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Cooperative learning and the implications for gifted students

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Cooperative learning and the implications for gifted students

Abstract

In today's educational community, several "buzz" words surface daily in the layperson's journals. Some of the terms are curriculum-based measurement (taking basal texts and devising a measurement tool to evaluate one school district's students), global education (taking into consideration the need to address skills which will enable students to fit into the world marketplace), whole-language (incorporating all language arts skills along with the chosen reading texts or stories into the total curriculum), grouping (placing students in homogeneous groups to teach them a skill), and cooperative learning. The last term is not new, however. It has been present for many years, but it seems to be enjoying a resurgence in the contemporary classroom. With the new stress on "banning" ability grouping, cooperative learning is viewed as a way to fill this void.

COOPERATIVE LEARNING AND THE IMPLICATIONS FOR
GIFTED STUDENTS

A Graduate Project
Submitted to the
Department of Curriculum and Instruction
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Introduction and Statement of Purpose

In today's educational community, several "buzz" words surface daily in the layperson's journals. Some of the terms are curriculum-based measurement (taking basal texts and devising a measurement tool to evaluate one school district's students), global education (taking into consideration the need to address skills which will enable students to fit into the world marketplace), whole-language (incorporating all language arts skills along with the chosen reading texts or stories into the total curriculum), grouping (placing students in homogeneous groups to teach them a skill), and cooperative learning. The last term is not new, however. It has been present for many years, but it seems to be enjoying a resurgence in the contemporary classroom. With the new stress on "banning" ability grouping, cooperative learning is viewed as a way to fill this void.

The purpose of this paper is two-fold. First, it reviews the literature to develop a general overview of cooperative learning. Included in this section are an historical

perspective of cooperative learning, descriptions of various cooperative learning models, attributes of cooperative learning, and the effect of cooperative learning on academic achievement and the affective domain. Second, the positive and negative implications of cooperative learning for gifted and talented education are drawn from the literature.

While cooperative learning is not a new concept and while it reflects an historical perspective, the reviewer has elected to focus, for the most part, on the current literature which parallels the present gifted education movement, 1978 to the present. Such a limitation seems to fit best the stated purposes of this paper.

General Overview of Cooperative Learning

History of Cooperative Learning

Cooperative learning is not a new concept. In Johnson, Johnson and Holubec's book, Circles of Learning (1990), it is stated that cooperative learning has been in existence for centuries. For example, they tell us that the Bible and the

Talmad both speak of the ability to do better with the help of one's fellow man. They recognize Johann Amos Comenius who, in the 1600s, believed that students would do better if taught by fellow students. In the 1700s, Joseph Lancaster and Andrew Bell are recognized as using cooperative learning groups in schools in England, with a subsequent transfer of the concept to the United States where they opened a school in New York City in 1806. It was Colonel Francis Parker, according to this source, who advocated the use of cooperative learning during the 1800s while he served as superintendent of schools in Quincy, Massachusetts. During this time, thousands of people visited his schools to observe cooperative learning in progress. In addition to Parker's contributions to cooperative learning, John Dewey used the cooperative learning technique in his project method of instruction.

In 1949, Morton Deutsch did extensive research on the effects of cooperative learning on students (cited in Johnson & Johnson, 1985). Using ten experimental groups, he compared this

technique to the competitive structures of a classroom. Three possible educational structures were addressed in his research: cooperative, competitive, and individualistic. In his research he found that greater group or organizational productivity occurs when groups work cooperatively rather than competitively. His study also pointed to the fact that other qualities were affected . For example, students were more likely to communicate ideas with group members, were more friendly, and possessed pride in the group's work. He noted that competitiveness produced a greater sense of personal insecurity than did the cooperative ventures-and concluded that the competitive grading system used in the classrooms should be re-examined, since it did not seem to achieve the affective goals for students which would compliment the academic goals of the classroom.

Teaching Models in Cooperative Learning

The review of the literature reveals seven different models that teachers use or have used in implementing cooperative learning in their classrooms. Five of the models presented in this review have been written by Robert Slavin. Linda Mungar (1990) presents an overview of Slavin's five models and two other models by Shlomo and Yael Sharan and David and Roger Johnson. The following brief descriptions are from her overview.

Mungar first points to Student Team Learning as an approach to cooperative groups. Robert Slavin has developed five models to implement this approach. The first Slavin model (De Vries and Slavin, 1978) is Teams-Games-Tournament (TGT). It uses four to five member heterogeneous teams assigned by the teacher. The students receive regular instruction and then complete a worksheet in their heterogeneous group. Students then play academic games with others of similar ability, and

these points are then added to the team score.

Points are also given for improvement.

The second student team model developed by Slavin (Slavin, 1978) is the Student Teams Achievement Division (STAD). In this model there are also 4 to 5 member heterogeneous teams assigned by the teacher. The students receive regular instruction followed by group work on a worksheet which covers the lesson. Each student then completes a quiz on the material. The team's score is determined by the improvement each student has achieved over a prescribed length of time.

Slavin (1986) also has devised the Jigsaw II model which uses student teams. It is a revised edition of the Jigsaw model by Aronson, Blaney and Sikes (1978). This model uses 4 to 5 member groups assigned by the teacher, and each member has a specific topic or section of material to learn. Members of different teams with the same topic or section of material meet in "expert groups" before teaching the material to teammates.

The groups then take a quiz and individual and group scores are calculated.

Cooperative Integrated Reading and Composition (CIRC) is Slavin's fourth model for student teams in cooperative instruction as presented in the review by Mungar. The original research was completed by Stevens, Madden, Slavin and Farnish (1978). This model is implemented in the areas of reading, writing, and language arts for grades two through six. It is a reading program using existing basal texts but replaces workbooks with team activities. The writing/language arts component uses a writing approach in which teams plan, draft, revise, edit, and publish a group's written work.

The fifth Slavin student teams model is Team Accelerated Instruction Mathematics (TAI) based upon research completed by Slavin, Leavey, and Madden (1986). In this model TAI combines cooperative learning with individualized instruction for grades three through six in the subject area of mathematics.

Group Investigation or Small-Group Teaching by Shlomo and Yael Sharan (1976), the sixth approach discussed by Mungar, incorporates a five step approach. Step One involves identifying the topic and organizing pupils into groups. Groups are formed according to their interest, and each group is heterogeneous. In Step Two, students interact with each other to plan the learning activity. Step Three finds the groups carrying out their investigation. The students gather information, and each group member is expected to contribute to the group effort. Stage Four involves the group in preparing a final report. The group members decide what and how they will make their presentation. Step Five is the actual presentation to the class. The audience is actively involved and completes an evaluation of the presentation. Students share feedback of the presentation, and the teacher collaborates with the students on the evaluation.

Mungar (1990) refers to the Learning Together Model for Cooperative Learning devised by Roger and David Johnson (1987). The Johnsons' model

Includes five basic elements: positive interdependence, individual accountability, group processing, social skills, and face to face interaction. To implement these five elements successfully, the teacher plays an important role in forming base groups. The group is heterogeneous and has four or five members. After direct instruction by the teacher, the group is directed to complete a task. Each team member is assigned a task to do such as checker, recorder, materials-handler or encourages. This group then works together to achieve the group goal with individual or group mastery in hopes of receiving a group reward. The Johnsons and Holubec (1987) suggest that the expected social skills of the individuals or groups need to be taught directly before breaking into base groups to help insure individual and group success.

Attributes of Cooperative Learning

Depending upon the model that one chooses to use in the classroom, different outcomes can be

expected. Each of these models can be used to elicit different group behaviors and to achieve different goals (Sharan, 1980). The outcome using one of the cooperative learning methods could produce group goals, team competitions, or task specializations, dependent upon their individual attributes.

In examining the motivationalist perspective, Slavin (1989c) suggests that two elements are required to make cooperative learning more effective than traditional instruction: group rewards and individual accountability. Classroom research on cooperative learning clearly supports this view. Of twenty-eight studies of cooperative learning methods cited by Slavin (1987c) using group rewards, twenty-five of these studies found greater achievement with group rewards and individual accountability; three studies found no difference.

According to Slavin (1981) the methods mentioned above (STL, STAD, Jigsaw II, CIRC, Group Investigation, CO-OP, and Learning Together) share four positive characteristics:

1. The cooperation required among students prevents one student from doing most of the work for the others.

2. In spite of the cooperative nature of the groups, each student must learn the material in order to improve his or her own score and the team score.

3. Even low achievers, who may not contribute greatly, can receive recognition since scores are based on individual improvement.

4. Students are motivated to cooperate since they receive not just a grade on a piece of paper, but recognition from the teacher and the class.

Educators often are asked to choose which teaching method they prefer to promote achievement and which they prefer to promote social development. As previously presented in this review, cooperative learning is one teaching method from which to choose whether to promote the academic or the social development of students or both.

So what is it that needs to be present to make cooperative learning work in the classroom?

Slavin and Brandt (1987c, 1987) list six attributes that are necessary in order for cooperative learning to be successful:

1. Group rewards: These rewards give the group a reason to cooperate and work together to help the group succeed.

2. Individual accountability: This can be achieved by figuring group scores on an activity according to the total of each individual's score.

Therefore, the group score and each individual's score is important, thus causing the group to work together and care about the success of fellow group members.

3. Positive interdependence: Positive interdependence correlates with individual accountability. According to Johnson and Johnson (1987), group members must demonstrate their concern about each individual's learning.

4. Verbal face-to-face interaction: Within cooperative groups, each member will have to be responsible to guide fellow members through a lesson by explaining and sometimes arguing about the topic to be learned.

5. Social skills: Prior to being placed in cooperative groups, students will need to be taught appropriate social skills in order for the group to be successful in cooperative learning. Some of these skills include leadership, communication, trust building, and conflict resolution.

6. Group processing:- Each group should receive immediate feedback as to how well the group was working together. Also, explanation is needed if there are areas on which the students need to concentrate the next time they are working in their cooperative groups.

To summarize, each cooperative learning model is designed with certain group outcomes in mind. Also, according to experts in the field, each

cooperative learning model has certain attributes which, if followed correctly, will insure success with that model. Educators need to have certain objectives and outcomes in mind when choosing a particular cooperative learning model. Among these are group rewards, individual accountability, positive interdependence, verbal face-to-face interaction, social skills and group processing.

Current Use of Cooperative Learning

The current movement to eliminate tracking has increased the popularity of cooperative learning as a means of serving all students within the regular classroom. But what characteristics of cooperative learning have caused this recent increase in its use?

Roy and Lindren (1989) have reported on the completion of a review of recent research on the topic of school improvement by the Metropolitan Educational Cooperative Service Unit of Minnesota. This research review focuses especially on

instruction, learning, school organization and climate, and the planned changes of schools. Research published since 1975 was given special attention in this particular review. Upon Roy and Lindren's examination of the findings and recommendations concerning the characteristics of effective schools, they emphasize that cooperative learning should be used as one of the teacher's classroom techniques.

The appropriate and effective use of cooperative learning groups also meshed with four of the other characteristics listed in this review. First, time-on-task was identified as an important aspect of effective schools. Roy and Lindren state that recent research in cooperative learning has shown that the amount of time on task is increased when students are engaged in cooperative learning activities as compared to students in an individualized setting. They also state that retention is improved with cooperatively structured activities.

Second, Roy and Lindren point out that a positive school climate was identified as an

important element in effective schools. According to their research, cooperative learning groups have been found to create positive attitudes toward school, other students, and the subject area in which the groups are working. Students accomplished more and felt better about themselves and school when cooperative learning techniques were used.

Roy and Lindren's report also points to the fact that heterogeneous classes and groupings were found to exist in effective schools. Cooperative learning group members typically consist of high, middle, and low ability students. The differences in members' abilities seem to force the group members to interact and share their knowledge.

The fourth effective school characteristic mentioned in Roy and Lindren's work was a safe and orderly environment. Teaching positive social skill behaviors to members of cooperative learning groups created a positive atmosphere. According to these researchers, cooperative groups seem to reinforce the idea that effective behaviors are necessary for school success. If students are

Involved in creating rules for cooperative groups, they also will be responsible for their conduct and will take a more active part in school activities.

What is the difference, then, between utilizing small groups in the classroom and using cooperative small groups? Some teachers tend to believe that they are using cooperative learning groups in their classrooms when, in actuality, they are not. When many teachers first hear about using small cooperative groups in the classroom, their response is, "Oh, I do that." Is any group a cooperative group? Does mere physical proximity determine cooperative interaction?

The following chart (Johnson, Johnson & Holubec, 1990) examines the compared differences and attributes of structured cooperative groups and other small groups used in the classroom (p. 16).

<u>Cooperative Groups</u>	<u>Small Classroom Groups</u>
---------------------------	-------------------------------

Positive interdependence	No interdependence
Individual accountability	Hitchhiking
Heterogeneous members	Homogeneous members
Monitoring	No consistent monitoring
Processing interactions	No processing
Teacher intervention to teach social skills	No cooperative skills taught
Responsible for others	Responsible for self

According to Johnson, Johnson and Holubec, in order to implement cooperative learning successfully, all seven items from the Cooperative Groups section of the chart must be present. It would appear that, if teachers were to evaluate their teaching methods using the above criteria, many would realize that they are not utilizing cooperative learning.

If a teacher decides to use cooperative learning, how does he or she become familiar with cooperative learning and ultimately implement the teaching strategy in the classroom? Susan Ellis, teacher leader in the Staff Development Center of

the Greenwich, Connecticut, Public School District, has provided teachers with training in cooperative learning since October of 1983 (Ellis, 1985). The training design for implementing cooperative learning in this Connecticut district follows these six steps:

1. An overview of theory and research on cooperative learning is presented to the teachers prior to their becoming involved with cooperative learning. Practical hands-on experiences are used to familiarize the teachers with this teaching technique.
2. Teachers who show further interest in cooperative learning are provided with training during school time.
3. In-school support is given to each teacher using the cooperative learning techniques. Administrators and fellow teachers are available to provide input.
4. Continuous support is given by the school district during each step of implementation.

5. Additional training is available after the initial training sessions to update the teachers on current cooperative learning techniques.

6. Teachers within the school district become trainers in the area of cooperative learning.

Ellis goes on to state that her district has learned over the years that cooperative learning is a valuable teaching strategy. She feels that it benefits students both academically and socially.

From the literature, it would seem that cooperative learning is being initiated in classrooms with some frequency due in part to its positive impact upon school improvement and the effective schools movement. Many districts are eliminating homogeneous grouping and replacing it with cooperative learning (Willis, 1990). It does need to be noted that cooperative groups have distinct differences from small classroom groups and that some school districts find it necessary to inservice their staff and to provide support

for their teachers in order to develop awareness of these differences.

Cooperative Learning and Academic Achievement

Academic achievement is an area about which teachers and parents are constantly concerned. Research on peer-tutoring indicates that teaching a fellow student helps tutors learn the material (Slavin, 1984). However, simply studying together does not necessarily make a difference in achievement. There needs to be more direction to qualify as a cooperative effort (Johnson & Johnson, 1982).

All grade levels and ages have been included in the research on cooperative learning and achievement, and a diverse range of subjects have been used: mathematics, language arts, writing, reading, social studies and science. It has been suggested that the achievement effects are equivalent for high, average, and low achievers, for boys and for girls, and for students of various ethnic backgrounds (Slavin, 1987a).

One difference did surface in the research findings examined for this review of the literature. It is evident that achievement is greater when group rewards are present. Thirty-three of thirty-eight studies completed found greater achievement when group goals were present. Only four of twenty studies were successful without group rewards or goals (Slavin, 1987a). A German study, cited by Slavin, found that providing recognition to student teams based on the sum of their individual learning increased student achievement. The study also found that adding group rewards based on individual learning did lead to increased achievement.

Foyle and Lyman (1989) studied the various cooperative learning methods in regard to achievement. Of the five methods studied, Jigsaw had the least achievement gains. The Student-Teams-Achievement Divisions had 89% success, Teams-Games-Tournament had 75% success, Learning Together had 73% success and Group Investigations had a success rate of 67% with achievement.

Cooperative Learning and the Affective Domain

Some of the literature indicates that cooperative learning promotes a positive affective environment. Foyle and Lyman (1989) found that cooperative learning promoted more frequent cross-handicap interaction with others in a classroom. Their study also revealed that cooperative learning generated a more positive attitude toward the subject matter being studied by the students and that the intergroup cooperation promoted more positive cross-sex and cross-ethnic relationships.

In other research, cooperative learning was shown to produce positive self-esteem, positive race relations, an increased liking of school, a mutual concern for each other, and a higher regard for teachers (Slavin, 1980). Positive effects of Jigsaw on race relations were found in Slavin's Study No. 17. In this study thirteen integrated classrooms (ten experimental and three control) were used. Students involved in Jigsaw classes increased the positive feelings toward other group

members more than non-groupmate classmates.

Assigning students to groups guaranteed ethnic heterogeneity. To evaluate these attributes, two subscales of the Coopersmith Self-Esteem Inventory were used and follow-ups of intergroup friendships were conducted months after the studies were completed.

In the Johnsons' research (1982) that compared cooperative learning to a competitive learning structure, cooperative learning was determined to be an important method to create constructive peer relationships. Such peer relationships are vital for the following to occur:

1. The socialization of values, attitudes, competencies, and perspectives.
2. Psychological health.
3. The mastery of social competencies.
4. The reduction of isolation and alienation.

5. The reduction of the occurrence of socially dysfunctional behavior.
6. The promotion of the occurrence of positive behavior.
7. The mastery of impulses such as aggression.
8. The development of sex-role identity.
9. The emergence of perspective-taking ability.
10. The acquisition of high educational aspirations.

Cooperative Learning and the Gifted Student

Many educators agree that the low-achievers and the middle-achievers have much to gain from being exposed to a cooperative learning experience (Johnson, Johnson, & Holubec, 1987). But what about the high-achievers and the academically gifted? Are we to assume the same for them?

Most of the literature reviewed for this paper deals with the general population of students. However, some authors did address the

positive and negative effects of involving gifted students in cooperative learning experiences. A summary of their findings follows.

Positive Effects of Cooperative Learning Experiences for the Gifted

The review of the literature reveals that the use of cooperative learning strategies can have positive effects on the education of gifted students. For example, some works state that high achievers working in heterogeneous cooperative groups have never done worse than their counterparts working competitively or individualistically and that, frequently, they did better (Johnson, Johnson & Holubec, 1987).

Kohn (1987) states that of four separate studies completed by the Johnsons, three of the studies showed that gifted children achieved at a higher level when they worked with medium- and low-ability students. These studies also stated that the behavior which correlates most highly with achievement in groups is the giving of

explanations to the other students, not just getting the explanations from the teacher.

According to Johnson and Johnson (1989), when a gifted and talented student is placed in an interdependent cooperative group with middle and low ability students, the high ability student is required to explain the material to other group members. They go on to state that this kind of explanation requires the gifted to think at the application level and above. Thus, it could be inferred, to teach and explain material means that the student must understand that material in more depth.

Learning social skills is another benefit of cooperative learning for the gifted student (Johnson, Johnson & Holubec, 1987). Many of the gifted have been left to work on their own and, as a result, have not developed effective interaction skills. The gifted child may not be looked upon favorably in a competitive situation, but may be a welcomed partner in a cooperative setting. They state that talented students need to learn how to work with others, how to communicate effectively,

how to form trusting relationships, how to resolve conflicts, and how to provide leadership with others in the group.

Johnson, Johnson & Smith (1982) feel that gifted students benefit from cooperative learning groups in many ways. Their achievement is not penalized as a result of working in groups, for they achieve at the same level or higher than the gifted in the regular classroom. They are required to process information at a higher level, and they are learning important interpersonal social skills which will help them to interact effectively at work, at home, and in the community.

Johnson, Johnson and Holubec in their book, Structuring Cooperative Learning: The 1987 Lesson-Plan Handbook, have made these suggestions for successful participation of gifted students in cooperative groups:

1. Structuring role interdependence: Have everyone in the group responsible for part of the learning process.

2. Adapting lesson requirements:

a. Use different criteria for each group to be successful.

b. Vary the amount each group member is to master.

c. Give each group member different assignments and then average the percentage of correct responses to use as the group score.

d. Use improvement scores.

3. Ensuring constructive group members: Think carefully about the students that are put together into a group. A successful group needs to be able to work together in a "cooperative" manner. Personalities should not clash. For example, it may be more productive to match high achievers with middle- and low-achieving students who will need explanations and elaboration of the material being learned.

4. Rewarding interpersonal skills development within each group: Praise and reward the groups who "get along well with others". Watch to see which groups listen to each other's explanations;

praise each other's work and contribute to the group's assignment.

5. Giving bonus points for enriching the learning of others: If high achieving students know that their group may receive bonus points for enriching group members learning, they may be motivated to broaden their study of a topic in order to bring in material not included in the regular class material.

6. Creating clear positive interdependence:

Simply because each member of the group has his or her own responsibilities does not mean that each person feels mutually responsible for his or her teammate. Positive interdependence requires successfully collaborating with team members.

7. Promoting academic acceleration to more advanced material: Some students may need to study material above their grade level. If that is the case, they could be placed in homogeneous cooperative groups to study the more advanced material.

Johnson and Johnson (1989) state that parents of high-achieving students are not easily convinced about the qualities of cooperative learning. The parents are told that heterogeneous cooperative groups provide high-achieving students with greater opportunities to develop social skills, leadership abilities, and become accepted, appreciated, and liked by their classmates. They state that parents, however, usually want assurance about achievement.

In their own research on achievement, Smith, Johnson and Johnson (1982) concluded that gifted students, along with handicapped and regular students, showed positive correlations on achievement and retention. To help parents understand this, Johnson and Johnson (1989) suggest the following:

1. High-achieving students should not always work in heterogeneous cooperative groups. There are times when they should be allowed to work alone at an accelerated pace. There are also times when the gifted students should be allowed to compete.

2. In order to maximize the achievement of gifted students, they should be integrated into heterogeneous learning groups and work with a variety of peers. The results of their research also indicate that the achievement of gifted students is usually higher when gifted students work in cooperative learning groups, rather than individualistically or competitively.

3. By working in homogeneous groups with other gifted students, gifted students are not given the opportunity to explain the subject matter to the others. This may lower the level of achievement and retention.

4. One disadvantage of working in heterogeneous groups is that the quantity of work completed may decrease.

5. High achievers in the real world of business, industry, and science tend to be low on competitiveness but high on the personality traits of wanting to take on challenging tasks and valuing hard work. Researchers have found that

competitiveness typically lowers job performance. Competitiveness, furthermore, lowers creativity.

In summary, the literature shows that cooperative learning can be used successfully with gifted students in the classroom according to Slavin and Johnson and Johnson. The positive factors for the gifted students are three-fold. First, gifted students have not done worse than their counterparts in the regular classroom as far as achievement is concerned. Second, the gifted students use higher level thinking skills when in cooperative groups. Finally, they reap the benefits of working with a variety of ability groups. By working with these various groups, the affective aspect of cooperative learning is seen to be beneficial.

Negative Effects of Cooperative Learning Experiences for the Gifted

From an opposite perspective, one can find very different opinions about the use of cooperative learning with gifted students. Gifted education advocates and cooperative learning advocates have been using this subject as a sparring ground. The final section of this literature review presents some evidence from the recent literature which seems to indicate that gifted students do not benefit from being in cooperative groups.

In a recent ASCD Update (1990), Scott Willis presents the opinions of a variety of gifted educators. He discusses the comments of William Gustin, Director of the Center for Talented Youth at Johns Hopkins University, who believes that gifted programs are feeling the crunch in budgets since the gifted programs are being cut. He feels that this comes as a result of cooperative

learning being used as a substitute for gifted programs.

In the same article, Linda Silverman, Director of the Gifted Child Development Center in Denver, attributes the decline of gifted programs to the gradual elimination of "tracking" or ability grouping. Tracking, she feels, categorizes students into ability groups and keeps them in these groups for many years.

In responding to the Willis Inquiry, John Feldhusen, Director of the Gifted Education Resource Center at Purdue University (Willis, 1990), states that placing gifted students in heterogeneous groups slows the pace at which the gifted students must work and repeats subject matter which they may already have learned. He also criticizes using the gifted students as "assistant teachers" on the basis that it is not ethical because gifted students "should have the right to work to their potential" (p.8). Feldhusen also is of the opinion that the research does not support the idea that gifted students need to learn the social skills needed to work in

groups. He states that the gifted students are not "peculiar ducks who need to be taught proper social behavior" (p.8).

In another Journal article, "Cooperation or Exploitation? The Argument Against Cooperative Learning for Talented Students", Ann Robinson (1990) cautions educators about the limitations of cooperative learning, its misuse and overuse with the population of talented students. She states that the research completed on cooperative learning is not directed specifically toward gifted students; and if it does focus on gifted students, the populations of identified gifted students varies so that it is difficult to obtain accurate readings of the effects of cooperative learning on this particular group. In the same article, Robinson states her belief that positive effects for higher-level learning or achievement for the gifted students is difficult to find in the research. One study only presented a difference in effect size as .02 between whole-class instruction and cooperative group instruction. As a rule of thumb, .30 to .60 only

represents a modest effect in analyzing research. Therefore, stating that the effect size was .02 in the cooperative learning study indicates that achievement was not significantly increased.

Robinson also reinforces the statements made in the ASCD Update. She feels that the gifted students are being exploited as "explainers" for the groups. A second type of exploitation to which she refers is the risk of stereotyping gifted students as the ones who cannot get along with the other students, who do not have many friends, and who do not have the appropriate social skills.

The reviewed literature shows that some educators of gifted students have great reservations about the rapid and saturating spread of cooperative learning within their field. They do not object to the concept of cooperative learning and are quite aware of the success recorded in the research. However, they are concerned about the possible exploitation of gifted students as student teachers, the loss of opportunities for the gifted students to work to

their potential, and the possibility that gifted students may be stereotyped as socially inept.

Summary, Conclusions and Implications for Further Research

Summary

The purpose of this review of literature was to provide a general overview of cooperative learning and to gain a perspective of its effect on gifted students. While limited in scope by the small number of articles dealing specifically with the use of the strategy with the gifted and talented, some generalizations concerning cooperative learning were developed as well as some positive and negative educational implications for gifted students.

First of all, cooperative learning in some form has been used in classrooms for many years and has been a topic for research in a variety of situations. Recently, cooperative learning has entertained some renewed interest in the

educational community, particularly as related to the effective schools movement.

Second, a variety of models are employed in cooperative learning at present. Slavin's Teams-Games-Tournament, Student Teams Achievement Division, Jigsaw II, Cooperative Integrated Reading and Composition, Team Accelerated Instruction, Group Investigation by the Sharans seem to be used with some frequency. In addition, David and Roger Johnson developed the Learning Together Model which emphasizes the grouping of heterogeneous teams to accomplish a group goal.

Third, each cooperative learning model is designed with certain group outcome in mind and possesses certain attributes which will help to insure success within the use of that model. The major attributes revealed by the literature are group rewards, individual accountability, positive interdependence, verbal face-to-face interaction, social skills, and group processing. The literature also makes clear that educators need to have certain objectives and outcomes in mind when choosing a particular cooperative learning model.

Fourth, the literature shows that cooperative learning is being initiated in classrooms with some frequency, due in part to its positive impact upon school improvement and the effective schools movement. Many districts are eliminating homogeneous grouping and replacing it with cooperative learning. Some researchers emphasize that it is necessary to remember that cooperative groups have distinct differences from small classroom groups. The literature also points to the fact that more school districts are inservicing their staff and providing support for those teachers choosing to introduce cooperative learning in their classrooms.

Fifth, the literature review reveals that academic achievement is an important issue when examining cooperative learning. Parents and teachers alike want to know if the students working in cooperative groups will make the same progress as their peers. The limited sources available indicate that achievement tends to be higher when group rewards are present. It also has pointed out that the achievement effects can

be equivalent for high, average and low achievers, for boys and girls, and for students of various ethnic backgrounds. According to some, achievement gains may differ according to the cooperative learning model being used.

Sixth, it can be summarized that cooperative learning can promote a positive affective climate in the classroom. Involved students seem to demonstrate a more positive attitude toward school and their peers. It also has been shown, in some cases, to improve positive ~~rate~~ relations among students (Foyle and Lyman, 1989).

Finally, cooperative learning is being used as a teaching strategy for gifted students. The work of Slavin (1980) and Johnson and Johnson (1987) point to three positive aspects of that use: (1) Gifted students have not done worse than their counterparts in the regular classroom as far as achievement is concerned, (2) gifted students use higher level thinking skills when in cooperative groups, and (3) gifted students reap the benefits of working with a variety of ability groups. From a negative point of view, some

educators of gifted students are concerned about the possible exploitation of gifted students as student teachers, the loss of opportunities to work to their potential, and the possibility that gifted students may be stereotyped as socially inept.

Conclusions

After reviewing the literature, one can conclude that cooperative learning has become a popular teaching strategy. There are many models of cooperative learning from which to choose. However, to use these models in order to achieve the highest success, school districts and individual teachers need to become very familiar with the structure of each model and decide whether it fits the situation and students with whom it will be used. For example, will cooperation be used to increase self-esteem or will it be used to increase student achievement? The research on each of these models should be evaluated to observe whether it matches with the

desired outcomes and objectives of the individual learning environment.

Another conclusion which may be drawn from the literature is that cooperative learning probably has not been designed as a specific replacement for a gifted program. Gifted students can participate successfully in cooperative learning, but they should be given other pathways to display their individual talents. A quote from Aneurin Bevan summarizes it well: "We know what happens to people who stay in the middle of the road, they get run over." This should not happen to the gifted students in the regular classrooms today. Cooperative learning can be one tool to use in the regular classroom, but there is some evidence which would lead to the conclusion that it should be combined with other alternatives to meet best the needs of the gifted and not used as the only strategy.

Implications for Further Research

From the review of the literature, it is evident that more research needs to be pursued in the area of cooperative learning as to its effects upon gifted students. Robinson (1990) states that a computer search of the PSYCHINFO from 1967 to the present found 181 entries on cooperative learning, only two of which examined giftedness. A similar ten year search of ERIC found 295 entries on cooperative learning and only three of these alluded to gifted students. Without specific research to which to refer, it is very easy to overgeneralize about what the effects "could" be for the gifted population. An additional problem is that much of the research has been initiated by those individuals who are already convinced of its effectiveness--Robert Slavin and David and Roger Johnson.

Following is a list of possible questions to be answered through additional research on the relationships between gifted education and cooperative learning:

1. How does research data differ when the gifted students being studied have been identified by different criteria?
2. How does the growth in self-esteem of the gifted student compare when he or she works in cooperative groups versus competitive groups?
3. Is cooperative learning being used successfully in the implementation of any models of gifted education?
4. What are the positive or negative effects of cooperative groups containing only gifted children?

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