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THE EFFECTS OF COOPERATIVE LEARNING ON
SOCIAL INTERACTIONS AND ATTITUDES
TOWARD ENGLISH CLASS IN
AT-RISK STUDENTS

by
Catherine A. Mikionis

A Thesis

Submitted in partial fulfillment of the requirements of the
Master of Arts Degree in the Graduate Division
of Rowan University
May 1, 1998

Approved by _____

Date Approved 5/1/98

ABSTRACT

Catherine A. Mikionis, The Effects of Cooperative Learning on Social Interactions and Attitudes toward English Class in At-Risk Students, 1998, Dr. S. Jay Kuder, Special Education. This research study examined the effects of cooperative learning methods on social interactions and attitudes toward English class in 18 at-risk high school students enrolled in a small alternative education program located on a college campus. The findings suggested cooperative learning methods increased students' positive social interactions, increased students' reported number of friends, and decreased students' cut classes. Although no significant difference in overall mean was found on the attitude toward English class survey, students' dislike for participating in class discussions decreased measurably. The implications for this study are such that cooperative learning methods can be effectively used with at-risk teens to improve social interactions with peers and some attitudes toward English class.

MINI-ABSTRACT

Catherine A. Mikionis, *The Effects of Cooperative Learning on Social Interactions and Attitudes toward English Class in At-Risk Students*, 1998, Dr. S. Jay Kuder, Special Education. This research study examined the effects of cooperative learning methods on social interactions and attitudes toward English class in at-risk high school students. The findings suggested that due to cooperative learning methods students increased positive social interactions and improved some attitudes toward English class.

Chapter 1

According to statistics taken from the US Census Bureau, the annual high school dropout rate, which reached an all time high in the late 1970's of 6.7%, had steadily declined to an all time low of 4.0% in 1990. Alarminglly, since 1990 the high school dropout rate has once again steadily increased reaching 5.4% in 1995 (US Bureau of the Census, 1995). Translated, this means that in 1995 nationally over 800,000 students chose to begin adult life without a high school diploma. As our economy increasingly demands higher skilled workers, we will become a nation at-risk if we are unable to provide the pool of workers qualified to meet this demand.

Students at-risk are those students in jeopardy of academic failure and are, consequently, potential dropouts. Generally, they are low academic achievers with low self esteem and poor social skills. Students from low socioeconomic backgrounds are at higher risk, along with children growing up in single parent households, and children with parents of low educational backgrounds (Pallas, 1989). At-risk students frequently exhibit disruptive or disaffected behaviors which result in problematic peer relationships and a lack of participation at school (Donnelly, 1987). Lacking appropriate social support, at-risk students frequently make bad choices resulting in drug use, pregnancy, and delinquency, thereby, contributing to the social problems of this country.

Beyond academic and vocational training, interpersonal skills are frequently cited as the most important set of skills contributing to a person's career success (Johnson & Johnson, 1995). The fact that at-risk students lack interpersonal skills has already been established. Cooperative learning methods have been credited as a means for improvements in both student achievement and the quality of students' interpersonal relationships (Slavin, 1991b). It stands to reason that a cooperative learning strategy combining academic education with social skills training would be more desirable than strategies that teach academic tasks in isolation. Concurrently, language is a social experience and command of the English language is a necessary skill contributing to career success. It stands to reason that since cooperative learning methods provide greater opportunities for classroom language use they, therefore, affect greater language gains than traditional methods where language is used more by the teacher than by the students. If cooperative learning methods provide students with opportunities for both academic and social success, it stands to reason that students will also find more enjoyment in learning.

The cooperative learning research to be reviewed in the next chapter of this paper claims that there are positive increases in students' academic achievement, intergroup relations, social supports, self esteem, time on task, liking of school, and social skills as a result of the use of cooperative learning. While there are a variety of cooperative learning strategies, all include students working together in small groups aiding each other in learning. Essential components of cooperative learning include individual accountability

and group goals or rewards. Also detailed in the next chapter will be the cooperative learning methods best evaluated by research.

Research Problems and Hypotheses

Considering the social needs of our students at-risk and the gains attributed to cooperative learning methods, the research question to be addressed in this study is: What is the effect of cooperative learning during English class on social interactions with peers in at-risk high school students? A second question to be addressed is: What is the effect of cooperative learning on attitudes toward English class in at-risk high school students?

For the purposes of this study, cooperative learning is defined as those structured learning methods in which students work in small groups helping each other master academic materials. These methods include three central concepts: individual accountability, group rewards, and equal opportunities for success (Slavin, 1995). For the purposes of this study, at-risk students are defined as those students in jeopardy of academic failure and at risk of dropping out of high school. They are students behind in high school credit status.

Given the gains of cooperative learning methods, the following research hypothesis is formulated: Cooperative learning during English class increases positive social interactions with peers in at-risk high school students. Additionally, a second research hypothesis is formulated: Cooperative learning increases positive attitudes toward English class in at-risk high school students.

Clearly, as educators we have a duty to keep our at-risk students in the educational system, affording them opportunities for social as well as academic success. We need to employ strategies that affect positive attitudes toward learning for our at-risk students. In doing so, we can realize our goal of creating lifelong learners with employable skills leading to personal and career success. The purpose of this study is to examine cooperative learning as it affects our goals for at-risk students.

As we reach the 21st century, educational reform must include social support systems to combat the negative effects of the increasing number of dysfunctional families found in our society. Increasingly, the classroom is called upon as a place to teach values once taught in the home. Educators are pressed to go beyond the teaching of academics. The results of this study can enable us to better implement a means for social support within the classroom. The results of this study can enable us to better understand the means by which underachievers can be transformed into achievers. Ultimately, the results of this study can enable us to better create a nation of lifelong learners achieving personal and career success.

Chapter 2

Cooperative learning has long been incorporated into the traditional classroom, taking the form of small group projects, peer tutoring, and group discussion. Since the 1970's, however, cooperative learning has taken on a more formal and structured approach causing specific cooperative learning strategies to be developed and researched (Slavin, 1995). Its roots as cooperative/team based learning distinguish cooperative learning from the competitive/individualistic instruction of the traditional classroom (Johnson & Johnson, 1994). With the use of cooperative learning strategies, teachers become facilitators rather than dispensers of knowledge.

While an essential component of cooperative learning is the use of small groups of students who share responsibility for each other's learning, a variety of cooperative learning techniques have evolved. Detailed in this chapter are the cooperative learning methods most widely used and researched. These methods include Student Team Learning, Learning Together, and Group Investigation.

Student Team Learning

Developed at John Hopkins University, Student Team Learning methods account for more than half of all cooperative learning research studies (Slavin, 1995). Slavin (1995) reports that three central concepts of all Student Team Learning Methods are team

rewards, individual accountability, and equal opportunities for success. Additionally, while Student Team Learning Methods emphasize team goals and team success, it is important to note that teams are not in competition for rewards. All teams may achieve their goals in a given time period. The researchers at John Hopkins University have developed five specific Student Team Learning methods: Student Teams-Achievement Divisions (STAD), Teams-Games-Tournaments (TGT), Jigsaw II, Team Accelerated Instruction (TAI), and Cooperative Integrated Reading & Composition (CIRC).

Students Teams-Achievement Division (STAD) centers around four to five member learning teams mixed in ability, sex, and ethnicity. STAD begins with a class presentation of materials. Teams then meet to learn the material and prepare for a quiz.. Quizzes are given individually and students earn points for their teams based on individual improvement scores over past quizzes. The team is then recognized by a newsletter, certificate or privilege. STAD can be used in all grade levels and in all subject areas requiring a single right answer (Slavin, 1991a).

Similarly, Team Games Tournaments (TGT) uses heterogeneous groups of four to five students and begins with a class presentation of materials, followed by team learning. Replacing the quiz, however, are games designed to test students' knowledge of materials learned. The games are played at tables of three students, each from a different team. Students are assigned to the tournament tables based on prior performance in an effort to equalize competition. Like STAD, there is team recognition and TGT can be used in all subject areas requiring a single right answer (Slavin, 1991a).

Jigsaw II is an adaptation of Jigsaw, originally designed by Aronson and colleagues in 1978 (Aronson & Patnoe, 1997). In its original form, each student in a learning group is given one section of a lesson and must teach that section to the other members of his or her group, forcing group interdependence. In Jigsaw II, students are given the same material rather than pieces of it, and each student is given an area or topic on which to become an expert. Different team members meet in “expert” groups to discuss material, later returning to their team to teach teammates about the topic. Like STAD and TGT, students are tested individually earning team points for individual score improvements, and teams receive recognition. Jigsaw is used most effectively in subject areas requiring the reading of textbooks and literature (Slavin, 1991a).

Team Accelerated Instruction (TAI) is a Student Team Learning method for mathematics instruction in grades two to eight. Again, students work in heterogeneous learning groups of four to five members. Placement tests are given, and individual skills materials are devised. Teams study together and check each other’s work. Team scores are based on the average number of units covered along with the accuracy of the units for a given week. For instruction on new concepts, teachers draw students who are at the same ability level from the various teams to form teaching groups. As with other Student Team learning methods, students receive team recognition (Slavin, 1991a).

Cooperative Integrated Reading & Composition (CIRC) was developed for use in reading, writing, and language arts, primarily for upper elementary grade levels, although adaptations can be made for use in other grades. Students work in heterogeneous learning teams on activities based on three principle elements: basal related activities, direct

instruction in reading comprehension, and integrated language arts and writing. Like other Student Team Learning methods, procedures include teacher presentation, team practice, individual practice, and testing (Slavin, 1995).

Learning Together

Johnson and Johnson (1994) devised the Learning Together approach to cooperative learning as a method that could be used in virtually any subject area or grade level. The authors place a strong focus on interpersonal skills by requiring each lesson to have a social skills objective as well as the academic objective. Additionally, each cooperative activity should include positive interdependence, face to face promotive interaction, individual accountability, and group processing.

Learning Together integrates the use of three types of procedures: formal cooperative learning, informal cooperative learning, and cooperative base groups. The use of formal cooperative learning involves students working together to complete assignments that can last anywhere from one class period to several weeks. Informal cooperative learning involves special purpose groups that focus attention or provide closure to an instructional activity. These groups are created for a few minutes to as long as a class period. Cooperative base groups are long term heterogeneous groups lasting all year. Cooperative base groups meet at least twice weekly to provide support in cognitive and social development. The students may check each other's homework, discuss assignments, and provide absent students with information on work missed.

In addition to specifying objectives, making preinstructional decisions, and explaining both the task and cooperation, the teacher in Learning Together continuously monitors and assesses the cooperative groups to see how well they are functioning. The authors recommend cooperative learning activities be used in classrooms for at least 60% of the time (Johnson & Johnson, 1994).

Group Investigation

Developed by Yael Sharan and Shlomo Sharan (1994), Group Investigation is rooted in John Dewey's steps of scientific inquiry whereby students experience how knowledge is generated. This method of cooperative learning integrates four basic strategies: investigation, interaction, interpretation, and intrinsic motivation.

Investigation begins when a teacher poses a multifaceted problem to the class for which there is no single right answer. Subtopics are determined and students sign up for groups based on interest. Through interaction, the students plan their group investigations discussing and exchanging ideas. They define their questions, determine their resources, divide work, and assign roles. The groups then carry out their investigations by interpreting and integrating their findings. Each student contributes his or her own perspective on the topic. Motivation becomes intrinsic as students determine what and how they will learn, and students gain control over their own learning.

Following the group investigations, groups plan and present their findings to their classmates in an effort to identify their main ideas and connect their findings to the general problem. Teachers evaluate students in Group Investigation through the work they have

done as a group and through individual performance on a test that incorporates factual recall of the main ideas presented by all of the groups. The teacher's role in Group Investigation is that of a facilitator who guides the students through each phase of the investigative process (Sharan & Sharan, 1994).

Overview of Research on Academic Achievement

A substantial amount of research comparing the effects of cooperative learning to that of control groups exists. For the most part, control groups consist of traditional classrooms using competitive or individualistic efforts. Johnson and Johnson (1992) define competitive efforts as those situations where students work against each other for a goal that can only be attained by a few. In competitive situations, students will achieve at the expense of another's failure. On the other hand, individualistic efforts are those when individual students work by themselves for goals that are unrelated to the achievement of others.

Based on a meta-analysis of the existing research comparing cooperative, competitive, and individualistic efforts, Johnson & Johnson (1992) conclude that cooperative learning results in higher academic achievement than that of competitive or individualistic learning efforts. The authors' conclusion is based on a review of 378 studies conducted over the last 90 years, and they use effect size to measure the impact of cooperative learning. An effect size is defined by Slavin (1995) to be "the proportion of a standard deviation by which an experimental group exceeds a control group." Slavin maintains effect sizes of .20 or .25 to be generally considered educationally significant

(Slavin, 1995). Regarding academic achievement, Johnson & Johnson find the overall effect size to be 0.67 when comparing cooperative and competitive efforts and 0.66 when comparing cooperative and individualistic efforts. Admittedly, not all of the research was carefully conducted. When studies were limited to those of high methodology that included random assignment of subjects and well-defined control situations, the effect sizes of cooperative versus competitive comparisons rose to 0.86 while cooperative versus individualistic comparisons rose to 0.88.

Robert Slavin (1995) also concluded that cooperative learning can have a positive effect on achievement. Using stringent methodological criteria that included comparison groups studying the same material, experimental and control groups initially determined to be equivalent, study durations of at least four weeks, and achievement measures that assessed objectives taught in experimental and control classes, Slavin compared ninety-nine studies. Overall, 63% of the ninety-nine experimental-control comparisons favored cooperative learning, while only 5% significantly favored control groups.

Cooperative learning methods are credited for academic achievement gains in all subject areas including language arts, reading, and writing (Stevens, Madden, Slavin, & Farnish, 1987; Lew, Mesch, Johnson, & Johnson, 1986; Slavin & Karweit, 1981; Johnson, Johnson, Johnson, & Anderson, 1976), mathematics (Slavin, Leavey, & Madden, 1984; Madden & Slavin, 1983), biology (Lazarowitz & Karsenty, 1990), and social studies (Dugan, Kamps, Leonard, Watkins, Rheinberger, & Stackhaus, 1995). In addition to academic achievement gains for regular education students, cooperative learning has

proven to effectively increase academic achievement gains for special needs students (Dugan, et. al., 1995; Lew, et. al, 1986; Madden & Slavin, 1983; Nevin, et. al., 1982).

Cooperative Learning and Non-Academic Achievement Outcomes

In their meta-analysis of cooperative learning research, Johnson & Johnson (1992) further conclude that cooperative efforts result in greater interpersonal attraction and increased social support than did competitive and individualistic efforts. The authors reviewed over 180 studies on interpersonal attraction and 106 studies on social support with weighted effect sizes for cooperation versus competition and cooperation versus individualistic efforts to be 0.65 and 0.64, respectively. With methodologically high quality studies, the effect sizes increased to 0.77 and 0.67. Additionally, the authors reviewed over 79 studies on self-esteem and concluded that cooperative efforts result in higher self-esteem than did competitive or individualistic efforts. The weighted effect size for cooperation versus competition was 0.60 while the cooperation versus individualistic efforts effect size was 0.44. Again, when only methodologically high quality studies were reviewed, the effect sizes increased to 0.68 and 0.45.

A number of studies measuring interpersonal attraction have been conducted with students with special needs. One such study, authored by Nancy Madden and Robert Slavin (1983), examined the effects of Student Teams-Achievement Divisions (STAD) on the social acceptance of mainstreamed children by their non-handicapped peers in six elementary grade mathematics classes. The subjects were 183 third, fourth, and sixth graders of whom 40 were classified in need of special education services.

A cooperative intervention was compared to a controlled condition. The same curriculum was taught in each, but the cooperative learning method used a cooperative reward structure and a cooperative task structure, while the control condition involved students studying individually and given performance feedback individually. Each teacher taught one control class and one experimental class. The peer social acceptance measure was a paper and pencil test that asked students to list their choices of peers as workmates and as friends, along with those students with whom they would not like to work. While the rejection of mainstreamed special needs students decreased, friendships and liking of the students did not increase. Additionally, although self concept showed a positive increase for the entire cooperative treatment sample, self concept did not show a positive increase for the students with special needs.

Ann Nevin, David Johnson, and Roger Johnson (1982), however, reported that on four studies conducted with first-graders, second-graders and ninth-graders having special needs, many of whom were alienated from their peers, results consistently indicate that group contingencies promote greater social acceptance by non-handicapped peers and higher self esteem for the target students. Both studies used similar sociometric peer ratings to measure social acceptance, but while self concept was measured with the Coopersmith Self-Esteem Inventory in the Madden and Slavin study, the Nevin, Johnson, and Johnson study measured self concept with a self esteem questionnaire of twenty statements designed specifically for their study.

In a study conducted by Robert Slavin (1977) with middle school social studies students that had special emotional and behavioral needs, a five item sociometric

instrument measured increases in students' attraction to one another when comparing Teams-Games-Tournament (TGT) to individualized instruction. This study further reported increases in students' time on task. In a follow up study five months later, the TGT students, now dispersed into new classes, were still interacting with peers more frequently than were control students.

In a study with regular education students, a jigsaw cooperative learning technique was compared to traditional teacher-taught methods in the classroom (Blaney, Stephan, Rosenfeld, Aronson & Sikes, 1977). On measures of peer liking and self esteem, students in the cooperative learning classes showed significant increases over control group students. In the "liking for school" measure, however, experimental whites increased in liking school, while control whites decreased; experimental blacks decreased slightly in liking school while control group blacks decreased markedly; and Mexican-Americans increased slightly in liking school, while control Mexican-Americans increased markedly. The authors attributed the unexpected results of the Mexican-Americans in "liking for school" to language difficulties possibly intensified by having to teach material to other students.

In another study with regular education students, Robert Slavin and Nancy Karweit (1981) compare the effects of STAD, TGT, and Jigsaw to traditional methods. Cooperative learning methods were used for most of the students' instructional day in fourth and fifth grade classes. The subjects were 456 students and their 17 teachers spanning 5 elementary schools in a rural school district. The control teachers were asked

to teach in their usual way, while the experimental teachers were given a three hour period of training in the three team learning techniques mentioned.

For cooperative learning students, student friendships as measured by sociometric items positively increased; self esteem, as measured by the Coopersmith Self-Esteem Inventory, increased in general and academic subscales as well as total score; and student attitudes, assessed by a Likert-scale format, increased in liking of school more than did the control group. No differences were reported on the social subscale of the Coopersmith, feelings of being liked, liking of others, and peer support for academic performance.

Similarly, Robert Slavin, Marshall Leavey and Nancy Madden (1984) compared TAI to individualized and traditional instruction methods with third, fourth, fifth and sixth grade mathematics students, measuring the degree to which students liked mathematics class. The students in these two studies included students with special needs. The subjects in Study 1 were 504 third, fourth, and fifth grade students in a middle class suburban school district of which 6% of the students were receiving special education services. The subjects in Study 2 were 375 fourth, fifth, and sixth grade students in another suburban school district of which 4% of the students received special education services.

The TAI intervention involved individualized instruction materials using team study methods. The individualized instruction method used the same curriculum materials as the TAI, but students worked individually, not in teams. The control group used traditional methods for teaching mathematics that included traditional texts, whole class lectures, and group paced instruction. Attitudes were measured by two eight item attitude

scales given as pre and post tests. These measure “liking of math class” and “self-concept in math.” While in Study 1, TAI students’ attitudes toward math class significantly increased, Study 2 showed no significant differences on the liking of math class for TAI students when compared to the other groups.

Two studies conducted with at-risk students indicate increased positive attitudes toward school when cooperative learning methods were used. One study, conducted by Hawkins, Doueck, and Lishner (1988) used cooperative learning methods as a part of an instructional package that included proactive classroom management and interactive teaching. While the study included all regular math, language arts, and social studies seventh graders in five middle schools, a subsample of 77 experimental subjects and 83 control subjects considered to be low math achievers were selected for analysis. Low math achievement was defined as scoring in the bottom 23% on the California Achievement Test in math taken in the spring of sixth grade. Low achievers were selected for this analysis based on the assumption that they are more likely to engage in delinquent behaviors than those students experiencing academic success.

Experimental teachers received an in-service training program and three booster training sessions during the year, as well as an average of 2 hours a month clinical supervision in the instructional methods used. The package of instruction included proactive classroom management, interactive teaching, and cooperative learning. For proactive classroom management, teachers were taught specific methods for keeping classroom disruptions to a minimum such as established routines, clear and explicit directions, and frequent encouragement and praise. The interactive teaching components

used for this study included objectives, modeling, and frequent monitoring to assess comprehension of material. The cooperative learning techniques used in this study were Student Teams Achievement Divisions and Teams-Games-Tournaments. Control teachers received no training in these methods from the project.

Student achievement was measured by comparing test scores on the California Achievement Test taken the spring prior to intervention and the spring following intervention. Achievement was also measured by changes in report card grades in the fall and the spring of the academic year. Social bonding toward school and attitudes toward class were measured by a student survey, using a Lifetree type response scale, given in the fall and the spring of the academic year. School misbehavior was measured by the number of suspensions and expulsions reported for each subject. This study reported “low achievers in experimental classrooms showed more favorable attitudes toward math, more bonding to school, greater expectations for continuing schooling, and less serious misbehavior” than did low achieving control group students by the end of the academic year. This study did not find a significant difference on achievement, however.

A study of at-risk students conducted by Roswal, Mims, Evans, Smith, Young, Burch, Croce, Horvat, and Block (1995) compared the effects of a collaborative peer tutor teaching program on the students’ self-concept and attitudes toward school. Subjects included 282 urban seventh graders, many of whom had been previously identified as at-risk by using traditional school identification strategies. The tendency to drop out of school was measured by the Demos D (Dropout) Scale consisting of 29 statements for which students indicate degree of agreement. Self concept was measured

by the Piers-Harris Self Concept Scale, a self-report inventory of 80 first person declarative statements requiring a yes or no response. Additionally, attitudes toward school were measured by comparing school attendance for the 4 weeks before intervention with attendance for the final 4 weeks of the program.

The collaborative peer teaching program consisted of 4 classes of 25 students each, further divided into 5 student heterogeneous teams. Teams worked together on academic tasks for 25 minutes each day for 16 weeks. Competition among the team was fostered by a “scholar bowl” and additional team points were awarded for appropriate student behavior during the week. The data for this study indicate the collaborative peer tutor teaching program group demonstrated significant improvement in drop out scores, and increased self-concept scores when compared to control groups. Additionally, the authors report “increased motivation to be in school, better attitudes toward school and teachers, and an enhanced awareness of school attendance for those students involved in the collaborative peer tutor teaching program” as measured by the Demos D Scale. A meaningful increase in attendance for students in the collaborative peer teaching program also resulted, as well as teacher reports that student referrals for discipline dramatically decreased with this group.

Cooperative Learning and Collaborative Skills Training

While some debate may exist regarding the specific components that make cooperative learning work, many studies indicate that collaborative skills training for the groups is a needed component. One study conducted by Lew, Mesch, Johnson, and

Johnson (1986) examined achievement, interpersonal attraction, and social interaction in socially withdrawn sixth-grade students using cooperative learning. The study compared four components of cooperative learning situations: peer interaction opportunities, positive goal interdependence, positive reward interdependence, or a combination of positive goal and reward interdependence plus a collaborative skills group contingency. For this study, four students were identified as “social isolates” based on observation of their interaction with peers, sociometric peer ratings, and teacher ratings on appropriate social behavior. The students were further identified as “academically deficient” based on achievement scores and teacher ratings. These students were a part of a sixth grade reading class containing 19 students.

The baseline condition involved student assignment of vocabulary words on Monday, a nonvocabulary assignment on Tuesday with a choice of working alone or with other classmates, an individual student review of the vocabulary words on Thursday, and a 15 minute test on Friday. All instruction was presented to individuals. The positive goal interdependence condition consisted with the addition of students working in cooperative learning groups on Thursdays. All other events remained the same. Students were told they were responsible for each others’ mastery of the vocabulary words. No collaborative skills were taught and no rewards were offered. The academic group contingency condition added positive goal interdependence by giving each group member two bonus points toward their test grade if all group members scored 80% or better on the test. The academic and collaborative skills group contingencies condition consisted of the additional bonus points already mentioned plus two more bonus points if each group member was

observed using three out of four carefully taught collaborative skills during their cooperative learning group review on Thursdays. The four collaborative skills taught to the class were: sharing ideas and information, keeping the group on task and asking task related question, praising and encouraging task related contributions of other members, and checking that everyone in the group understood the material.

The results for the class as a whole indicated the combination of academic and collaborative skills group contingencies significantly increased academic achievement, while the addition of positive goal interdependence and the addition of an academic group contingency did not. For the target students, however, the addition of positive goal interdependence as well as academic group contingency increased achievement, as did the addition of a collaborative skills group contingency. Sociometric results indicated “social isolates” to be rejected less frequently and to have developed positive relationships that generalized to the free choice study situation. Additionally, these students demonstrated the acquisition of the collaborative skills taught with the collaborative skills group contingency, a factor suggesting the benefits of collaborative skills training within the classroom.

While Johnson and Johnson (1983) report frequent use of cooperative learning to be positively related to perceptions of support, help, and friendship among students, Battistich, Solomon, and Delucchi (1993) find the quality of group interaction a determining factor when measuring student outcomes in cooperative learning. Observers rated the extent to which students were friendly, helpful, collaborative, and concerned for one another when working in their groups. Additionally, observers collected data on the

percentage of time students worked in groups. The authors report that “frequent participation in learning groups was associated with positive student outcomes only when the quality of within-group interaction was rated by the observers as high.” When observers related the quality of group interaction as low, frequent group work was associated with negative outcomes. The authors conclude that teachers providing explicit instruction in group interaction skills will be more successful in using cooperative learning in the classroom.

Since at-risk students lack interpersonal skills, collaborative skills training will be a necessary component in instituting an effective cooperative learning program for these students. This review of the literature on cooperative learning suggests that other effective components include positive group interdependence, individual accountability, group contingencies and/or rewards, and frequent use when group interactions are of high quality.

While previous research studies indicate increases in interpersonal attraction and social support, these increases have not been established with at-risk students. And while cooperative learning efforts have affected better attitudes toward school in at-risk students, more favorable attitudes toward a particular subject have only been reported when cooperative learning was used as a part of a greater instructional package. This study attempts to add to the current body of research, thereby increasing our knowledge of effective learning methods for at-risk students.

Chapter 3

Description of the Subjects

The participants in the study are at-risk students enrolled in an alternative education program. Although the students are on the rolls of a comprehensive high school in Atlantic County, they are behind in academic credits and are, therefore, at risk of becoming high school drop outs. These subjects are non-classified students who have a history of problems causing their inability to remain at their home schools. Their history of problems includes at least one of the following:

1. Disruptive, disaffected, or aggressive behaviors
2. Truancy or excessive illnesses
3. Teen parenting, requiring flexibility in child care
4. On probation for juvenile criminal offenses (weapons, drugs, theft, assault)

The subjects are 18 students enrolled in one of three English Skills classes designed for HSPT reading and writing preparation. Class attendance varies, ranging from five to twelve students per class per day. All are morning classes taught by the same instructor. All classes meet for 40 minutes each school day. The subjects are mixed in ability, sex, gender, age, race, and socioeconomic backgrounds, with the following gender and racial breakdowns: 56% male and 44% female, 56% black, 39% white, and 5% Hispanic. The average student is 17 years of age.

Description of the Site

The site for this study is the Atlantic County Alternative High School, located on the campus of Atlantic Community College. Classrooms for this program are located in the trailers designated for the Alternative High School, along with two classrooms in a college building, and the gymnasium. One English class being used for this study meets at the trailers, while the other two classes meet in the college building. Students in the program have access to many college facilities including the library, cafeteria, and student life center. The high school students enjoy many freedoms given to college students such as smoking cigarettes at school and 10 minutes between classes. There is no such thing as a hall pass or library pass. There is nothing in the way of dress codes or lockers.

Description of the Instruments

Two instruments were used to measure social interactions for this study. The first measure is a “Circle of Friends” questionnaire designed specifically for this study. The students are asked three questions: In this class, who are your best friends? In this class, who are your friends? In this class, who are not your friends? Attached to the questions is a class list of the students’ names, and students are required to write their answers. This questionnaire requires a pre and post intervention administration to measure changes in the number of students named for each category. The purpose of the questionnaire was to see if, following intervention, the number of students named as friends would increase, and the number of students named as “not friends” would decrease. Movement in these directions would constitute an increase in positive social interactions.

The second instrument measuring social interactions in this study was an observation checklist, with observations recorded by the class instructor. On the checklist, the observer records if subjects exhibit on task interaction, off task interaction, no interaction, positive interaction, and negative interaction while working in their groups. Observations began the week prior to intervention and continued once a week during intervention. The instructor observed subjects at random for several minutes during the course of the week, with subjects unaware of the observation.

Attitudes toward English class were measured by a Likert-scale format designed specifically for this study. The instrument consists of 10 statements requiring subjects to circle the degree to which they agree with the statement: always, almost always, almost never, and never. The ten statements were created by an English teacher and measure the subjects' attitudes toward activities that are common in English class such as reading, writing, and participation in class discussions, as well as if the class is boring, interesting, fun, and enjoyable. For two statements, subjects indicate if the class is the best or worst part of their school day, and for the final statement subjects indicate the degree to which they are happy in this English class. The instrument requires a pre and post intervention administration.

A second measure of attitudes toward English class was the "Cut Classes Tally." For this, the number of times a subject cut English class two weeks prior to intervention and the final two weeks of intervention is compared. Since students in this program enjoy the freedom of college students, there is a higher tolerance for cuts than one would expect in a regular high school program. Additionally, with the lack of hall restraints and

For these mini lessons, groups were given a model explaining the grammar rules along with a worksheet to complete. When the group felt that everyone understood the lesson, they were given individual quizzes. 100% mastery was expected on the quizzes, and any group whose members' quiz scores reached mastery was allowed to read the newspaper. Any group with a member not reaching mastery completed a second worksheet.

Collaborative writing was used to introduce models for specific writing tasks, such as controversial writing tasks or cause and effect writing tasks. In cooperative learning groups, students collaboratively wrote an essay using a model and then exchanged essays with another group for editing and revision. Eventually students were required to write their own essays, but continued the process of peer editing. The members of the learning groups changed daily, but always included a mix of skill level, race, and gender.

Types of Analysis of Data

Data were analyzed based on the measurable changes in behavior and attitudes of subjects prior to intervention and during or after intervention. On the "Circle of Friends" questionnaire, a comparison was made of the mean number of students named prior to intervention and the mean number of students named following intervention. Data was also examined to see what percentage of students reported an increase or decrease in names for each question. Similarly, the cut classes tally compared the mean number of subjects' cut classes prior to intervention and during the final weeks of intervention, as well as examined what percentage of subjects increased or decreased in number of cut classes.

On the observation checklist, data were analyzed comparing the percentage of subjects exhibiting each type of behavior on a weekly basis. Data were then examined to see if patterns emerged as the intervention progressed. On the attitude survey, data were analyzed comparing subjects' mean responses pre and post intervention. Comparisons were made for individual questions as well as overall scores.

Chapter 4

Two research questions were addressed by this study. Firstly, what is the effect of cooperative learning during English class on social interactions with peers in at-risk high school students? And secondly, what is the effect of cooperative learning on attitudes toward English class in at-risk high school students? Data were collected during English classes at the Atlantic County Alternative High School. Subjects are 18 teenagers at-risk for dropping out of school. No cooperative learning methods were used in these English classes prior to intervention, after which the cooperative learning intervention period lasted four weeks.

Social interactions were measured by a “Circle of Friends” questionnaire requiring pre and post intervention administration. Additionally, social interactions were measured by a series of weekly observations beginning pre intervention and continuing during intervention. Attitudes toward English class were measured by a Likert-scale format requiring pre and post intervention administration. Also, a comparison of the number of times a student cut English class two weeks prior to intervention and during the last two weeks of intervention was used to measure attitudes toward English class.

Circle of Friends Measure

The “Circle of Friends” measure consisted of three questions: In this class, who are your best friends? In this class, who are your friends? In this class, who are not your friends? Attached to the questions was a class list of students’ names. On the question regarding best friends, the mean dropped from 1.8 to 1, with 56% of the subjects naming fewer best friends on the post test. While 28% of the subjects stayed the same in their number of best friends, 17% named more best friends on the post test than they had on the pre test.

Although the mean dropped regarding best friends, the mean rose from 5 to 5.9 students being named as friends on the post test. While 44% of the students reported on the post test an increase in the number of friends they had in the class, 28% reported a decline with another 28% staying the same. The data presented in Table 1 show the highest change in number of friends coming from one subject who went from 14 friends on the pre test to only 2 friends on the post test. Countering that is a subject who gained 10 friends from the pre test to the post test, with two more subjects gaining 6 and 7 friends. 50% of respondents, however, reported changes ranging from 1 to 3 names.

On the “not friends” question, the mean rises from .8 to 1.3 students named as not friends on the post test. In spite of the rise in mean, however, 72% of respondents stayed the same in not naming any classmates as not being their friend. 22% of the subjects reported a decrease in the number of students who were not their friends. And while only 11% of subjects reported an increase in the number of students who were not their friends,

Table 1: Circle of Friends

Code #	Best Friends		Friends		Not Friends	
	Pre	Post	Pre	Post	Pre	Post
01	2	0	5	15	3	0
02	3	0	11	14	0	0
03	3	1	3	2	0	0
04	0	0	0	0	0	0
05	2	0	13	15	0	0
06	2	0	8	15	0	0
07	4	2	2	2	0	0
08	3	0	3	6	1	0
09	1	2	14	2	0	10
10	5	4	10	11	0	0
11	1	1	7	7	0	0
12	1	3	2	0	0	0
13	1	0	0	0	0	0
14	3	2	4	3	0	0
15	0	0	1	0	2	12
16	0	0	3	3	0	0
17	1	2	4	10	8	2
18	1	1	0	2	0	0
Mean	1.8	1	5	5.9	.8	1.3

these two subjects reported an increase of 10 names each of classmates who were not their friends.

Social Interaction Observations

The social interaction observation measure consisted of a checklist recording on task interaction, off task interaction, no interaction, positive interaction, and negative interaction while subjects worked in their groups. Five observations occurred, beginning with a pre intervention observation and continuing through each of the four weeks of intervention. Table 2 records the percentage of subjects interacting and the quality of their interactions for each of the 5 observations.

The pre intervention observation shows the highest percentage of subjects observed engaging in negative interactions as 61%. Additionally, this observation shows the highest percentage of students engaged in off task behavior as 50%. During the pre intervention observation, 33% of the subjects engaged in on task interactions, with 17% engaging in no interaction and 22% engaging in positive interactions.

Observation 1 occurred during the first week of intervention. This observation shows the highest percentage of subjects exhibiting no interaction within their groups, which is 56%. Of the remaining subjects, 22% engaged in on task interaction and 22% engaged in off task interaction, with 28% of the subjects engaged in positive interactions and 17% engaged in negative interactions.

Observation 2, which occurred during the second week of intervention, shows the lowest percentage of students engaged in negative interactions to be 11%. 56% of the

Table 2: Social Interaction Observations

#	Pre-Observation				Observation 1				Observation 2				Observation 3				Observation 4				
	on	off	no	pos	neg	on	off	no	pos	neg	on	off	no	pos	neg	on	off	no	pos	neg	
01		x			x			x									x				
02	x			x				x					x								
03		x			x									x							
04	x			x				x													
05			x					x													
06		x			x								x								
07			x											x							
08		x		x										x							
09		x			x																
10		x			x																
11	x																				
12		x																			
13	x			x																	
14	x				x																
15			x																		
16		x																			
17	x				x																
18		x																			
%	33	50	17	22	61	22	22	56	28	17	44	22	33	56	11	50	33	17	67	17	72

Key: on = on task interaction off = off task interaction no = no interaction
 pos = positive interaction neg = negative interaction % = percentage of students

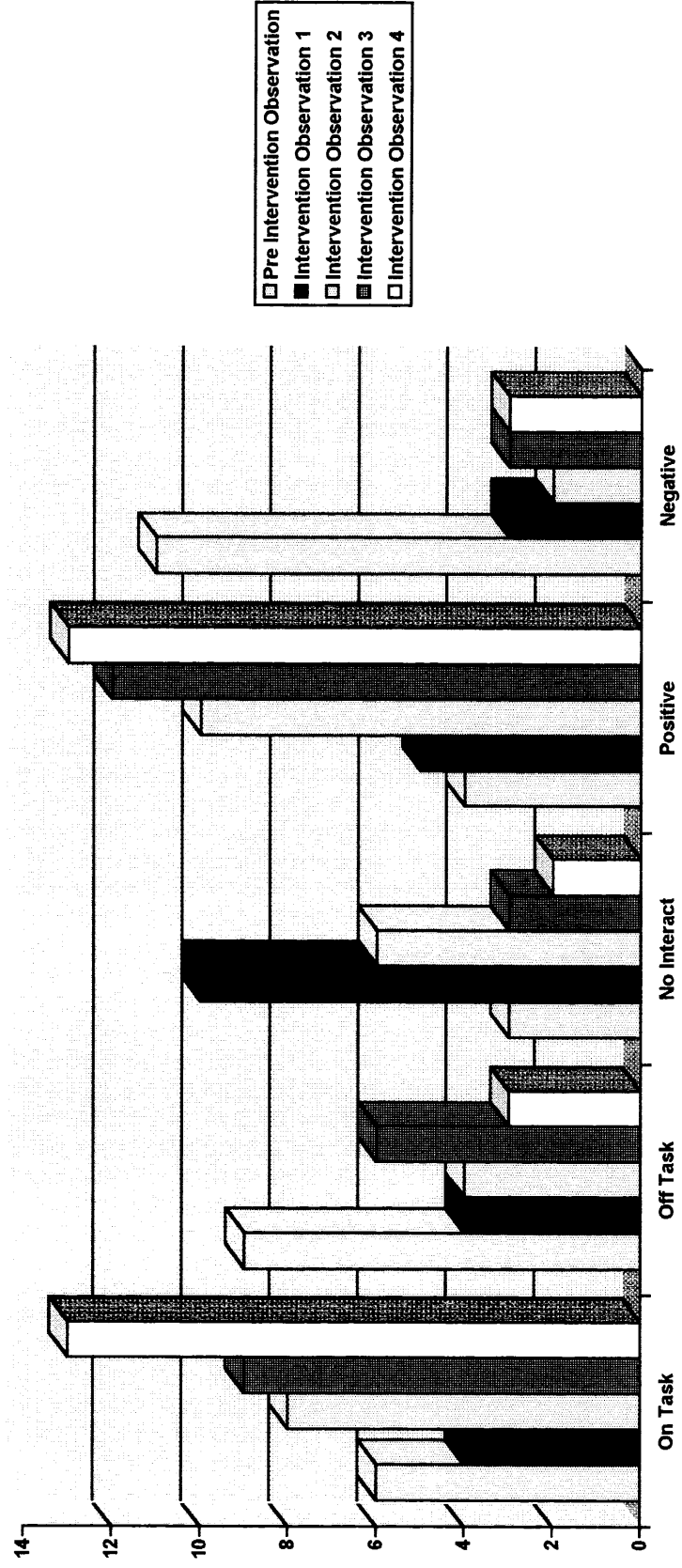
subjects were found to engage in positive interactions, with 44% engaging in on task interactions and 22% engaging in off task interactions. 33% of the subjects exhibited no interaction with their peers during this observation.

Observation 3 occurred during the third week of intervention and shows 50% of the subjects engaged in on task interaction, 33% in off task interaction, and 17% in no interaction. 67% of the subjects exhibited positive interactions, while 17% exhibited negative interactions during this observation.

The final observation, observation 4, occurred during the fourth and last week of intervention. This observation shows the highest percentage of students engaged in on task interactions, 72%, along with the highest percentage of students engaged in positive interactions, again 72%. Also during this observation, the lowest percentage of subjects were observed exhibiting no interaction, only 11%, while 17% of the subjects engaged in off task behavior and 17% engaged in negative behavior.

Graph A illustrates the number of students engaged in on task interaction, off task interaction, no interaction, positive interaction, and negative interaction as grouped by observations. In comparing the observations, there is a steady rise from 4 subjects to 13 subjects engaging in positive interactions during the course of the observations. With the exception of the pre intervention observation, we also see a steady rise from 4 to 13 subjects engaging in on task interaction during intervention, and a decrease from 10 students to 2 students exhibiting no interaction during intervention observations. Negative interactions decreased from 11 subjects during the pre intervention observation to 2

Graph A: Social Interaction Observations



subjects during the second observation, and remained steady at 3 subjects engaging in negative interactions for the remaining observations.

Attitude Survey

An attitude survey was administered to subjects pre intervention and post intervention. The survey was a Likert-scale design consisting of 10 statements that measured student attitudes toward English class. Students responded with always, almost always, almost never, and never to the following statements:

1. This English class is the best part of my school day.
2. I like reading in this English class.
3. This English class is the worst part of my school day.
4. This English class is interesting.
5. I like to write in this English class.
6. This English class is fun.
7. This English class is boring.
8. I enjoy being in the English class.
9. I dislike participating in discussions during this class.
10. I am happy in this English class.

As shown in Table 3, the overall mean score increased slightly from 2.6 to 2.7 in more positive attitudes toward English class. The highest increase in positive attitudes occurred with the statement “I dislike participating in discussions during this class.” This statement saw a rise in mean from 2.8 to 3.2, followed by the statement “This English class is the best part of my school day” which saw a rise in mean from 2.3 to 2.6. The statements “This English class is fun,” and “I enjoy being in this English class” showed gains in mean of .2 in positive attitudes toward English class, while the statement “I am happy in this English class” increased slightly from 2.8 to 2.9 in positive attitudes. The

Table 3: Pre / Post Attitude Survey

Key
 1=Most Negative, 2=Negative, 3=Positive, 4=Most Positive

	Statement 1		Statement 2		Statement 3		Statement 4		Statement 5		Statement 6		Statement 7		Statement 8		Statement 9		Statement 10		Overall Mean		
	Pre	Pos	Pre	Pos	Pre	Pos	Pre	Pos	Pre	Pos	Pre	Pos	Pre	Pos	Pre	Pos	Pre	Pos	Pre	Pos	Pre	Pos	
Mean	2.3	2.6	2.5	2.5	3.0	2.9	2.6	2.5	2.5	2.5	2.4	2.6	2.5	2.5	2.5	2.5	2.5	2.8	2.8	2.8	2.9	2.6	2.7

Table 4: Cut Classes Tally

Participants Code #	Classes Cut		Participants Code #		Classes Cut		Classes Cut	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
01	0	0	10	10	2	1		
02	0	0	11	11	2	0		
03	2	0	12	12	1	0		
04	0	1	13	13	1	0		
05	2	1	14	14	0	2		
06	2	1	15	15	2	3		
07	4	0	16	16	3	1		
08	2	0	17	17	4	0		
09	0	1	18	18	6	0		

Mean

Pre	Post
1.8	.7

statements “This English class is the worst part of my school day,” and “This English class is interesting” saw a slight decrease of .1 in positive attitudes toward English class. The remaining three statements, “I like reading in this English class,” “I like to write in this English class,” and “This English class is boring,” showed no difference in attitudes toward English class.

Cut Classes Tally

A comparison of the number of times a student cut English class for the two weeks prior to intervention and for the last two weeks of intervention was used as a second measure of attitudes toward English class. The overall mean in subjects cutting English class dropped from 1.8 prior to intervention to .7 during the last two weeks of intervention, amounting to 1.1 less cuts per student. Overall, 67% of the subjects decreased their amount of cut classes during intervention, with 22% increasing their cuts and 11% remaining unchanged at 0 cuts. As seen in Table 4, the highest change in cuts was attributed to one subject whose cuts dropped from 6 to 0 during intervention. Aside from two more subjects whose cuts dropped from 4 to 0 each, 61% of the subjects showed increases or decreases of 1 or 2 cuts during intervention.

Chapter 5

The purpose of this study was to address the following research questions: What is the effect of cooperative learning during English class on social interactions with peers in at-risk high school students? What is the effect of cooperative learning on attitudes toward English class in at-risk high school students? Given the positive outcomes for cooperative learning methods as stated in the literature review, the following research hypotheses were formulated: Cooperative learning during English class increases positive social interactions with peers in at-risk high school students and cooperative learning increases positive attitudes toward English class in at-risk high school students.

Changes in social interactions were measured by a “Circle of Friends” questionnaire and a weekly observation checklist. On the “Circle of Friends” questionnaire, the mean number of best friends actually decreased slightly during the study, while the mean number of friends increased slightly. A majority of the subjects reported fewer best friends following intervention, and more subjects reported more friends than subjects reporting fewer friends or the same number of friends. Although best friend nomination decreased slightly during the study, these results may indicate an increase in positive social interactions in that following intervention, friendships extended outside of the already established cliques formed prior to intervention. Although there

was a slight increase in the mean number of “not friends,” 76% of the subjects reported no changes in this category (remaining at 0 names for “not friends”); and since more subjects reported a decrease in “not friends,” a slight increase in positive social interactions is suggested. More dramatically, the social interactions observation checklist showed steady gains in positive social interactions during intervention. The pre-intervention observation showed the lowest percentage of subjects exhibiting positive social interactions when working in groups, while in each successive observation the percentage of subjects exhibiting positive social interactions steadily climbed to reach more than triple its initial amount in the final observation.

Two instruments measured attitudes toward English class. While the attitude survey saw a slight increase in positive responses, this rise would not be interpreted as having statistical or practical significance. Interestingly, the highest gain in positive attitudes was reported on the question measuring the subjects dislike for participating in discussions during class. Since class discussions require a degree of social interaction and students lessened their dislike for participating in these discussions, it would seem that the cooperative learning interventions made them more comfortable with talking to each other. The second measure of attitudes was the “Cut Classes Tally” which saw a decline in mean of 1 cut per subject from the two weeks prior to intervention to the final two weeks of intervention. Since cuts were decreased by the majority of subjects, an increase in positive attitudes toward English is suggested inasmuch as the majority of students chose to attend class more often.

The results of this study compare favorably to the research studies reviewed in earlier. For regular education students, Slavin and Karwiet (1981) reported increases in student friendships as well as students' positive attitudes toward school. In a study conducted with at-risk students, Hawkins, Doueck, and Lishner (1988) showed cooperative learning, as a part of an instructional package including proactive classroom management and interactive teaching, to affect more positive attitudes toward math class. In another study of at-risk students conducted by Roswal, Mims, Evans, Smith, Young Burch, Croce, Horvat, and Block (1995), positive attitudes toward school, as measured by comparing attendance prior to intervention with attendance the final weeks of intervention, were increased as indicated by a meaningful increase in attendance for students in the collaborative peer teaching program.

All of the above mentioned studies compared experimental groups to control groups. The smallest of these studies included almost 300 subjects. Comparatively, this research study is of much smaller magnitude, with an experimental group of 18 subjects and no control group. This study was limited to one teacher's English classes in a small alternative high school program. In spite of this, all measures other than the attitude survey, which showed no significant changes overall in attitudes toward English class, indicated positive increases in social interactions and some attitudes toward class that were consistent with the findings of larger studies.

The implication of this research study is that cooperative learning can be successfully used on a small scale to increase at-risk students' positive social interactions and attitudes toward class. While the results of this study may not be statistically

significant, a reduction of even one cut per student in a two week period impresses me as an educator in an alternative education program. Additionally, witnessing the steady rise in students' positive interactions with each other in just four weeks makes me find this intervention worthwhile. Differences in methodology for future studies would certainly include a longer intervention period. Would positive interactions continue to rise or would students tire of the intervention?

Areas for further research in using cooperative learning with at-risk students might include the effects of using cooperative base groups to provide support in cognitive and social development as described by Johnson and Johnson (1994) in the Learning Together approach. Since at-risk students frequently lack social support, would cooperative base groups that meet twice weekly to check each other's homework, discuss assignments, and provide absent students with information on work missed provide an effective means of social support for the students? Would this social support translate into scholastic achievement and career achievement? Can these base groups be effectively applied in a small school setting with a high absentee rate?

This research study examined the effects of cooperative learning methods on social interactions and attitudes toward English class in 18 at-risk high school students enrolled in a small alternative education program located on a college campus. The findings suggested cooperative learning methods increased students' positive social interactions, increased students' reported number of friends, and decreased students' cut classes. Although no significant difference in overall mean was found on the attitude toward English class survey, students' dislike for participating in class discussions decreased

measurably. The implications for this study are such that cooperative learning methods can be effectively used with at-risk teens to improve social interactions with peers and some attitudes toward English class.

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