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ABSTRACT

These digests provide information for educators about the nature of cooperation and how cooperative principles can be used to restructure classrooms, administrative hierarchies, and work relationships of all types. Digest 1 describes the competitive, individual, and cooperative interaction patterns and examines the impact of cooperative learning experiences on achievement levels. Digest 2 presents one teacher's experiences with traditional student grouping; differentiates traditional and cooperative learning groups; recommends the number of students in a cooperative depending upon the teacher's intent; examines group composition; and discusses random and structured grouping as two ways to arrange cooperative groups. Digest 3 discusses positive interdependence and individual accountability as elements differentiating cooperative learning from group work and examines simultaneity, proximity, and social skills as important elements of cooperative learning. Digest 4 further examines nine types of positive interdependence and how teachers can incorporate them into cooperative learning activities: (1) goal interdependence; (2) resource interdependence; (3) role interdependence; (4) identity interdependence; (5) task interdependence; (6) reward interdependence; (7) outside enemy interdependence; (8) environmental interdependence; and (9) fantasy interdependence. (KDFB)

The Cooperative Companion Digest #1

Thinking About The Nature and Power of Cooperative Learning

by Ed Daniels & Mike Gatto

What's The Purpose of The Cooperative Companion Digest ?

Are you interested in finding out more about cooperative learning? If the answer is yes, then this digest is for you. The Cooperative Companion Digest seeks to provide basic understandings about the nature of cooperation and how cooperative principles can be used to restructure classrooms, administrative hierarchies, and work relationships of all types. Related topics will include the transforming powers of cooperation and the relationship between cooperation and competitive power structures. This first digest concerns different types of interaction patterns and how they affect behavior.

What Are Interaction Patterns?

The way people behave toward each other is heavily dependent upon the type of environmental structure or behavioral interaction pattern they are engaged in. W. Edward Demming, the late Total Quality Management guru, estimated that 85% of an individual's behavior is due to the framework in which he/she operates. Demming's claim is significant since it strongly suggests that changing a person's interaction pattern can vary the behavior of those functioning within that pattern. In other words, if you're not satisfied with behavior in a given environment, alter the way people interact and you'll alter the way they'll respond to each other.

David and Roger Johnson of the University of Minnesota maintain there are three basic types of interaction patterns people can find themselves in. One is a **competitive pattern** where individuals complete for limited resources, with one winner and lots of losers. Another is an **individual pattern** where people act on their own behalf with little or no regard for what others are doing. The last is a **cooperative interaction pattern** where the success of one individual is interdependently tied to the success other individual members of a group who have the same goal. These three interaction patterns are found

in schools, the work place, and even in social settings with the competitive and individual interaction patterns the most prevalent.

While all three interaction patterns are important and likely necessary, each generates different types attitudes and associated behaviors. Not all of them are good. Those locked into a competitive pattern are likely to want their opposition to fail since this is the only way they can succeed. Competitors are negatively interdependent in that they need each other, but only to define themselves as either winners or losers. While competition can motivate and push one toward a higher performance level, it can also be counterproductive. Alfie Kohn, in his book No Contest : The Case Against Competition, presents an interesting argument against competition claiming it can produce such negative behaviors as a "winner take all" attitude, cheating, and failure to participate or try hard for fear of losing.

Those in an individual interaction pattern are expected to perform with no connection to others. Each person succeeds or fails on his own since one's behavior or performance has little relationship to what another person does. There is little reason to care about what others are doing. Individual performance is important, of course. However valuable opportunities to build on and refine one's knowledge and understanding are lost when people are expected to work only by themselves, ignoring others. Individual interaction patterns are the ones most commonly found in classrooms today.

Cooperative interaction patterns are designed for people to work toward mutual goals together. Properly structured cooperative interaction patterns promote positive interdependence among people. Cooperative interaction patterns are significantly different from competitive and individual interaction patterns. Rather than rooting for opponents to fail, or working alone without regard for the accomplishments of others, cooperative group members support and want their team members to succeed.

Is There A "Best" Interaction Pattern?

Research on cooperative learning supports the idea that cooperative interaction patterns promote the type of learning and behavior schools and those involved with the education of children might want. According to the Johnsons, and others, cooperative learning experiences tend to promote higher achievement for students of all ages, across all subject areas, for virtually all types of learning than do competitive and individualistic learning experiences. And, of course, students learn to work collaboratively. These findings are specifically related to educational research but likely apply to other types of similarly structured organizations as well.

Doubtless, each pattern has value, but the position here is that the cooperative model accomplishes the most and should be the primary consideration for teachers or anyone else who wishes to use the power of properly constructed cooperative groups.

Interestingly, a cooperative interaction pattern can accommodate the other two so that competitive and individual behavior takes place within a cooperative context.

Setting up effective cooperative groups requires some basic understandings relative to cooperation and then practice implementing them. The next The Cooperative Companion Digest will present some ideas about grouping that show how cooperative groups differ from just putting people together in and asking them to work.

Ed Daniels and Mike Gatto are both teachers in the Smithtown Central School District. Among other things, they teach graduate level courses for teachers in cooperative learning for SUNY at Stony Brook and conduct workshops and inservice training in cooperative learning for school districts and other educational institutions throughout Long Island.

The Cooperative Companion Digest #2

Thinking About The Nature and Power of Cooperative Learning

by Ed Daniels & Mike Gatto

Are Your Grouping Experiences The Same As This Teacher's ?

Here's what one teacher said about his grouping experiences using traditional groups.

" I was primarily a chalk and talk teacher. Essentially, I put notes on the board and lectured. I conducted discussions by asking the whole class a series of questions and calling on students who I thought knew the answers. I only used groups when I needed a break from this type of teaching or I felt my students needed a break from me.

When forming groups, I usually let my students pick the people they wanted to work with. Pairs, groups of threes, fours, and sometimes more formed based on friendships, romances, or other common circumstances. Some students could find no one to work with and ended up working alone.

Most groups never worked well together. When group work was done, it was often by one member with the others either copying or doing nothing. Some groups did no work at all, choosing to talk to each other or other group members across the room. Even when a whole group appeared to be working, it was nothing more than a number of students sitting together, working alone, rather than a group sharing their thoughts and ideas.

I was never happy with the results. Often, I'd end group work early, direct my students to sit in their seats quietly and read and answer questions by themselves. Each time, I swore I'd never use groups again. And I didn't. That is, until the next time I needed a break from chalk and talk and my students needed a break from me.

When I heard about cooperative learning groups, I was afraid it would be just more of the same."

How Are Cooperative Learning Groups Different From Traditional Grouping ?

Cooperative learning groups are anything but more of the same. One of the greatest misconceptions about grouping students is that by simply putting then together they will somehow cooperate and work well with each other. We all know this doesn't happen very often and certainly not frequently enough to rely on this type of grouping to be an effective educational practice.

Cooperative learning groups are different. They are designed so that students actually need each other to accomplish their goals. In a sense, students are "forced" to cooperate in order for the group to be successful through the imposition of a cooperative interaction pattern. Most traditional group work is still used in conjunction with an individual interaction pattern, where one student's work is usually unrelated to the work of the other group members.

The first step in unleashing the power of cooperative groups is to understand that grouping and the tasks assigned to groups require some thought and specific restructuring of the individual interaction pattern into a cooperative one.

How Many Students Should Be In A Cooperative Group?

Effective cooperative groups range from 2 to 4 students depending upon the teacher's intent (Some leading cooperative learning advocates give 5 as the upper limit but our experience indicates that a group of 5 naturally tends to break into two groups, one of 2 and one of 3). Groups of 2 generally provide the greatest amount of interaction between members. If a teacher wants each student to explain his/her ideas to one another, pairs are very effective since it's difficult for two people grouped together to avoid talking with each other. Groups of 3 or 4 provide additional perspectives and ideas for problem solving and the strategies required for the same. When teachers want students to consider a number of different notions, groups of 3 or 4 are quite effective.

What Should The Group Composition Be Like?

As a general rule, groups should be as diverse as the class itself, with each made up of students representing a cross section of the class. Teachers new to cooperative learning are frequently worried about students not wanting to work with each other. Often they will allow the students to pick their own groups. While there are times student selected groups may be appropriate and even desirable, these types of groups are generally not as effective as groups that are randomly formed or teacher selected. Students, even

those who don't know each other very well, will get used to working with one another quickly as they complete properly constructed cooperative activities.

How Should The Groups Be Set Up?

Random Grouping

There are two basic ways groups can be set up, random grouping or structured grouping. Random grouping involves placing students together without great concern for who ends up working with whom. Random grouping is often used by teachers early in the school year, in other situations where students abilities are not yet known, or in situations where the level of ability is very similar among the students in the class. Surprisingly, random grouping usually produces appropriately diverse groups who work well together.

Random grouping is often achieved through a counting off system. Teachers determine how many students they wanted in each group, divide that number into the number of students in the class, and use the resulting number to count off with. If a teacher wanted groups of four in a class of 28, s/he would count off by sevens (28 divided by 4 = 7), grouping students who have the same number. For example, all number ones would be a group, all number twos would be a group, etc.

When numbers won't work out evenly, some groups will just have one more member than the others. Suppose the teacher wants to use groups of threes in that 28 member class. This time s/he would count off by nines (28 divided by 3 = 9 with 1 left over). The teacher would have nine groups. Eight would contain three students (24) and one would contain four students (3 plus the one left over), accounting for all 28 members of the class.

Another effective way to randomly group involves jigsawing a picture or a ditto among the students. Using the class of 28 again, and the teacher's decision to use 7 groups of 4, the teacher makes 7 copies of a worksheet, picture, or any other material s/he wants the students to examine. Each copy is separately cut up into 4 different sections and then mixed together. Every student receives one section and finds the other three who have the missing pieces needed to make the material complete. Once the students find each other, a group is formed.

There are a variety of ways to randomly select groups. Some teachers hand out cards from a deck, and allow students to find others who have the same card (All Aces are a group, for example). Others hand out colored stickers (All blue stickers are a group). Whatever the method, the basic principle always remains the same : determine how many students you want in a group, determine how many groups you'll have by dividing that number into the total number of students, and then select a method that allows you to randomly arrange the class accordingly.

Structured Grouping

Structured grouping occurs when the teacher consciously selects students for each group. Structured grouping is a good way to promote the appropriate mix and balance of students for a cooperative learning group. The criteria for selection may differ from teacher to teacher, however a common type of structured grouping is based on academic ability. The principle of diversity remains as students are placed in groups based upon their approximate ranking with in the class. High level, middle level, and low level achievers are spread among the groups so that a relatively equal amount of them are placed in each group. Groups of 4, for example, might have one high, two middle, and one low achiever. Groups of three would consist of one high, one middle, and one low achiever. .

An easy way to set up structured groups is to for the teacher to list his/her students in ability order. The top student in the class would be number one on the list, the second top student would be number two on the list, and so forth. Setting up the groups now is simple. Once the teacher determines the number of groups s/he will have, students are assigned the groups from the list so that each has a high, a middle, and a low achiever. For example, if there will be 7 groups of 4 students each, the teacher puts one of the top seven students and one of the bottom seven students in each group. Then the groups are rounded out by assigning two of the remaining students to each.

Groups can be deliberately structured in other ways and the criteria for structuring need not be exactly as described above. Additional considerations other than academic ability for grouping are likely necessary. Certainly maturity, leadership abilities, and the like are meaningful and surely should be thought of when grouping.

Teachers new to cooperative learning sometime see grouping like students together as an attractive option. The feeling is students can only be helped by students similar in ability to themselves. This is an especially common notion regarding both high and low level achievers. However, forming groups that contain all the same types of students, as a rule, should be avoided. The important thing to remember is that groups should be designed so that a number of perspectives may be offered and considered. All children can learn from all other children and a diversely structured group helps set up the context for this to happen.

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The Cooperative Companion Digest #3

Thinking About The Nature and Power of Cooperative Learning

by Ed Daniels & Mike Gatto

What Are The Elements That Make Cooperative Learning Different From Group Work?

Cooperative Learning is far more than just putting students together and asking them to cooperate. In fact, all successful cooperative activities contain a number of specific elements that anyone interested in using cooperative learning well should become familiar with. The two elements that all cooperative learning advocates agree are absolutely necessary for cooperative learning to be successful are ***positive interdependence*** and ***individual accountability***.

What is Positive Interdependence?

Positive interdependence is the glue that helps hold cooperative groups together. Positive interdependence exists when group members see it is in their best interests to work together to accomplish a particular goal and that the success of each member within the group is essential for that goal to be accomplished. Positive interdependence means that "*for us to succeed, you and I both must succeed.*" Without positive interdependence, groups are not likely to be cooperative. In a very real way, positive interdependence is what makes cooperative learning cooperative.

There are two basic things to know about positive interdependence. First, positive interdependence usually doesn't happen naturally in the classroom. It needs to be specifically structured into most cooperative activities by the teacher. Second, there are a number of types of interdependence, each having a different degree of strength and a different application. Teachers well versed in cooperative learning know the appropriate types of positive interdependence required for a lesson to be successful cooperatively.

Although there are many types of positive interdependence, not all of them need be present in a cooperative activity. David and Roger Johnson suggest that at least three specific forms of positive interdependence are needed for a good cooperative lesson, however.

A number of types of positive interdependence are listed below.

Goal Interdependence
Resource Interdependence
Role Interdependence
Identity Interdependence
Task Interdependence
Outside Enemy Interdependence
Environmental Interdependence
Fantasy Interdependence
Reward Interdependence
Time Interdependence

Exactly what each positive interdependence is, and how it may be implemented requires a more detailed explanation than this edition of The Cooperative Companion Digest can accommodate. However, the next issue will examine the interdependences in detail and provide specific examples for each.

What is Individual Accountability ?

Individual accountability means that each member of a cooperative group is accountable for the work that takes place within the group. It is not acceptable for any member of the group to do nothing, piggybacking off the efforts of other group members. Like positive interdependence, individual accountability needs to be specifically structured into the cooperative activity by the teacher.

There are two basic types of individual accountability relative to cooperative learning. One is ***within group*** individual accountability and the other is ***outside group*** individual accountability.

Within group individual accountability occurs when each member of the group has a specific task or role that needs to be actuated for the group to succeed. For example, in a jigsaw cooperative task, each member of the group is responsible for dealing with a separate section of material and then teaching or presenting his/her finding to the rest of the group members. That member becomes individually accountable for providing information to the group it can get in no other way.

Another type of within group individual accountability takes place through the assignment of roles to group members. A writer role, for example, requires a group member to be individually accountable for carrying out that specific role. Roles such as reader, time keeper, checker, and the like do the same thing.

Outside group individual accountability usually involves some type of individual assessment of what group members have learned. This type of individual accountability is designed to prevent students from laying back and letting other group members do all the work. Outside group individual accountability takes the form of tests, quizzes, writing assignments, question answering, or any other form of evaluative tool administered to the students individually. After a group has had time to cooperatively complete a task, a teacher might break the groups up and give a individual test to each student, for example.

What Are Some Of The Other Elements That Make Cooperative Learning Different From Group Work?

Simultaneity

Cooperative learning advocate Spencer Kagan proposes the idea of simultaneity as a necessary element for effective cooperative learning. Simultaneity generally refers to the idea that during a properly structured cooperative learning activity, groups of students are working simultaneously, or a the same time, on an assigned task. Simultaneity can be contrasted with sequential instruction, the type of instruction that most often takes place in classrooms today.

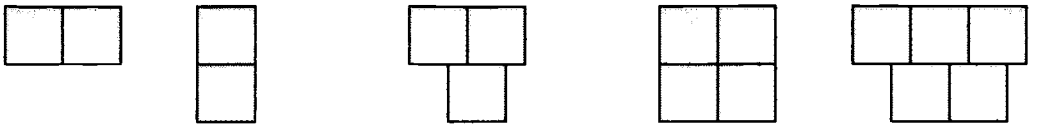
Sequential instruction is the type of teaching most teachers use most often. An example of sequential instruction is the teacher asking a question of the whole class and waiting for students to raise their hands or calling upon students one at a time. This is sequential because the interactions occur one at a time, or in sequence. Only one student can speak at a time. All others must wait until they are called on, and the teacher can only call upon one of them at a time.

Cooperative learning allows for simultaneity to take place. In a cooperative setting the teacher asks a question but directs the groups to discuss it among themselves, explaining that each group member needs to understand the answer and be able to explain it if called on. All groups then discuss the question at the same time; simultaneously. The teacher can then walk around from group to group, listening to group members' responses. Rather than one student speaking while all others remain silent, groups have all their members actively involved in responding to the question at the same time. This is simultaneity.

Proximity

Where students sit in a group is important. Proximity to one another makes a difference in how they interact. It is important to group students in such a way as to make it impossible for them to avoid each other. Face to face, eye to eye, knee to knee, close enough to touch but not touching is the way the Johnsons put it. Students need to be seated so they can see each other and interact act with each other. This means desk

arrangements for groups of students arranged in twos, threes, fours, or fives may look like the following:



Teachers often see these seating arrangements as threatening at first. *"I'm afraid to have my students out of their seats, let alone move their desks to groups"* or *"It'll take my kids too long to do this, the period will be half over by the time every thing settles down"* are common initial sentiments. However, with some practice, teachers soon realize grouping students like this is not difficult at all.

Social Skills

Even the staunchest cooperative learning advocates recognize that most students, regardless of the age level, do not know how to work effectively in a group. Both the Johnsons and Kagan articulate the need for social skill development in order for cooperative groups to work together successfully. These skills may be very basic such as moving desks together quickly and quietly or they may be rather sophisticated and involve groups synthesizing information members have brought to a discussion.

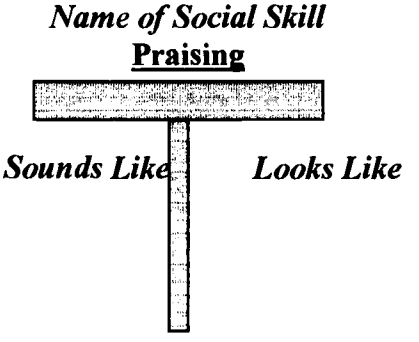
There are two basic approaches concerning the best way to introduce social skills to groups. One advocates the teacher observing cooperative groups, determining the specific social skills needed for more effective group work, and then introducing those specific skills on a needs basis. Another promotes the idea that specific, predetermined social skills be infused into each academic lesson so groups can practice these skills as they complete their tasks.

The position here is that both methods are well worth considering. Perhaps a mixture of the two would suit teachers best. For example, when teachers first start using cooperative groups, specific basic social skills that allow the group to function should be introduced and illustrated by the teacher. These basic skills might include calling other group members by their first names or listening to group members when they speak, and using quiet speaking voices.

As groups get better executing the basic social skills, the teacher can determine what additional higher level social skills are needed for them to work even better. These skills would then be introduced to the groups. Some of these skills might include members praising other group members for good work, respecting each other's opinions, and making sure everyone participates in the decisions made by the group.

However teachers wish to implement social skills, the method of illustrating the skills is basically the same. The Johnsons stress a multifaceted approach that involves defining the skill, explaining the need for the skill, modeling of the skill, and then providing time for the groups to practice the skill.

Many cooperative learning advocates suggest using a T Chart to help illustrate the behavior associated with a social skill. The teacher, eliciting student ideas, writes down what the skill looks like on one side of chart and what it sounds like on the other side. In this way students get a very real sense of the behavior they are expected to display.



Group Evaluation

One last way cooperative learning differentiates itself from group work is through group evaluation. The Johnsons call this group processing, some others refer to it as group assessment. The method of evaluation can vary, but is often done by using a processing sheet that has questions or statements the group can collectively respond to.

Basically, group evaluation provides an opportunity for members to assess how effective they have been as a group. It differs from an assessment of the group's academic success since its emphasis is on group functioning rather than group results. For example, a group might evaluate how well or to what degree members helped each other as they completed a cooperative task. Or, they might consider how well they enacted the specific social skills the teacher asked them to exhibit.

The idea of the group evaluation is for groups to see there are specific types of behavior that will help their performance next time. Evaluation gives the groups the opportunity to reflect on their past performance and set goals for their future performances.

Ed Daniels and Mike Gatto are both teachers in the Smithtown Central School District. Among other things, they teach graduate level courses for teachers in cooperative learning for SUNY at Stony Brook and conduct workshops and inservice training in cooperative learning for school districts an other educational institutions throughout Long Island. Comments may be addressed to Ed Daniels at EDani10003 @ aol.com

The Cooperative Companion Digest #4

Thinking About The Nature and Power of Cooperative Learning

by Ed Daniels & Mike Gatto

What Is Positive Interdependence?
How Does It "Force" People To Cooperate?

One snowy winter night, a friend of ours and his wife went to visit the wife's sick father in the hospital. A number of inches of snow had fallen already during the day and the roads were especially slick. The trip was normally an easy one, mostly parkway from our friend's house and then a short stint on a major road to the hospital. This night, though, the ramp from the parkway to the road the hospital was on was backed up. At least 10 cars stood between our friend and the road he needed to turn on to and no one was moving.

Horns began to honk. The signal light at the end of the ramp turned red and then green, and then red again. Still no cars moved. Our friend left his car and walked down the long line of stationary automobiles. When he got to the front he saw what the problem was; the lead car was stuck in the snow, wheels spinning, unable to clear the ramp and move onto the adjoining road. The only way to get the car moving again was to push it.

So our friend began to push. But, it was immediately obvious he wasn't going to be able to do this alone. Four or five drivers left their cars and came running to help. They pushed together. One man slipped and was helped up by the others. They coordinated their shoves with the driver's shifting the car from forward first, then to reverse. Within a few minutes, the car was free and maneuvered off the ramp. Now other cars began to move off the ramp, too. The men congratulated each other, shaking hands and patting each other on the back. Then, with their job done, they walked back to their cars, got in, and went their separate ways.

What motivated our friend and the others to push this car off the ramp? Was it altruism, kindness, compassion? Probably all these feelings had something to do with it. But we've each seen cars stuck on the side of the road that don't elicit the type of immediate assistance the stuck driver received in this story. Why is this situation different? One reason is there was something else here that argued for action. An additional force was at work, the force of positive interdependence.

In *Positive Interdependence :The Heart of Cooperative Learning*, David and Roger Johnson *say "Positive interdependence is present when individuals perceive that they are linked with others in a way that they cannot succeed unless the others do (and vice versa) and/or that they must coordinate their efforts with the effects of others to complete a task. Without positive interdependence, cooperation doesn't exist."*

In other words, positive interdependence occurs in a situation when those involved each recognize it's in their best interests to work together to accomplish something that is of significance to them. It usually involves a common goal that cannot be achieved by one person alone but can only be realized by joint action. And when structured into situations, it motivates individuals to work willingly as a team to take common positive actions.

In our friend's case, his goal of getting off the ramp was one shared by the other drivers. Neither his individual effort, nor the individual effort of any other driver on that ramp, was sufficient to push the car out of the snow. When this was recognized, the force of positive interdependence kicked in. A group of strangers, tied together by necessity, formed and worked together as a group, coordinating their efforts to move the car. All were needed to free the car; none could have done it alone. They pushed because attainment of the common goal depended upon the successful efforts of each individual pusher. The Johnsons refer to this as *sinking or swimming together.*

The general recommendation is that there be at least 3 different types of positive interdependence in every cooperative activity. The challenge all teachers using cooperative learning face is how to structure positive interdependence into the cooperative activities they prepare for their students.

What Are The Different Types Of Positive Interdependence?
What Are Some Ways Teachers Can Structure Them Into Cooperative Activities

Goal Interdependence

Goal interdependence occurs when a group task is set up so that all members are needed before the group goal can be reached. The success of each group member is required before the success of the group can be achieved. All properly constructed cooperative activities have goal interdependence. Goal interdependence requires setting a group goal so that all group members need to be successful for the group to be considered successful.

An example of goal interdependence is when group members are required to master some material so that not only each member understands it but each member makes sure all the other group members understand it. The teacher might randomly select one member to answer for the group or select one group member's paper to represent the

groups' answers. If that randomly selected student response is satisfactory, then the group is considered successful. If that student response(s) is not satisfactory, the group is not successful.

Resource Interdependence

Resource interdependence is set up through the limiting of materials for group members so that members need to share the resources essential for completion of the group task. It creates an environment where group members are forced to share those things necessary to meet the goal set by the teacher. Some of the resources a teacher might consider limiting are textbooks, writing utensils, group answer sheets, or even time to complete the required task..

For example, a teacher might assign cooperative groups of 4 the goal of finding the answers to some questions from the textbook, stipulating that all members must have the answers and be able to explain them for the group to be deemed successful (goal interdependence). Instead of each group member having a text from which to work, the teacher could limit the textbooks to two so group members would have to share them.

Role Interdependence

Role interdependence is created through the assignment of specific roles to specific group members. Role interdependence helps create individual accountability as well since each role requires a specific behavior by the group member it is assigned to. It should be recognized, however, not all cooperative activities require roles.

Teachers often struggle trying to find meaningful roles for every group member. Teachers who find themselves racking their brains trying to find roles for everyone in the group will probably come up with ones so contrived as to be trivial or ineffective. The greater the difficulty in coming up with roles, the greater the likelihood roles are not needed.

Teachers should first determine what specific actions will be required for a group to be successful and then assign these actions in the form of roles to group members. An alternative is to allow the groups themselves to distribute the roles. For example, if the group goal requires members to read or write something, the roles of reader and writer may be given. If there is a time limit the group must adhere to, the role of a timekeeper is appropriate. One way to make sure everyone has a role in activities where there are not enough specific roles to go around is to rotate the role(s). For example, group members can take turns reading or writing if these are the only roles for a particular activity.

Roles may be determined and assigned on the basis of student ability. Stronger academic students may be given roles that require greater academic skills. Students with

lesser academic abilities may be given roles that are important to the group, but not necessarily requiring strong academic talents. The roles of timekeeper, group spokesperson, or even team praiser are sometimes used in these cases.

However, random assignment of roles or intragroup designation of roles should be encouraged. One of the nice things cooperative learning does is provide a different context for behavior than the traditional classroom. Teachers are continuously surprised by what they hear and see students say and do in cooperative groups. Doling out roles based upon perceptions of performance in a traditional classroom setting may be inappropriate within a cooperative context. For example, the shy child in the corner who never speaks during a whole class discussion may turn out to be dynamo in a cooperative group. Assigning a role trying to match more traditionally based perceptions may be restrictive and unfair.

Roles can be a very powerful way to set up desired behaviors with in a group. Interestingly, they appear to have similar affects, regardless of age level. We were once giving a presentation to a group of about 200 teachers during the afternoon session of a Superintendent's Conference Day. We realized immediately we had a lively group on our hands, so much so that we had a hard time keeping them quiet once we had gotten them into their groups. It was obvious they had gotten quite revved up during their lunch break and they weren't ready, to settle down, just yet. We hadn't planned on assigning any roles for our cooperative activity but we knew that we needed help from within the group to get the group members' full attention.

So here's what we did. We asked the groups to select their most responsible member and then we designated that person the Group Quieter. We explained that the job of the Group Quieter was simply to quiet the group down quickly when asked. Each person who had this role took it quite seriously, and every time we needed to settle the groups down we called on this person to carry out his/her role. It worked wonderfully. The groups responded positively, and the presentation was a great success.

Identity Interdependence

Identity interdependence is produced as student teams set themselves apart from other teams by agreeing upon a team name, coming up with a team motto or logo, or even designing a team coat of arms. Setting up identity interdependence can be fun for teams and used as a team building activity. In fact, some of the group names can be quite creative and descriptive. Toxic Wastes, Wonderful Warriors, Cooperative Friends are just a few that come to mind.

Identity interdependence isn't as strong as some of the other interdependences such as goal, reward, or resource. It shouldn't be relied on to pack an "interdependence punch" by itself. However, used in conjunction with other interdependences, identity adds to the force that helps draw group members together.

Task Interdependence

Task interdependence is often misunderstand. This is probably due to its name and the incorrect association with the task or job a group is asked to complete. Task interdependence is often confused with goal interdependence or role interdependence.

Task interdependence could easily be called "assembly line interdependence." In task interdependence, group members have jobs that must be performed in a sequential order; one group member must wait for another group member to finish before he/she can start his/her job.

For example, in a pre-robotics assembly line a worker had to put the wheels on the car before another worker could put on the lug nuts while yet a third worker had to wait so he could tighten the lug nuts. In an elementary classroom, the application might be one child finds a picture from a magazine, another then cuts the picture out, and yet another waits to paste the picture onto the paper.

Task interdependence is not the same as role interdependence. In the latter, group members' roles may be carried out simultaneously or independently of each other. Task interdependence differs from goal interdependence in that the latter refers to the overall satisfaction of a group assignment while the former refers to individual operations within the assignment that must to be completed in a specific order.

Reward Interdependence

Reward interdependence take place when a reward is given out to a group who successfully attains the goal set by the teacher. The key here is that it is a group reward, not individual rewards for people in the group who have succeeded. Either the entire group is successful and gets the reward, or no reward is given.

Many teachers feel uncomfortable about giving rewards for work the students are supposed to do anyway. Others feel that by rewarding students for their work, the work itself or the process by which the work is completed is devalued. Alfie Kohn, in Punished By Rewards, makes an excellent case against using rewards to motivate, arguing intrinsic motivation is destroyed as a result. Others contend rewards may be helpful in getting groups to work together initially but should be eliminated as soon as group members recognize the benefits of group work.

Regardless of your feelings, rewards do seem to have impact upon student motivation, at least in the short term. Our experience is that reward interdependence is a powerful tool in getting groups to work together and should be used by teachers as they see necessary. The rewards given, though, should not be of any great value, and should

not be used when the activities are already of high interest. Not every group activity need have a reward associated with it.

When used, common types of rewards are bonus points, stickers, "no homework passes, free time, and certificates. Not all reward types are appropriate for all teachers. Good advice is to base your rewards on those things that will make your students most likely to work together but never use reward types with which you are uncomfortable or disagree.

Outside Enemy Interdependence

Outside enemy interdependence is achieved by having the groups within a class compete against each other, with only one group able to win and all other groups ending as losers. Competition among groups is a good way to get group members to work together. However, since only one group can win, Outside Enemy often has the side effect of generating bad feelings between the groups. And, as a competitive interaction pattern, Outside Enemy also can spawn other negative behaviors often associated with competition (See The Cooperative Companion # 1).

Many teachers combine a form of Outside Enemy Interdependence and Reward Interdependence so that each team may succeed and be rewarded but one team will be rewarded even more by reaching their goal first, or matching some other criteria the teacher sets up (most correct answers, most cooperative, etc.). For example, the teacher may set up an activity with the following reward structure : Any team that can successfully complete the assignment will receive a bonus point, but the team that successfully completes the assignment first will receive an additional bonus point. This type of reward structure allows each team to earn a reward but adds the additional interdependence associated with outside competition.

Environmental Interdependence

Environmental Interdependence calls for the cooperative group to be seated in the same area of the room each time they meet. Groups, in essence, are given their own turf. Proximity matters, so it is important for group members to be near each other. According to David and Roger Johnson, the ideal seating arrangement is for group members to be "knee to knee", "eye to eye", "close enough to touch but not touching." Environmental Interdependence is usually naturally built in to any cooperative learning activity when group members meet.

Fantasy Interdependence

Fantasy Interdependence is usually considered a task specific interdependence. That is , the interdependence is directly connected to the activity the group is asked to do. Fantasy interdependence activities are often simulations of real life situations or imaginary life or death situations. Usually, group members are lost or stranded some where such as on the moon or in a desert. Group members must work together to make decisions that could mean the difference between life and death if the situation were real.

Ed Daniels and Mike Gatto are both teachers in the Smithtown Central School District. Among other things, they teach graduate level courses for teachers in cooperative learning for SUNY at Stony Brook and conduct workshops and inservice training in cooperative learning for school districts and other educational institutions throughout Long Island. Comments may be addressed to Ed Daniels at EDani10003 @ aol.com

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