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Cooperative Learning

"Form yourselves into groups of five or six and discuss the next example in the text. I'll give you 15 or 20 minutes, then we'll hear from all the groups. Any questions? Okay, go ahead."

Teachers use small groups frequently—to generate ideas for classroom discussion, for a change of pace from the lecture, or to encourage students to speak out in class. This occasional use of small groups, however, differs from cooperative learning in a number of significant ways. In a cooperative learning classroom, the teacher would pose a clear task for students to perform and give specific instructions about how to do it:

"Look at the next example in the book and think about the advantages and disadvantages of the solutions which Clarkson proposes. Think about their economic feasibility. Write down your ideas and then compare them with one of the other students in your usual group of four. Make sure you justify the reasons for your answers, especially if there is any disagreement with your partner. Once you are satisfied that you understand your partner's choices—you don't have to agree with them—I'll ask you to share your answers with the rest of the class so that we can come up with the main advantages and disadvantages of the proposed solutions."

This structure, **Think-Pair-Share**, is a commonly used cooperative learning strategy. It exemplifies clearly how cooperative learning differs from the occasional use of group work in classrooms.

What is Cooperative Learning?

Cooperative learning is a strategy which involves students in established, sustained learning groups or teams. The group work is an integral part of, not an adjunct to, the achievement of the learning goals of the class. Cooperative learning fosters individual accountability in a context of group interdependence in which students discover information and teach that material to their group and, perhaps, to the class as a whole. The teacher's role changes as Alison King (1993) says "from sage on the stage to guide on the side." Although they learn in groups, the students are evaluated individually on the learning they have achieved.

Cooperative Learning is Structured and focused to make sure that learning is taking place. The teacher chooses the groups to reflect a diversity of viewpoints, abilities, gender, race, and other characteristics. Letting the students choose their own groups can result in a homogeneity which reduces the acquisition of social skills and increases the possibility of a lack of focus on the learning task (Cooper, 1990).

The groups contain fewer than six students—most likely four. Four is a good number; more than that, and individuals may not have equal opportunity to contribute. Four students can work in pairs (each student having 3 potential partners) or together. The group is large enough to contain a diversity of perspectives, yet small enough to facilitate useful interaction (Millis, 1993).

Think- Pair - Share

In addition to the scenario above where students use Think- Pair - Share to reach a consensus on advantages and disadvantages, this versatile cooperative learning structure can be used in other ways:

- **pairs problem solving:** two students work together to solve a math problem;
- **thinking aloud pairs problem solving:** a variation where one student in the pair listens to the other as he or she talks through the solution to the problem; and
- **peer teaching:** students teach each other the material.

Cooperative Learning Creates a Classroom Community which involves students in a kind of interdependence whereby all are working towards a common goal, often with group members responsible for different aspects of the content and teaching it to other members of the group. The group's work is not complete until all its members have mastered the content. Furthermore, individual learning is reinforced as a result of explaining the content to others. Once established, the groups can stay together for the entire semester or can be reformed to concentrate or disseminate their acquired knowledge at various stages throughout the semester (see *Jigsaw*).

Cooperative Learning is a Sustained Approach which lasts longer than a 15 - 20 minute small-group discussion. An entire course or module may be taught using the cooperative learning method. Because they are in the same group for a longer period of time, students experience greater continuity than in occasional small-group situations. The cooperative method enables the groups to identify areas which they need to study further. Groups can recognize connections between what they have learned and what they are discovering, thereby integrating their knowledge. It is important to note that this method encourages students to seek information actively; they are no longer only passive recipients of information.

Cooperative Learning Requires and Enhances Students' Communication Skills. The success of the group depends upon the interaction of its members. Before cooperative learning can begin, students will learn some of the skills required for successful group interaction:

- paraphrasing other's words to ensure and verify comprehension;
- giving and receiving feedback;
- allowing everyone to contribute ideas; and
- refraining from taking over the group or allowing another to do so.

Regular questionnaires can be useful in gauging the success and maintaining the integrity of the group process.

Cooperative Learning Balances Interdependence with Individual Accountability. Instructions to the students are specific: each group and each student within that group has a task to perform. In other words, each student must demonstrate his or her mastery of the subject and receive an individual grade. Group grades, which may result in some students coasting to a higher mark on the effort of others, do not emphasize individual accountability and are not recommended.

Cooperative Learning Responds to Classroom Diversity and has a positive impact on students whose voices may otherwise go unheard in the classroom. These students include women, minorities, and those who for other reasons may be shy to speak in front of the entire class. Those whose learning style preference is cooperative and collaborative rather than competitive are also served well by this classroom technique. Let's face it, most teaching techniques emphasize students working as individuals - alone in the library, classroom, or study - or as competitors. Students in the cooperative classroom are responsible for each other's learning. Competition may still exist; however, it is among groups rather than individuals.

Think- Pair - Square

Similar to the **Think- Pair- Share** structure, **Think- Pair - Square** asks students, once they have completed their assigned pair task, to join with another pair to compare their conclusions. The instructions to the newly formed "squares" may be to reach a consensus within their groups or to explain their conclusions to the other pair who has joined them.

The Role of the Teacher in the Cooperative Learning Classroom

Teachers involved with cooperative learning strategies become facilitators and resource persons. They must do extensive initial planning and researching of the material to be learned, clearly specifying the objectives for the lesson, module, or class. Teachers must explain the task and the cooperative process to the groups.

Once the cooperative process begins, teachers should circulate among the groups, listening to their deliberations, noting whether students are able to manage the work, and intervening where necessary to provide support and information, and otherwise monitoring the effectiveness of the groups. Through this improved interaction with the students, teachers model skills of group management and communication which students are expected to use. Such skills include listening, paraphrasing, responding in a non-judgemental manner, and encouraging equal participation between group members (Millis, 1993).

Adapted from Fennell, Hope-Arlene (1994), *Cooperative Learning: Students' Perceptions and Preferences*, The Lakehead University Teacher, 4 (1)

Benefits and Obstacles Associated with Cooperative Learning

Some Advantages of Cooperative Learning

Improved Attendance: Because of their commitment to others in their group, students in cooperative classrooms tend to have better attendance.

Higher Grades: Because of their active participation in class, students' self-esteem and understanding of the material are increased. They earn higher grades.

Increased Participation: Because they are contributing to the group and participating in class, students become more active learners.

Overcoming Obstacles to Cooperative Learning

Student Resistance: Some students may feel that they are not "getting value for money" if the teacher is not standing in front of them, lecturing. Explain the benefits of cooperative learning to those students. Encourage them to work in a group for a while. Only rarely will you find someone opting out, becoming a group of one.

Incompatibility: If a student has difficulty working within the group to which she or he is assigned, find out whether the problem is personality conflict, a misunderstanding about the learning goals, or a lack of preparation. Perhaps the student is not pulling her or his weight and is being pressured by other group members. Or perhaps you may have to find a more compatible group for that student.

Adapted from Segó, Arlene (1991), Cooperative Learning: A Classroom Guide, Info-Tec, Cleveland, Ohio

Jigsaw

In groups of four, students are assigned a "chunk" of material or a multi-faceted problem. Each member of the group then selects or is assigned a particular aspect of the problem on which to focus.

Next, students move into expert groups, again four students, which consist of students who are responsible for mastering the same material. Students may be given the necessary material at this point or may have been responsible for learning it beforehand. In these expert groups, the students ensure that they all understand their portion of the material and also know how they will teach it to their original group of four.

Students then regroup into their original foursomes, and each student teaches his or her material to the others. Individual mastery of the entire topic can be evaluated through quizzes.

This technique mirrors clearly the characteristics of cooperative learning—structured groupings, clear purpose and instructions, the balance of group interdependence with individual responsibility, and the development of communication skills.

Adapted from Crowley, M. and Dunn, K. (1993) Cooperative Learning at Dalhousie, Workshop Materials.

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These and many other sources may be consulted at or borrowed from the Office of Instructional Development and Technology.



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