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“COOPERATIVE LEARNING”

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COOPERATIVE LEARNING. **David W. Johnson and Roger T. Johnson**

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Introduction

Two are better than one, because they have a good reward for toil. For if they fall, one will lift up his fellow; but woe to him who is alone when he falls and has not another to lift him up...And though a man might prevail against one who is alone, two will withstand him. A threefold cord is not quickly broken.

Ecclesiastics 4:9-12

Cooperative learning is an old idea (Johnson, Johnson, & Holubec, 2015). The Talmud clearly states that in order to study the Talmud you must have a learning partner. In the first century, Quintillion argued that students could benefit from teaching one another. The Roman philosopher, Seneca advocated cooperative learning through such statements as, "Qui Docet Discet" (when you teach, you learn twice). Johann Amos Comenius (1592-1679) believed that students would benefit both by teaching and being taught by other students. In the late 1700's Joseph Lancaster and Andrew Bell made extensive use of cooperative learning groups in England, and the idea was brought to America when a Lancastrian school was opened in New York City in 1806.

To understand cooperative learning as a research-based school practice it is first necessary to understand what cooperation is. And in order to use cooperative learning in the classroom, it is necessary to understand the essential elements that differentiate (a) cooperative learning from traditional classroom grouping and (b) a well-implemented cooperative lesson from a poorly implemented one. Cooperative learning may be used in formal lessons, direct teaching to ensure that students are cognitively active, and base groups to provide students with long-term support and assistance. The strength of cooperative learning is the research evidence verifying its effectiveness. Cooperative learning's beauty is what is good for students is even better for faculty. Cooperative learning is part of a basic change in organizational structure from a competitive-individualistic "mass manufacturing" model of organizing to a high-performance team-based organizational structure. Cooperative procedures can be used throughout the school and school district as well as in the classroom.

Nature of Cooperative Learning

In every classroom, no matter what the subject area, teachers may structure lessons so that students:

1. Work cooperatively in small groups, ensuring that all members master the assigned material.
2. Engage in a win-lose struggle to see who is best.
3. Work independently on their own learning goals at their own pace and in their own space to achieve a preset criterion of excellence.

These are three ways student-student interaction may be structured in school classes: competitively, individualistically, and cooperatively.

When students are required to compete with each other for grades, they work against each other to achieve a goal that only one or a few students can attain. There is a negative interdependence among goal achievements; students perceive that they can obtain their goals if and only if the other students in the class fail to obtain their goals (Deutsch, 1962; Johnson, Johnson, & Holubec, 1991). Students are graded on a norm-referenced basis, that requires them to work better, faster, and more accurately than their peers. In doing so, they strive to best their classmates, deprive others of success (my winning means you lose), celebrate classmates' failures (your failure makes it easier for me to win), view resources such as grades as limited (only a few of us will get "A's"), recognize their negatively linked fate (the more you gain, the less for me; the more I gain, the less for you), and believe that the more competent and hard-working individuals become "haves" and the less competent and deserving individuals become the "have nots" (only the strong prosper).

When students are required to work **individualistically** on their own, they work by themselves to accomplish learning goals unrelated to those of the other students. Students' goal achievements are independent; students perceive that the achievement of their learning goals is unrelated to what other students do (Deutsch, 1962; Johnson, Johnson, & Holubec, 1991). Individual goals are assigned and students' efforts are evaluated on a criterion-referenced basis. Each student has his or her own set of materials and works at his or her own speed, ignoring the other students in the class. Students are expected and encouraged to focus on their strict self-interest (how well can I do), value only their own efforts and success (if I study hard, I may get a high grade), and ignore as irrelevant the success or failure of others (whether my classmates study or not does not affect me).

Cooperation is working together to accomplish shared goals. Within cooperative activities individuals seek outcomes that are beneficial to themselves **and** all other group members. Cooperative learning is the instructional use of small groups so that students work together to maximize their own and each other's learning. In **cooperative learning situations** there is a positive interdependence among students' goal attainments; students perceive that they can reach their learning goals if and only if the other students in the learning group also reach their goals (Deutsch, 1962; Johnson, Johnson, & Holubec, 1991). Class members are split into small groups after receiving instruction from the teacher. They then work through the assignment until all group members have successfully understood and completed it. Cooperative efforts result in participants striving for mutual benefit so that all group members benefit from each other's efforts (Your success benefits me and my success benefits you), recognizing that all group members share a common fate (we all sink or swim together here), realizing that one's performance is mutually caused by oneself and one's colleagues (we can not do it without you), and feeling proud and jointly celebrating when a group member is recognized for achievement (You got an A! That is terrific!).

In summary, students' learning goals may be structured to promote cooperative, competitive, or individualistic efforts. In the ideal classroom, all students would learn how to work collaboratively with others, compete for fun and enjoyment, and work autonomously on their own. The teacher decides which goal structure to implement within each lesson. Unfortunately, most teachers decide to use the competitive structure. They least utilize the most powerful and important of the three is cooperative learning. And even when teachers think they are using cooperative learning they are often simply placing students in groups. There is more to cooperative learning than simply grouping students; there are essential components of cooperation that must be carefully implemented so cooperative learning actually takes place.

Basic Elements of Cooperative Learning

Many teachers believe that they are implementing cooperative learning when in fact they are missing its essence. In order for a lesson to be cooperative, five basic elements must be carefully structured (Johnson, Johnson, & Holubec, 2013). The first element of a cooperative lesson is positive interdependence. Students must believe that they are linked with others in a way that one cannot succeed unless the other members of the group succeed (and vice versa), that is, they "sink or swim together." In a math class, for example, a teacher assigns her students a set of math problems to solve. Students are placed in groups of three. The instructional

task is for students to solve each story problem correctly and understand the correct strategy for doing so. The teacher creates positive goal interdependence by requiring group members to agree on the answer and the strategies for solving each problem. Positive role interdependence is structured by assigning each student a role. The reader reads the problems aloud to the group. The checker makes sure that all members can explain how to solve each problem correctly. The encourager in a friendly way encourages all members of the group to participate in the discussion, sharing their ideas and feelings. Resource interdependence is created by giving each group one copy of the problems to be solved. All students work the problems on scratch paper and share their insights with each other. Positive reward interdependence is structured by giving each group five points if all members score above 90 percent correct on the test given at the end of the unit. The most important type of positive interdependence is goal interdependence. All cooperative learning starts with a mutually shared group goal.

The second element of a cooperative lesson is face-to-face, promotive interaction where students help, assist, encourage, and support each other's efforts to learn. Students promote each other's learning by orally explaining to each other how to solve problems, discussing with each other the nature of the concepts and strategies being learned, teaching their knowledge to each other, and explaining to each other the connections between present and past learning. In the math lesson, the teacher must provide the time, knee-to-knee seating arrangements, and encouragement for students to exchange ideas and help each other learn.

The third element is individual accountability, where the performance of each individual student is assessed and the results given back to the group and the individual. It is important that group members know (a) who needs more assistance in completing the assignment and (b) they cannot "hitch-hike" on the work of others. Common ways of structuring individual accountability include giving an individual test to each student and randomly selecting one student's work to represent the efforts of the entire group.

The fourth element of a cooperative lesson is social skills. Groups cannot function effectively if students do not have and use the needed leadership, decision-making, trust-building, communication, and conflict-management skills. These skills have to be taught just as purposefully and precisely as academic skills. Many students have never worked cooperatively in learning situations and, therefore, lack the needed social skills. In the math lesson the teacher emphasizes the skill of "checking to make sure everyone understands." The teacher defines the skill as the phrases and the accompanying nonverbal behaviors to be used by the checker. The group roles are rotated each day. When the teacher sees students engaging in the skill, she verbally praises the group and/or records the instance on an observation sheet. Procedures and strategies for teaching students social skills may be found in Johnson (1999), Johnson and F. Johnson (2017), and Johnson, Johnson, and Holubec (2013).

Finally, the fifth element of a cooperative lesson is group processing. At the end of the math period the groups process their functioning by answering two questions: (1) What is something each member did that was helpful for the group and (2) What is something each member could do to make the group even better tomorrow? Such processing enables learning groups to focus on group maintenance, facilitates the learning of social skills, ensures that members receive feedback on their participation, and reminds students to practice the small group skills required to work cooperatively. Some of the keys to successful processing are allowing sufficient time for it to take place, making it specific rather than vague, varying the format, maintaining student involvement in processing, reminding students to use their social skills while they process, and ensuring that clear expectations of the purpose of processing have been communicated. Often, each group is required to turn in a summary of their processing that is signed by all group members.

Types of Cooperative Learning Groups

A cooperative classroom consists of the integrated use of three types of cooperative learning groups (Johnson, Johnson, & Holubec, 2013). Cooperative learning groups may be used to teach specific content (formalcooperative learning groups), to ensure active cognitive processing of information during direct

teaching (informal cooperative learning groups), and to provide students with long-term support and assistance for academic progress (cooperative base groups). Any assignment in any curriculum for any age student may be done cooperatively. When used in combination, cooperative formal, informal, and base groups provide an overall structure for learning.

Formal Cooperative Learning Groups

Formal cooperative learning groups may last for one class period to several weeks to complete specific tasks and assignments (such as solving a set of problems, completing a curriculum unit, writing a report or theme, conducting an experiment, or reading a story, play, chapter, or book) (Johnson, Johnson, & Holubec, 2013). Any course requirement or assignment may be reformulated to be cooperative. In formal cooperative learning groups the teacher:

1. Specifies the objectives for the lesson (one academic and one social skills).
2. Makes a series of decisions about how to structure the learning groups (what size groups, how students are assigned to groups, what roles to assign, how to arrange materials, and how to arrange the room).
3. Teaches the academic concepts, principles, and strategies that the students are to master and apply and explains the task to be completed and the criteria for success, the positive interdependence, the individual accountability, the expected student behaviors, and the criteria for success.
4. Monitors the functioning of the learning groups and intervenes to teach collaborative skills and provide assistance in academic learning when it is needed.
5. Evaluates student performance against the preset criteria for excellence and ensures that groups process how effectively members worked together.

Formal cooperative learning should be used whenever the learning goals are highly important, the task is complex or conceptual, problem solving is required, divergent thinking or creativity is desired, quality of performance is expected, higher level reasoning strategies and critical thinking are needed, long-term retention is desired, or when the social development of students is one of the major instructional goals (Johnson & Johnson, 1989).

Informal Cooperative Learning Groups

Informal cooperative learning groups are temporary, ad-hoc groups that last from a few minutes to one class period (Johnson, Johnson, & Holubec, 2013). During a lecture, demonstration, or film they can be used to focus student attention on the material to be learned, set a mood conducive to learning, help set expectations as to what will be covered in a class session, ensure that students cognitively process the material being taught, and provide closure to an instructional session. During direct teaching the instructional challenge for the teacher is to ensure that students do the intellectual work of organizing material, explaining it, summarizing it, and integrating it into existing conceptual structures. Informal cooperative learning groups are often organized so that students engaged in three-to-five minute focused discussions before and after a lecture and three-to-five minute turn-to-your-partner discussions interspersed throughout a lecture.

Cooperative Base Groups

Cooperative base groups are long-term, heterogeneous cooperative learning groups with stable membership (Johnson, Johnson, & Holubec, 2013). The purposes of the base group are to give the support, help, encouragement, and assistance each member needs to make academic progress (attend class, complete all assignments, learn) and develop cognitively and socially in healthy ways. Base groups meet daily (or whenever the class meets). They are permanent (lasting from one to several years) and provide the long-term caring peer relationships necessary to influence members consistently to work hard in school. They formally meet to discuss the academic progress of each member, provide help and assistance to each other, and verify that each member is completing assignments and progressing satisfactory through the academic program. Base groups may also be responsible for letting absent group members know what went on in class when they miss a session. Informally, members interact every day within and between classes, discussing assignments, and helping each other with homework. The use of base groups tends to improve attendance, personalizes the work required and the school experience, and improve the quality and quantity of learning. The larger the class or school and the more complex and difficult the subject matter, the more important it is to have base groups.

What Do We Know About Cooperative Efforts?

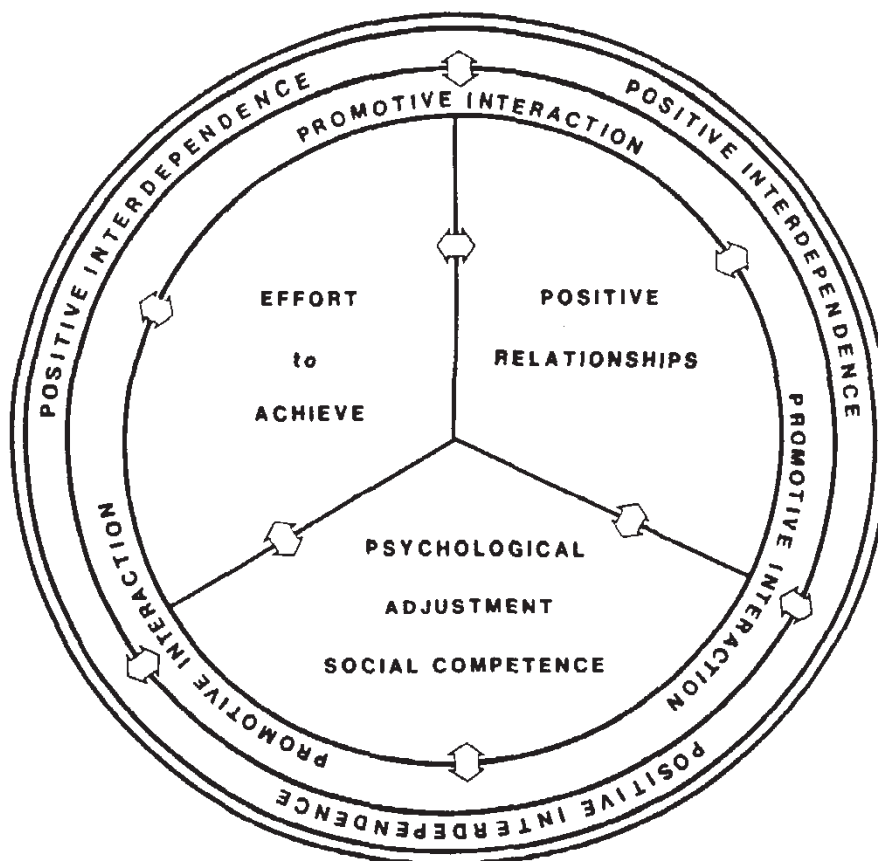
Everyone has to work together; if we can't get everybody working toward common goals, nothing is going to happen.

Harold K. Sperlich, President, Chrysler Corporation

Learning together to complete assignments can have profound effects on students and faculty. A great deal of research has been conducted comparing the relative effects of cooperative, competitive, and individualistic efforts on instructional outcomes (Johnson & Johnson, 1989). These research studies began in the late 1800's when Triplett in the United States, Turner in England, and Mayer in Germany conducted a series of studies on the factors associated with competitive performance. In the 1940's Morton Deutsch, building on the theorizing of Kurt Lewin, proposed a theory of cooperation and competition that has served as the primary foundation on which subsequent research and discussion of cooperative learning has been based.

Our own theorizing and research is directly based on Deutsch's work. Since the late 1800s, over 1,200 experimental and numerous correlational studies have been conducted by a wide variety of researchers in different decades with different age subjects, in different subject areas, and in different settings (see Johnson & Johnson, 1989, 2005, for a complete listing and review of these studies). The basic premise of social interdependence theory is that the type of interdependence structured among students determines how they interact with each other which, in turn, largely determines instructional outcomes. Structuring situations cooperatively results in promotive interaction, structuring situations competitively results in oppositional interaction, and structuring situations individualistically results in no interaction among students. These interaction patterns affect numerous variables, which may be subsumed within the three broad and interrelated outcomes of effort exerted to achieve, quality of relationships among participants, and participants' psychological adjustment and social competence (see Figure 1) (Johnson & Johnson, 1989, 2005, 2009).

Figure 1 . Outcomes Of Cooperative Learning



Source: Johnson, D. W., & Johnson, R. (1989). Cooperation and competition: Theory and research. Edina, MN: Interaction Book Company. Reprinted with permission.

Interaction Patterns

Students can facilitate each other's learning, obstruct each other's learning, or ignore each other. The way students interact depends on how teachers structure interdependence in the learning situation. Positive interdependence results in students promoting each other's learning and achievement. *Promotive interaction* may be defined as individuals encouraging and facilitating each other's efforts to achieve, complete tasks, and produce in order to reach the group's goals. While positive interdependence in and of itself may have some effect on outcomes, it is the face-to-face promotive interaction among individuals fostered by the positive interdependence that most powerfully influences efforts to achieve, caring and committed relationships, and psychological adjustment and social competence. Students focus both on increasing their own achievement and on increasing the achievement of their groupmates. Promotive interaction is characterized by individuals (Johnson & Johnson, 1989, 2005, 2009):

1. Providing each other with efficient and effective help and assistance.
2. Exchanging needed resources such as information and materials and processing information more efficiently and effectively.
3. Providing each other with feedback in order to improve the subsequent performance of their assigned tasks and responsibilities.
4. Challenging each other's conclusions and reasoning in order to promote higher quality decision making and greater insight into the problems being considered.
5. Advocating the exertion of effort to achieve mutual goals.
6. Influencing each other's efforts to achieve the group's goals.
7. Acting in trusting and trustworthy ways.
8. Being motivated to strive for mutual benefit.
9. Having a moderate level of arousal characterized by low anxiety and stress.

Negative interdependence typically results in students opposing and obstructing each other's learning. *Oppositional interaction* occurs as students discourage and obstruct each other's efforts to achieve. Students focus both on increasing their own achievement and on preventing any classmate from achieving higher than they do. *No interaction* exists when students work independently without any interaction or interchange with each other. Students focus only on increasing their own achievement and ignore as irrelevant the efforts of others.

Outcomes

Over 375 studies have been conducted over the past 90 years to give an answer to the question of how successful competitive, individualistic, and cooperative efforts are in promoting productivity and achievement (see Table 1) (Johnson & Johnson, 1989). Since research participants have varied as to economic class, age, sex, and cultural background, since a wide variety of research tasks and measures of the dependent variables have been used, and since the research has been conducted by many different researchers with markedly different orientations working in different settings and in different decades, the overall body of research on social interdependence has considerable generalizability. Three basic findings seem to emerge.

Working together to achieve a common goal produces higher achievement and greater productivity than does working alone. This finding is so well confirmed by so much research that it stands as one of the strongest principles of social and organizational psychology. Cooperative learning, furthermore, results in more higher-level reasoning, more frequent generation of new ideas and solutions (i.e., process gain), and greater transfer of what is learned within one situation to another (i.e., group to individual transfer) than does competitive or individualistic learning. The more conceptual the task, the more problem solving required, the more desirable higher-level reasoning and critical thinking, the more creativity required, and the greater the application required of what is being learned to the real world, the greater the superiority of cooperative over competitive and individualistic efforts.

Some cooperative learning procedures contained a mixture of cooperative, competitive, and individualistic efforts while others were “pure.” The original jigsaw procedure (Aronson, 1978), for example, is a combination of resource interdependence (cooperative) and individual reward structure (individualistic). Teams-Games-Tournaments (DeVries & Edwards, 1974) and Student-Teams-Achievement-Divisions (Slavin, 1980) are mixtures of cooperation and intergroup competition. Team-Assisted-Instruction (Slavin, Leavey, & Madden, 1982) is a mixture of individualistic and cooperative learning. When the results of “pure” and “mixed” operationalizations of cooperative learning were compared, the “pure” operationalizations produced higher achievement.

Table 1. Mean Effect Sizes For Impact Of Social Interdependence On Dependent Variables

Dependent Variable	Cooperative Vs. Competitive	Cooperative Vs. Individualistic	Competitive Vs. Individualistic
Achievement	0.67	0.64	0.30
Interpersonal Attraction	0.67	0.60	0.08
Social Support	0.62	0.70	-0.13
Self-Esteem	0.58	0.44	-0.23
Time On Task	0.76	1.17	0.64
Attitudes Toward Task	0.57	0.42	0.15
Quality Of Reasoning	0.93	0.97	0.13
Perspective-Taking	0.61	0.44	-0.13
High Quality Studies			
Achievement	0.88	0.61	0.07
Interpersonal Attraction	0.82	0.62	0.27
Social Support	0.83	0.72	-0.13
Self-Esteem	0.67	0.45	-0.25

Source: Johnson, D. W., & Johnson, R. (1989). Cooperation and competition: Theory and research. Edina, MN: Interaction Book Company. Reprinted with permission.

Individuals care more about each other and are more committed to each other's success and well-being when they work together to get the job done than when they compete to see who is best or work independently from each other. This is true when individuals are homogeneous and it is also true when individuals differ in intellectual ability, handicapping conditions, ethnic membership, social class, and gender. When individuals are heterogeneous, cooperating on a task results in more realistic and positive views of each other. As relationships become more positive, absenteeism and turnover of membership decreases, member commitment to organizational goals increases, feelings of personal responsibility to the organization increase, willingness to take on difficult tasks increases, motivation and persistence in working toward goal achievement increase, satisfaction and morale increases, willingness to endure pain and frustration on behalf of the organization increases, willingness to defend the organization against external criticism or attack increases, willingness to listen to and be influenced by colleagues increases, commitment to each other's professional growth and success increases, and productivity increases (Johnson & Johnson, 1989).

Working cooperatively with peers, and valuing cooperation, results in greater psychological health and higher self-esteem than does competing with peers or working independently. Personal ego-strength, self-confidence, independence, and autonomy are all promoted by being involved in cooperative efforts with caring people, who are committed to each other's success and well-being, and who respect each other as separate and

unique individuals. When individuals work together to complete assignments, they interact (mastering social skills and competencies), they promote each other's success (gaining self-worth), and they form personal as well as professional relationships (creating the basis for healthy social development). Individuals' psychological adjustment and health tend to increase when schools are dominated by cooperative efforts. The more individuals work cooperatively with others, the more they see themselves as worthwhile and as having value, the greater their productivity, the greater their acceptance and support of others, and the more autonomous and independent they tend to be. Cooperative experiences are not a luxury. They are an absolute necessary for the healthy development of individuals who can function independently.

There are bidirectional relationships among efforts to achieve, quality of relationships, and psychological health (Johnson & Johnson, 1989). Each influences the others. First, caring and committed friendships come from a sense of mutual accomplishment, mutual pride in joint work, and the bonding that results from joint efforts. The more students care about each other, on the other hand, the harder they will work to achieve mutual learning goals. Second, joint efforts to achieve mutual goals promote higher self-esteem, self-efficacy, personal control, and confidence in their competencies. The healthier psychologically individuals are, on the other hand, the better able to they are to work with others to achieve mutual goals. Third, psychological health is built on the internalization of the caring and respect received from loved-ones. Friendships are developmental advantages that promote self-esteem, self-efficacy, and general psychological adjustment. The healthier people are psychologically (i.e., free of psychological pathology such as depression, paranoia, anxiety, fear of failure, repressed anger, hopelessness, and meaninglessness), on the other hand, the more caring and committed their relationships. Since each outcome can induce the others, they are likely to be found together. They are a package with each outcome a door into all three. And together they induce positive interdependence and promotive interaction.

The Cooperative School

Cooperative learning is more than an instructional procedure. It is a basic shift in organizational structure that extends from the classroom through the district office. For decades business and industrial organizations have functioned as "mass manufacturing" organizations that divided work into small component parts performed by individuals who worked separately from and, in many cases, in competition with peers. Personnel were considered to be interchangeable parts in the organizational machine. Such an organizational structure no longer seems effective and many companies are turning to the high productivity generated by teams.

Most schools have also been structured as mass manufacturing organizations. Teachers work alone, in their own room, with their own set of students, and with their own set of curriculum materials. Students could be assigned to any teacher because teachers were interchangeable parts in the education machine and, conversely, teachers could be given any student to teach. Schools need to change from a mass-manufacturing competitive/individualistic organizational structure to a "high performance" cooperative team-based organizational structure. The new organizational structure is generally known as "the cooperative school" (Johnson & Johnson, 1989b).

In a cooperative school, students work primarily in cooperative learning groups, teachers and building staff work in cooperative teams, and district administrators work in cooperative teams. The organizational structure of the classroom, school, and district are then congruent. Each level of cooperative teams supports and enhances the other levels.

A cooperative school structure begins in the classroom. Teachers typically cannot promote isolation and competition among students all day and be collaborative with colleagues. What is promoted in the instructional situations tends to dominate relationships among staff members. Teachers who spend up to six hours a day telling students, "Do not copy," "I want to see what you can do, not your neighbor," "Let's see who is best," and "Who is the winner," will in turn tend to approach their colleagues with the attitudes of, "Don't copy from me," and "Who is the winner in implementing this new teaching strategy." When teachers spend most of their day structuring learning situations cooperatively and carefully creating positive interdependence,

face-to-face promotive interaction, individual accountability, social skills, and group processing, they will in turn approach their colleagues with cooperative attitudes. In addition, by structuring cooperative learning and teaching students how to work effectively within cooperative teams, teachers themselves learn the skills and attitudes required to work cooperatively with their colleagues.

The second level in creating a cooperative school is to form collegial support groups, task forces, and ad hoc decision-making groups within the school. Just as the heart of the classroom is cooperative learning, the heart of the school is the collegial support group. Collegial support groups are small cooperative groups whose purpose is to increase teachers' instructional expertise and success. The focus is on improving instruction in general and increasing members' expertise in using cooperative learning in specific. Collegial support groups meet once a week for about 60 minutes. The principal is a member of each collegial support group, moving from one meeting to another as time allows. A school governing council consists of the principal and one member of each collegial support group. Information is shared in this meeting to be pasted on to each collegial support group. Most decisions are made in this group. In addition, there are school task forces, each of which focuses on a different issue and is made up of one member of each collegial support group. The task forces meet periodically to achieve specific tasks. Information about each task force is passed back to the collegial support group. A full faculty meeting is held once a month and when special issues needing active participation of all faculty arise.

The third level in creating a cooperative school is to implement administrative cooperative teams within the district. The superintendent should organize the district administrators into cooperative teams similarly to how teachers organize students into cooperative learning groups. All administrators should be involved in cooperative teams that meet regularly and work on meaningful tasks. If administrators compete to see who is the best administrator in the district, they are unlikely to be able to promote cooperation among staff members of the school. The more the district and school personnel work in cooperative teams, the easier it will be for teachers to use cooperative learning and vice versa.

Summary And Conclusions

Cooperative learning is the instructional use of small groups so that students work together to maximize their own and each other's learning. The effectiveness of cooperative efforts depends on how well positive interdependence, face-to-face promotive interaction, individual accountability, interpersonal and small group skills, and group processing is structured within the learning situation. These five essential elements may be structured within the learning situation, within the classroom, within the school, and within the school district.

In a cooperative school students work primarily in cooperative learning groups, teachers and building staff work in cooperative teams, as do the district administrators. The heart of the cooperative school is cooperative learning. Cooperative learning groups may be used to teach specific content (formal cooperative learning groups), to ensure active cognitive processing of information during a lecture (informal cooperative learning groups), and to provide long-term support and assistance for academic progress (cooperative base groups). In the classroom, teachers may use two general approaches to creating cooperative learning procedures, conceptual and direct. Long-term change in teaching practices depend on teachers understanding conceptually what cooperation is as well as being able to conduct cooperative learning lessons. In the school, staff members work in collegial support groups especially to increase teacher's instructional expertise and success, task forces to plan and implement solutions to schoolwide problems, and ad hoc decision-making groups to involve all staff members in important school decisions.

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