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Cooperative Learning Workshop

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COOPERATIVE LEARNING WORKSHOP

By

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ABSTRACT

The purpose of this workshop was to inform Lincoln County R-III teachers of the valuable aspects of cooperative or team learning. Research has shown that students at all grade levels have benefitted both academically and socially. Also, with this learning method alternative, teachers and students alike derived pleasure from the improved relaxed atmosphere brought about by collegial learning. The workshop, staged in 3 two-hour sessions, enabled elementary, junior-high, and secondary teachers to learn about cooperative learning while being cooperative learners. They worked cooperatively on various projects which could be adapted in their own classrooms. Subsequent informal get-togethers enabled the participants to question, praise, and gain support from each other.

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CHAPTER ONE

INTRODUCTION

Topic of the Workshop

Our students deserve to be allowed the opportunity to learn cooperatively! Furthermore, if they are denied cooperative learning, they are being shortchanged! This was the message of the six-hour workshop, presented in three two-hour segments, given to the teachers of Lincoln County R-III, Troy, Missouri, in March, 1989.

Cooperative learning is a classroom technique in which students work and talk together cooperatively about academic material. In a cooperative classroom, students are assigned to small groups and instructed to learn materials initially presented by the teacher. The heterogeneously-grouped teams, which usually consist of four to six members, work to master the material. In these small, mixed-ability groups, higher ability students in effect serve as substitute teachers for students who have trouble learning. In the process the

more capable student achieves a higher level of understanding while the low-ability child benefits from the other children's' assistance.

Cooperative learning programs differ in terms of the reward contingency. For example, the grade or reward might be contingent on a product cooperatively produced by the group, or it might be contingent upon the sum or average of the individual members' performance. In other instances, an improvement score determines the group reward. Evidence suggests, according to Ames, (cited in Stallings and Stipek, 1986) that simply being a member of a successful group, regardless of a child's own performance, allows the child some of the advantages of success, such as high self-perceptions of ability, satisfaction, and peer esteem. Moreover, some of the cooperative learning techniques include group competition which presumably pits groups of equal ability against each other, and consequently maximizes motivation for <u>all</u> members.

The two most prominent collaborative learning programs were developed at The Center for Organization of Schools, John Hopkins University, by Robert E. Slavin and The Cooperative Learning Center, University of Minnesota by David W. and Roger T. Johnson.

In the John Hopkins program, students work within groups to reach individualistic goals. The rewards for the group depend on the combined achievement of the

entire group. Everyone has to contribute in order for the group to succeed. The University of Minnesota's program is similar in that group grades encourage students to care about how their teammates are doing. They are taught social skills such as sharing, listening, and how to disagree without rejecting others' ideas.

The four principle student team learning methods that have been developed and researched by Slavin are: Student Teams Achievement Division (STAD), Team-Games-Tournaments (TGT)), Team Accelerated Instruction (TAI), and Cooperative Integrated Reading Composition (CIRC). STAD and TGT are comprehensive cooperative methods. They are adaptable to most subjects and grade levels. The remaining two methods are designed for use in specific subjects and grade levels.

In STAD the teacher presents a lesson and students meet in four- to five-member teams, helping one another to master a set of worksheets on the lesson. Each student takes a quiz on the material. The individual scores, based on the degree of individual improvement over previous scores, contribute to a team score. Teams with high scores are recognized.

In TGT instruction is similar to STAD, with students trying to help one another learn the material. But instead of taking individual quizzes, students compete with classmates of similar achievement from

other teams, and thus earn points for their own team. The teams with high scores are publicly recognized.

In Jigsaw (JIG), a technique originally developed by Aronson, each student in a five- to six-member group is given unique information on a topic that the whole group is studying. After reading their material, the students meet in "expert groups" with their counterparts from other teams to discuss and master the information. Next they return to their teams to teach it to their teammates. In a variation called "Jigsaw II" all students are first given common information. Then student "experts" teach more specific topics to the group. Finally, students take tests individually, and team scores are publicized.

In Learning Together (LT), a technique developed by Johnson and Johnson, students work in small groups on assignments to produce a single group product. Teachers use various methods for nurturing a philosophy of cooperation based on five elements: positive interdependence, face to face interaction, individual accountability, social skills, and group processing. Students are instructed to seek help from one another before asking for teacher assistance. They are usually rewarded on a combination of their own individual performance and the overall performance of the group. Rewards include teacher praise, grades, tokens and privileges.

Advantages and Disadvantages of Cooperative Learning

All the approaches encourage students to help one another to learn, and all aim to promote both achievement and improved social relations, but there are significant differences in methods that reflect differences in theoretical perspective and educational philosophy. In STAD and TGT, for example, there is more emphasis on individual testing of predefined academic material and upon individual and group competition to improve scores. In contrast, Jigsaw and LT rely more upon intrinsic student interest in cooperation and upon teacher praise of the group as a whole.

Differences among the methods may stem from the extent to which cooperative learning is promoted primarily as a means to individual achievement and accountability versus group productivity and social understanding. STAD and TGT emphasize ways in which students' competitive motivation can be constructively channeled to compete with one's own previous achievement and with one's peers at a similar level. At the same time, one's achievement benefits from and contributes to a group effort, which itself is driven by the excitement of group competition. The ultimate reward is individual achievement, along with improved social relations among students who have learned to give and receive help from one another. To implement this approach requires

training in new classroom procedures, but, because the techniques are designed to be compatible with dominant motivations of students in school (to compete for high grades), relatively little reorientation to schooling is needed.

In contrast, LT and JIG advocate cooperative learning largely as a way to reduce negative forms of individualism and competition, that is, to enhance skills in cooperative behavior, pride in group productivity, and in students' getting along with members from diverse social backgrounds (especially race, ethnicity, and physical handicap). Thus, successful implementation of the method is likely to require training in new skills of social interaction for teachers and students alike.

One of the concerns when implementing cooperative learning is that the grouping and working together will bring about an unacceptable noise level, but this problem can be easily overcome by instructing both elementary and secondary students which noise levels are tolerated and which are not. Another concern is that this will take away from precious classroom time, but instead of working alone at their desks, the students will be spending more time on task in their heterogeneously-grouped teams working on a project, helping prepare for an individualized test, tutoring each other, and

generally "liking" to learn as they meet with success in an unstressful situation.

Another important aspect of any cooperative learning situation is that the teacher uses the teaching techniques he or she normally employs to convey information such as lectures, filmstrips, and demonstrations. Then the students work together as a team on whatever assignment will allow them to practice, enrich, or challenge their thinking skills.

Successes and Few Failures

The power of groups working cooperatively to achieve a common goal is apparent in all realms of human activity. Yet in schools, cooperative activities are usually restricted to the playing field, and are rarely seen in the academic classroom. In the team setting, one student's success helps others to achieve their goals. As a result, team members encourage and help one another. Teamwork is fun, but that is not why teamwork works. It is effective because it creates a social and motivational environment that expects and assists maximum effort. Students will put the kind of effort and commitment into helping each other learn that they put into team sports. They become active participants in their own learning.

Parker (1985) states that cooperative learning groups can have a positive impact in many areas:

academic achievement, social skills development, and self-concept. Students of all abilities benefit from involvement with cooperative learning groups. Students help each other learn and promote academic achievement through social relations. The significant advantage of cooperative learning is that students are motivated to help one another learn and succeed, not fail. Everyone has to contribute and better students have a stake in helping slower students succeed. In this learning technique, the team is rewarded rather than the individual.

Some students grasp concepts before others; therefore, they may reinforce what they have learned by explaining concepts to students who need help. Students reinterpret what the teacher presented. This emphasizes the necessity for everyone to understand each lesson. Students are thus motivated to help one another master academic skills.

In Slavin's (1984) review of research evidence, he stated that 29 of 46 studies showed cooperative learning methods to have significantly positive effects on student achievement. He also concluded that there was strong support for his observation that group rewards for individual learning are critical to the effectiveness of cooperative learning methods.

One of the very few studies that did not offer statistically significant support that achievement is

enhanced at all age levels through cooperative learning was that of Swing and Peterson (1982). They found that retention and achievement of high- and low-ability students was enhanced but those of medium-ability students was not. They concluded that students who actually teach group members or receive explanations from fellow group members performed better on achievement. However, Yager, Johnson, and Johnson (1985), as well as numerous other researchers, found that medium- as well as high-and low-achieving students all academically benefited from participation in heterogeneous cooperative learning groups.

An important aspect of cooperative learning is that this method generally produces a more favorable classroom climate. After a review of six studies of the impact on affective domain, (which are examined in Chapter 2) it was determined that the students who had worked cooperatively perceived themselves as having greater peer support, personal teacher support, and greater cohesion. The widespread reliance on traditional whole-class structure appears to foster attitudes less favorable than those obtained by cooperative methods.

Evidence of Need and Support of Workshop

On August 25, 1988 the 113 faculty members of Lincoln County R-III, Troy, Missouri were asked to complete a needs assessment survey initiated by the professional concerns committee of the school. (See Appendix A). Teachers were asked to check their degree of interest (none, some, or much) in 34 topics. These were then ranked according to the total checks received in either the "some" or "much" categories.

Cooperative learning received the third highest number, a total of 62 checks. This alone would seem to justify an inservice on group learning, plus there were other notable responses. For instance, the topic "Methods of Motivating Students" received the highest interest (69). Since motivating students to learn is the most important concern of our teachers, and oftentimes the most frustrating to bring about, justification of the cooperative learning workshop seemed apparent. As stated earlier, group learners are more easily motivated than individual learners. "Improving Student Self-Esteem" was the second choice of the teachers (62), and "Techniques for Teaching Slow Students" and "Dealing with Individual Differences" ranked high (57 and 56 respectively). All of these concerns were addressed in the cooperative learning workshop.

In early November, 1988, a questionnaire was sent to all faculty members (Appendix B). It asked that those teachers who were interested in a cooperative learning inservice respond to the following items in order for the presenter to better serve their needs: (a) their preference for afternoon or evening workshops; (b) their knowledge of theories or practice in cooperative learning; and (c) the questions about cooperative learning they would like answered in the workshops.

From their responses, it was determined that 61% preferred a 3:30 to 5:30 time slot on Monday evenings. Most of them (81%) had no knowledge of the theories of Johnson and Johnson or Slavin or other major cooperative learning researchers. Few of them (19%) were using group learning techniques in their classroom presently. This information plus the questions about implementation, etc. are addressed in Chapter III. A final invitation to participate in the workshop was sent to all teachers in February. (Appendix B)

Johnson and Johnson (1987) stated that most of the research conducted up to 1970 was on <u>adult</u> cooperation; it was only in the 70's that much research was done in elementary and secondary schools. But from both types of studies, it seems clear that cooperation increases productivity. Many of the same students who are apathetic or antagonistic in the traditional classroom,

appreciate a change of approach and are willing to work harder, for both their own reward (individual accountability) and for the group reward. No longer would teachers be settling for the small number of students who are actively involved in learning. Instead, the reward would be a majority of hardworking, satisfied, motivated students.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

Overview of Current Literature

Cooperative learning is not a new idea. Throughout history, it has been those individuals who could organize and coordinate their efforts to achieve a common program that have been most successful in virtually any human endeavor. The use of cooperative learning for educational procedures is not new to American education. There have been periods in which cooperative learning had strong advocates and was widely used to promote the educational goals of that time.

One of the most successful advocates of cooperative learning was Colonel Francis Parker. In the last three decades of the nineteenth century, he brought enthusiasm and practicality to his advocacy of cooperative learning . His fame and success rested on his power to create a

classroom atmosphere that was truly cooperative and democratic. His instructional methods dominated American education through the turn of the century. Following Parker, John Dewey promoted the use of cooperative learning groups as part of his famous project method instruction. In the late 1930's, however, interpersonal competition began to be emphasized in public schools. In the 1940's, Morton Deutsch, proposed a theory of cooperative and competitive situations that have served as the primary foundation for subsequent research.

David and Roger Johnson's work is directly based on the research of Deutsch. They believe, as explained in one of their publications, Circles of Learning, that teachers should use different methods to nurture a philosophy of cooperation based on five elements: face-to-face-interaction, individual accountability, social skills, and group processing. Working in groups on assignments to produce a single group product, students are instructed to seek help from one another before asking the teacher for assistance. They are usually rewarded through teacher praise, grades, tokens. and privileges, based on a combination of individual and group performance. But neither individuals nor groups should compete with one another, according to Johnson and Johnson. Their

research methods and results will be explained later in this chapter.

At John Hopkins University the work on cooperative learning initiated by David DeVries and Keith Edwards is being extended by Robert Slavin and his colleagues. Elliot Aronson, of the University of California at Santa Cruz, has developed a "jigsaw" procedure for using curriculum materials which has been modified by Slavin and called Jigsaw II. Slavin also has implemented Student Teams-Achievement Divisions (STAD) and Teams-Games-Tournament (T-G-T). All of these methods, collectively called Student Team Learning, involve both cooperation and competition. They emphasize the three ideas of cooperative activity: structure, cooperative reward structure, and individual accountability. Students help members of their team learn the material. Then they take individual quizzes or compete with students of similar ability from other teams. The results of individual performances are added to compose team scores.

Justification of Workshop Content

Why This Topic is Important for Educators

William Glasser (1986) feels that team learning carries out the three basic requirements for good education: relevance, involvement, and thinking. These teams also add a fourth requirement: knowledge is power! Since the learning teams have a great deal of control over the learning, it becomes obvious to any student on any team that, if he works, he can gain some power both as a team member and for himself. The traditional class fails to get many students involved because few students believe that they have access to power there.

As one can see, there is success and power in the cooperative environment, but it flows from the students, not the teacher who facilitates, manages, answers questions, questions, and provides materials as needed, but does not present the material as is done in traditional classes in the hope that students would learn enough to pass a test. The teacher understands that as much as the actual assignment is important, the value of letting the students do the work is equally or even more important. In learning teams students have to

figure out both how to get along with each other and how to complete a cooperative task on time. Glasser feels that this is much more relevant to what they will have to do later, which is to get along at work and in their own families, than what goes in traditional classes where they work alone.

How This Topic Will Differ From Others

An overview of the major theories of Slavin and Johnson and Johnson will be presented. They have much in common yet basically differ in that Slavin is much more structured. He sees a place for some competitiveness within the teams, especially in the T-G-T format, whereas Johnson and Johnson think group rewards can still be stressed without competition. Both emphasize individual accountability with their techniques.

According to the results of my questionnaire, only of the teachers planning on attending the workshop are familiar with Johnson and Johnson and Slavin; therefore, part of job will be to acquaint them with their work. They will not be told which theory is better, but it will be suggested that cooperative learning is worth a try because of the academic and affective skills their students should receive and the pleasure they and their students

will gain. They will go back to their classroom reassured that whatever cooperative learning techniques the experienced teachers have already initiated on their own are worthwhile, and that additional time spent in this manner is justified. Perhaps they and the new teachers will create their own lesson plans with ideas generated from Slavin and Johnson and Johnson and Boessen.

They will be participating in various cooperative activities throughout the workshop, but they will not be asked to go back to their classrooms and change their curriculum to a cooperative strategy. Instead they will be encouraged to try an activity two or three times a week and then add more. Their entire curriculum should not be cooperative learning, just as it should not be all individualized learning or whole-group instruction. Specific approaches will be suggeseted that can be used K-12.

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Research Studies of the Effects of Cooperative Learning on Two Aspects of Student Development

Cooperative learning techniques vary, but they share an interest in finding an alternative to "frontal teaching"--the teacher instructing the whole class at once--or to individual seatwork by students. Instead, cooperative methods ask students to work in small groups on the assumptions that cooperative tasks are more likely to motivate students to learn; will provide more individual help for students for students; and will, as a result, improve achievement. Cooperative learning is also advocated for its promotion of other goals such as improved social relations between races, ethnic groups, high and low achievers, in other words, the affective domain. My report on research will therefore be divided into these two areas--affective and achievement results.

Impact on Affective Development

Johnson, Johnson, Johnson, and Anderson (1976) contrasted cooperative and individualized learning and concluded that cooperative learning resulted in greater ability to take the affective perspective of others, offered more altruism, and more positive attitudes toward classroom life. Since only one teacher and one classroom of fifth graders participated, there was no random sample, and this sample would therefore be regarded with skepticism, they were anxious to do further research. In a later study, Johnson and Johnson (1981) the hypothesis was that with desegregation, there are more positive social interactions among minority and majority students when the students are taught in a cooperative learning situation as opposed to individualistic learning. Results supported the hypothesis, as students taught cooperatively interacted more frequently, were more helpful and supportive of one another, and perceived one another to be friends much more often than did the other students.

The validity of this study might also be legitimately questioned because of its drawbacks. For instance, in a study comparing interethnic interaction there were only 11 minority students

participating. Altogether, there were 51 students in two fourth grade classes. Also, the generalizability of the results is limited by the age of the students studied (seven-year-olds) and the length of the study (16 days). However, the study's results are strengthened by the random assignment of students, the use of highly trained teachers to conduct the instruction, and the rotation of teachers across conditions.

Slavin and Karweit (1981) studied an intensive program of cooperative learning in which STAD and T-G-T were combined and used in different subject areas. The subjects were 456 fourth-and fifth-grade students and their seventeen teachers in five elementary schools in a rural Maryland school district. The teachers were assigned by school to the experimental conditions. Ten teachers in two schools were assigned to the experimental group, and ten additional teachers in four different schools were assigned to the control group. The two groups of schools were matched in overall average scores on the Iowa Test of Basic skills, which is used in the Maryland accountability testing program. Pretests were used in all analyses as the covariates for their corresponding posttests to control for any initial differences on any of the measures. One drawback

to the study was that the experimental teachers were given only a brief (three hour) period of training in the use of the three team learning techniques. They were instructed to use STAD for all of their language arts instructive, TGT for all of their mathematics instruction, and Jigsaw II for all of their social studies instruction. Some teachers also used team learning strategies occasionally in their science and reading classes. Thus, the bulk of each student's instructional day was occupied by the team learning methods.

Four student attitude scales and academic achievement accountability were coded on a scale from one (No) to five (Yes). The data were analyzed by means of analysis of covariance, with their respective pretests as covariates.

The experimental groups exceeded the control group on several of the affective measures, controlling for their pretests. Experimental students felt that they had a larger number of friends in school, and a smaller number of classmates with whom they would prefer not to work. Experimental students also gained in liking of school more than the control students. On the Coopersmith Self-Esteem Inventory, experimental students gained more in general self-esteem as well as academic self-esteem.

Madden and Slavin's (1983) study found that cooperative learning over a seven-week period resulted in a partial decrease in rejection of a group of children with mild academic handicaps by their normal-progress peers. The subjects were 183 third, fourth, and sixth graders. Of these, 40 were identified by the school as having sufficient academic handicaps to warrant classification as children in need of special education services. Each teacher taught one control and one experimental class. The assignment to experimental or control group was made randomly for each teacher, with stratification to ensure an academic balance between groups. Analyses were done using analysis of covariance, with controls for pretest and teacher.

Two instructional methods were used. One, cooperative learning, involved the use of a cooperative reward structure and a cooperative task structure in the classroom. The second served as a control condition, in which the same curriculum and schedule of instruction were used, but students studied individually, and were given feedback on their performance, individually. The condition was called focused instruction. This condition differed from the experimental treatment only in that students did not work in teams and did not receive

feedback on their performance as teams. Points earned by the individual student were provided based on current performance relative to past performance, in both treatments.

As an outcome measurement, students were asked to complete three paper-and-pencil items indicating their choices of peers as workmates and friends. The results of the one-way analysis of covariance partially confirm Madden and Slavin's hypothesis that the social acceptance of academically handicapped students would be enhanced by the cooperative treatment. However, the improvement in social acceptance appeared only as a reduction of negative choices. Positive choices of academically handicapped students as friends or preferred workmates were not affected by the intervention. There were no differences between treatment groups on the number of academically handicapped students chosen as friends or the number desired as workmates.

Perhaps more credibility could be given to a later study because it lasted 54 days instead of 35. The sample consisted of 69 fourth-grade, middle-class students from a mid-western school district. Of these subjects, 15 were handicapped with severe learning and/or behavioral problems. All students were randomly assigned to one of three

conditions (cooperative, cooperative followed by individualistic, and individualistic) stratifying for sex, ability, ethnic membership, and handicap. This study of Yager, Johnson, Johnson, and Snider (1985) corroborated previous findings that students with handicapping conditions benefitted from being placed in cooperative learning groups with non-handicapped peers. They further found that more favorable cross-handicap relations developed as the length of the activity increased.

Nonhandicapped students were requested to nominate classmates for both positive and negative categories. Those on the individualistic condition made negative nominations of their handicapped classmates at the 95% level before the class began and essentially did not change their evaluation of the handicapped students over the 54 days of the study.

In the cooperative followed by individualistic condition, while the nonhandicapped students were working collaboratively with their handicapped peers their evaluation changed from 77% negative to 46% negative. Once their collaboration ended, however, and they began to work individualistically, their evaluation of their handicapped classmates returned to 70% negative after 36 days and 83% negative after 54 days.

In the cooperative condition, the nonhandicapped students uniformly viewed their handicapped peers negatively at the beginning of the study. and gradually developed a more and more positive relationship with them over the 54 days of the study. After 18 days, 76% of their nominations of handicapped students were negative, and after 36 days, 65% were negative. After 54 days, only 27% of the nominations were negative.

The researchers further found that more favorable cross-handicap relations developed as the length of the cooperative activity increased. One important effect was that the academic self-esteem of handicapped youth increased throughout their cooperative experiences. Students in cooperative settings, when compared to students' learning in individualistic settings, perceived themselves as having more teacher personal support, greater peer support, greater academic support, and greater cohesion.

The study of Zahn, Kagan, and Widaman (1986) incorporated a number of methodological improvements over previous investigations of classroom climate in cooperative and traditional classrooms. These include using a larger number of teachers and classroom, randomly assigning the teachers to conditions, covering a wider range of

elementary grades, employing a more comprehensive measure of classroom climate, and directly comparing STAD and TGT methods. The results support previous conclusions that cooperative learning methods can make a difference in the classroom climate experienced by students. The effects, however, are more complex than previous studies suggested.

Thirty-four teachers at five schools were randomly assigned to one of three conditions: the traditional whole-class format, STAD, or TGT. There were 530 students in the traditional treatment condition and about 165 students in each of the cooperative technique groups with fairly proportionate ethnic representation in each group. The subject area was spelling, which was taught for approximately one hour a day over a six-week period. An original 32-item questionnaire was developed to assess classroom climate. Analyses were performed on scores on two second-order factors. One was Social Relations, which included liking of group work, feeling liked and liking and supporting others. The other was Schoolwork Attitudes, which included liking the school, class, and the subject.

Two hypotheses were supported. One was that cooperative learning methods will produce a more

favorable classroom climate (74%) than will traditional instruction (71%). They felt these percentages were statistically significant. An interesting aspect of these results revealed that females in the cooperative conditions held significantly more positive social relations attitudes than each of the other groups.

The second hypothesis which was supported was that non-Anglo students (black and Mexican-American) would show more favorable attitudes in STAD than TGT, which employed a weekly competition. Anglo-American students had significantly more favorable attitudes in TGT (79%) than STAD (70%), and non-Anglo students had slightly, though not significantly, more favorable attitudes in STAD (72%) than TGT (68%). Thus, the researchers concluded that tournament competition does not benefit the climate for non-Anglo students, but it does improve the climate experienced by Anglo-American students. They warned that cooperative techniques constitute a set of different tools from which the teacher should carefully select with the ethnicity of the students in mind. However, they felt that it should be noted that the traditional whole-class format benefited neither group on either measure. The widespread reliance on traditional whole-class structure

appears to foster attitudes less favorable than can be obtained if cooperative work is included, even for a short duration.

Impact on Academic Achievement -- Elementary Level

The purpose of Slavin's (1984) paper was to review research evidence from studies of cooperative learning methods in elementary and secondary classrooms in an attempt to discover the separate effects of cooperative incentives and cooperative tasks on student achievement. (Some of these same secondary studies will be examined in more detail in Newmann and Thompson's (1988) summary of research to be reviewed in the next section of this chapter.) The critical feature of a cooperative-incentive structure is that two or more individuals are interdependent for a reward they will share if they are successful as a group. Cooperative-task structures are situations in which two or more individuals are allowed, encouraged, or required to work together on some task, coordinating their efforts to complete the task.

Taken together, the effects of cooperative learning methods on student achievement are clearly positive. Of the 46 studies, 29 (63%) showed

cooperative learning methods to have significantly positive or, in one case, marginally positive effects on student achievement. No differences were found among 15 (33%) and 2 (4%) found significantly higher achievement for a control group than for a cooperative treatment.

However, the overall results mark important differences among studies. Of 27 studies that used group study and group rewards for individual learning, 24 (89%) found positive effects on student achievement, while 3 (11%) found no differences. In contrast, none of the nine studies of group study methods that did not use group rewards for individual learning found positive effects on student achievement.

The results of studies that used task specialization are less clear because of the much smaller number of studies (10) that used this task structure. However, there is one interesting pattern to the findings. As cited by Slavin (1984), Ziegler was the only researcher to use task specialization and group rewards for individual learning. He found strong effects on student achievement, which were maintained in a five-month follow-up. Three of the four task specialization studies in which students were rewarded on the basis of a group product found positive achievement

results. Thus, this evidence cited suggests that the effects of task specialization methods on achievement depend on the use of group rewards, regardless of whether the rewards are based on individual learning or group performance.

Slavin believes that this review of studies presents strong support for the observation that group rewards for individual learning are critical to the effectiveness of cooperative learning methods. Furthermore, the pattern of results for the studies that used a group study task, across the different methods, supports an unexpected conclusion: the opportunity for students to study together makes little or no contribution to the effects of cooperative learning on achievement. Providing an opportunity for group study without providing further structure in the form of individual assessment and group reward has not been found (in Slavin's assessment) to increase student achievement more than having students work separately.

Slavin (1986) listed the major characteristics and achievement outcomes of 35 studies of student team learning methods, all of which employed group rewards and individual accountability. In those 35 studies, 29 of them (83%) found that students in these classes gained significantly more in

achievement than did students in traditionally-taught classes studying the same objectives. None found differences favoring control groups. The methodological quality of the studies seemed very high: most used random assignment to experimental and control groups, standardized achievement measures, and other means of ensuring objectivity and reliability of the findings. With few exceptions, effects of student team learning have been equally strong for high, average, and low students in urban, rural, and suburban schools.

One of the very few studies that does not offer statistically significant support that achievement is enhanced at all age levels through cooperative learning is that of Swing and Peterson (1982). They randomly assigned forty-three fifth-grade students to small groups which were either designated treatment or central. The treatment group was trained in small group interaction. A Mann-Whitney comparison showed that trained students participated in more task-related interaction which enhanced the achievement and retention of high- and low-ability students but did not facilitate the achievement of medium-ability students. They concluded that students who actually teach group members or receive explanations from fellow group members performed better on

achievement. Thus, the high-ability student explained how, and the low-ability student was the target of the explanation and the medium-ability student does not differentially benefit by small group work.

However, Yager, Johnson, and Johnson (1985) ascertained in their study that medium- as well as high- and low-achieving students all academically benefited from participation in heterogeneous cooperative learning groups. They assumed that the oral explanation, summary and elaboration of the material being learned, as well as the act of listening carefully to check the accuracy of others' oral summaries positively affects achievement and retention. There was a breakdown of the daily achievement measure of the three groups to which the 75 second-grade students had been randomly assigned to three conditions stratified for sex and ability level which was determined by the Gates-McGinitie Standardized Reading Test. The ones in the structured-oral-discussion cooperation condition achieved a 93% accuracy rate on their daily assignments, the students in the unstructured oral-discussion cooperation condition achieved an 87% accuracy rate, and the students in the individualistic condition achieved only a 61% accuracy rate. Thus,

these results strongly support the efficacy of cooperative learning and the importance of structured oral interaction within cooperative learning groups.

Even though they only performed a three-week experiment, Hertz-Lazarowitz, Sharan, Ackerman (1980), used a relatively large number (217) of students in 10 classrooms. These second-through-sixth-graders from two schools in Israel were taught social studies either in a traditional classroom or in a cooperative environment. The teachers were matched on several variables: age, education, and teaching experience. The teachers of the cooperative classrooms had attended a series of 18 workshops led by the authors .

Special achievement tests prepared for each grade level and were constructed with items requiring responses at both low and high levels of cognitive functioning. Pupils in grades two, four, and six from small-group classrooms excelled on high-level items as predicted. Pupils in fifth grade produced superior answers on questions requiring original contributions. Achievement scores of all groups did not differ on items measuring lower-level cognitive functioning.

The purpose of Foster and Penick's (1985) study was to determine whether cooperative small

groups would stimulate creativity of fifth-and sixth-grade students more than an individualized learning environment. Student aptitudes for creative and academic work were assessed on the Torrance Tests of Creative Thinking, analysis of student-created electrical circuit diagrams, and a batteries and bulbs prediction test. A measure of student perceptions was also used to indicate any changes in attitudes toward the science activity and learning environment. A posttest control group design was used with 111 fifth-and sixth-grade students who were randomly assigned to their groups. Half of them worked by themselves, while the other half worked within small groups. The science activity involved creating as many different types of electrical circuits from a given set of batteries and bulbs as possible. An overall conclusion is that these students working within small cooperative groups can be more creative as measured by a figural creativity test.

Secondary Level

A research literature on cooperative learning techniques in elementary and secondary schools has developed since the early 1970's, although most of the research has occurred in elementary school classrooms. Because secondary schools differ substantially from elementary schools and because adolescents' behavior and motivation may differ in significant ways from younger children's, it is important to take a special look at cooperative learning research at the secondary level. Newmann and Thompson's (1987) summary of research offers a descriptive inventory of studies of cooperative learning on achievement at the secondary level.

Five major techniques have been investigated in grades 7-12 (as well as in elementary studies). They include students within teams helping one another to learn material and public recognition of teams which show high gains in individual students' scores (STAD): students helping one another learn material, and earning points or their teams (TGT); student receiving unique information on a topic, working with members of other teams to master material and finally returning to their teams to teach it to their teammates (JIG); small group work on assignments that produce a single-group product

without competition between groups (LT for Learning Together); and small group work that entails each group in the class taking on a different task or project (GI for Group Investigation).

They selected studies which met the following criteria: an experimental treatment which involved cooperative tasks and a group product or group reward structure; the use of a control or comparison group; a sample of at least 20 students; a duration of at least two weeks; and individual testing of student achievement.

Newmann and Thompson felt that 27 studies met these criteria and were of high methodological quality even though most used intact classes and then randomly assigned treatments to classes. Within classes, students were usually randomly assigned to treatments, stratified by ability. To control for teacher effects, the studies either randomly assigned teachers to methods, assigned teachers to use more than one method, or used statistical analysis to describe teacher effects. Almost all studies reported pretest comparisons between treatment groups and/or used statistical controls for pre-test differences. The greatest number of studies have occurred in grade 7, but the studies in grades 8 and 9 have the highest success rate. The 27 reports involved 37 comparisons.

Cooperative learning methods at the $p<.05$ level of significance were favored by 25 (68%) of the comparisons.

The purpose of Okebukola's (1985) investigation was to examine the relative effectiveness of three approaches to learning--"pure" cooperative, cooperative-competitive, and "pure" competition with respect to students' performance in science. It involved 630 eighth-grade students in six randomly selected schools in Nigeria. Five volunteer teachers taught the experimental group while the sixth school, regular science teacher, served as the control. The Science Achievement Test was administered as a pretest. This test was used to classify students into ability categories. All control group students were taught in the traditional whole group method, and experimental classes were divided into five-member groups that were heterogeneous in ability and sex. These students were then instructed identically except for the five different treatment techniques: Johnson's technique, Jigsaw, TGT, STAD, and individual competition. These techniques were later blocked into the three previously-mentioned groups.

An ANOVA test, performed on the posttest scores of the three blocks indicates that the

cooperative-competitive methods have greater positive effects of students' performance in science, when compared with the "pure" cooperation and "pure" competition methods. Furthermore, all the techniques effected significant mean gains on the posttest over the pretest. And the results further suggest the superiority of TGT and STAD in promoting students' performance in science as compared to the other techniques. In the author's discussion, he stated that "pure" cooperation, as exemplified by the Johnsons' and Jigsaw techniques, may not be the optimal mode of organizing instruction in junior-high science classes. He felt that perhaps an ever-present aura of competition seems often to pervade the learning environment. On the other hand, "pure" competition, without any form of cooperation, even with a motivational influence, may be threatening and discouraging to those who believe they cannot win. Therefore, a combination of cooperation and competition may be regarded as the best method of instruction in science classes in regard to student achievement.

In a later study, Okebukola (1986) surmised that the results indicated that students will do equally well in cooperative and competitive conditions so long as they are placed in the

learning setting which matches their preferences. His hypotheses were:

1. students who demonstrate preference for cooperative situations will achieve better in science in a cooperative rather than in a competitive setting;

2. students who demonstrate preference for competitive situations will achieve better in science in a competitive rather than in a cooperative learning setting.

The sample consisted of 493 ninth-grade biology students in four secondary schools in Nigeria. Two of the schools are in a rural district and were randomly selected. The other two schools were also randomly selected and are located in an urban center. Just before treatment commenced, BAT and LPS were administered to all students in the treatment classes. Of the 242 students in the two rural schools, 222 expressed preference for cooperative work. In the two urban schools, 198 of the 241 students expressed preference for competitive work. Students in one of the rural schools had a cooperative group teacher; while students in the other school, despite their cooperative preference, had a competitive group teacher. In a similar manner, students in one of the urban schools had a

cooperative group teacher despite their competitive preference; while students in the other school had a competitive group teacher.

In the cooperative condition students were informed that their goal was to learn together, to share and help each other understand the material, and to discuss and list their ideas together and make decisions by consensus. In the competitive condition, students were told that their goal was to learn the material better than the other students in the group; to discuss their ideas with other students, and to study independently. They competed among themselves for first, second, and third places in the group during each lesson. The overall comparison between methods yielded no significant difference, but students who learned by their preferred method out-performed by a wide margin (effect size 1.8) those who were mismatched.

Even though the hypotheses were upheld, the finding casts a significant qualifier on previous conclusions about cooperative learning. By restricting the cooperative condition to LT, this study did not test the relationship of student preference to techniques such as STAD and TGT which contain a combination of cooperation and competition. Although further research on this issue is needed, especially in United States

schools, the findings of these two studies suggest that rather than choosing between purely cooperative and purely individual competitive methods it would be desirable to match students according to their preference, and, when this is not feasible, to include cooperation within small groups with some competition between groups.

Sherman and Thomas's (1986) study further supports this theory. Two high school general mathematics classes were differentially taught a 25-day unit on percentages, one teacher implementing STAD and TGT methods, and the other instructing with an individualistic goal structure. A pretest, posttest quasi-experimental design was used to contrast the two classes' achievement scores.

Such a design has certain inherent weaknesses. Selection bias and its interaction with maturation, history, instrumentation, and regression toward the mean are all potential threats to the internal validity of this study. One major problem was that intact groups were used. However, inasmuch as both groups were not significantly different on their pretest scores, they at least started the unit on instruction equally, thus probably ruling out the influence of instrumentation. And a 25-day unit of instruction is probably not a long enough period of

time for maturation to have affected these outcomes. Both groups were taught during two different yet similar morning sessions (9:00 and 10:00 AM), which might also rule out the influence of history.

While both groups obtained significantly higher posttest achievement scores as contrasted with their pretest scores, the cooperative group demonstrated significantly higher achievement on the posttest than the individualistic group. The authors felt that there were motivating qualities associated with intergroup competition among cooperating classroom groups. They further concluded that because of the ease with which STAD/TGT techniques can be developed teachers of general mathematics and other disciplines should give this approach serious and favorable consideration.

A concern voiced by the Newmann and Thomas was that of the 37 comparisons between cooperative and control methods, only 6 (16%) occurred in grades 10-12. They wondered if this apparently cold reception to cooperative learning in high school might reflect a judgment by teachers that cooperative learning is not likely to work in high school, for their review yielded a success rate of only 33% in grades 10-12.

But they noted that of the four studies that failed to find a significant effect, three used JIG which has had many unsatisfactory results at lower grade levels as well. Furthermore, no special preparation for teachers was reported in any of these four studies. "Thus," stated Newmann and Thompson, "it would be wrong to conclude from this data alone that most forms of cooperative learning are destined to failure in grades 10-12" (p.9).

The U.S. Army Research Institute, in a study undertaken by Hagman and Hayes (1986) found that when comparing cooperative and individual learning, the individual scores improved only if they were coupled with group rewards. Test performance results supported their hypotheses that group reward efforts were caused by increased individual trainee motivation to learn resulting from group pressure to perform or that group reward encouraged groupmates to share information, and that this "peer tutoring" facilitated individual learning.

As noted earlier, research on these team learning methods has revealed that two elements are critical to the effectiveness of cooperative learning: group rewards and individual accountability. That is, there must be some reward given to groups based on the achievement of their members, and there must be no way for students to

ride on their teammates coattails; every student's learning must be important to the team. Slavin (1986) feels that cooperative learning methods in which students are simply asked to work with another, without any group goal, or in which students complete a single worksheet or group solution will allow the chance or danger that more able students will do all the work and provide answers rather than explanations to their groupmates. Johnson and Johnson (1985), on the other hand, feel that cooperative interdependence may be arranged through the assignment of complementary and interconnected roles to group members such as summarizer-checker, researcher-runner, encourager, and observer. Assigning such roles, they believe, is an effective method of teaching students collaborative skills and will help discourage one student doing all the work in a purely cooperative situation.

Methods of an Effective Presenter

Showers, Joyce, and Bennett (1987) state that nearly all the research relevant to staff development has been conducted during the last 20 years. In 1957 the authors of the NSSE yearbook on inservice education could draw on only about 50 studies, including only a half-dozen experimental studies in the areas of training, curriculum improvement, or the implementation of innovations. By 1977 the knowledge base had broadened considerably; but still nearly all the literature was descriptive or conceptual. Only a small proportion of the articles and books either reported research or mentioned existing studies.

During the last ten years the amount of research has increased and the results have been integrated with studies of curriculum and innovation. In a review of these studies and research, Joyce and Showers (cited in Showers, Joyce and Bennett, 1987) found that the number of studies dealing with the acquisition of teaching skills and strategies permitted the development of hypotheses about how teachers acquire teaching skills and strategies, although the number of investigations into how skills are incorporated into the active repertoire continued to be small.

After building the file of research, they classified the reports according to the questions asked about teaching styles and strategies, and also examined the non-research literature, identifying the questions asked by practitioners and the issues and assumptions put forth by staff development personnel, teachers, and administrators. Issues emerged about where training is held; who offers service most effectively; and motivation. One of the conclusions drawn by the authors of this meta-analysis of nearly 200 research studies, plus a review of the literature on staff development, is that it does not seem to matter where or when training is held, and it does not really matter whether the trainer is an administrator, teacher, or professor. What does matter is the training design.

Teachers Teaching Teachers

Merton and Yarger (cited in Showers, Joyce and Bennett) studied federally funded teacher centers, all of which were governed by teachers. Their work indicates that teachers are capable of taking prominent leadership roles in staff development centers and can play the role of organizers and trainers.

Daresh (1987) stated in his review of research

directed toward content and procedures of staff development that teachers prefer that their peers plan and deliver inservice programs. When teachers prepare programs for other teachers, there is less resistance to the programs than if they are designed exclusively by administrators. An important finding in much of the research is that teachers resist when it appears that programs are designed as something that is done to teachers, and not as something that teachers do for themselves.

The teacher of adults should begin by responding to the needs and practical concerns of the students, thus making the content problem-oriented. Guskey (1986) stated that the majority of inservice programs fail because they do not take into account two critical factors: what motivates teachers to engage in staff development, and the process by which change in teachers typically takes place.

Bringing About Implementation in the Classroom

Berman & McLaughlin (cited in Guskey, 1986) reasoned that teachers participate in staff development activities primarily because they believe such activities will help them to become better teachers. Becoming a better teacher was defined as enhancing the learning outcomes of their students. Therefore, what teachers hope to gain

through staff development programs are specific, concrete, and practical ideas that directly relate to the day-to-day operation of their classrooms.

According to Bolster (cited in Guskey, 1986) teachers do not easily alter or discard the practices they have developed and refined in their own classrooms. The likelihood of their implementing a new program or innovation depends largely on their judgment of the magnitude of change required for implementation. Therefore, if a staff development effort is to be successful, it must clearly illustrate how the new practices can be implemented without too much disruption or extra work.

Mazzarella (cited in Guskey, 1986) stated that staff development efforts that successfully encourage and sustain changes have been found to share several other common characteristics. First, if a new program or innovation is involved, it must be presented in a clear and explicit way. It should be explained in concrete, rather than abstract or theoretical terms, and should be aimed at specific teaching skills. Second, the personal concerns of teachers must be addressed in a direct and sensitive manner. If teachers are to focus attention on how the new program or innovation might benefit their students, they must first

resolve their concerns about how the new practices will affect them personally. Third, the purveyor of the new practices must be seen as a credible person by those responsible for implementation. This person must be articulate and charismatic, and must emphasize the practicality of the new practices. Whether it is someone from within the system or an external consultant, it is essential that this person stress how these new practices can be practically and efficiently used.

Mazzarella reminds us that although these characteristics greatly facilitate the implementation process, it is important to remember that very few teachers will leave a staff development effort thoroughly convinced that a new program or innovation will work for them. But it is hoped that many will be intrigued enough to try the new practices, at least on a trial basis, and will leave the staff development program with a "Well, let's see" attitude.

How Adults (and Teachers) Learn

According to Even (1985), it is believed that learning is a problem-solving process in which a new idea comes into the perception of an adult. The adult interacts with that idea mentally trying, or deciding not to try, to give the new idea a chance at entry into the memory. The adult makes a

conscious decision to accept or reject each perceptual input. Learning is not ever all that new because there must be some way to relate new ideas to prior ideas. A whole new idea still needs to get a foothold in the mind based upon an old or prior idea.

The Zemkes (1982) feel that one developing research-based concept that seems likely to have an input on adult training and development is the concept of "fluid" versus "crystallized intelligence." Fluid intellect tends to be what was once called innate intelligence; fluid intelligence has to do with the ability to store strings of numbers and facts in short-term memory, react quickly, sees spatial relations and do abstract reasoning. Crystallized intelligence is the part of intellectual functioning we have always taken to be a product of knowledge acquisition and experience. It is related to vocabulary, general information, conceptual knowledge, judgment and concrete reasoning.

Historically, many societies have equated youth with the ability to insatiably acquire information and age with the ability to wisely use information. Catell's research (cited in Zemke, 1982) suggests this is true--that wisdom is, in fact, a separate intellectual function that develops as we grow

older. Therefore, adults need to be able to integrate new ideas with what they already know if they are going to keep--and use--the new information. Information that conflicts sharply with what is already held to be true, and thus forces a reevaluation of the old material, is integrated more slowly. Information that has little "conceptual overlap" with what is already known is also acquired slowly.

Adult Training Design

There are important implications for designing adult curriculum. First, the presentation of new information should be meaningful, and it should include aids that help the learner organize it and relate it to previously stored information. Second, it should be presented at a pace that permits mastery. Third, presentation of one idea at a time and minimization of competing intellectual demands should aid comprehension. Finally, frequent summarization should facilitate retention and recall.

Showers, Joyce, & Bennett (1987) stated that one of the first messages from training research is that the important components of teaching practices are cognitive in nature. Therefore, each training component contributes to the acquisition of knowledge. Where information-only training is

used, the average effect size on knowledge acquisition is modest. When presentations, demonstrations, and opportunities for practice and feedback are combined, the effect on measures of knowledge is much greater. Combinations of these four components appear necessary to develop the levels of cognitive and interactive skills that permit practice in the classroom. For most teachers, even combinations such as demonstrations along with the study of theory do not appear to produce high enough effects to sustain classroom practice, unless they also have the opportunities to practice in the training setting.

Practice in cooperative interaction

As has been stated previously, there is considerable research documenting the effects of cooperative interaction within small groups with competitive and individualistic efforts. Much of this research has direct implications for conducting an inservice workshop.

Watson and Johnson (1972) stated that there is considerable research indicating that: (a) the attitudes of an individual are strongly influenced by the groups to which he or she belongs, (b) participation in group discussions helps overcome resistance to adopting the new attitudes that are being presented, (c) it is easier to modify the

attitudes of individuals when they are in a group than it is to modify the attitudes of single individual, and (d) attitudes that people make known publicly are more resistant to later attacks than are attitudes that are private. Thus, participation in a cooperative learning experience promotes more positive attitudes and the small group setting is more optimal for building positive attitudes toward the material in a way that is resistant to later change when the teachers return to their schools and classrooms.

Watson and Johnson felt it much easier to build the group norms of giving each other support, assistance, and help when teachers interact in small groups than when they are taught as individuals. The data of these men indicate that effective presenters have a better chance of reaching their goals when cooperative learning experiences are emphasized. Also, some teachers may need to increase their communication, trust-building, leadership, and conflict resolution skills in order to be an effective team member. Thus, teachers learning <u>about</u> cooperative learning while actually <u>being</u> cooperative learners is an ideal situation.

Daresh (1987) noted that another consistent finding is that teachers do not want to be "talked

at." As is true of adult learners in general, teachers wish to be the source of their own learning. This means that procedures used in staff development programs should concentrate on opportunities for two-way communication whenever possible, and eliminate learning settings in which teachers are forced to remain as passive participants at structured lectures.

Broadwell (1977) agrees that an instructor has to be truly exceptional to reach learning goals without actively involving the subjects. But just what kind of involvement should we try for? Instead of incorporating involvement to overcome something negative (to make the time go faster, to relieve boredom, or to force students to concentrate on the subject), it should be built into the design of training programs or inservice to accomplish something positive. In other words, it can be the best teaching method available to accomplish learning goals.

Although involvement itself is certainly not synonymous with successful teaching, it does provide an opportunity to get feedback from students. By simply observing the involved and participating students (in cooperative groups, for example) we can match what we see against our objectives and decide whether or not we have our

goals. Broadwell (1977) cautions that one problem with involvement is it is easy to get caught up in the doing of it, without considering the purpose behind it. Therefore, the instructor always ought to ask, "Is this really a meaningful activity?" Excessive reliance on involvement techniques presents another problem--using them just because it is easy to do so. Adult learners need a reason for doing things in class. When participating in cooperative learning groups at the workshop to be presented, the participants should have little problem seeing the necessity for active participation in the learning groups before setting them up later in their own classroom.

Modeled behavior

According to Rosenbaum and Baker (1982), behaviors modeled by an instructor can have a powerful impact on group and individual performance. Four trainee behaviors that increase motivation to learn are:

1. Maintain and enhance the self-esteem of participants. They cite research demonstrating that people are motivated to learn at a level consistent with their perceptions of self-competency. Therefore it is important that trainers do the following:

A. Listen to and praise ideas of

participants.

B. Turn questions back to the group.

C. Ask for examples from the group's own expertise.

D. Give complete reasons for directions.

E. Give constructive feedback and build behaviors through positive reinforcement.

F. Show enjoyment of the class.

G. Begin sessions on time.

2. Actively listen to show understanding. Accept what is being said without making any value judgement, clarify the feelings being expressed, and reflect this back to the participants.

3. Use reinforcement to shape learning. Refer back to a participant's ideas or examples, and when a participant's comments or responses are only partially correct, acknowledge the accurate elements before correcting what is wrong.

4. Set goals that are challenging but achievable, measurable, and accompanied by specific guidelines. Well-stated, measurable training goals are effective in improving learning. A growing band of research, according to Rosenbaum and Baker (1982), has demonstrated the motivational properties of goals.

Follow-up Peer Coaching and Support

Finally, a reoccuring idea stressed by many researchers is that teachers are likely to keep and use new strategies and concepts if they receive coaching, (either expert or peer) while they are trying the new ideas in their classroom. Nearly all teachers need social support as they labor through the transfer process. Johnson and Johnson (1980) state that effective instruction in the workshop setting requires the use of cooperative learning groups during the inservice sessions followed by the use of collaborative support groups to assist and maintain the implementation of the innovation being presented. Such an approach recognizes that learning, attitude change, behavior change, and the maintenance of new teaching patterns are best facilitated by cooperative interaction with colleagues and administration.

Guskey (1986) agrees that few teachers can move from a staff development program directly into the classroom and begin implementing a new program or innovation with success. In most cases, some time and experimentation are necessary for teachers to fit the new practices to their unique classroom conditions. Support during this period of trial and experimentation are critically important. Teachers need ongoing guidance and direction to

make whatever adaptations may be necessary and at the same time maintain program fidelity. Furthermore, they need to know that assistance is readily available if problems develop or if unexpected difficulties are encountered. Guskey further states that no matter how much advance staff development occurs, it is when teachers actually try to implement a new approach that they have the most specific concerns and doubts. Therefore, follow-up procedures incorporating coaching or time for collegial sharing may seem simplistic, particularly in light of the complex nature of the change process. Still, as the model suggests, careful attention to these types of support appears crucial in facilitating change. Details of how these follow-up coaching procedures, as well as other important training guidelines, will be incorporated within this workshop will be provided in Chapter III.

CHAPTER III

Workshop Presentation

Focus and Coverage

A presentation is a method of communication that when done effectively involves an interaction between the workshop presenter and participants. It is also an opportunity to inform and possibly persuade them to take some action. Perhaps the greatest single barrier to effective communication is the lack of common experiences between the communicator and receiver. Thus similarity of experience is necessary. As a teacher with experience both in elementary and secondary levels, this presenter hoped to choose words and phrases in terms of the receivers' background in order to establish effective communication. Varying visual medium, reiteration of important points, and audience participation helped increase my chances for success.

The November questionnaire asked prospective participants, "What questions would you like answered in the workshop?" They were as follows:

1. What is cooperative learning?
2. How can I use it?
3. Will it help all students be more successful?
4. Can it be applied in all subject areas?

5. How should students be selected for groups?

6. How should we teach children to work in groups?

7. How can we really use this theory with little extra planning and bookkeeping?

The answers to these questions established the focus of the presentation. They and other relevant points were addressed. As Daresh stated, (1987) staff development is viewed more positively if it is planned with a view toward incorporating the views of participants in the selection of content. In addition, demonstration and opportunities for practice and feedback were given. Group discussion helped overcome resistance to adopting the new ideas being presented. Thus, teachers learning about cooperative learning while actually being cooperative learners was the situation.

Specific Objectives

The objectives of the cooperative learning workshop were:

1. Following discussion and practice in the workshops, participants will discern, on the posttest, that cooperative learning is an alternative method of student learning and not a new method to introduce and teach new concepts.

2. Following a discussion of research on the academic and social benefits of group learning, participants will list at least four major benefits of this approach.

3. Following practice working in groups, participants will identify at least three strategies and procedures of cooperative learning that can be used at various grade levels.

4. Following reading and practice during the workshop, participants will identify common methods of grouping students for cooperative learning.

5. Following discussion, participants will compose a list of skills that need to be taught before students engage in group activities.

6. Following the first workshop, participants will adopt at least one cooperative learning method in their classroom and report on this activity at the second session.

7. Following both sessions, a majority of the participants will validate their interest in and commitment to cooperative learning by attending at least one of the two follow-up sessions in April or May. At these sessions, assistance in implementing these procedures will be shared with colleagues.

Approaches and Rationale

The major question for conducting a successful inservice program was, "What instructional procedures should be used to ensure that the previously stated seven objectives were achieved." The answer was not to lecture, entertain, and focus on individuals! Yet many inservice programs do exactly that. Lecturing does

have its place, entertainment can help an inservice program, and the individual needs of every teacher have to be taken into account. But these three practices should not be the heart of an inservice program.

The Zemkes (1982) added that adults prefer self-directed and self-designed learning projects, seven to one, over group learning experiences led by a professional. Regardless of the popularity of media presentations, straightforward how-to is the preferred content orientation. As many as 80% of the polled adults in one study cited the need for applications and how-to information as the primary motivation for undertaking a learning project. They reported that long lectures, periods of interminable sitting, and absence of practice opportunities are high on the irritation scale. Also, new knowledge has to be integrated with previous knowledge; that means active learner participation.

The workshops were held in three two-hour sessions after school. Each participant was expected to attend two sessions--a general one for teachers of all grade levels and a follow-up one for K-12 and one for junior high and high school teachers. Because of the admonitions of the Zemkes concerning lecturing in the presentations and because of the warning Bailey and Garmston (1988) had issued to "strike a balance between what is too much information and what is too little

information" (p.22), there was little time devoted to lecture about cooperative learning. A pretest given to the participants at the beginning of the first session formed the outline of the subsequent presentation. A simple "do's" and "don'ts" list, brief overview of research proving academic and social value of cooperative learning, and summary added to the overall "lecture" part of the four hours. Instead, most of the time was devoted to group work and group presentations.

Bailey and Garmston (1988) stated that the first issue to deal with in design of presentation is inclusion. The participants need to feel a part of what is happening. One important method of achieving inclusion is to get them to do an activity--participate in delineating areas of concern; have them break into small groups with a structured activity of some sort; and/or lead them through a structured activity in either a small group or large group.

The teachers were organized into small groups of four or five several times throughout the workshop in order to discuss the material being presented, carry out assigned cooperative activities within the workshop setting, provide a support structure to present their ideas to the rest of the class, and finally, to provide a basis for follow-up assistance while the material was tried out and integrated into their instructional activities. It was the task of the presenter to make it

clear that the group members were in a "sink or swim" situation in which they had to cooperate with each other to produce group products during the workshop. Quality of teacher-teacher interaction during and following the workshop was very important. Therefore, the goal structure had to be clearly set, the tasks explained, the products to be produced defined, the criteria by which the group's success would be judged, explained, and the group skills needed to work together, described, just as they must be in any subsequent cooperative learning situations in their classrooms. In other words, cooperative learning activities were utilized during the inservice thus creating collaborative support groups to assist implementation efforts after the workshop had ended.

Also, the participants were asked to try a cooperative learning activity in their own classroom sometime in the week between the first and second session. Upon their return to the second session, they discussed the activities and the outcomes with their group members. This "assignment" followed the advice of Bailey and Garmston (1988) who had said that it was important to leave the participants with something important to think about and something specific to do.

Little (cited in Guskey, 1986) stated that simply providing teachers with opportunities to interact and share ideas can also be a very valuable mechanism for

support. He found, for example, that staff development programs concerning new programs and innovations are most successful when teachers can regularly discuss their experiences in an atmosphere of collegiality and experimentation. Similarly Holly (cited in Guskey, 1986) found that what teachers like best about inservice workshops generally is the opportunity to share ideas with other teachers. Cogan (cited in Guskey, 1986) reported that support is also necessary so that teachers can tolerate the anxiety of occasional failures and persist in their implementation efforts.

Bailey and Garmston (1988) had also stated the job of the presenter was to motivate the audience "to want to know what they need to know and provide other options beside the talk to get that information across" (p. 22). Accordingly, a packet of materials fully explaining the topic and giving numerous activities was provided.

Specific Content

First Session--All Grade Levels--Two Hours

I. Pre-test

Six true-false questions relating to the questions most frequently asked about cooperative learning on the November questionnaire. (Appendix C)

II. Mind-Bender Game (Appendix D)

A. Twenty drawings. Given 30 seconds to figure individually and then given 15 seconds to compare and combine answers with a partner.

B. Participants asked for comparison of feelings when working alone and with a partner. Their responses listed under respective heading on an overhead projector.

III. Motto: "No one of us is as smart as all of us, " explained. (A banner with this motto had been hung in the room).

IV. Seven specific objectives given. (Listed in previous section, page).

V. Format of workshop--During all hours of workshop, discussion of the six pretest answers and ensuing activities formed the general outline of the presentation.

A. Question 1 "Cooperative learning is an alternative method of introducing and teaching new concepts." Reply--False. Teachers continue to introduce and teach and model concepts using whatever

instructional methods they prefer. But cooperative learning is an alternative method to whole group or individualized study.

1. Definition of cooperative learning.

2. Differences between cooperative learning groups and traditional groups (Appendix E)

3. Differences between approach of Johnson and Johnson, and Slavin. (Appendix F)

B. Question 2 "Cooperative learning can help students at all levels be more successful." Reply-- True.

1. Participants asked to finish phrase, "With cooperative learning you will see students who..." As replies were given, they were recorded on overhead transparency. If anticipated replies were lacking, this presenter supplied responses.

2. Major research results given stressing that <u>all</u> students, even middle and high, benefit academically and socially.

VI. Assigned participants to teams of three or four apiece. Together, they answered questions of Quibblean Spelling Rules worksheet and prepared for quiz. (Appendix G) After quiz, they found their median score.

A. STAD method of computing scores and giving improvement points to team members explained. (Appendix H)

B. Previous group work and cooperative method STAD related to Question 3 of pretest, "Cooperative learning can be used successfully in any classroom at any grade level." Reply--Yes. This would be further demonstrated throughout the workshop.

VII. Question 4 "Students should be grouped heterogeneously (mixed-ability levels) in all small group activities. Reply--False. As an explanation of this question and other important points, participants participated in a cooperative learning Jigsaw activity. They were numbered as one's, two's, or three's, etc. Each were given different sections of Appendix I and the one's were to read and report to the group on the topic, "Factors Influencing Group Size." Two's became experts on "Assigned Roles and Why?" and the three's replied to "Four Questions for Assigning Groups." The four's were asked to report on "Jigsaw II--an Overview." The five's discussed "Five Methods of Informal Cooperative Learning Activities." The six's were to point out "Five to Six Steps to Follow in Using STAD and Mastery Learning," while the seven's were to give the "Basics of Theory and Five Management Techniques" of cooperative learning. Each "expert" group then wrote the basic principles of each topic on an overhead transparency and then "taught" all the other participants.

IX. Asked participants to study Appendix J, an explanation of TGT (Teams Games and Tournaments),

because at the second session they would be playing a tournament game where they would be answering questions over the material. They were assured that no "grade" would be given, but that they would be expected to earn points for their team.

X. They jotted down some questions they had and turned them in. If they were not answered in their packet or by the end of the next session, they were to ask them at that time.

XI. Passed out a packet of materials. They were asked to have their class engage in at least one cooperative activity before the next workshop session.

Second Session--Kindergarten through Sixth-Grade Personnel & Third Session--Junior-high and High School Personnel.

I. Participants reported on their cooperative learning activities within the previous week or at an earlier time. Discussion ensued on each activity.

II. Elementary workshop only--teachers listed group skills that would have to be taught before extended group activity could take place. In both workshops, group roles (facilitator, observer, recorder, etc.) were discussed. This reflected answer to pretest question five, "It is possible to teach children to work in groups." Reply--yes.

III. TGT activity. (Appendix K) Points evaluated for

each team. Team scores given. Slavin's opinion of this somewhat "competitive" cooperative learning activity stressed.

IV. Group rewards discussed.

V. Pretest question 6, "This method takes very little planning and bookkeeping." Reply--False, but the rewards and advantages for the students were stressed. Cooperative learning is an alternative method of learning, not an additional one. Asked for labor-saving "tricks" from those who had already used it in their classrooms.

V. Do's and Don'ts of Cooperative Learning (Appendix L)

VI. Value of follow-up support groups for those wanting to practice cooperative learning activities explained. Time and place set.

VII. Post-Test (Same as Pre Test)

IX. Evaluation of workshop. (Appendix M)

Appendix A

NEEDS ASSESSMENT SURVEY
Lincoln County R-III School District
August 25, 1988

(Directions: Please check all items according to your degree of interest. Return this completed form to Mrs. Eberle, Mrs. Kelley, Mrs. Riffle, Mr. Surber, or Mr. Willard)

Topic	Degree of Interest None	Some	Much
1. Methods of Motivating Students	___	___	___
2. Dealing with Individual Differences	___	___	___
3. Teaching Critical Thinking Skills	___	___	___
4. Designing Independent Projects (Enrichment)	___	___	___
5. Career Education			
6. Teacher Made Tests	___	___	___
7. Elementary Science (Experiments and Demonstrations)	___	___	___
8. Computer Applications for Teachers	___	___	___
9. Developmental Reading - Secondary	___	___	___
10. Behavior and Discipline in the Elementary	___	___	___
* * * * * Secondary	___	___	___
11. Parent-Teacher Relations	___	___	___
12. Psychology of the Disadvantaged Child (Guidance Techniques for Teachers)	___	___	___
13. Classroom Management and Organization	___	___	___
14. Special Education in the Elementary	___	___	___
* * * * Secondary	___	___	___
15. Audiovisual Aids Workshop	___	___	___
16. Pupil Services Within the School and the Community	___	___	___
17. New Techniques and Programs in Elementary Math	___	___	___
18. Teachers' Legal Limitations and Liabilities	___	___	___
19. Rap Sessions in Your Subject Area (Your area is _____	___	___	___
20. Techniques for Teaching Slow Students	___	___	___
21. Instructional Materials (Specify Subject Area _____)	___	___	___
22. Instructional Games (Specify Subject Area _____)	___	___	___
23. Updating Courses of Study in Your Field	___	___	___
24. Community Resource People	___	___	___
25. Effective Questioning	___	___	___
26. Cooperative Learning (Small Groups)	___	___	___
27. Weight Loss and Exercise Classes	___	___	___
28. Stress Management (given this fall)	___	___	___
29. Mentors (Teachers Helping Teachers)	___	___	___
30. Mastery Learning	___	___	___
31. Time Management	___	___	___
32. Grading Alternatives (Handling Papers)	___	___	___
33. Identification of Abused Children	___	___	___
34 Improving Student Self-Esteem	___	___	___

Appendix B

Dear Faculty,

Many of you have expressed an interest in a cooperative learning (small group) workshop when you completed the inservice survey last August. Tentative plans are to hold the workshops the last week in January and first week of February. There will be three sessions, each one lasting two hours. The first one will be for all interested faculty. The second will be a follow up designated for elementary teachers, and the third will be for junior high and high school faculty.

It is my desire to offer the workshops at a time most suitable for the majority of prospective participants. Also, I hope to present concepts and give cooperative learning practice pertinent to your responses to the following questionnaire.

Please return the bottom portion to me or Mike Willard by Friday, November 11th.

Kathy Boessen

- -

Your Name_____Grade Level_____

_____Yes, I hope to attend the workshop.

_____No, I will not be attending the workshop.

If yes, please indicate whether you would prefer the sessions to be held from 3:30 to 5:30 p.m. _____ or 7 to 9 p.m._____.

If yes, please check which days you could probably attend:
Monday_____Tuesday_____Wednesday_____Thursday_____

Are you familiar with the theories and research of either Johnson and Johnson_____or Slavin_____or others_____ regarding cooperative learning?

If you are now or have used any cooperative activities in your classroom, please give a brief sketch of them.

What questions would you like answered at the workshop?

YOU'RE INVITED
To

What: Two workshops on Cooperative Learning (students working and learning in small groups)

When: Monday, March 6th for all interested personnel K-12
Follow-up sessions:
Monday, March 13th for faculty K-6
Wednesday, March 15th for faculty 7-12

All sessions will meet from 3:30 to 5:30 P.M.

Where: Elementary Library (unless notified otherwise)

Focus: First session: Concept of cooperative learning, its research base (briefly), and general applications.

Second and
Third Sessions: Specific applications and techniques for respective grade levels.

In all sessions, practice working cooperatively within groups will be provided. (Don't worry, it will be painless and maybe even fun.)

Presented by: Kathy Boessen, ninth-grade English teacher, who has been researching the topic for her masters' project and providing numerous cooperative learning opportunities for her students.

Please return the bottom of this invitation if you would like to participate in these workshops. If it is impossible for you to attend the first session, you may still attend the second one. A packet of materials and video of the presentation will be provided upon request.

- -

Your name_____Grade/Subject_____

Indicate which workshop(s) you will be attending:

March 6th _____ March 13th_____ March 15th_____

PLEASE RETURN A.S.A.P. TO MIKE WILLARD OR KATHY BOESSEN

Appendix C

Cooperative Learning Workshop Pre-Test

Please indicate True or False for each statement:

_____1. Cooperative learning is an alternative method of introducing and teaching new concepts.

_____2. Cooperative learning can help students at all levels be more successful.

_____3. Cooperative learning can be used successfully in any classroom at any grade level.

_____ 4. Students should be grouped heterogeneously (mixed-ability levels) in all small group activities.

_____5. It is possible to teach children to work in groups.

_____6. This method takes very little planning and bookkeeping.

Appendix D

Mind Benders

See how many of these well-known phrases that you can identify:

1. MIND / MATTER
2. T RN
3. TIME TIME
4. LE VEL
5. 

6. VIOLETS VIOLETS VIOLETS
7. Cycle Cycle Cycle
8. R/E/A/D
9. Panic
10. 
12. crime
13. 

14. 

15. 

16. 

17. 

18. MIND
19. Night

Appendix E

What is Cooperative Learning?

"No One Is As Smart As All of Us!"

Basic philosophy is shared responsibility--"I am responsible for my own learning and that of everyone else in my group."

Students work together in small groups from two to six members and learn from each other.

Students experience the process of learning, the how as well as the what of learning.

Students learn by doing, building on the thoughts and experiences of group members, developing and expanding their capabilities, exceeding what each could accomplish alone.

It is learning to use one's own knowledge or gaining knowledge in cooperative interaction with other people.

The teacher's role shifts from the leader in the traditional hierarchy to a facilitator in a network.

It provides a structure for teamwork, communication, effective coordination, and divisions of labor which characterize most real-life settings.

What Is the Difference?

Cooperative Learning Groups	Traditional Learning Groups
Positive interdependence	Responsible only for self
Individual accountability	Some will "hitchhike" on work of others
Heterogeneous membership	Homogeneous membership
Shared leadership	One appointed leader
Task and maintenance of a good working relationship emphasized	Focus only on completing the assignment
Social skills taught	Social skills assumed
Teacher observes and interacts	Teacher either ignores or intervenes
Groups process their effectiveness	No group processing

Appendix F

COOPERATIVE LEARNING

Heterogeneous grouping
Shared leadership
Shared responsibility for each other's learning
Interaction among students

Student Team Learning

(Robert Slavin)

Team rewards
Individual accountability
Equal opportunity for success

Strategies include:

1. STAD
2. TGT
3. Jigsaw II

Circles of Learning

(Johnson and Johnson)

Team rewards
Individual accountability
Equal opportunity for success
Interpersonal and small group skills

Positive interdependence is encouraged by:

1. Single product from group
2. Random accountability
3. "Expert" group members
4. Interconnecting roles
5. Group grade/reward

Taken from: Beverly Clevenger, Learning Exchange
(See Appendix N)

Appendix G

Quibblean Spelling Rules

Spelling on the planet Quibble is phonetic, just as it in general in English. However, as in English, there are some pecularities in Quibblean spelling. These spelling rules are summarized below:

1. There is no "m" or "n" on Quibble, but a single sound that is written "mn".

2. Whenever "z" and "t" appear together, "z" always follows "t", except at the beginnings of words, when "t" always follows "z". Examples: Batzmnamn Ztipcode

3. An apostrophe always separates any letter and a following "q". Example: Rah'qmnroll

4. None of the above rules apply to words that begin with "Q". Any word beginning with "Q" is correctly spelled now matter what, except that no word beginning with "Q" can have an "mn" in it.

5. With the above restrictions, all possible spellings are correct.

Directions: Label whether the following words in the Quibblean tongue are correctly or incorrectly spelled.

1. Quiztqid
2. Quamn
3. Tzahp
4. Quaquers
5. Iztahmnbul
6. Ztahtzahlfo'qtz
7. Quitzvil
8. Rabahdu'qui
9. Wahtzub-daq
10. Nyahr'q

Pages 87-89
From: Beverly Clevenger, Learning Exchange
(See Appendix N)

Quibblean Quiz

Label whether the following words are correctly or incorrectly spelled:

1. Ma'qtz
2. Quibqr
3. Ztimn
4. Aztamnor
5. Correc'qu
6. Robmo
7. Hatzoff
8. Ahmntrahq
9. Quahgmnire
10. Ztamno'qtz

Answers for Quibblean Worksheet

1. Correct (Rule 4)
2. Incorrect (Rule 4)
3. Incorrect (Rule 2)
4. Correct (Rule 4)
5. Incorrect (Rule 2)
6. Correct (Rules 2 & 3)
7. Correct (Rule 4)
8. Correct (Rule 3)
9. Incorrect (Rule 3)
10. Incorrect (Rule 1)

Appendix H

Student Teams-Achievement Divisions (STAD)

STAD is made up of five interlocking components: class presentations, teams, quizzes, individual improvement scores, and team recognition.

Teams are composed of four or five students who represent a cross-section of the class in academic performance, sex, and race or ethnicity. The major function of the team is to prepare its members to do well on the quizzes. After the teacher presents the material, the team meets to study worksheets or other material.

Quizzes are composed of course content questions. Students are not permitted to help one another during the quizzes.

Individual improvement scores--Any student can contribute maximum points to his or her team, but no student can do so without showing definite improvement over past performance. Each student is given a "base" score, derived from the student's average performance on similar quizzes. Then students earn points for their teams based on how much their quiz scores exceed their base scores.

Team recognition is composed of certificates or other rewards if their average scores exceed a certain criterion.

From: Slavin (See Appendix N)

Appendix I

Deciding on the Size of the Group

Once the objectives of the lesson are clear, the teacher must decide which size of learning group is optimal. Cooperative learning groups tend to range in size from 2 to 6. A number of factors should be considered in selecting the size of a cooperative learning group:

1. As the size of the learning group increases, the range of abilities, expertise, skills, and number of minds available increases.

2. The larger the group, however, the more skillful group members must be in providing everyone with a chance to speak, coordinating the actions of group members, reaching consensus, ensuring elaboration of the material being learned, and keeping all members on task. Very few students have the collaborative skills needed for effective group functioning; therefore, the skills have to be initially taught.

3. The materials available or the specific nature of the task may dictate a group size.

4. The shorter the period of time available, the smaller the learning group should be. If there is only a brief period of time available for the lesson, then smaller groups will be more effective because they take less time to get organized, they operate faster, and there is more "air time" per member.

Some advice for beginning teachers is to start with pairs or threesomes. When students become more experienced and skillful, they will be able to manage larger groups. Five should be an upper limit. Cooperative learning groups have to be small enough that everyone is engaged in mutual discussion while achieving the group's goals.

Assigning Roles to Ensure Interdependence

Cooperative interdependence may also be arranged through the assignment of complementary and interconnected roles to group members. An example is a science lesson. Each group member is assigned a responsibility that the group needs to function. These include a summarizer-checker to make sure everyone in the group understands what is being learned, a researcher-runner to get needed materials for the group and to communicate with the other learning groups and the teacher, a recorder to write down the group's decisions and edit the group's report, an encourager to reinforce members' contributions, and an observer to keep track of how well the group is collaborating. Assigning such roles is an effective method of teaching students collaborative skills.

Assigning Students to Groups

There are four basic questions teachers often ask about assigning students to groups:

1. Should students be placed in learning groups homogeneous or heterogeneous in member ability? There are times when cooperative learning groups homogeneous in ability may be used to master specific skills or to achieve certain instructional objectives. Generally, however, we recommend that teachers maximize the heterogeneity of students, placing high, medium, and low ability students within the same learning group. More elaborative thinking, and more frequent giving and receiving of explanations seems to occur in heterogeneous groups.

2. Should nontask-oriented students be placed in learning groups with task-oriented peers or be separated? To keep nonacademically-oriented students on task, it often helps to place them in a cooperative learning group with task-oriented peers.

3. Should students select who they want to work with or should their teacher assign students to groups? Having students select their own groups is often not very successful. Often there is less on-task behavior in student-selected groups than in teacher-selected groups. A useful modification of the "select your own

group" method is to have students list who they would like to work with and then place them in a learning group with one person they chose and one or two or more students not of their choosing. Some additional ways of assigning students to groups are:

a. Ask students to list three peers with whom they would like to work. Identify the isolated students who are not chosen by any other classmates. Then build a group of skillful and supportive students around each isolated student.

b. Randomly assign students by having them count off and placing the one's together, the two's together, and so forth. If groups of three are desired in a class of thirty, you would have the students count off by tens.

c. In order to build constructive relationships between majority and minority students, between handicapped and nonhandicapped students, and even between male and female students, use heterogeneous cooperative learning groups with a variety of students within each learning group.

4. How long should the groups stay together? For the length of the instructional unit. Actually, there is no formula or simple answer to this question. Some teachers keep cooperative learning groups together for an entire year or semester. Other teachers change group membership often. Am elementary setting allows students

to be in several different learning groups during the day. The best advice is to allow groups to remain stable long enough for them to be successful.

Breaking up groups that are having trouble functioning effectively is often counterproductive as the students do not learn the skills they need to resolve problems in collaborating with each other.

There is merit in having students work with everyone in their class during a semester or school year. Finally, never underestimate the power of heterogeneous cooperative learning groups in promoting high quality learning experiences for all.

Pages 93-97 from Beverly Clevenger, Learning Exchange

(See Appendix N)

JIGSAW II

Overview

Jigsaw II can be used whenever the material to be studied is in written narrative form. It is most appropriate in such subjects as social studies, literature, some parts of science, and related areas in which concepts rather than skills are the learning goals. The instructional "raw material" for Jigsaw II should usually be a chapter, story, biography, or similar narrative or descriptive material.

In Jigsaw II, students work in heterogeneous teams as in STAD and TGT. The students are assigned chapters or other units to read, and are given "Expert Sheets" which contain different topics for each team member to focus on when reading. When everyone has finished reading, students from different teams with the same topic meet in an "expert group" to discuss their topic for about 30 minutes. The experts then return to their teams and take turns teaching their teammates about their topics. Finally, students take quizzes that cover all the topics, and the quiz scores become team scores as in STAD. Also as in STAD, the scores that students contribute to their teams are based on the individual improvement system, and students on high-scoring teams may receive certificates or be recognized in a newsletter or bulletin board. Thus, students are motivated to study the material well and to work hard in their expert groups so that they can help their team do well. The key to Jigsaw is interdependence--every student depends on his or her teammates to provide the information he or she needs to do well on the quizzes.

Schedule of Activities

Jigsaw II consists of a regular cycle of instructional activities as follows:

Reading--Students receive expert topics and read assigned material to locate information.

Expert Group Discussion--Students with the same expert topics meet to discuss them in expert groups.

Team Report--Experts return to their teams to teach their topics to their teammates.

Test--Students take individual quizzes covering all topics.

Team Recognition--Team scores are computed as in STAD.

Other Ways of Using Jigsaw

1. Instead of having the topics refer to narrative materials given to students, have students search a set of classroom or library materials to find information on their topics.

2. Have students write essays or give oral reports instead of taking quizzes after completing the experts' reports.

3. Instead of having all teams study the same material, give each team a unique topic to learn together and each team member subtopics. The team could then prepare and make an oral presentation to the entire class.

Appendices I, J, and K -- Pages 98-118

From: Slavin

(See Appendix N)

Groups 5

INFORMAL COOPERATIVE LEARNING METHODS

Up to this point, this manual has focused on complete cooperative learning methods that can be used over extended time periods. However, many teachers weave cooperative activities into their otherwise traditional lessons or use them when presenting lessons in STAD, TGT, or other cooperative techniques. Some of the most useful of these informal cooperative activities are described below (adapted from Spencer Kagan's [1985] *Cooperative Learning Resources for Teachers.*)

1. *Spontaneous Group Discussion.* If students are sitting in groups, it is easy to ask at various times during a lecture or presentation for the students to discuss the meaning of something, why something works, or how a problem might best be solved. This simple cooperative learning structure complements a traditional lesson, and the group work can vary from a few minutes to a full class session.

2. *Numbered Heads Together.* Russ Frank, a teacher at Chaparral Middle School in Diamond Bar, California, was teaching a grammar lesson. He put a sentence on the overhead projector, and then asked, "Where should the comma go? Put your heads together and consult with your group." The students literally put their heads together and talked it over. There was a buzz of animated talking. After a short time Russ flipped off the lights. Total silence. Then he called out a number. The hand of one student in each group shot up. Russ called on one of these group representatives. A correct answer led to points for that team.

Each student in a group had a number and the students knew that only one student would be called on each time to represent the group. The buzz of ani-

mated discussion was the attempt of the students to share the information so that everyone knew the answer. That way they would receive a point no matter which number was called.

Numbered Heads Together is basically a variant of Group Discussion; the twist is having only one student represent the group but not informing the student in advance who the group representative will be. That twist insures total involvement of all the students. Russ Frank's method is an excellent way to add individual accountability to Group Discussion.

3. *Team Product.* Have your students in teams make a learning center, write an essay, draw a mural, work a worksheet, make a presentation to the whole class, design a better government, make a list of possible solutions to a social problem, or analyze a poem. To maintain individual accountability, assign team members specific roles or individual areas of responsibility.

4. *Cooperative Review.* It is the day before the exam. Students in groups make up review questions. They take turns asking the other groups the questions. The group asking the question gets a point for the question. The group initially called on gets a point for a correct answer. Then there is the opportunity for a second group to receive a point if they can add any important information to the answer.

In a variation on Cooperative Review, the teacher brings in the questions. Another variation combines Numbered Heads Together with Cooperative Review. That is, when the teacher or students ask the review question, there is time first for students to discuss their answer with their teammates. After this brief "Heads Together" time, a number is called, 1, 2, 3, or 4. Students with the corresponding numbers have the opportunity to come up with the right answer. A second number is called after a correct answer is provided, and another student can earn a point for his or her team by adding material to the original correct answer. If the teacher feels there is still important information to be brought out, a third number may be called, and so on.

5. *Think-Pair-Share.* A simple but very useful informal cooperative learning method called Think-Pair-Share was developed by Frank Lyman of the University of Maryland. When the teacher presents a lesson to the class, students sit in pairs within their teams. The teacher poses questions to the class. Students are instructed to *think* of an answer on their own, then to *pair* with their partners to reach consensus on an answer. Finally, the teacher asks students to *share* their agreed-upon answers with the rest of the class.

For more on Think-Pair-Share, see Lyman (1981).

Group 6

STUDENT TEAM LEARNING AND MASTERY LEARNING

Mastery learning is a widely used technique for making sure that almost all students have mastered one skill before another is taught. It can be used in any subject, but is perhaps most appropriate in those subjects in which learning of one skill depends on mastery of a previous one, such as mathematics, reading, or foreign language.

The basic procedure for mastery learning involves setting clear goals, including both instructional objectives and standards of mastery; class presentations by the teacher; worksheet work or other exercises designed to help students learn the material; and then a "formative" (diagnostic) quiz. If a preset percentage of the class (e.g., 90%) achieves a preset level of mastery (e.g., 80 or 90%), then the class goes on to the next skill. If these conditions are not met, corrective instruction is provided to students who did not achieve mastery, and a "summative" (final) quiz is given. This process could continue to further quizzes until the 90% criterion is reached by 90% of the students, or until the teacher decides to go on to the next unit.

Mastery learning, as described above, resembles the basic schedule of STAD, except that STAD adds learning teams to the mastery learning model to help students master the material. Consequently, the two can be easily combined. In combining STAD and Mastery Learning, the team practice sessions are used to help students learn the material for the formative quiz and then during corrective instruction to help students who did not achieve mastery the first time to do so on the summative quiz. To use STAD and Mastery Learning, follow these steps:

1. Prepare curriculum materials as for STAD, except that you will need to make one additional quiz to use as a formative quiz.
2. Assign students to teams and give them initial base scores as for STAD.
3. At the beginning of each unit, tell students exactly what you will be studying and what level of mastery they will be expected to achieve. The criterion of mastery can be set by you based on whatever you feel represents complete understanding of the concept.
4. Introduce the unit.
5. Allow students to work on worksheets in their teams (as in STAD).
6. Give the formative quiz.
7. Correct the formative quiz. You may have students exchange papers and score the quizzes in class.
8. If 90% of the students score at the criterion you have set for mastery (usually 80-90% correct), count the formative quiz and go to step 12.
9. If fewer than 90% of the students achieve mastery, return the corrected quizzes to the students and go over the most frequently missed items. Then let the teams work with the members who did not achieve mastery to help them understand what they missed. If any entire

teams achieve mastery, they may do other work.

10. After sufficient time for corrective instruction has been allowed, give students the summative quizzes. All students who did not get perfect formative quizzes should take the summative quizzes to see if they can improve their scores.
11. Correct the summative quizzes.
12. Figure individual and team scores based on the higher of the two quizzes (formative and summative). This should be done exactly as for STAD, with the individual improvement score system, except that students should receive ten additional points if they achieve mastery, regardless of their base scores. Put the base scores, quiz scores, and improvement points on each student's returned quiz, and use that information to calculate team scores as in STAD.

For more information on Mastery Learning, see Block, J. H. and Anderson, L. W., *Mastery Learning in Classroom Instruction*. New York: MacMillan, 1975.

Group 7

COOPERATIVE CLASSROOM MANAGEMENT

Most cooperative learning classrooms are well-behaved, because students are motivated to learn and are actively engaged in learning activities. However, in many cases the teacher may wish to take additional steps to ensure that students will use class time effectively and direct their energies toward productive activities. This section describes classroom management methods adapted from Spencer Kagan's (1985) *Cooperative Learning Resources for Teachers*.

A. Theory: Group-Based Positive Reward.

The most effective approach to classroom management for cooperative learning is to create a group-based positive reward system. The teacher gives his or her attention to the group behavior he or she most wants in the classroom. Quickly the other groups begin to model themselves after the group which is receiving the teacher's positive attention.

Studies demonstrate that in a whole-class structure, if teachers pay attention to undesired behaviors such as out-of-seat behavior or talking, the frequency of those behaviors increases. It does not matter if the type of attention is positive or negative. That is, even if the teacher severely scolds the students who get out of their seats without permission, other students will model themselves after the students who are receiving the attention.

So too is it in a cooperative classroom. If a teacher gives his or her attention to the team which is too noisy or not on task, other teams will follow the lead of the team which has managed to win the attention of the teacher, even if the attention is negative. Conversely, if the teacher ignores the teams who are least on task and gives special recognition to those who are, soon most or all teams will be on task. This is especially so if the special recognition is specific, public, and recorded. The teacher does well to articulate to the whole class exactly why the model team is receiving special recognition and to record the instance on a class recognition chart.

Another important element in a successful cooperative learning management system is clear expectations. The teacher needs to define clearly and in advance those behaviors which are necessary for successful classroom functioning and those behaviors which are appreciated. Necessary behaviors include quickly coming to full, quiet attention whenever the teacher asks. Appreciated behaviors include extra peer helping, cooperation with teammates, and attention to the needs, opinions, and desires of others.

B. Management Techniques

1. *The Zero-Noise-Signal.* After the groups are formed the teacher will explain that there is a natural tendency for a classroom of teams to become too noisy. As one team talks, a nearby team needs to talk a bit louder to be heard, which forces the first team to talk even louder. Noise levels can escalate. The teacher needs to be able to bring the noise level quickly back to zero. The teacher indicates that the class can solve this problem if it can learn to respond quickly to a zero-noise-signal.

The zero-noise-signal is a signal to students to stop talking, to give their full attention to the teacher, and to have their hands and bodies still. Teachers choose different signals for their students. Some may simply ask for attention by saying "May I have your attention please." Others may flip the lights on and off or ring a bell. One effective method is for the teacher to raise one hand. That signal is convenient because the teacher does not have to talk over the group noise level, and because he or she does not have to walk over to the bell or light switch. An additional nice feature of the raised hand signal is that the teacher can indicate that when students see the teacher's raised hand, they too should raise their hands. Thus, when the teacher needs the attention of the class, she or he raises a hand. This is quickly followed by students nearby raising their hands, which leads to yet other students doing so. The raised hand of the teacher is like the pebble dropped in the pond: quiet attention spreads from the teacher across the class like a ripple.

Some variations of the zero-noise-signal:

1. Use a timer, and time how long it takes to come to zero-noise. The seconds are summed each week and they are taken away from team or class fun time (see below).

2. Have different signals, one to simply bring the noise level down (e.g., arm up, palm horizontal), another to bring the noise level down and get students attention for an announcement by the teacher (arm up, palm vertical).
3. Use a random timer to bring noise levels down. Students know that the first team to come to zero-noise-level when the timer goes off will receive 5 recognition points, the second team 3, and the third team 1. Points earned may be toward class rewards or special recognition.

Remember: The effectiveness of the zero-noise-level signal will depend on the effectiveness of the positive group reward. The reward must be clear and public, and should follow desired behavior as closely in time as possible. If the hand signal is used, after the teacher raises an arm, the first team or teams to have all members quiet with full attention to the teacher receive special recognition. The effectiveness of the zero-noise-level signal, like all elements of a cooperative classroom, depends a great deal on the way in which special recognition is given.

2. *Group Praise.* It is hard to over-emphasize the power of praising groups. One day Spencer Kagan was in the classroom of a teacher first trying Jigsaw. The teacher had all of the elements right. The class would come to full attention when she raised her hand. She was giving special recognition to the teams who were first to do so.

But something was terribly wrong. The noise level was high. Over in one group the expert was using her newfound authority to bawl-out the other students for being stupid. In another group as soon as the teacher was looking another way, the expert stuffed some paper in his nose which led to loud giggles and laughter. And the zero-noise-level signal was really not much help: the kids responded by quickly coming to attention, but right afterwards they would return to loud talking and off-task behaviors.

What was wrong? What could be done? Dr. Kagan walked over to the teacher and said, "I am going to sit down again, but I want you to walk over to the best group in the class, give the zero-noise-level signal, and draw everyone's attention to the group, praising them for their good work and saying exactly what you like about their behavior. Don't give points; just say clearly what you like."

She did. The power of the praise was astonishing. For about ten minutes after the group praise, all the teams were markedly more on task. When they began to slip, the teacher used group praise again. This time they stayed on task longer. By the end of the period, the class had turned around. Jigsaw was working the way it should. The teacher was thrilled; she had a powerful tool for shaping the class. Group praise establishes the norms for the classroom; students learn which behaviors are valued and receive special recognition. It is as if all they really need is a very clear message as to how to behave well in the new setting. Holding up as a model the groups which are behaving best is the clearest way to give that message and to show students what is valued.

3. *Special Recognition Bulletin.* A very effective way to give special recognition in the classroom setting is to use a chart or poster to record special recognition points. Whereas a positive comment is valued at the moment, if it is recorded it has additional power to motivate students toward desired behaviors. The recorded recognition points may be turned in for a team reward, make progress toward a class reward, or may simply stand on their own as recorded special recognition. In either case, teammates will work hard, encouraging each other toward desired behaviors if they know their efforts will be recognized. A teacher may simply walk over to the reognition chart and mark in points, explaining to the class the reason a certain team is receiving special recognition.

4. *Special Recognition Ceremony.* Teachers may use a Special Recognition Ceremony each week in which outstanding teams and individuals are recognized by the teacher and students. The Special Recognition Ceremony can be quite brief but a very important experience. In the ceremony students and teams who have earned the most recognition points write in or post their names on the weekly special recognition chart, and receive applause from the rest of the class. For the individual recognition categories, the recognized individuals come up with their teams and both the team name and the individual name are written in or posted.

5. *Class or Team Fun Time.* Special recognition points may be traded for class or team rewards. It is often helpful to have the students choose fun time activities such as first out for recess or time at a fun activity table. The teacher may announce that whenever any team earns a certain number of points, they may cash them in for extra recess or fun activities. Alternatively, if a cooperative between-team format is adopted, the recognition points are summed, and the class as a whole receives the reward when the total of recognition points reaches the predetermined criterion.

It is important to provide a visible measure of how the class is progressing toward the class reward. For example, the teacher may have a clear marble jar, and special recognition points translate into marbles dropped (loudly) into the jar. When the jar is full, the class gets its fun time. A bright thermometer which rises toward a predetermined goal is also a nice addition to the cooperative class.

TEAMBUILDING

Many teachers and proponents of cooperative learning advocate extensive training of students in how to work in groups, and there are many tech-

Appendix J

Appendix J

Overview

TGT is the same as STAD in every respect but one: instead of the quizzes and the individual improvement score system, TGT uses academic game tournaments, in which students compete as representatives of their teams with members of other teams who are like them in past academic performance. A description of the components of TGT follows.

Class Presentations. (Same as for STAD)

Teams. (Same as for STAD)

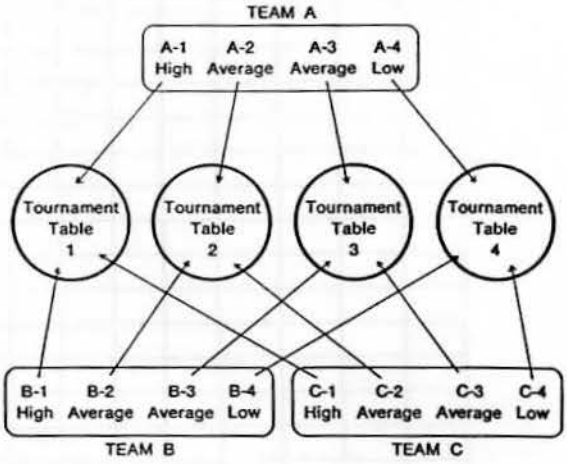
Games. The games are composed of content-relevant questions designed to test the knowledge students gain from class presentations and team practice. Games are played at tables of three students, each of whom represents a different team. Most games are simply numbered questions on a ditto sheet. A student picks a number card and attempts to answer the question corresponding to the number. A challenge rule permits players to challenge each other's answers.

Tournaments. The tournament is the structure in which the games take place. It is usually held at the end of the week, after the teacher has made a class presentation and the teams have had time to practice with the worksheets. For the first tournament, the teacher assigns students to tournament tables—assigning the top three students in past performance to Table 1, the next three to Table 2, and so on. This equal competition, like the individual improvement score system in STAD, makes it possible for students of all levels of past performance to contribute maximally to their team scores if they do their best. Figure 6 illustrates the relationship between heterogeneous teams and homogeneous tournament tables.

After the first week, students change tables depending on their own performance in the most recent tournament. The winner at each table is "bumped up" to the next higher table (e.g., from Table 6 to Table 5); the second scorer stays at the same table; and the low scorer is "bumped down." In this way, if students have been misassigned at first, they will eventually be moved up or down until they reach their true level of performance.

Team Recognition. (Same as for STAD)

Figure 6. Assignment to Tournament Tables



Preparing to Use TGT

Materials. Curriculum materials for TGT are the same as for STAD. Also needed will be one set of cards numbered from 1 to 30 for every three students in your largest class. Teachers can obtain these materials from the Johns Hopkins Team Learning Project (see Appendix 9) or they can make their own by numbering colored index cards.

Assigning Students to Teams. Assign students to four- to five-member heterogeneous teams exactly as for STAD.

Assigning Students to Initial Tournament Tables. Make a copy of the Tournament Table Assignment Sheet (Appendix 5). On it, list students from top to bottom in past performance in the same ranking used to form teams (see Figure 7). Count the number of students in the class. If the number is divisible by three, all tournament tables will have three members; just assign the first three students on the list to Table 1, the next three to Table 2, and so on. If there is a remainder to the division, one or two of the top tournament tables will have four members. For example, a class of 29 students will have nine tournament tables, two of which will have four members. The first four students on the ranked list will be assigned to Table 1, the next four to Table 2, and three to other tables (see Figure 7).

How to Start TGT

Begin with the schedule of activities described in the following section. After teaching the lesson, announce team assignments and have students move their desks together to make team tables. Tell students that they will be working in teams for several weeks and competing in academic games to add points to their team scores, and that the highest-

Figure 7. Tournament Table Assignment Sheet (TGT)

Student	Team	Tournament Number: 1	2	3	4	5	6	7	8	9	10	11	12	13
Sam	Orioles	1												
Sarah	Cougars	1												
Tyrone	Whiz Kids	1												
Maria	Geniuses	2												
Liz	Orioles	2												
John T.	Cougars	2												
Sylvia	Whiz Kids	3												
Tom	Geniuses	3												
John F.	Orioles	3												
Tanya	Whiz Kids	4												
Carla	Orioles	4												
Kim	Cougars	4												
Carlos	Geniuses	4												
Shirley	Whiz Kids	5												
Ralph	Cougars	5												
Ruth	Geniuses	5												

scoring teams will receive recognition in a class newsletter.

Schedule of Activities

TGT consists of a regular cycle of instructional activities, as follows:

TEACH—Present the lesson.

TEAM STUDY—Students work on worksheets in their teams to master the material.

TOURNAMENTS—Students play academic games in ability-homogeneous, three-member tournament tables.

TEAM RECOGNITION—Team scores are computed based on team members' tournament scores, and a class newsletter or bulletin board recognizes high-scoring teams.

These activities are described in detail on the following pages.

Teach
Time: 1-2 class periods
Main Idea: Present the lesson
Materials needed: • Your lesson plan
See the section on Teaching for STAD, page 17.

Team Study
Time: 1-2 class periods
Main Idea: Students study worksheets in their teams.
Materials needed: • Two worksheets for every team
• Two answersheets for every team
See the section on Team Study for STAD, page 18.

Tournaments
Time: One class period
Main Idea: Students compete at three-member, ability-homogeneous tournament tables.
Materials needed: • Tournament Table Assignment Sheet, with tournament table assignments filled in
• One copy of Game Sheet and Game Answers (same as the quiz and quiz answers for STAD) for each tournament table
• One Game Score Sheet (Appendix 6) for each tournament table
• One deck of number cards to correspond to the number of questions on the Game Sheet for each tournament table.

At the beginning of the tournament period, announce students' tournament table assignments and have them move desks together or go to tables serving as tournament tables. Have selected students help distribute one game sheet, one answer sheet, one deck of number cards, and one game score sheet to each table. Then begin the game. Figure 8 describes the game rules and procedures.

To start the game, the students draw cards to determine the first reader—the student drawing the highest number. Play proceeds in a clockwise direction from the first reader.

Figure 8. Game Rules (TGT)

Reader

1. Picks a numbered card and finds the corresponding question on the game sheet.
2. Reads the question out loud.
3. Tries to answer.

1st Challenger

Challenges if he or she wants to (and gives a different answer), or passes.

2nd Challenger

Challenges if 1st challenger passes, if he or she wants to. When all have challenged or passed, 2nd challenger checks the answer sheet. Whoever was *right* keeps the card. If the *reader* was wrong, there is no penalty, but if either challenger was wrong, he or she must put a previously won card, if any, back in the deck.

When the game begins, the reader shuffles the cards and picks the top one. He or she then reads aloud the question corresponding to the number on the card, including the possible answers if the question is multiple choice. For example, a student who picks card number 21 answers question number 21. A reader who is not sure of the answer is allowed to guess without penalty. If the content of the game involves math problems, all students (not just the reader) should work the problems so that they will be ready to challenge. After the reader gives an answer, the student to his or her left (first challenger) has the option of challenging, and giving a different answer. If he or she passes, or if the second challenger has an answer different from the first two, the second challenger may challenge. Challengers have to be careful, however, because they lose a card (if they have one) if they are wrong. When everyone has answered, challenged, or passed, the second challenger (or the player to the reader's right) checks the answer sheet and reads the right answer aloud. The player who gave the right answer keeps the card. If either challenger gave a wrong answer, he or she must return a previously won card (if any) to the deck. If no one

gave a right answer, the card returns to the deck.

For the next round, everything moves one position to the left—the first challenger becomes the reader, the second challenger becomes the first challenger, and the reader becomes the second challenger. Play continues, as determined by the teacher, until the period ends or the deck is exhausted. When the game is over, players record the number of cards they won on the Game Score Sheet in the column marked "Game 1." If there is time, students reshuffle the deck and play a second game until the end of the period, recording the number of cards won under "Game 2," on the score sheet. (See Figure 9.)

All students should play the game at the same time. While they are playing, the teacher should move from group to group to answer questions and be sure that everyone understands the game procedures. Ten minutes before the end of the period, call "time" and have students stop and count their cards. They should then fill in their names, teams, and scores on the Game Score Sheet, as in Figure 9.

Have students add up the scores they earned in each game (if they played more than one) and fill in their day's total. For younger children (fourth grade or below), simply collect the score sheets. If students are older, have them calculate their tournament points. Figure 10 summarizes tournament points for all possible outcomes. In general, have students give the top scorer sixty points, the second scorer forty points, and the third scorer twenty points at a three-person table with no ties. If there are more or less than three players of if there are any ties, use Figure 10 to tell students what to do. When everyone has calculated his or her tournament points, have a student collect the Game Score Sheets.

class newsletter to announce the standings. To do this, first check the tournament points on the Game Score Sheets. Then, simply transfer each student's tournament points to the Team Summary Sheet for his or her team, add all the team members' scores and divide by the number of team members present. Figure 11 shows the recording and totaling of scores for one team.

Recognizing Team Accomplishments

As in STAD, there are three levels of awards given based on average team scores. These are as follows:

Criterion (Team Average)	Award
40	GOODTEAM
45	GREATTEAM
50	SUPERTEAM

You may give certificates to teams that meet greatteam or superteam criteria (such as those in Appendix 4). Goodteams should just be congratulated in class. Instead of or in addition to team certificates, you may wish to make bulletin board displays, recognizing each week's successful teams, posting their pictures or team names in a place of honor. Many teachers use class newsletters in TGT. An example of a newsletter appears on Figure 12. Whatever means you use of recognizing team accomplishments, it is important that you communicate that team success (not just individual success) is what is important, as this provides the motivation to students to help their teammates learn.

Figure 9. Sample Game

TABLE # _____ GAME SCORE SHEET (TGT) ROUND # _____

PLAYER	TEAM	Game 1	Game 2	Game 3	DAY'S TOTAL	TOURNAMENT POINTS
Eric	Giants	5	7		12	20
Lisa A.	Geniuses	14	10		24	60
Darryl	B. Bombs	11	12		23	40

Team Recognition

Main Idea: Figure team scores and prepare a class newsletter or bulletin board.

Figuring Team Scores

As soon as possible after the tournament, figure team scores and prepare team certificates or write a

Bumping: Reassigning Students to Tournament Tables

Bumping, or reassigning students to new tournament tables, must be done after each tournament to prepare for the next tournament. It is easiest to do the bumping when figuring team scores.

To "bump" students, use the steps which follow. Figure 13 shows a diagram of the bumping proce-

Figure 10. Calculating Tournament Points

FOR A FOUR-PLAYER GAME

Player	No Ties	Tie For Top	Tie For Middle	Tie For Low	3-Way Tie For Top	3-Way Tie For Low	4-Way Tie	Tie For Low and High
Top Scorer	60 points	50	60	60	50	60	40	50
High Middle Scorer	40 points	50	40	40	50	30	40	50
Low Middle Scorer	30 points	30	40	30	50	30	40	30
Low Scorer	20 points	20	20	30	20	30	40	30

FOR A THREE-PLAYER GAME

Player	No Ties	Tie For Top Score	Tie For Low Score	3-Way Tie
Top Scorer	60 points	50	60	40
Middle Scorer	40 points	50	30	40
Low Scorer	20 points	20	30	40

FOR A TWO-PLAYER GAME

Player	No Ties	Tied
Top Scorer	60 points	40
Low Scorer	20 points	40

Figure 11. Sample Team Summary Sheet

TEAM SUMMARY SHEET

TEAM NAME GENIUSES

TEAM MEMBERS	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Mark	60	20	20	40										
Kevin	40	40	20	60										
Lisa A.	50	20	40	60										
John F.	60	60	20	40										
Dewanda	40	40	60	20										
TOTAL TEAM SCORE	250	180	160	220										
TEAM AVERAGE *	50	36	32	44										
TEAM AWARD	Superteam			Goodteam										

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

Figure 12. Sample TGT Newsletter

The Weekly Planet

4th Week March 28

FLASH! Fantastic Four Sweeps Language Arts Tournament!

The Fantastic Four was the winning team this week with a total of 55 points. John T., Kris, and Alvin put in outstanding performances for the Four, each contributing sixty points to their team. Their victory brings the Four to second place in the National League standings, only six points behind the leading Giants! Mary said, "We won because our team works well together."

Hot on the heels of the Fantastic Four were the Brain Busters with 52 points. Anita and Tanya helped the team out with victories at their tables, while Peter tied for first at his. The Brain Busters are still in third place in National League competition, but are moving up fast! Darryl was overheard telling Peter, "We really learned to cooperate with each other."

Third this week were the American League Geniuses with 44 points. They were helped out by Kevin and Lisa A., both table winners. Mark told his teammates he had more of a chance to help others this week.

Other table winners were Lisa P. of the Daredevils and Mike of the Grammar Haters.

THIS WEEK'S SCORES

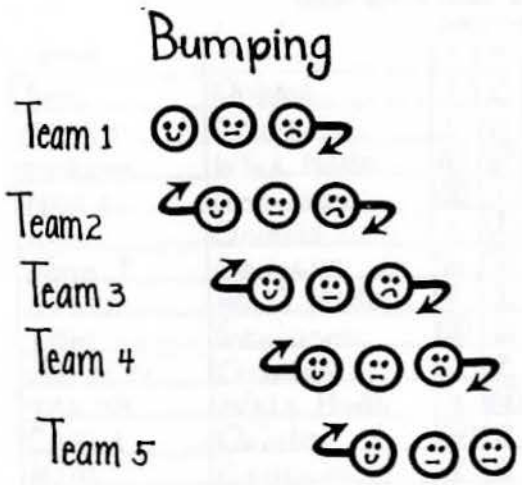
1st--Fantastic Four		2nd--Brain Busters		3rd--Geniuses	
John T.	60	Anita	60	Mark	40
Mary	40	Peter	50	Kevin	60
Kris	60	Darryl	40	Lisa A.	60
Alvin	60	Tanya	60	John F.	40
	220		210	Dewanda	20
					220

Daredevils		Giants		Chipmunks		Grammar Haters	
Lisa P.	60	Robert	40	Caroline	50	Sarah	20
Henry	20	Eric	20	Jerry	20	Willy	20
Cindi	40	Sharon	20	Charlene	30	Mike	60
Fred	40	Sylvia	40	James	20	Theresa	30
	160		120		120	John H.	20
							150

SEASON'S STANDING FOURTH WEEK

National League		American League	
TEAM	SEASON SCORE	TEAM	SEASON SCORE
Giants	195	Grammar Haters	185
Fantastic Four	180	Geniuses	162
Brain Busters	165	Daredevils	142
Chipmunks	147		

Figure 13. Bumping



dures, and Figure 14 gives an example of a completed Tournament Table Assignment Sheet, showing how the bumping procedure works for a hypothetical class after two tournaments (one tournament per week).

1. Use the Game Score Sheets to identify the high and low scorers at each tournament table. On the Tournament Table Assignment Sheet, circle the table assignments of all students who were high scorers at their tables. If there was a tie for high score at any table, flip a coin to decide which number to circle; do not circle more than one number per table. In Figure 14, Tyrone, Maria, Tom, Carla, and Ralph were table winners in the first tournament, so their table numbers are circled in the first column; Tyrone, Liz, John T., Tanya, and Ruth were winners in the second tournament, so their numbers are circled in the second column.

2. Underline the table numbers of students who were low scorers. Again, if there was a tie for low score at any table, flip a coin to decide which to underline; do not underline more than one number per table. In Figure 14, Sarah, John T., John F., Kim, and Shirley were low scorers at their respective tables in the first tournament.

3. Leave all other table assignments as they were, including numbers for absent students.

4. In the column for the next tournament, transfer the numbers as follows:

If the number is *circled*, reduce it by one (④ becomes 3). This means that the winner at Table 4 will compete at Table 3 the next week, a table where the competition will be more difficult. The only exception is that ① remains 1, because Table 1 is the highest table. If the number is *underlined*, increase it by one (4 becomes 5), except at the lowest table, where the low scorer stays at the same table (e.g., 10 remains 10). This means that the low scorer at each table will compete the next week at a table where the competition will be less difficult. If the number is neither underlined nor circled, do not change it for the next tournament—transfer the same number.

In Figure 14, note that Tom won at Table 3 in the first tournament and was bumped up to Table 2. At Table 2 he was the low scorer, so for the third week's tournament he will compete at Table 3 again. Sylvia was the middle scorer at Table 3 in the first tournament, so she stayed at Table 3; then she lost in the second tournament and was moved to Table 4.

Count the number of students assigned to each table for the next week's tournament. Most tables should have three students; as many as two may have four. If table assignments do not work out this way, make some changes so that they do.

Note that in Figure 14, Tyrone won twice at Table 1, but did not change tables because there was no higher place to go than Table 1. Shirley and Kim lost at Table 5, but were not "bumped down" because Table 5 was the lowest table.

Changing Teams

After five or six weeks of TGT, assign students to new teams.

Combining TGT with Other Activities

Teachers may wish to use TGT for part of their instruction, and other methods for other parts. For example, a science teacher might use TGT three days a week to teach basic science concepts, but then use related laboratory exercises on the other two days. TGT can also be used in combination with STAD, either by alternating quizzes one week and tournaments the next, or by having a quiz on the day after each tournament and counting both the quiz score and the tournament score toward the team score. This procedure gives the teacher a better idea of student progress than the tournament alone.

Grading

TGT does not automatically produce scores that can be used to compute individual grades. If this is a serious problem, consider using STAD instead of TGT. To determine individual grades, many teachers using TGT give a midterm and a final test each semester; some give a quiz after each tournament. Students' grades should be based on quiz scores or other individual assessments, not on tournament points or team scores. However, students' tournament points and/or team scores can be made a small part of their grades; or, if the school gives separate grades for effort, these scores can be used to determine the effort grades.

Figure 14. Sample Tournament Table Assignment Sheet With Bumping

(Five Tournament Tables)

TOURNAMENT TABLE ASSIGNMENT SHEET (TGT)

Tournament Number:

Student	Team	1	2	3	4	5	6	7	8	9	10	11	12	13
SAM	Orioles	1	1	2										
SARAH	Cougars	1	2	2										
TYRONE	Whiz Kids	①	①	1										
MARIA	Geniuses	②	1	1										
LIZ	Orioles	2	②	1										
JOHN T.	Cougars	2	③	2										
SYLVIA	Whiz Kids	3	3	4										
TOM	Geniuses	③	2	3										
JOHN F.	Orioles	3	4	5										
TANYA	Whiz Kids	4	④	3										
CARLA	Orioles	④	3	3										
KIM	Cougars	4	5	5										
CARLOS	Geniuses	4	4	4										
SHIRLEY	Whiz Kids	5	5	5										
RALPH	Cougars	⑤	4	4										
RUTH	Geniuses	5	⑤	4										

Note:
- ③ indicates *high* scorer at Table 3
- 3 indicates *middle* scorer at Table 3
- 3 indicates *low* scorer at Table 3

Results of Most Recent Tournament

Tournament Table Assignment for Next Tournament

TABLE #_____ GAME SCORE SHEET (TGT) ROUND #_____

PLAYER	TEAM	Game 1	Game 2	Game 3	DAY'S TOTAL	TOURNAMENT POINTS

TABLE #_____ GAME SCORE SHEET (TGT) ROUND #_____

PLAYER	TEAM	Game 1	Game 2	Game 3	DAY'S TOTAL	TOURNAMENT POINTS

TABLE #_____ GAME SCORE SHEET (TGT) ROUND #_____

PLAYER	TEAM	Game 1	Game 2	Game 3	DAY'S TOTAL	TOURNAMENT POINTS

TABLE #_____ GAME SCORE SHEET (TGT) ROUND #_____

PLAYER	TEAM	Game 1	Game 2	Game 3	DAY'S TOTAL	TOURNAMENT POINTS

TOURNAMENT TABLE ASSIGNMENT SHEET (TGT)

		Tournament Number:												
Student	Team	1	2	3	4	5	6	7	8	9	10	11	12	13

Appendix K

Learning about TGT: Game Sheet

1. A five-member team is made up of how many

   _____ high achievers?

   _____ average achievers?

   _____ low achievers?

2. How many teams would you have in a class of 28 students?

   How many tournament tables?

3. If you had a class of 33 students, how many four- and five-member teams would you have?

4. True or false:

   In TGT, each team in the classroom is approximately equal in academic ability to each other team.

5. The tournament competition is "fair" in TGT because:
   a. The teams can help their members study.
   b. All students have an equal number of turns to pick cards and answer questions.
   c. The competition is among students of equal past performance.

6. True or false:

   One of the most important functions of the tournament table is peer tutoring.

7. Bill has seven cards, Sue has three. Bill picks a card from the deck and gives an answer. Sue challenges. Mary checks the answer sheet and tells Bill that he was right. How many cards does Bill have now?

   How many cards does Sue have?

8. At a TGT tournament table, Lisa won 8 cards, Bill won 10, and Mary won 12.

   What are the tournament points for each student?

9. In TGT, team members value the contributions made by their teammates who are low in past performance because:
   a. They can earn as many points as high achieving team members.
   b. The low achieving students often bring special perspectives to team discussions.
   c. Low achieving students can earn extra points.

10. Bob earned six points at his tournament table. For the next tournament, he will:

    a. move to a higher ability table
    b. move to a lower ability table
    c. stay at the same table!

11. True or false:

The basic premise of TGT is that students who must cooperate to achieve a common goal will help each other learn, and their liking and respect for each other will increase.

12. What information does the newsletter emphasize in TGT?

a. tournament table winners
b. team scores
c. bumping results

13. John, Sally, and Dave have been meeting at the same table for three weeks. Their class is using TGT. They are probably:

a. a team missing one member
b. a tournament table
c. an expert group

14. Experimental studies have documented four main positive effects on students. Name two of the four.

15. True or false:

TGT can be used in any subject in which information can be put in the form of a statement or question with an objective answer.

16. The teacher instructs the class on Monday, Tuesday, and Wednesday on solving word problems in math.

If the teacher is using TGT, what happens on Thursday?

On Friday?

17. True or false:

Al, Tom, and Bob are good friends and work well together, so they should be placed on the same team.

18. At a tournament table, Lisa won 8 cards, Bill won 14 cards, and Mary won 8 cards. How many points will each receive?

19. An "ideal" TGT team is heterogeneous in terms of:

a. ability levels, sex, and race
b. sex, ability levels, and age
c. ability levels, race, and creativity

20. Janice is very good in math, but terrible in language arts. What tournament table would she probably be playing at in each subject?

a. high table in math; average tabl in language arts
b. low math; average language arts
c. high math; high language arts
d. none of the above

21. During the team practice session teachers should:

a. Catch up on their paperwork.
b. Take a well-deserved break.
c. Spend time writing bad items like this one.
d. Circulate through the class; encourage peer tutoring; provide individual help to students who need it.

Game Answer Sheet

1. 1,3,1
2. 7 teams, 9 tournament tables
3. seven four-member teams
   one five-member team
4. True
5. c
6. False
7. 8, 2
8. Lisa - 20
   Bill - 40
   Mary - 60
9. a
10. a
11. True
12. b
13. a
14. increased academic achievement (learning)
    better race relations (social relations)
    increased mutual concern
    increased self-esteem
15. True
16. Thursday - team practice on worksheets
    Friday - tournament on solving word problems
17. False
18. Lisa - 30
    Bill - 60
    Mary - 30
19. a
20. d
21. d

Appendix L

DO'S and DON'Ts of Cooperative Learning

DO	DON'T
1. Give cooperative learning top priority	1. Use it every day for every lesson
2. Start slowly with cooperative learning	2. Use so often that you hear, "Not groups again!"
3. Teach group skills and model behavior	3. Expect students to automatically know how to act and react in a group
4. Stress "sink or swim" situation (<u>interdependence</u>-of group members)	
5. Give group <u>scores</u> (average of individual tests, games, or improvement points)	5. Give group <u>grades</u> (Don't forget to stress individual accountability)
6. Give the same <u>reward</u> to every <u>group</u> that meets the criteria	
7. Reward each member the same	
8. Group <u>heterogeneously</u> as often as possible	8. Say "never" to the ways groups can be chosen
9. Change group members often enough for variety	9. Break up groups when they are having trouble.
10. <u>Interact</u> with groups when they are having trouble. Turn problem back to group to solve. Believe that they will learn from their mistakes.	10. <u>Intervene</u> in groups
11. Be confident in cooperative learning as a method where academic and social skills are taught.	11. View time spent in groups as something other than a valuable work period.

Appendix M

Workshop Evaluation Form

Name of Workshop _____ Date _____

	5	4	3	2	1	
1. The program objectives were: well defined						vague
2. I feel the program objectives were attained: fully						not at all
3. The overall quality of this program was: high						low
4. The number of topics presented during this program was: just right						insufficient
5. The presentations and activities of this program were: beneficial						not beneficial
6. The pace of the program sessions was: excellent						poor
7. The material presented during this program was: applicable						not applicable
8. Participant involvement during this program was: high						low
9. The majority of program time was taken up with: group participation						lecture
10. The program climate promoted freedom of expression. strongly agree						strongly disagree
11. My expectations for this program were: fulfilled						unfulfilled
12. Interaction between the program staff and myself was: high						low
13. Interaction between other participants and myself was: high						low
14. I feel I will utilize the material presented in this program: fully						not at all
15. I would recommend this program to others: fully						not at all

Appendix N

1071 Meadowbrook
Troy, Missouri 63379
January 23, 1989

Ms. Beverly Clevenger
The Learning Exchange
2720 Walnut
Kansas City, Missouri 64108

Dear Ms. Clevenger,

Last July I was a participant of your two-day workshop on cooperative learning at the Belton-Raymoor Elementary School. Even though I was the only high school teacher present, I gained valuable information for group learning at any age level.

At that time, I asked your permission to use some of your instructional material in a masters'project thesis and workshop I would be conducting for my own school district. You did graciously agree to that use, but I have been instructed that written permission is needed.

I hope it will not inconvenience you to supply that written permission, so that I may include it in my thesis.

Your material will be very helpful in my instruction, particularly the Quibblean spelling rules which will be used in a demonstration of STAD. I have included copies of the material which will be duplicated.

Thank you for your time.

Sincerely,

Mrs. Kathy Boessen

Kathy,

Sorry it has taken me so long to get back to you. You are obviously a woman on the move - I tried a few times calling your home number in the evening, you were not there to answer.

About using the materials I shared with you — all of the materials are collections from resources and not my original information. The comparison between Slavin & Johnson is from Cadre members. Deciding on the Size of the Group is from Johnson & Johnson, as is Cooperative Learning Teacher's Role (I merely put into into new "chunks"). Quibblean Spelling is from Slavin. I do have original information and

designs, however, they have been developed since I did the Belton-Raymore workshop.

I'm sorry I have not been more help to you.

Bev Clevenger

1071 Meadowbrook
Troy, Missouri 63379
January 22, 1989

Dr. Robert E. Slavin
Center for Research on Elementary and Middle Schools
The Johns Hopkins University
3505 North Charles Street
Baltimore, Maryland 21218

Dear Dr. Slavin:

In February, 1988 I attended a workshop on cooperative learning in Columbia, Missouri, sponsored by the Missouri State Teachers' Association. The presenters did an excellent job instructing us in the various methods set forth in Using Student Team Learning, 3rd Edition.

Consequently, I am now preparing my masters' project at Lindenwood College, St. Charles, Missouri on cooperative learning. As part of my project, I will be giving a workshop on the same topic. I am asking your permission to use some of your instructional material, tally sheets, and explanations of STAD and TGT especially in my presentation and in the packet of materials they will receive as well as my written project.

I hope to convey to the participants your enthusiasm (and mine) for group learning and the positive results they and their students will receive. I am sure your material will certainly help in my endeavor.

Sincerely,

Kathy Boessen

Mrs. Kathy Boessen

PLEASE FEEL FREE
TO COPY ANYTHING YOU
LIKE FROM YOUR STL
FOR YOUR WORKSHOP

- Bob Slavin

1071 Meadowbrook
Troy, Missouri 63379
February 6, 1989

Dr. Roger Johnson
Dr. David Johnson
Dr. Edythe Johnson Holubec
Interaction Book Company
7208 Cornelia Drive
Edina, Minnesota 55435

Dear Doctors:

Since reading your book, Circles of Learning, and participating in numerous workshops where cooperative learning is stressed, I have become convinced of its value for both students and teachers. As a ninth-grade English and social studies teacher, I find myself often using cooperative learning groups and am very pleased with the results both academically and socially.

In March, 1989, I will be presenting a series of workshops on cooperative learning to our school personnel. At the workshop I will be giving a packet of materials which I know all will find useful. I hope to use some valuable information which is presented in your books Cooperation in the Classroom and Warm-Ups, Grouping Strategies, and Group Activities which I purchased last summer. Could you please give me permission to copy material from these books and distribute at this workshop?

Also, I will be videotaped giving the workshop, and this videotape plus accompanying thesis will be placed in the library at Lindenwood College where I am obtaining my masters' degree in education.

Sincerely,

Kathy Boessen

Mrs. Kathy Boessen

Best of luck with your workshop & degree! Please be sure to reference all Johnson/Johnson/Holubec material and have available.

INTERACTION BOOK COMPANY
7208 CORNELIA DRIVE
EDINA, MN 55435
(612) 831-9500

Thanks for your letter. Linda M. Johnson Orig. to IBC

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