



BASES AND BENEFITS OF CO-OPERATIVE LEARNING

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Abstract:-

Cooperative learning is the learning process in which individuals learn in a small group with the help of each other. Cooperative learning gives importance to cooperation as against our present educational system, which is based on competition. Cooperation rather than competition is the predominant characteristics of human beings. People are bonded together by love and cooperation and it is this quality on which the survival of human kind is based. The present paper discusses the theoretical bases and benefits of cooperative learning.

Key-words: Cooperative Learning, Theoretical Bases, Benefits

INTRODUCTION:

Cooperation rather than competition is the predominant characteristics of human beings. People are bonded together by love and cooperation and it is this quality on which the survival of human kind is based. People develop their attitudes and values from social interaction. Although we learn much about the world from various sources, discussing what we know or think with others develops majority of our attitudes and values. This exchange shapes our views and perspectives. It turns cold, lifeless facts into feelings, and then to attitudes and values that guide our behaviour over longer periods of time. These values and attitudes very often are left untaught in our schools. Our classrooms rely solely on formally acquired knowledge, with learners competing for grades and reinforcement; yet, these are our attitudes and values that are one of the most important outcomes of schooling, because they alone provide the framework for guiding our actions outside the classroom. Keeping in view the drawbacks of the most commonly used traditional methods of presentation cum recitation radical changes are needed and have been advised in our instructional strategies. Cooperative learning is one such strategy.

According to Johnson *et al.* (1991), cooperative learning is an educational tool in which small groups of students work together to increase individual, as well as, group member learning. Cooperative learning exists when students work together to achieve joint learning goals (Johnson *et al.*, 1992, 1993). Any assignment in any curriculum for any age student can be done cooperatively. There are three ways that cooperative learning may be used. Formal cooperative learning groups may last for one class period to several weeks to complete any course requirement (such as solving problems, reading complex text material, writing an essay or report, conducting a survey or experiment, learning vocabulary, or answering questions at the end of a chapter). The teacher introduces the lesson, assigns students to groups (two to five members), gives students the materials they need to complete the assignment, and assigns students roles. The teacher explains the task, teaches any concepts or procedures the students need in order to complete the assignment, and structures the cooperation among students. Students work on the assignment until all group members have successfully understood and completed it. While the students work together the teacher moves from group to group systematically monitoring their interaction. The teacher intervenes when students do not understand the academic task or when there are problems in working together. After the assignment is completed the teacher evaluates the academic success of each student and the group processes to

determine how well they functioned as a team. In working cooperatively, students realize they (a) are mutually responsible for each other's learning and (b) have a stake in each other's success

Slavin (1996) defines cooperative learning as "instructional programs in which students work in small groups to help one another master academic content...." He adds that most methods of cooperative learning involve students working in groups in which they are responsible not only for their own learning, but that of their fellow group members. Slavin (1990) believes the goal of cooperative learning is to encourage students to assist one another to maximize learning. To accomplish this, students must work together to complete a project or master material as a group. Therefore, cooperative learning fosters a collaborative atmosphere as opposed to a competitive environment. Slavin (1983) explains the two most important aspects of cooperative learning that increase student achievement are group rewards and individual accountability. Slavin (1996) sites Johnson and Johnson, in which they stated that individual mastery of material is one of the goals of cooperative learning. According to literature research conducted by McManus and Gettinger (1996), additional goals of cooperative learning include assuming leadership responsibilities, equal and active participation in the group process, positive interaction, increased learning and improved self-esteem.

BASES OF COOPERATIVE LEARNING

The widespread use of cooperative learning in many countries, particularly in United States of America, is due to multiple factors. Three of the most important are that cooperative learning is clearly based on theory, validated by research, and operationalized into clear procedures educators can use. First, cooperative learning is based solidly on a variety of theories in anthropology (Mead, 1936), sociology (Coleman, 1961), economics (Von Mises, 1949), political science (Smith, 1759), psychology, and other social sciences. In psychology, where cooperation has received the most intense study, cooperative learning has its roots in social interdependence (Deutsch, 1949, 1962; Johnson and Johnson, 1989), cognitive-developmental (Johnson and Johnson, 1979; Piaget, 1950; Vygotsky, 1978), and behavioural learning theories (Bandura, 1977; Skinner, 1968). It is rare that an instructional procedure is central to such a wide range of social science theories. There are several theoretical positions regarding why small-group instruction has the impact that it appears to have. From the cognitive perspective, small-group instruction allows students to cognitively rehearse and relate course material into existing schema or conceptual frameworks, thus producing a deeper, contextualized level of understanding of content (Kurfiss, 1988). When peers work together there is a great deal of modeling, cognitive disequilibrium, feedback and perspective taking that emerge as students explain and receive explanations from their colleagues.

Second, the amount, generalizability, breath, and applicability of the research on cooperative, competitive, and individualistic efforts provides considerable validation of the use of cooperative learning, perhaps more than most other instructional methods (Cohen, 1994; Johnson, 1970; Johnson and Johnson, 1974, 1979, 1989, 1999; Kohn, 1992; Sharan, 1980; Slavin, 1977, 1991). There are over 900 research studies validating the effectiveness of cooperative over competitive and individualistic efforts. This body of research has considerable generalizability since the research has been conducted by many different researchers with markedly different orientations working in different settings and countries and in eleven different decades, since research participants have varied widely as to cultural background, economic class, age, and gender, and since a wide variety of research tasks and measures of the dependent variables have been used.

The third factor contributing to the widespread use of cooperative learning is the variety of cooperative learning methods available for teacher use, ranging from very concrete and prescribed to very conceptual and flexible. Cooperative learning is actually a generic term that refers to numerous methods for organizing and conducting classroom instruction. Almost any teacher can find a way to use cooperative learning that is congruent with his or her philosophies and practices. So many teachers use cooperative learning in so many different ways that all the operationalizations cannot be listed here.

Slavin (1997) has presented four major theoretical perspectives aimed at explaining the achievement effects of cooperative learning: motivational, social cohesion, developmental and cognitive elaboration perspectives.

1. Motivational Perspective

Motivational perspectives focus primarily on the reward or goal structures under which students operate. From a motivationalist perspective, cooperative incentive structures create a situation in which the only way group members can attain their own personal goals is if all the members of the group are successful. In these conditions, group members must both help their group mates to do whatever helps the group to succeed, and to encourage their group mates to exert maximum efforts. Evidence from practical applications of cooperative learning in elementary and secondary schools supports the motivationalist position that group rewards are essential for the effectiveness of cooperative learning. Out of sixty-four studies on cooperative learning methods that provided group rewards based on the sum of group members' individual learning, fifty (78%) found significantly positive effects on achievement, and none found negative effects (Slavin, 1995).

2. Social Cohesion Perspective

This theoretical perspective is related to the motivational viewpoint. According to this approach, effects of cooperative learning on achievement are mediated by the cohesiveness of the group. Also this perspective emphasizes primarily motivational rather than cognitive explanations for the instructional effectiveness of cooperative learning. There is, however, an important difference. Motivational theory stresses extrinsic rewards: students help their group mates learn because it is in their own interests to do so. Social cohesion theorists, in contrast, emphasize the idea that students help their group mates learn because they care about the group. The social cohesion perspective emphasizes teambuilding activities in preparation for cooperative learning, as well as group self-evaluation, instead of external incentives and individual accountability. A well-known application of this theory is Aronson's (Aronson *et al.*, 1978) Jigsaw method, where students concentrate on different topics in "expert groups" and subsequently share their expertise in groups where students from all expert groups come together. The theoretical idea in the Jigsaw method is to create interdependence between the group members in a way that would increase social cohesion.

Johnson and Johnson (1992) have also developed a similar method and the ideas have been applied in the instructional programme called Fostering Community of Learners (FCL), developed by Brown and Campione (1994; 1996). The method of Brown and Campione, which besides Jigsaw includes also many other innovative learning environment features, has proved to be effective particularly in improving higher order learning in students. This has, however, not been the case in all experiments based on the Social Cohesion theory. According to Slavin's (1995) review, research on pedagogical applications of the Jigsaw has not generally found positive effects on student achievement. A typical problem with this method is that students do not necessarily get acquainted with material other than that which they have studied themselves. Some of the very well implemented applications of the Jigsaw method, however, indicate that it is possible to avoid this problem (Sharan and Shachar, 1988; Sharan and Sharan, 1992; Johnson and Johnson, 1994).

3. Developmental Perspective

The third perspective for explaining the mechanisms of cooperative learning proposed by Slavin (1997) was developmental theory. The fundamental assumption of the developmental perspective on cooperative learning is that interaction among children around appropriate tasks increases their mastery of critical concepts (Damon, 1984). Both major traditions of developmental psychology, the Vygotskian and the Piagetian, have substantially contributed to the theory of collaborative learning. Although Vygotsky (e.g. 1934/1994; 1935/1994) in general did not believe in the usefulness of spontaneous cooperation among children of the same age, his theoretical ideas have been widely used in later theories of cooperative learning. Particularly Vygotsky's (1978) idea of the zone of proximal development has been useful for understanding mechanisms in collaborative learning. According to this view, collaborative activity among children promotes growth if children of similar ages have developmental differences. More advanced peers are likely to be operating within one another's proximal zones of development, modelling in the collaborative group behaviours more advanced than those they could perform as individuals.

Piaget (1926) held that social-arbitrary knowledge -- language, values, rules, morality, and symbol systems -- could only be learned in interactions with others. Peer interaction is also important in logical-mathematical thought in disequilibrating the child's egocentric conceptualisations and in the provision of feedback to the child

about the validity of logical constructions. On the basis of Piaget's theory a group of psychologists undertook a systematic empirical investigation of how social interaction affects individual cognitive development (Doise and Mugny, 1984). These researchers borrowed from the Piagetian perspective its structural framework and the major concepts that were used to account for development: conflict and the coordination of points of view (centrations) (Dillenbourg *et al.*, 1996).

4. Cognitive Elaboration Perspective

Cognitive Elaboration means a theoretical perspective in which cooperative learning is assumed to be effective because it requires participants to elaborate their cognitive structures in a social context. One of the most effective means of elaboration is explaining the material to someone else. Several studies on peer tutoring have found achievement benefits for the tutor as well as the tutee (Devin-Sheehan *et al.*, 1976). Webb (1989, 1992) found that the students who gained the most from cooperative activities were those who provided elaborated explanations to others.

The cognitive elaboration idea of cooperative learning has been successfully applied in writing process models (Graves, 1983), in which students work in peer response groups or form partnerships to help one another draft, revise, and edit compositions. The well-known Reciprocal Teaching model developed by Palincsar and Brown (1984) can also be considered as an example of the cognitive elaboration perspective. In Reciprocal Teaching, cooperative learning is a method for teaching reading comprehension skills. In this technique, students are taught to formulate questions for one another about a text. Students have to process the material themselves and learn how to focus on the essential elements of the reading passages before they are able to do comprehension modeling. Studies of Reciprocal Teaching have supported its effects on student achievement (Jarvela, 1996).

Reconciling the Four Perspectives

The four theoretical perspectives discussed above all have well-established rationales, and most have supporting evidence. All apply in some circumstances, but none are probably both necessary and sufficient in all circumstances. Research in each tradition tends to establish setting conditions favourable to that perspective. For example, most research on cooperative learning models from the motivational and social cohesiveness perspectives takes place in real classrooms over extended periods, as both extrinsic motivation and social cohesion may be assumed to take time to show their effects. In contrast, studies undertaken from the developmental and cognitive elaboration perspectives tend to be very short, making issues of motivation moot. These latter paradigms also tend to use pairs, rather than groups of four; pairs involve a much simpler social process than groups of four, which may need time to develop ways of working well together. Developmental research almost exclusively uses young children trying to master conservation tasks, which bear little resemblance to the "social-arbitrary" learning that characterizes most school subjects; cognitive elaboration research mostly involves college students.

However, the alternative perspectives on cooperative learning may be seen as complementary, not contradictory. For example, motivational theorists would not argue that the cognitive theories are unnecessary. Instead, they would argue that motivation drives cognitive process, which in turn produces learning. For example, it is unlikely that over the long haul students would engage in the kind of elaborated explanations found by Webb (1989) to be essential to profiting from cooperative activity. Similarly, motivational theorists would hold that an intermediate effect of extrinsic incentives must be to build cohesiveness, caring, and pro-social norms among group members, which could in turn affect cognitive processes. One model of the relationship among the four alternative perspectives is diagrammed below (Slavin, 1995).

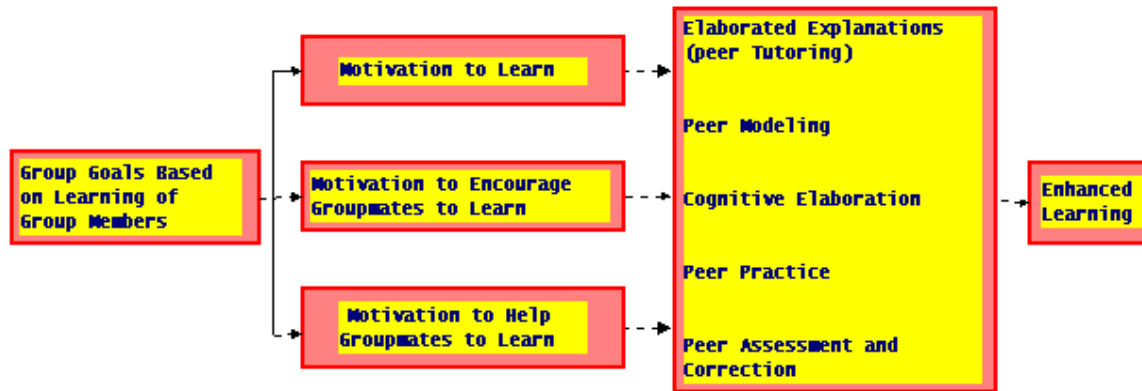


Figure 1.1: Perspective Relationship Model

The process depicted in the diagram shows how group goals might operate to enhance the learning outcomes of cooperative learning. Provision of group goals based on the individual learning of all group members might affect cognitive processes directly, by motivating students to engage in peer modeling, cognitive elaboration, and/or practice with one another. Group goals may also lead to group cohesiveness, increasing caring and concern among group members, making them feel responsible for one another's achievement, thereby motivating students to engage in cognitive processes which enhance learning. Finally, group goals may motivate students to take responsibility for one another independently of the teacher, thereby solving important classroom organization problems and providing increased opportunities for cognitively appropriate learning activities.

From the perspective of the model diagrammed in Figure 1, researchers from outside of the motivational perspective are attempting to short-circuit the process to intervene directly on mechanisms identified as mediating variables in the full model. For example, social cohesion theorists intervene directly on group cohesiveness by engaging in elaborate teambuilding and group processing training. The Sharan and Shachar (1988) Group Investigation study suggests that this can be successfully done, but it takes a great deal of time and effort. In this study, teachers were trained over the course of a full year, and then teachers and students used cooperative learning for three months before the study began. Earlier research on Group Investigation failed to provide a comparable level of preparation of teachers and students, and the achievement results of these studies were less consistently positive (Sharan *et al.*, 1984).

Cognitive theorists would hold that the cognitive processes that are essential to any theory relating cooperative learning to achievement could be created directly, without the motivational or affective changes discussed by the motivationalist and social cohesion theorists. This may turn out to be accurate, but at present demonstrations of learning effects from direct manipulation of peer cognitive interactions have mostly been limited to very brief durations and to tasks that lend themselves directly to the cognitive processes involved. For example, the Piagetian conservation tasks studied by developmentalists have few practical analogs in the school curriculum. However, the research on Reciprocal Teaching in reading comprehension (Palincsar and Brown, 1984) shows promise as a means of intervening directly in peer cognitive processes. Long-term applications of Dansereau's (1988) cooperative scripts for comprehension of technical material and procedural instructions also seem likely to be successful.

Benefits of Cooperative Learning

Cooperative learning activities instill in learners important behaviours that prepare them to reason and perform in an adult world. A few of them have been discussed here.

i. Attitudes and Values

Adult learners form their attitudes and values from social interaction. Although we learn much about the world from books, magazines, newspapers, and audiovisual media, most of our attitudes and values are formed by discussing what we know or think with others. In this manner we exchange our information and knowledge with that of others who have acquired their knowledge in different ways. This exchange shapes our views and perspectives. It turns cold, lifeless facts into feelings, and then to attitudes and values that guide our behaviour over longer periods of time.

These attitudes and values very often are left untaught in our schools. Many classrooms rely solely on formally acquired knowledge, with learners competing for grades and-reinforcement. Yet, it is our attitudes and values that are one of the most important outcomes of schooling, because they alone provide the framework for guiding our actions outside the classroom, where there may be no formal sources of knowledge to fall back on. Cooperative learning is important in helping learners acquire from the curriculum the basic attitudes and values they need to think independently inside and outside of your classroom.

ii. Prosocial Behaviour

Models of acceptable behaviour that contribute to the common good of family, friends, and community may not always be available in the home today. It is during close and meaningful encounters among family members that models of "prosocial" behaviour are communicated. Children learn right from wrong implicitly through their actions and the actions of others that come to the attention of adult family members. These adults are quick to point out the effects of these actions on family, friends, and the community.

With the decreasing presence of adults in the homes of many school-age learners, the classroom becomes an important vehicle for bolstering home and community values, or providing a substitute for them when none exist. Cooperative learning brings learners together in adult like settings which, when carefully planned and executed, can provide appropriate models of social behavior.

iii. Alternative Perspectives and Viewpoints

It is no secret that we form our attitudes and values by confronting viewpoints contrary to our own. Our likes and dislikes, the things we aspire to and avoid, come from our exposure to alternatives we could not have thought of on our own, given the limitations of our immediate context and experience. These alternatives—some of which we adopt, some we borrow from, and some we reject—are the raw material from which we form our own attitudes and values.

Confronted with these alternatives, we are forced into objectivity necessary for thinking critically, reasoning, and problem solving. In other words, we become less self-centered. Depending on the merits of what we see and hear, we grow more open to exchanging our feelings and beliefs with those of others. It is this active exchange of viewpoints and the tension it sometimes creates within us that is the catalyst for our growth. Cooperative learning provides the context or "meeting ground" where many different viewpoints can be orchestrated, from which we form more articulate attitudes and values.

iv. Integrated Identity

One of the most noticeable outcomes of social interaction is its effect on how we develop our personalities and learn who we are. Social interaction over long periods forces us to "see ourselves"—our attitudes, values, and abilities—in many different ways. Thus we begin to gain an integrated sense of self. The main result is that inconsistencies and contradictions in which we are—or think we are—cannot be hidden, as might be the case in a single interaction or small number of social interactions. If we say and think one way in one situation, and say and think another way in another situation, we cannot help but notice our own inconsistency and wonder why it exists. We attempt to resolve such contradictions, to clarify what we really believe and to believe what we really say. Our personality (at least what we show to others) becomes more coherent and integrated and is perceived by others as a more forceful and confident projection of our thoughts and feelings. Over time, repeated social interactions reduce the contradictions until our views become singular and consistent. Cooperative learning can be the start of stripping away the irrelevant, overly dramatic, and superficial appendages that mask our deepest thoughts and feelings.

v. Higher Thought Processes

If all of the preceding benefits of cooperative learning were not enough, the fact that it has been linked to increases in the use of higher thought processes in learners is another reason for its use (Slavin, 1987; Slavin et al., 1985; Johnson and Johnson, 1987). As noted, cooperative learning actively engages the student in the learning process and seeks to improve the critical thinking, reasoning, and problem-solving skills of the learner. Critical thinking, reasoning, and problem solving cannot occur outside a context of attitudes and values, pro-social behavior,

alternative perspectives and viewpoints, and an integrated identity. Cooperative learning provides the ingredients for higher thought processes to occur and sets them to work on realistic and adult like tasks.

These higher thought processes—required for analyzing, synthesizing, and decision making—are believed to be stimulated more by interaction with others (peers and adults) than by books and lectures, which typically are not interactive. Books and lectures may be useful for teaching knowledge, comprehension, and application, but they seldom are sufficient to bring about the private speech required for thinking critically, reasoning, and problem solving. These behaviours require interaction with others as well as oneself to "unleash" the motivation required for thinking and performing in complex ways.

The many benefits of cooperative learning are supported by extensive research, and are grounded in the theories of leading psychologists. The cooperative learning teaching strategy appears to primarily have its theoretical underpinnings in the theories of Piaget and Vygotsky. Piaget's stage theory of learning is in many ways related to cooperative learning (Bransford *et al.*, 2000). Piaget has concluded that the cognitive and intellectual development of children proceeds through certain stages. Overall, a child progresses from pre-logical thinking, to concrete thinking, to abstract thinking. This theory could be classified as constructivist, meaning the children construct their view of the world, based upon their interaction with it. A cooperative learning approach in the mathematics classroom allows students to do just that, by allowing them to work in groups on complex problems, in order to learn and explore abstract concepts.

The cooperative learning approach to teaching can facilitate students' progress through Piaget's stages, and can help bring students to the abstract thinking level, which is not always attained by everyone. As discussed above, cooperative learning provides students with the opportunity to explore and discuss topics with their peers in a hands-on, interactive environment. Students "bounce their ideas off each other" while learning, and receive non-threatening feedback and guidance from each other. In a traditional classroom setting, opportunities for the exploration of abstract concepts are very limited, and students are likely to be intimidated to perform on their own.

Hartman (1997) discusses Piaget's definitions of assimilation and accommodation, both of which he states are involved in learning. Piaget defines assimilation as "the incorporation of new information into an existing schema," and accommodation as "changing the existing schema or creating a new one to fit new information" (Hartman, 1997, p.148). Both of these processes occur naturally in cooperative learning, but do not necessarily easily occur in traditional instruction, where students do not have the opportunity to discuss and evaluate each other's ideas.

The "learning cycle" is a student-centered teaching method, which was developed from Piaget's stage theory, and can be implemented via the cooperative learning approach (Hartman, 1997). Briefly, the method involves first guiding students through a stage of exploration with physical objects, in which students can make predictions and confront misconceptions by activating prior knowledge. This can be best accomplished in a group setting which cooperative learning offers. Next, students progress from a guided discovery stage of concrete exploration to an abstract discussion phase where concepts are transferred or applied. Again, a cooperative learning group setting is ideal for this to take place, as opposed to a traditional setting where students must remain passive and silent.

Hartman quotes Schuell's definition of learning as "an active, constructive, goal-oriented process that involves mental activities including metacognition, selection, organization, and the use of learning strategies" (Hartman, 1997, p.149). This definition essentially defines cooperative learning, and a cooperative learning class setting provides the ideal arena in which all this can take place.

Vygotsky's social interaction theory is also very much related to cooperative learning, since by definition, cooperative learning is based upon social interaction. Vygotsky presents a concept known as the zone of proximal development (ZPD), defined as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Hartman, 1997, p.150; Bransford *et al.*, 2000, p.81). When students work cooperatively in groups and are assisted by their peers, they are able to work much closer to their full potential than if they work independently. The ultimate goal, of course, is for the student to no longer require the assistance of his or her group members when solving a problem, but to be able to solve it independently, having mastered the appropriate academic and cognitive skills.

REFERENCES

1. Aronson, E., Blaney, N., Stephan, C., Sikes, J., & Snapp, M. (1978). *The Jigsaw classroom*. 275, Beverly Drive, Beverly Hills, CA: Sage Publications.

2. Bandura, A. (1977). *Social Learning Theory*. Englewood Cliffs, NJ: Prentice Hall.
3. Bandura, A. (1977). *Principles of behavioral modification*. New York: Holt, Rinehart, & Winston.
4. Bransford, D., Brown, A.L., Cocking, R.R. (2000). *How People Learn: Brain, Mind, Experience, and School*. Washington, DC: National Academy Press
5. Brown, A. & Campione, J. (1994) Guided discovery in a community of learners. In K. McGilly (Ed.), *Classroom lessons: Integrating cognitive theory and classroom practice* (pp. 229-270). Cambridge, MA: Bradford Books, MIT Press.
6. Brown, A. L. & Campione, J. C. (1996) Psychological theory and the design of innovative learning environments: On procedures, principles, and systems. In L. Schauble. & R. Glaser (Eds.) *Innovations in learning. New environments for education*. Mahwah, NJ: Lawrence Erlbaum, 289-325.
7. Cohen, E.G., (1994). **Designing groupwork: Strategies for the heterogeneous classroom** (2nd Ed.). New York: Teachers College Press.
8. Coleman, J. (1961). *The adolescent society*. New York: Macmillan.Collins College Publishers.
9. Damon, W. (1984). Peer education: The untapped potential. **Journal of Applied Developmental Psychology**, 5, 331-343.
10. Dansereau, D.F. (1988). Cooperative learning strategies. In C.E. Weinstein, E.T. Goetz, & P.A. Alexander (Eds.), **Learning and study strategies: Issues in assessment, instruction, and evaluation**. Orlando, FL: Academic Press,103-120.
11. Deutsch, M. (1949). A theory of cooperation and competition. *Human Relations*, 2, 129-152.
12. Deutsch, M. (1962). Cooperation and trust: Some theoretical notes. In Jones, M. (Ed.), *Nebraska Symposium on Motivation*. Lincoln: University of Nebraska Press, 275-319.
13. Devin-Sheehan, L., Feldman, R., and Allen, V. (1976). Research on children tutoring children: A critical review. **Review of Educational Research**, 46(3), 355-385.
14. Dillenbourg, P., Baker, M, Blaye, A & O'Malley, C (1996) The evolution of research on collaborative learning. In H. Spada and P. Reimann (Eds) *Learning in Humans and Machines*. Elsevier.
15. Doise, W. & Mugny, W. (1984). *The Social Development of the Intellect*. Oxford: Pergamon Press.
16. Graves, D. (1983). *Writing: Teachers and children at work*. Exeter, NH: Heinemann.
17. Hartman, H. (1997). *Human Learning and Instruction*. New York: City College of the City University of New York.
18. Järvelä, S. (1996). New models of teacher-student interaction: A critical review. *European Journal of Psychology of Education*. 6 (3), 246-268.
19. Johnson, D. W. (1970). *Social psychology of education*. New York: Holt, Rinehart, & Winston.
20. Johnson, D. W., & Johnson, R. (1974). Instructional goal structure: Cooperative, competition, or individualistic. *Review of Educational Research*, 44, 213-240.
21. Johnson, D. W., & Johnson, R. (1979). Conflict in the classroom: Controversy and learning. *Review of Educational Research*, 49, 51-70.
22. Johnson, D., & Johnson, R (1987). *Learning together and alone* (2nd ed.). Englewood Cliffs, NJ: Prentice-Hall.
23. Johnson, D. W., & Johnson, R. (1989). *Cooperation and competition: theory and research*. Edina, MN: Interaction Book Company.
24. Johnson, D. W., Johnson, R. T., & Skon, L. (1979). Student achievement on different types of tasks under cooperative, competitive, and individualistic conditions. *Contemporary Educational Psychology*, 4, 99-106.
25. Johnson, D.W., & Johnson, R.T. (1992): Positive interdependence: Key to effective cooperation. In R. Hertz-Lazarowitz & N. Miller (Eds.), *Interaction in cooperative groups: The theoretical anatomy of group learning* (pp. 174-199). New York: Cambridge University Press.
26. Johnson, D.W. & Johnson, R. (1994). *An Overview of Cooperative Learning*. <http://www.clcrc.com/pages/overviewpaper.html>
27. Johnson, D. W., & Johnson, R. (1999). *Learning together and alone: Cooperative, competitive, and individualistic learning*. Boston: Allyn & Bacon. First edition, 1975.
28. Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1993). *Circles of learning* (4th ed.). Edina, MI: Interaction Book Company.
29. Johnson, D. W., Johnson, R. T., & Holubec, E. J. (1993). *Cooperation in the Classroom* (6th ed.). Edina, MN: Interaction Book Company.

30. Johnson, D.W., Johnson, R., Ortiz, A., & Stanne, M. (1991). Impact of positive goal and resource interdependence on achievement, interaction, and attitudes. *Journal of General Psychology*, 118(4), 341-347.
31. Kohn, A. (1992). *No contest* (2nd ed.). Boston: Houghton Mifflin.
32. Kurfiss, J. G. (1988). *Critical Thinking: Theory, Research, Practice, and Possibilities*. ASHE-ERIC Higher Education Report No. 2, Washington, D.C.: Association for the Study of Higher Education.
33. McManus, S.M., & Gettinger, M. (1996). Teacher and student evaluations of cooperative learning and observed interactive behaviors. *The Journal of Educational Research*, 90(1), 13-22.
34. Mead, M. (Ed.). (1936/1961). *Cooperation and competition among primitive peoples*. Boston: Beacon.
35. Palincsar, A.S. & Brown, A.L. (1984). Reciprocal teaching of comprehension monitoring activities. *Cognition and Instruction*, 2, 117-175.
36. Piaget, J. (1926). *The Child's Conception of the World*. Paris:Alcan.
37. Piaget, J. (1926). *The language and thought of the child*. New York: Harcourt Brace.
38. Piaget, J. (1950). *The psychology of intelligence*. New York: Harcourt.
39. Sharan, S. (1990). *Cooperative learning: theory and research*. New York: Praeger Publishers.
40. Sharan, S., Kussell, P., Hertz-Lazarowitz, R., Bejarano, Y., Raviv, S., & Sharan, Y. (1984). *Cooperative learning in the classroom: Research in desegregated schools*. Hillsdale, NJ: Lawrence Erlbaum Associates.
41. Sharan, S., & Shachar, C. (1988). *Language and learning in the cooperative classroom*. New York: Springer-Verlag.
42. Sharan, S., & Sharan, Y. (1992). *Group investigation: Expanding cooperative learning*. New York: Teacher's College Press.
43. Skinner, B.F. (1968). *The Technology of Teaching*. New York: Appleton-Century-Crofts.
44. Slavin, R. (1977). Classroom reward structure: An analytical and practical review. *Review of Educational Research*, 47, 633-650.
45. Slavin, R.E. (1983). Student Team Learning in Math. In *Cooperative Learning in Mathematics: A Handbook for Teachers*. Edited by Neil Davidson. Menlo Park, CA: Addison-Wesley Publishing Company.
46. Slavin, R.E. (1985). Team-Assisted Individualization: Combining cooperative learning and individualized instruction in mathematics. In R.E. Slavin, S. Sharan, S. Kagan, R. Hertz-Lazarowitz, C. Webb, & R. Schmuck (Eds.), *Learning to cooperate, cooperating to learn* (pp. 177-209). New York: Plenum.
47. Slavin, R.E. (1987). *Cooperative Learning Student Teams*. (2nd ed.) Washington: National Educational Association.
48. Slavin, R.E. (1987). Cooperative learning: Where behavioral and humanistic approaches to classroom motivation meet. *Elementary School Journal*, 88, 9-37.
49. Slavin, R. (1990). *Cooperative learning: Theory, research and practice*. Englewood Cliffs, NJ: Prentice-Hall.
50. Slavin, R.E. (1991). Are cooperative learning and untracking harmful to the gifted? *Educational Leadership*, 48(6), 68-71.
51. Slavin, R.E. (1995). *Cooperative learning: Theory, research, and practice* (2nd Ed.). Boston: Allyn & Bacon.
52. Slavin, R.E. (1996) Cooperative learning in middle and secondary schools. *The Clearing House*, 69 (4), 200.
53. Slavin, R. E. (1997). *Research on cooperative learning and achievement: A quarter century of research*. Paper presented at the Annual Meeting of Pedagogical Psychology, Frankfurt.
54. Smith, A. (1759). *The theory of moral sentiments*. Reprint. Edited by D. Raphael & A. Macle. (1976). Oxford: Clarendon.
55. Von Mises, L. (1949). *Human action: A treatise on economics*. New Haven, CN: Yale University Press.
56. Vygotsky, L. (1934/1994). The development of academic concepts in school aged children. In R. van der Veer & J. Valsiner (Eds.). *The Vygotsky reader* (355-370). Oxford: Blackwell. (Originally published in Russian 1934)
57. Vygotsky, L. (1935/1994). The problem of the environment. In R. van der Veer & J. Valsiner (Eds.). *The Vygotsky reader* (338-354). Oxford: Blackwell. (Originally published in Russian 1935).
58. Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

59. Webb, N.M. (1989). Peer interaction and learning in small groups. *International Journal of Educational Research*, 13, 21-39.
60. Webb, N.M. (1992). Testing a theoretical model of student interaction and learning in small groups. In R. Hertz-Lazarowitz & N. Miller (Eds.), *Interaction in cooperative groups: The theoretical anatomy of group learning* (pp. 102-119). New York: Cambridge University Press.



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