

Reprint September 1979: Learning Together and Alone: Cooperation, Competition and Individualization¹

Karl Smith²
College of Education
University of Minnesota



Introduction

Whether it is in preschool, elementary or secondary school, or college learning situations, there are three important types of interaction: the interaction between the teacher and the students, the interaction between the students and the curriculum materials, and the interaction among students. Both the teacher's role and the curriculum have received a great deal of attention in instructional theory, but the student-student interaction patterns have largely been ignored and often mismanaged by educators.

Teachers can structure student learning goals so that students are in the same boat together trying to help each other learn, are in a win-lose struggle to see who is superior and who is inferior, or are all facing the learning situation alone. By structuring student learning goals cooperatively, competitively, or individualistically, teachers control whether students are positively interdependent, negatively interdependent, or independent of each other during instructional activities. Technically, cooperative learning is based on a positive correlation among goal attainments, competitive learning is based on a negative correlation among goal attainments, and individualistic learning is based on independent goal attainments (Johnson and Johnson, 1975). The way in which teachers structure student learning goals determines how students interact with each other. Student interaction patterns are a major determinant of the cognitive and affective outcomes of instruction. The first step during teaching is always setting the appropriate goal structure to maximize the achievement of instructional goals. Setting the appropriate goal structure for each lesson should be come as automatic for teachers as turning the key to start a car.

In this introduction we summarize some of the major research finding on the relative effects of cooperative, competitive, and individualistic goal structures and discuss specific procedures teachers can use in establishing cooperative learning situations. Keep in mind that while we emphasize the use of cooperatively structured learning because of its importance and underutilization in the past, all three goal structures can be used appropriately and

effectively. Teachers are well-advised to use all three goal structures and to instruct students in the basic skills necessary to function in all three types of situations. The importance and utility of the cooperatively structured learning does not mean that competitive and individualistic instruction should never be used.

Interaction Patterns And Outcomes

A great deal of research indicates that the appropriate use of cooperative, competitive, and individualistic goal structures is not only an important instructional strategy, it may be the most powerful in terms of affecting both cognitive and affective learning outcomes. Ignoring this research (and their common sense) teacher educators have often misinformed and poorly prepared teachers to use all three goal structures in systematic and appropriate ways. In our book for teachers (Johnson and Johnson, 1975) and in a previous journal article (Johnson and Johnson, 1974) we reviewed more than 350 studies on the effects of cooperative, competitive, and individualistic goal structures. We now have collected over 600 studies that demonstrate that with any curriculum, with any age of student (from preschool through graduate school), and in any subject area, appropriately structuring learning goals is an extremely powerful teaching strategy and has significant effects on a broad range of learning outcomes. Without a doubt most classroom learning should be structured cooperatively. Some of the major research findings are (Johnson and Johnson, 1974, 1975; Johnson, 1979):

1. The successful mastery, retention, and transfer of concepts, rules, and principles is higher in cooperatively structured learning than in competitively or individualistically structured learning. For the day to day conceptual and problem-solving learning, cooperation promotes higher quality and more quantity of learning. This is especially true for students of average and low ability, although the learning of gifted students is in no way lessened by spending much of their time learning in heterogeneous cooperative learning groups.

¹Presented during the Professional Development Group Session at the 25th Annual NACTA Conference, University of Minnesota. St. Paul, June 10 - 13; based on a paper developed by David W. Johnson and Roger T. Johnson of the University of Minnesota, entitled "Cooperative Learning: The Power of Positive Goal Interdependence."

²Counselor in College of Education

2. Student motivation to learn will be higher more intrinsically-oriented, and less extrinsically-oriented in cooperative learning situations than in competitive or individualistic ones.

3. The cognitive and social development of students is more facilitated by cooperative than by competitive or individualistic learning experiences. The ability to take other people's perspectives, to communicate effectively, to resolve conflicts, and to relate effectively are all encouraged more by cooperative than by competitive or individualistic experiences.

4. Student attitudes toward teachers, other school personnel (principals, teacher aides, counselors), subject areas, and school are more positive in cooperative compared with competitive and individualistic learning experiences. Not only do students who are learning cooperatively like teachers better, they feel more accepted personally and supported academically by teachers.

5. Students like their classmates more in cooperative than in competitive or individualistic learning situations, including classmates from different ethnic groups, the opposite sex, different social classes, and classmates who are intellectually and physically handicapped. Students in cooperative learning situations, furthermore, feel more supported and accepted by their classmates than do students learning competitively or individualistically.

6. Student self-esteem and psychological health will generally be more positive in cooperative than in competitive and individualistic learning situations. These research findings, along with other equally powerful and important findings reported in Johnson and Johnson (1975) and Johnson (1979), all indicate the importance of cooperative learning experiences for both cognitive and affective instructional outcomes. Yet the procedures for structuring learning situations cooperatively are not well known by teachers. One of the purposes of this handbook is to illustrate such procedures. For a more complete discussion, see Johnson and Johnson (1975).

Structuring Cooperative Learning

In our work with teachers in many parts of the country we have observed teachers who believe that they are implementing cooperation when in fact they are missing its essence. Cooperation is not having students sit side by side at the same table. Cooperation is not having students discuss an assignment before each has to do it individually. Cooperation is not having students do a task individually with instructions that the ones who finish first are to help the slower students. Cooperation is not having students share materials before a competitive test. Cooperation is much more than being physically near other students, discussing material with other

students, helping other students, or sharing materials with other students, although each of these is important in cooperative learning.

The essence of cooperative learning is assigning a group goal such as producing a single product (e.g., a single set of answers to math problems or a single theme or report) or achieving as high a group average on a test as possible, and rewarding the entire group on the basis of the quality or quantity of their product according to a fixed set of standards. The teacher establishes a group goal and a criteria-referenced evaluation system, and rewards group members on the basis of their group performance. Teaching a cooperative lesson, however, involves more than just setting up a cooperative goal structure. Here is a brief summary of the teacher's role in cooperatively structured learning:

1. As far as possible, specify the instructional objectives.

2. Select the group size most appropriate for the lesson. With young students the size of the group may need to be two or three members. With older students larger groups are possible. The optimal size of a cooperative group will vary according to the resources needed to complete the lesson or project (the larger the group the greater the resources available), the cooperative skills of group members (the less skillful the group members, the smaller the group should be), and the nature of the task.

3. Assign students to groups. Usually, teachers will wish to maximize the heterogeneity in the group. Random assignment usually ensures a good mixture of males and females, highly verbal and passive students, leaders and followers, and enthusiastic and reluctant learners. And sometimes teachers may wish to group students around their interests. Often teachers may wish to assign students to groups so that students high, low, and average in expertise are in the same group.

4. Arrange the classroom. Teachers will wish to cluster the groups of students so that they will not interfere with each other's learning. Within the groups students should be able to see the relevant materials, convene with each other, and exchange materials and ideas. Usually a circle is best, and long tables should be avoided.

5. Provide the appropriate materials. When students are first learning how to cooperate, or when some students are having problems in contributing to the group's work, teachers may wish to arrange the materials like a jig-saw puzzle and give each group member one piece. A group, for example, could be writing a report on Abe Lincoln, with each member having material on a different part of his life. In order for the report to be completed, all group members will have to contribute their material and ensure it is incorporated into the group's report.

6. Explain the task and the cooperative goal structure. The task may be the successful completion of an assignment in math, science, language arts,

or social studies. To explain the cooperative goal structure teachers will need to communicate that there is a group goal, a criteria-referenced evaluation system, and all group members will be rewarded on the basis of the quality of the group's work.

7. Observe the student-student interaction.

Just because the teacher asks students to cooperate with each other does not mean they will always do so. Much of the teacher's time in cooperative learning situations is spent observing student groups to see what problems they are having in functioning cooperatively. For specific procedures for observing, and for specific observation instructions, see Johnson and R. Johnson (1975) and Johnson and F. Johnson (1975).

8. Intervene as a consultant to help the group solve its problems in working together effectively and to help group members learn the interpersonal and group skills necessary for cooperating. These skills are detailed in Johnson (1972, 1978) and in Johnson and F. Johnson (1979), along with activities to be used in teaching the skills.

9. Evaluate the group products, using a criteria-referenced evaluation system. The procedures for setting up and using such an evaluation system are given in Johnson and R. Johnson (1975).

Barriers Against

There are classroom pressures that mitigate against the use of cooperatively structured learning. One is the inadequacy of students' cooperative skills. Many students have never learned how to cooperate with others and must be taught to do so. Thus the first experience of teachers who try structuring cooperative learning is that their students cannot work together. Teaching cooperative skills becomes an important prerequisite for academic learning, not just something to be thrown in when there is spare time.

A second pressure against the use of cooperatively structured learning is the competitive myths held by many parents and educators. These myths are based on the social Darwinian view that we live in a survival of the fittest world dominated by the law of fang and claw. Despite popular belief, society is not competitive, motivation is not based on competition, competitive and individualistic experiences do not build character and strong identities, and self-esteem is not increased either by competing or working alone.

A third barrier to the use of cooperatively structured learning is the pressure for covering a specified amount of curriculum material within a certain time period. Under the pressure for cognitive accountability that recognizes only what page a student is on by Christmas it seems difficult to many teachers to take the time necessary to teach cooperative skills so that students can learn cooperatively. As

has long been evident from the social psychological research on productivity (Watson and Johnson, 1972), it is precisely the students who take time to learn cooperative skills and who stop to resolve difficulties in working together, who will achieve the most in the long run. Stopping to teach cooperative skills in September does mean that students will master more material by Christmas.

Back To Basics

The importance of cooperative learning experiences goes beyond improving instruction, increasing student achievement, and making life easier and more productive for teachers. Although these are worthwhile activities, cooperation is as basic to humans as the air we breathe. The ability of all students to cooperate with other people is the keystone to building and maintaining stable families, career success, neighborhood and community membership, important values and beliefs, friendships, and contributions to society. Knowledge and skills are of no use if the student cannot apply them in cooperative interaction with other people. It does no good to train an engineer, secretary, accountant, teacher, or mechanic, if the person does not have the cooperative skills needed to apply the knowledge and technical skills in cooperative relationships on the job, in the family and community, and with friends. The most logical way to emphasize the use of cooperative skills in task situations is to structure the majority of academic learning situations cooperatively. Students can then learn technical knowledge and skills in a realistic setting of having to work cooperatively with their classmates. There is nothing more basic than learning to use one's knowledge in cooperative interaction with other people.

Concluding Note

Effective teaching requires structuring learning cooperatively the majority of the time. Yet there is an important place for competitive and individualistic goal structures within the classroom. The major problems with competition and individualistic efforts result from their being inappropriately and over used. In addition to cooperative skills, students need to learn how to compete for fun and enjoyment, win or lose, and how to work independently and follow through on a task until it is completed. The natural place for competitive and individualistic efforts is within the umbrella of cooperation. The predominant use of cooperation reduces the anxiety and evaluation apprehension associated with competition and allows for the use of individualistically structured learning activities as part of a division of labor within cooperative tasks. The relative importance of cooperative, competitive, and individualistic goal structures and their relationship to one another can be summarized in one statement: Cooperation is the forest, competition and individualistic efforts are the trees.

Reprint

References

- Johnson, D.W. 1972. Reaching out: Interpersonal effectiveness and self-actualization. Englewood Cliffs, N.J. Prentice-Hall.
- Johnson, D. W. 1978. Human relations and your career: A guide to interpersonal skills. Englewood Cliffs, N.J. Prentice-Hall.
- Johnson, D.W. 1979. Educational psychology. Englewood Cliffs, N.J. Prentice-Hall
- Johnson, D.W. and Johnson, F. 1975. Joining together: Group theory and group skills. Englewood Cliffs, N.J. Prentice-Hall.
- Johnson, D.W. and Johnson, R. 1974. Instructional structure: Cooperative, competitive, or individualistic. Review of Educational Research. 44,213-240.
- Johnson, D.W. and Johnson, R. 1975. Learning together and done: Cooperation, competition, and individualization. Englewood Cliffs, N.J. Prentice-Hall.
- Watson, G. and Johnson, D.W. 1972. Social psychology: Issues and insights. Philadelphia: Lippincott.

**To read the NACTA Journal online go to:
<http://nacta.fp.expressacademic.org/>**

