of relationships within the classroom. The information was used to group students with consideration to their interpersonal relationships. The technique of sociometry, founded by psychiatrist, Jacob L. Moreno, enables a researcher to obtain an objective picture of relationships among students. Moreno devised the sociometric test in order that the gathering of information on attractions, and repulsions among groups members could be

identified (cited in Gershenfield, 1972).

Heterogeneous groups were formed using the sociometric grouping for the experimental group only. This technique has been shown to be successful in changing and improving friendship patterns in classroom groups. "The goal is to create an attraction that is diffuse; that is, one in which each child receives approximately three positive choices and three negative choices on a three choice sociogram." (Vacha, 1977)

The following definitions were used as guidelines:

1. Disliked students Students receiving more than four negative choices and less than two positive choices when their classmates completed a three-choice sociometric survey.
2. Isolate A student receiving less than two positive choices and no more than four negative choices.
3. Positive Mutual Choices Pairs of students who choose each other as preferred companions.
4. Negative Mutual Choices Pairs of students who reject each other.
5. Stars Children receiving five or more positive choices on a three-choice sociometric survey (Vacha, 1977).

A matrix was formed to record and analyze the students choices (see appendix C). The name of the chooser was placed vertically along the left margin, and the name of the chosen was placed horizontally at the top of the paper. This

provided a clear visual representation that aided in the identification of the students previously defined.

The test was given to both the comparison group and the experimental group. Grouping of students in the class not receiving the treatment was heterogeneous in nature only so far as gender, and race was concerned. An analysis of interpersonal relationships by way of a sociometric matrix was not used on this group. Treatment was denied the comparison group. Both the comparison group and the experimental group were posttested using the same sociometric test.

#### Statistical Treatment

A t test for independent samples ( $\alpha=.05$ ) was used to compare the posttest results of the experimental and control groups. Assumptions necessary to validate the use of a parametric test was believed by the researcher to be justified.

Chapter 4  
Analysis of Findings  
Introduction

The intent of this study was to examine the effect that cooperative learning, and the teaching of group norms would have on the social ranking of the low status student. The initial assessment of interpersonal relationship patterns was ascertained by the use of a sociometric questionnaire, and then posttested using the same instrument. Introduction of a treatment designed to change the existing pattern of interaction was given to a treatment group. A comparison between the treatment group of 24 fourth grade students receiving training in group behavior, and 24 fourth grade students denied training was made using a t-Test of independent samples. The researcher hypothesized that no significant difference in the status ranking of the low status students between fourth grade students subjected to sessions involving the development of social and cooperative skills and fourth grade students who were not afforded that opportunity would be found.

The purpose of this chapter is to display and analyze the data gathered in the pretesting and posttesting of both the treatment group and the comparison group.

### Tabulation of Raw Scores

The analysis of the data began with the compiling of raw scores obtained from each individual test. Table 4.1 presents the raw scores of positive and negative choices on the pretest, and the posttest for the treatment group. It then shows the change, either positive or negative, between the two tests, as well as the net change between pretest and posttest.

table 4.1

#### Treatment Group

#### Results of Sociometric

Student	Pretest		Posttest		Change		Net Change [+ or -]
	[+]	[-]	[+]	[-]	[+]	[-]	
1	3	4	4	1	+1	+3	+4
2	6	2	4	4	-2	-2	-4
3	6	2	4	3	+2	-1	+1
4	1	3	5	0	+4	+3	+7
5	3	4	6	1	+3	-3	0
6	3	0	1	2	-2	-2	-4
7	2	3	2	3	0	0	0
8	0	0	0	2	0	-2	-2
9	0	12	0	15	0	-3	-3
10	2	3	6	1	+4	+2	+6
11	3	1	1	1	+2	0	+2
12	4	2	5	0	+1	+2	+3
13	4	4	3	1	-1	+3	+2
14	4	6	3	3	-1	+3	+2
15	0	3	1	5	+1	-2	-1
16	0	3	2	3	+2	0	+2
17	0	3	0	2	0	+1	+1
18	10	1	8	0	+2	+1	+3
19	3	6	2	7	-1	-1	-2
20	7	0	4	0	-3	0	-3
21	5	2	2	9	-3	-7	-10
22	1	3	4	1	+3	+2	+5
23	1	1	1	1	0	0	0
24	1	1	1	4	0	-3	-3
<b>Avg.</b>	<b>2.875</b>	<b>2.875</b>	<b>2.875</b>	<b>2.875</b>	<b>.5</b>	<b>-0.25</b>	<b>0.250</b>

The next step in the analysis of the data was to likewise compile raw scores obtained from each individual test given to the comparison group. Table 4.2 presents the raw scores of positive and negative choices on the pretest, and the posttest for the comparison group. It then shows the change, either positive or negative, between the two tests, as well as the net change between pretest and posttest.

table 4.2

Comparison Group  
Results of Sociometric

Student	Pretest		Posttest		Change		Net Change [+ or -]
	[+]	[-]	[+]	[-]	[+]	[-]	
1	2	7	2	6	0	-1	-1
2	3	1	4	3	+1	-2	+1
3	5	0	7	0	+2	0	+2
4	4	0	3	2	-1	-2	-3
5	0	4	0	6	0	-2	-2
6	3	5	1	8	-2	-3	-5
7	6	2	4	1	-2	+1	+1
8	3	2	5	0	-2	+2	0
9	0	4	0	4	0	0	0
10	4	2	5	1	+1	+1	+2
11	6	1	8	1	+2	0	+2
12	4	4	6	2	+2	+2	+4
13	1	4	0	5	-1	-1	-2
14	2	0	4	3	-2	-3	-5
15	1	0	0	0	-1	0	-1
16	2	2	2	2	0	0	0
17	1	1	0	1	-1	0	-1
18	0	11	0	10	0	+1	+1
19	6	0	5	0	-1	0	-1
20	1	5	1	3	0	+2	+2
21	4	3	5	1	+1	+2	+3
22	5	3	3	1	-2	+2	0
23	3	5	1	6	-2	+1	+1
Avg.	2.869	2.869	2.869	2.869	-0.347	0	-0.087



### Tabulation of T-Score

The net change average scores from table 4.1, and table 4.2 were compared using a t-Test for independent samples. The results are shown below on table 4.3.

table 4.3

#### t-Test for Independent Samples

Group	N	Mean	SD
1.000	24	0.250	3.779
2.000	23	-0.087	2.295
Separate Variances T = .371 DF = 38.2 Prob. = .713			
Pooled Variances T = .367 DF = 45 Prob. = .715			

The t-Test for independent samples was used, because of the random formation of the groups, that is, no attempt at matching of any type was undertaken. The members of one group were not related to the members of the other group in any way, other than the fact that they were drawn from the same population. The two groups were believed to be essentially the same at the beginning of the study, with regards to the dependent variable.

#### Analysis of Data

Probabilities of .713 for the separate variances, and .715 for pooled variances are not significant at the .05 level of probability. The standard deviation would need to

be much smaller, and the probability levels much higher, if any differences could be attributed to anything other than chance.

The fact that no significant statistical difference could be found between the treatment group, and the comparison group, suggests acceptance of the null hypothesis as true. No significant difference could be found in the status ranking of the low status students between fourth grade students subjected to sessions involving the development of social and cooperative skills and fourth grade students who were not afforded the opportunity.

Table 4.4 below shows a total observation of the treatment group and the comparison group.

table 4.4

Total Observations for Treatment and Comparison Groups

	Treatment	Comparison
N of cases	24	23
Minimum	-10.000	-5.000
Maximum	7.000	4.000
Range	17.000	9.000
Mean	0.250	-0.087
Variance	14.283	5.265
Standard Dev.	3.779	2.295
Skewness( Group 1)	-0.524	-0.538
Kurtosis( Group 2)	0.582	-0.054
Sum	6.000	-2.000

From table 4.4, it can be determined that the treatment group contained a greater degree of variance within the group, than did the comparison group. The distributions of both groups are fairly symmetrical. The treatment group has a kurtosis that is platykurtic, and the comparison group has a kurtosis that is leptokurtic. The minimum of -10 in the treatment group, while seeming to be much larger than the -5 in the comparison group is in fact more in keeping with the general distribution of the treatment group than is the -5 in the comparison group.

The comparison group than can be said to be more homogeneous than is the treatment group. This is further evidence that no change occurred during the course of the study that could be attributed to the treatment.

## Chapter 5

### Summary, Conclusions, and Recommendations

#### Introduction

In this chapter, the problem, hypotheses, procedures, and the findings are reviewed and summarized. Conclusions based on the data provided in Chapter Four, as well as recommendations for further study are also discussed.

#### Summary of the Problem

Research has shown that the patterns of interaction between members of a cooperative group can have a direct effect on the benefits derived from cooperative group work. Status group distinctions in the classroom have been shown to have an adverse effect on the involvement of the low status student in the social and academic processes of the classroom.

#### Summary of the Hypotheses

A null hypotheses stating that no significant difference in the status ranking of the low status students between fourth grade students subjected to sessions involving the development of social and cooperative skills and fourth grade students who were not, would be found.

### Summary of the Procedure

The sample for this study consisted of 48 fourth grade students drawn from the population of a southern New Jersey elementary school. A treatment group of 24 students, and a comparison group of 24 students were pretested and posttested using a sociometric instrument designed to examine the interpersonal relationship patterns of the students. Both the treatment group and the comparison group were heterogeneously formed with regard to race, and gender, but only in the formation of the treatment group was consideration given to the analysis of interpersonal relationships.

Fifteen minute lessons involving the children in activities designed to encourage cooperation, and to establish group norms were taught three times per week for a period of six weeks.

In addition, cooperative learning structures were incorporated into the daily lesson plans of the teacher/researcher for the treatment group.

### Summary of the Findings

A t-Test for independent samples was used as a discriminator of significant differences separating the averages of the net changes that occurred between the pretest and the posttest for both the treatment group and the comparison group. Probability levels, when accounting for separate

variances, were found to be .713, and .715 when pooling the variances. Using the .05 probability level as the standard of measurement, there was no significant statistical difference found.

### Conclusions

The null hypothesis stating that no significant difference in the status ranking of low status students between fourth grade students subjected to sessions involving the development of social and cooperative skills and fourth grade students who were not afforded the opportunity was found to be true. No statistical evidence to the contrary was shown in the results from the t-Test for independent samples.

### Recommendations

Data generated in this study does not support the rejection of the null hypothesis. The short duration of this study, the lack of randomization in the sample as well as the limited amount of time allowed for treatment are believed to be important factors that led to the insignificance in the data analysis.

Research has shown that cooperative learning can increase the success rates for the low status students in the classroom. It has not conclusively been proven however to be true in all cases. This study was based on research

that showed a negative impact on the low status students in cooperative group work when the interaction within the groups were of poor quality. The study sought to show that if this interaction could be improved, the ranking of the low status students in the classroom would also improve. The results of this study showed no correlation between the two.

It is the belief of this author that the quality of interaction in small groups does have a negative effect on the group work process. He also believes that if treatment could be administered over a period of time not less than one school year, the resulting analysis of data would be more representative of the true effects of the treatment on the ranking of the low status student.

APPENDIX A  
LESSON PLANS



Cooperative Norms and Roles  
(Week 1)

**Objective:** After the introduction of cooperative group norms and roles, the students will be able to attempt a cooperative learning structured social studies lesson utilizing the roles of Question Commander, Encourager, Checker, and Secretary ( see Kagen 1994, pg. 14:10)

**Set:** The preparation, or set for this lesson will be taught during two fifteen minute cooperative learning lessons. Cooperative group norms and individual work roles are introduced and explained during this segment of the instruction. The information is then reviewed before the start of the input part of the lesson on the third day.

**Input:** Six teams consisting of four students each will be assigned one of the six geographical regions of NJ. Each team will gather information on their assigned topic, and complete a prepared worksheet containing pertinent questions about the six geographical regions of NJ.

**Checking for Understanding:** The teacher is the facilitator of the group work, intervening as little as possible and encouraging independent group problem solving.

Guided Practice: Worksheet

Closure: Discussion of the nature and quality of the group work experience, self report by student teams, and suggestions for improvement solicited from the students.

Independent Practice: Team summary of the information.

Cooperative Group Sharing Activity  
(Week 2)

**Objective:** After being instructed in Team Jigsaw as a way of sharing the information gathered on the six regions of NJ with the whole class, the students will be individually tested on the material.

**Set:** The concept of Team Jigsaw will be taught during two fifteen minute cooperative learning lessons. Also, the use of tokens will be introduced as an addition to the Jigsaw strategy. All rules will be reviewed prior to lesson input.

**Input: Team Jigsaw:** (see Kagen 1994 pg. 18:4) Each team member, after becoming experts on one geographical region of NJ, will reform as four teams consisting of six students, each originally from a different team. These team experts will share information gathered by their respective teams with their new team. The students will only be allowed to speak if they are holding the token, each being allotted two minutes of sharing time, and one minute for questions and answers (Kagen 1994 pg. 13:1). They then return to their home team and relay that information to the home team members.

**Checking for Understanding:** The teacher will act as

facilitator of the group work, intervening as little as possible. Actively observing the group interaction.

**Guided Practice:** The teacher will regulate the use of the tokens, acting as time keeper, and the guardian of the rules.

**Closure:** A discussion and self report on the quality of the group work, plus affirmations for groups and individuals.

**Independent Practice:** Individual test on subject matter.

Cooperative Group Play  
(Weeks 3 and 5)

**Objective:** After participating in a cooperative group play activity, the students will be able to more effectively use the norms and behaviors of group work.

**Set:** The rules for cooperative group work will be reviewed, and the directions for the cooperative play activity introduced, or reiterated during six fifteen minute cooperative group lessons.

**Input:** The co-op play activity Pencil in Bottle (see Kagan 1994, pg. 23:8), will be used to help the student teams internalize the cooperative group roles of Coach, also called Helper, and Encourager (see Kagan 1994, pg. 14:10).

**Check for Understanding:** Questioning strategy as to understanding of role responsibilities.

**Guided Practice:** Activity with teacher as facilitator.

**Closure:** Discussion and self report of group interaction.

**Independent Practice:** Self report questionnaire.

Teambuilding Activity  
(Week 4)

**Objective:** After a Social Studies lesson on Lenni Lenape customs, and in particular the importance and various uses of wampum, the students will build team spirit by cooperatively choosing an Indian name that will identify their team, and create a pattern of colored beads in a wampum necklace that symbolize their team name.

**Set:** Review the importance of wampum to the Indians, and suggest that the teams pick an Indian name (usually an animal name) to represent their team. List students suggestions on the board.

**Input:** The students will be given string, beads, and feathers, and be instructed on the particulars concerning the construction of wampum.

**Checking Understanding:** Review the particulars of task, through questions and answers.

**Guided Practice:** The activity.

**Closure:** Assign competence to each team by affirming that they did a good job. Display the wampum in a place where

it will be in plain view of the class.

Note: This will take three 15 minute cooperative learning lessons to finish.

Cooperative Training Exercise  
(Week 6)

**Objective:** After being presented with a cooperative puzzle that can only be solved as a team, the students will be able to solve the puzzle, and identify the actions taken by the individuals in their teams that enabled the team to solve the problem.

**Set:** Brainstorm with the students about good cooperative teams, and how they work. Ask them to give an opinion about which of the teams in the classroom exhibits the kind of cooperative behavior that fits their description of good group work.

**Input:** Give instructions to participants for Broken Circles (see Cohen 1994, pg. 163-167). Each of the participants are given an envelope containing two or three pieces of a puzzle, not to be opened until told to do so. The object of the exercise is to put the pieces together in such a way that each member of the team ends up with a complete circle. The game is played in complete silence, with each member of the team responsible for their own puzzle. This is an exercise in giving. You may give a piece to another player, but you can not take a piece from another player.



The circle can only be completed through cooperative effort.

**Checking for Understanding:** Ask the students to tell you how the game is to be played.

**Independent Practice:** The puzzle.

**Closure:** After allotted time, or when all groups have completed the task, help students to identify some of the important things that happened, analyze why they happened, and generalize to other group learning situations.

**Note:** Patterns for Simple Broken Circles, and Advanced Broken Circles (see Cohen 1994, pg. 165 & 166). The two versions of Broken Circles, and the discussion afterward will take at least three fifteen minute cooperative learning instruction periods, if not more.

**APPENDIX B**

**PRETEST/POSTTEST**

## The Sociometric Approach

The Sociometric Approach is an optional adjunct when using the Ranked List Approach. This approach was developed by Susan Masers and Lucile Tambara (Maple Hill Elementary School, Diamond Bar California). It allows consideration of the relations among students.

**Step 1. Students Fill in Preferences.** To use the Sociometric Grid, first present students with a list of their classmates and have them place a plus by the names of the three persons they would most like on their team and a check mark by the names of the three persons they would least like to be on their team.

Student Handout:

Name: \_\_\_\_\_

### Team Preference Sheet

**Instructions:** We will form new teams. To form the best teams possible, I would like to know your preferences. Here is a list of your classmates. Please put a plus by the names of the three classmates you would most like to have on a team for the next six weeks, and a check mark by three people you would prefer not to be on a team with this time. You may want to make new friends, so you might place a check mark by the names of old teammates and your best friends. I cannot promise you will be on a team with someone you have given a plus, or that you will not be on a team with someone you have given a check, but I will consider your preferences when I make the new team assignments.

#### Class List

- |           |           |
|-----------|-----------|
| 1. _____  | 19. _____ |
| 2. _____  | 20. _____ |
| 3. _____  | 21. _____ |
| 4. _____  | 22. _____ |
| 5. _____  | 23. _____ |
| 6. _____  | 24. _____ |
| 7. _____  | 25. _____ |
| 8. _____  | 26. _____ |
| 9. _____  | 27. _____ |
| 10. _____ | 28. _____ |
| 11. _____ | 29. _____ |
| 12. _____ | 30. _____ |
| 13. _____ | 31. _____ |
| 14. _____ | 32. _____ |
| 15. _____ | 33. _____ |
| 16. _____ | 34. _____ |
| 17. _____ | 35. _____ |
| 18. _____ | 36. _____ |

APPENDIX C  
SOCIOMETRIC GRID

# The Sociometric Grid

For teacher's use. Write in the three pluses and three minuses following the name of each student, indicating that student's preferences. While assigning teams you may wish to avoid pairing students if a minus occurs. Although some students may not be a favorite of anyone, and may have quite a number of students who do not want to be on their team, it is almost always possible to find at least three others who have not indicated they would mind having the student as a teammate. You may want also to avoid certain pluses as they represent "best friends" who can pair, minimizing interaction along many lines within teams.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36			
1	■																																						
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