Cooperative Learning

Prince George's County Public Schools

Welcome to the Electronic Learning Community

A Guide to Cooperative Learning

http://www.pgcps.org/~elc/learning1.html

'We search on cooperative learning is overwhelmingly positive, and the cooperative approaches are appropriate for all curriculum areas. The more complex the outcomes (higher-order processing of information, problem solving, social skills and attitudes), the greater are the effects. "Bruce Joyce

What is Cooperative Learning?

Cooperative learning may be broadly defined as any classroom learning situation in which students of all levels of performance work together in structured groups toward a shared or common goal. According to Johnson, Johnson and Holubc, (1994): "Cooperative learning is the instructional use of small groups through which students work together to maximize their own and each others learning. " In classrooms where collaboration is practiced, students pursue learning in groups of varying size: negotiating, initiating, planning and evaluating together. Rather than working as individuals in competition with every other individual in the classroom, students are given the responsibility of creating a learning community where all students Participate in significant and meaningful ways. Cooperative learning requires that students work together to achieve goals which they could not achieve individually.

How do students benefit from working in Cooperative Learning?

Students that are involved in cooperative learning achieve many social and academic benefits. Cooperative classrooms are classes where students group together to accomplish significant cooperative tasks. They are classrooms where students are likely to attain higher levels of achievement, to increase time on task, to build cross-ethnic friendships, to experience enhanced self-esteem, to build life-long interaction and communication skills, and to master the habits of mind (critical, creative and self-regulated) needed to function as productive members of society.

Why use Cooperative Learning?

Teachers who employ cooperative learning methods promote learning because these collaborative experiences engage students in an interactive approach to processing information, resulting in greater retention of subject matter, improved attitudes toward learning, and enhanced interpersonal relations among group members.

What is the teacher's role?

Initially, the teacher carefully designs meaningful tasks that require active participation of each student in the group toward a common end. At the beginning of a cooperative lesson, the teacher's role, often in cooperation with the class, is that of "task setter." As groups work on tasks, the teacher acts as a facilitator/coach moving from group to group to monitor the learning

process. The teacher also provides students with on-going feedback and assessment of the group's progress.

How many different types of Cooperative Learning models are there?

A variety of formal cooperative learning models have been developed, such as JIG-SAW, CO-OP, LEARNING TOGETHER, and GROUP INVESTIGATION. In addition, a number of specific cooperative learning designs, such as think-pair-share, peer response groups for writing, paired problem solving for

mathematics, reciprocal teaching in reading, group experiments in science, and discussion circles in social studies have been successfully applied in the classroom. The selection of a particular model or design is influenced by the desired outcomes for instruction, <u>the subject area, and the social skills of the students</u>.

Essentials of Cooperative Learning*

BASIC ELEMENTS

There are five basic principles fundamental to cooperative learning.

1. Face-to-Face Promotive Interaction

By using face-to-face promotive interaction, learning becomes active rather than passive. Teams encourage discussion of ideas and oral summarization. Peer assistance clarifies concepts for both helper and the student being helped. Cooperative teams help students learn to value individual differences and promote more elaborate thinking.

2. Positive Interdependence

Students must feel that they need each other in order to complete the group's task, that is, they "sink or swim together." Positive interdependence can be built into the task by jigsawing information, by limiting materials, by having a single team product, through team roles (recorder, reporter), or by randomly .y selecting one student to answer for the team. It can be built into a reward structure by assigning team points based on team averages, on members reaching a predetermined criterion, or on team improvement rather than outright grades.

3. Individual Accountability/ Personal Responsibility

Students must feel that they are each accountable for helping to complete a task and for mastering material. They must know that a "chauffeur/hitchhiker" situation will not be productive. Ways to build in individual accountability include: students take individual quizzes; each student is responsible for a specific portion of a task; each must be able to summarize another's ideas; any student may be called on at random to answer for the team.

4. Interpersonal and Collaborative Skills

These include skills for working together effectively (staying on task, summarizing, recording ideas) as well as group maintenance skills (encouraging each other). Ways to foster skill development include teacher modeling, brainstorming characteristics of "good" skills, direct practice, process observing, and reflection. Skill practice can be "tacked on" to academic lessons through games (e.g., Talking Chips) or by making social skills a separate objective to be practiced and observed.

5. Reflection/Group Processing of Interaction

Processing means giving students the time and procedures to analyze how well their groups are functioning and how well they are using the necessary collaborative skills. Processing can be individual, team-wide, or at the whole collaborative class level. Examples include: How well did I listen? Did we take turns and include everyone? How could we have coached each other

better? How can the class function more smoothly?

TEAM FORMATION ISSUES

Size

The smallest group is two. The largest recommended is six. Generally, in smaller groups each member participates more, fewer social skills are required, and groups can work more quickly. Larger groups generate more ideas, deal better with complex ideas, and create fewer group reports to process. Remember, it's hard to get left out of a pair; triads tend to surface issues and are good for process observing; teams of four allow multiple ways to pair.

Formation

With a few exceptions, research favors groups which are heterogeneous with regard to academic achievement, gender, ethnicity, task orientation, ability, and learning style. Heterogeneous groups promote more elaborate thinking and explanations, and provide opportunities for students to develop feelings of mutual concern. Student self-selection of groups is generally not successful, although students may provide input for teachers to consider in assigning groups. Random assignment promotes the idea that everyone is expected to work with everyone else at some point. Random assignment can result in teams that are not heterogeneous or equal in ability, so are best used if the task is of short duration.

Duration

If the task is of some duration, the makeup of groups must be seen as "fair," so the groups should be carefully structured. Groups that stay together for longer periods (4-6 weeks) form stronger bonds, develop more complex collaborative skills, and can tackle more complex tasks. Groups should remain together long enough to feel successful, but not so long that bonds become counter-productive. It is a usually a mistake to break groups up because they are having trouble functioning since members will feel unsuccessful in groups and transfer that feeling to the next group. Try to establish some success first!

MANAGEMENT TIPS

- *Noise*
  Develop and practice a Quiet or Zero-Noise signal. The closer students are seated, the quieter their voices can be. Practice "12-inch voices." Use structures such as Circle of Knowledge or Roundtable that have quiet time built-in. Remember that if only one student in a group is speaking at a time, larger groups should result in fewer voices, therefore less noise. Have students brainstorm solutions to noise.
- *Deadlining and Task Structure*
  Give students specific tasks to finish within a predetermined time limit, e.g., "You have one minute to agree as a group on 3 reasons." Use a timer.
- *Instructions*
  Show, don't tell, instructions (have a group model the steps). Have students tell each other the instructions to make sure they understand prior to starting the task.
- *Questions*
  Answer team questions only. Individual questions should be dealt with in the team. Teach students to use the "Three Before Me" technique.
- *Circulate*
  Use proximity. Monitor discussions to check for understanding and to be aware of collaborative skills that may need to be addressed.
- *Roles*
  Structure tasks through roles. Have runners, checkers, recorders, reporters, timekeepers, etc.

*H.C.P.S.-Cooperative Learning Guide

Cooperative Learning:

Descriptions of Some Commonly Used Techniques

SIMPLE STRUCTURES

Think-Pair-Share

This is a four-step discussion strategy that incorporates wait time and aspects of cooperative learning. Students (and teachers) learn to LISTEN while a question is posed, THINK (without raising hands) of a response, PAIR with a neighbor to discuss responses, and SHARE their responses with the whole class. Time limits and transition cues help discussion move smoothly. Students are able to rehearse responses mentally and verbally, and all students have an opportunity to talk. Both students and teachers have increased opportunities to think and become involved in group discussion. (Lyman)

Three-Step Interview

This involves structured group activity with students. Using interviews/listening techniques that have been modeled, one student interviews another about an announced topic. \"en time is up, students switch roles as interviewer and interviewee. Pairs then join to form groups of four. Students take turns introducing their pair partners and sharing what the pair partners had to say. This structure can be used as a teambuilder, and also for opinion questions, predicting, evaluation, sharing book reports, etc. (Kagan)

Roundtable

Roundtable can be used for brainstorming, reviewing, or practicing while also serving as a teambuilder. Sequential form: Students sit in teams of 3 or more, with one piece of paper and one pencil. The teacher asks a question which has multiple answers. Students take turns writing one answer on the paper, then passing the paper and pencil clockwise to the next person. When time is called, teams with the most correct answers are recognized. Teams reflect on their strategies and consider ways they could improve. Simultaneous form: Each student starts a piece of paper, writes one answer, and passes it, so several papers are moving at once. (Kagan)

Numbered Heads Together

This structure is useful for quickly reviewing objective material in a fun way. The students in each team are numbered (each team might have 4 students numbered 1, 2, 3, 4). Students coach each other on material to be mastered. Teachers pose a question and call a number. Only the students with that number are eligible to answer and earn points for their team, building both individual accountability and positive interdependence. This may be done with only one student in the class responding (sequential form), or with all the numbers, 3's for instance, responding using an Every Pupil Response technique such as cards or handsignals (simultaneous form). (Kagan)

Pairs Check

This is a way to structure pair work on mastery-oriented worksheets. Students work in teams of four with two sets of partners. The worksheet is set up with problems presented in pairs. The first person in each partnership does the first problem with the pair partner serving as coach, and offering exaggerated praise. After the first problem is done, partners change roles. After each pair of problems, teams of four check each others' work and, if they agree, give a team cheer or handshake. In this way students stay on task, working together toward mastery. (Kagan)

Send a Problem

Each student on a team writes a review problem on a flash card. Teams reach consensus on answers and write them on the backs of the cards. Each group's stack of questions passes to another group, which attempts to answer them and checks to see if they agree with the sending group. If not, they write their answer as an alternative. Stacks of cards can be sent to a third and fourth group. Stacks of cards are finally returned to the senders, who may discuss the alternative answers. (Kagan)

STUDENT TEAM LEARNING TECHNIQUES

Jigsaw II

Using this structure, students are responsible for teaching each other material. A unit of work, often a reading, is divided into 4 expert areas, and each student on a team is assigned one area. Experts from different teams meet together at tables to discuss their expert areas. Students then return to their teams and take turns teaching. A quiz may be given at this time. Jigsawing materials refers to any strategy in which each student on a team receives only a piece of the material that is to be learned so that students must rely on the other members of their team to learn all of the material. (Slavin)

<p style="text-align:center">**Using Role Cards**</p>

While working in cooperative learning groups it is necessary for each member of the group to be assigned a task and be given a role. Once a decision has been made as to the number of groups and the roles that will be needed to perform the task, a set of role cards, similar to the ones below, should be constructed for each team member. Before roles are assigned, teachers should explain and model the task and the individual roles for students so that they know and understand how his/her individual task and role will contribute to the success of the group. Roles should be rotated on a regular basis so that all students become proficient in each task.

Role Card # 1

Facilitator:

Makes certain that everyone contributes and keeps the group on task.

Role Card # 2

Recorder:

Keeps notes on important thoughts expressed in the group. Writes final summary.

Role Card # 3

Reporter:

Shares summary of group with large group. Speaks for the group, not just a personal view

Role Card # 4

Materials Manager:

Picks up, distributes, collects, turns in, or puts away materials. Manages materials in the group during group work.

Role Card # 5

Time Keeper:

Keeps track of time and reminds groups how much time is left.

Role Card # 6

Checker:

Checks for accuracy and clarity of thinking during discussions. May also check written work and keeps track of group point scores.

Sources:

- MSDE "*Better Thinking and Learning*"
- Howard County Public Schools - *Cooperative learning Guide*

- *Cooperative Learning in the Classroom*

- *Developing Social skills Handbook* - Dr. Richard Solomon

To learn more about cooperative learning, consider taking:

- Cooperative Learning State Approved Workshop (SAW-ME)
  This three credit workshop is designed for educators, K-12, who want to learn how to incorporate all facets of cooperative learning into instructional design.

For more information about cooperative learning check out the resources available at the Instructional Resource Room located at Buck Staff Development Center:

- Cooperative Learning in the classroom, Roger T. Johnson, David W. Johnson, and Edythe J. Holubec, ASCD, 1994
- Cooperative Learning Manual, Spencer Kagan, Resources for Teachers, 1992

Video Series:

- Cooperative Learning (ASCD)
- What's New in Schools?- A Parent's Guide to Cooperative Learning (ASCD)
- A Fresh Look at Cooperative Learning (Video Journal of Education)
- Becoming the Very Best Team (Teacher Education Resources)

This site was developed by the Department of Staff Development, in collaboration with the Division of Instruction. Questions, comments, and other inquiries may be addressed to Allene Chriest (achriest@pgcps.org) or Jeff Maher (jmaher@pgcps.org).

Cooperative learning strategies
http://courses.coe.asu.edu/dbclark/CoopLearn/CL%20strategies.htm

Various strategies exist for cooperative learning and can be used at whenever the instructor see fit for their use. Listed below with a brief description are some of the more common strategies.

Think-Pair-Share is a method that allows students to engage in individual and small-group thinking before they are asked to answer questions in front of the whole class. There are four steps to this method. The first step, groups of four students listen to a question posed by the teacher. Secondly, individual students are given time to think and then write their responses. Thirdly, pairs of students read and discuss their responses. Finally, a few students are called on by the teacher to share their thoughts and ideas with the whole class. This method can be very useful and work well in the science classroom due to the continual request of science teachers having students formulate hypotheses about the outcome of an experiment before it is done.

- (Example: A teacher could pose the question, 'What is photosynthesis?' students then think individually about the question. After a couple minutes of thought the students then turn to a shoulder partner and discuss their thoughts with each other. The teacher then facilitates a whole class discussion.)

Three-Step Interview is a strategy that is effective when students are solving problems that have no specific right answers. Three problem-solving steps are involved in this process. In step one the teacher presents an issue about which varying opinions exist and poses several questions for the class to address. Step two, the students, in pairs become the interviewer and the interviewee. Step three, after the first interview has been completed, the students' roles are switched. After each student has had a turn, the pairs read their interviews to the class. After all interviews have been done, the class writes a summary report of the interview results.

- (Example: A teacher presents stem cell research as a cure to Alzheimer's disease then students pair off and interview each other about this topic. Following the interviews a presentation to the class is made.)

Round Table or Rally Table are simple cooperative learning structures that cover much content, builds team spirit, and incorporates writing. The roundtable has three steps to it. In the first step, the teacher poses a question that has multiple answers. Step two, the first student in each group writes one response on a paper and passes the paper counterclockwise to the next student. Finally, in step three, teams with the greatest number of correct responses gain some type of recognition. This type of cooperative learning can easily be used in the science classroom. For example, the students may be asked to write as many reptile names as they can. At the end the group with the most reptiles written down is rewarded.

- (Example: A teacher displays a picture and asks what are various food chains found within the ecosystem of the picture. One student writes a food chain on a piece of paper then passes the paper to other members of the team for them to write a food chain that they see in the picture. Students continue to pass around the paper until the teacher stops the activity or until a group runs out of answers.)

Group Investigations are structured to emphasize higher-order thinking skills such as analysis and evaluation. Students work to produce a group project, which they may have a hand in selecting.

- (Example: Science fair projects.)

STAD (Student Teams-Achievement Divisions) is used in grades 2-12. Students with varying academic abilities are assigned to 4 or 5 member teams in order to study what has been initially taught by the teacher and to help each student reach his or her highest level of achievement. Students are then tested individually. Teams earn certificates or other recognition based on the degree to which all team members have progressed over their past records.

- (Example: Review day activity before a test.)

Jigsaw II is used with narrative material in grades 3-12. Each team member is responsible for learning a specific part of a topic. After meeting with members of other groups, who are the "expert" in the same part, the "experts" return to their own groups and present their findings. Team members then are quizzed on all topics.

- (Example: Discussion of the interplay of the systems of the human body.)

Round Robin Brainstorming or Rally Robin are a strategies when the class is divided into small groups of 4 to 6 students per group with one person appointed as the recorder. A question is posed by the teacher with many possible answers and students are given time to think about answers. After the "think time," members of the team share responses with one another round robin style. The recorder writes down all the answers of the group members. The person next to (clockwise) the recorder gives their answer and the recorder writes it done then the each person in the group in order (clockwise) gives an answer until time is called. This strategy is very similar to round table. The main difference is that in round robin one student does all the recording for all members of his/her group.

- (Example: A teacher displays a picture and asks what are various food chains found within the ecosystem of the picture. One student is the recorder and writes all of the groups answers on a piece of paper. This strategy continues until the teacher stops the activity or until a group runs out of answers.)

Three-minute review is used when the teachers stop any time during a lecture or discussion and allows teams three minutes to review what has been said with their group. Students in their groups can ask a clarifying question to the other members or answer questions of others.

- (Example: After discussing a multiple step process like digestion, students can form teams and review the process or ask clarifying questions.)