

Collaborative Learning or Cooperative Learning?**The Name Is Not Important; Flexibility Is**

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Abstract

A great deal of theory and research, not to mention students' and teachers' practical experience, supports the use of group activities in education. Collaborative learning and cooperative learning are two terms commonly used in discussions of how and why to use group activities. This article looks at the issue of whether the two terms collaborative learning and cooperative learning are synonymous or whether they represent different conceptualisations of how and why students should interact as part of their learning. Those scholars who differentiate the two terms often see collaborative learning as more student centered and cooperative learning as a more teacher centered way to facilitate student-student interaction. The present article argues that collaborative and cooperative learning should be seen as synonymous student centric approaches, and that teachers and students, regardless of which of the two terms they use, should and will vary the ways they shape their learning environments in order to best facilitate the cognitive and affective benefits that student-student interaction offers.

Keywords: Collaborative learning, cooperative learning, flexibility

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Since at least the 1970s, theories, research and practical developments in education have placed increased emphasis on student-student interaction as an important element in learning (e.g., Barnes & Todd, 1977; Johnson & Johnson, 1975; Vygotsky, 1978). The roots of this trend in education toward greater peer interaction among students date back much earlier (e.g., Dewey, 1929; Lewin, 1935), even to the work of Parker in the late 19th century (cited in Campbell, 1965). Two terms that are frequently used to describe approaches and methods for promoting student-student interaction are *collaborative learning* (Bayer, 1990; Britton, Burgess, Martin, McLeod, & Rosen, 1975; Bruffee, 1973, 1984, 1993; Golub, 1988) and *cooperative learning* (Baloche, 1998; Cohen, 1994; Gillies, 2007; Johnson, Johnson, & Holubec, 2008; Sharan, 1999; Slavin, 1995).

In education and many other fields, terminology can be confusing, because the same term can have different meanings, while two different terms can have the same or similar meanings. The present article focuses on the terminological questions that arise as some educators wonder if the terms *cooperative learning* and *collaborative learning* represent equivalent approaches/methods. Several authors have discussed this question (e.g., Brody, 1995; 2009; Panitz, n.d.), and some educators do indeed differentiate the terms (Center for the Development of Teaching and Learning, n.d.; Center for Enhanced Learning and Teaching, n.d.). The main purpose of this article is to argue that: (1) the terms should be treated as synonymous, as both represent a student centric approach to learning; and (2) educators should be flexible in how they facilitate peer learning among their students. Toward this second goal, the article explores some of the issues educators may have in mind when they distinguish collaborative and cooperative learning.

In general, those who differentiate between cooperative and collaborative learning tend to identify cooperative learning with more teacher centered ways of facilitating group activities and to identify collaborative learning with more student centered ways of facilitating group activities, despite the fact that the use of group activities connects both cooperative and collaborative learning with student centric pedagogy. Table 1 provides an overview of some of the issues that surface when differentiating student centered and teacher centered approaches to the use of group activities.

Table 1

The Student Centered - Teacher Centered Continuum: Issues along the Continuum that Impact Use of Group Activities

(Please be reminded that a variety of options along the student centered/teacher centered continuum exist on each of these issues; these are not dichotomies.)

| Issues | Student Centered | Teacher Centered |
|--|--|---|
| What is the main perspective on how learning takes place | Knowledge construction – Teachers facilitate students’ learning, as students work with groupmates to generate their own understandings | Knowledge transmission – Students work in groups to master what teachers/course materials have taught |
| Who chooses what will be studied | Students can make some choices in areas such as what topics their groups study | Choices of topics to study are made by teachers |
| Who chooses materials | Students find, select or create some of the learning materials for their group activities | Teachers and administrators find, select or create the learning materials for the group activities |
| What is the main type of motivation | Intrinsic motivation | Extrinsic motivation |
| How are students assessed | Assessment by teachers is supplemented by peer and self assessment | Assessment by teachers only |
| How many students per group and which students work together | Students decide how many members will be in their group and who those members will be | Teachers decide on group size and membership |

| | | |
|---|---|--|
| How group seating is arranged | Students decide | Teachers decide |
| How well can students work together | Trusting students to work together well | Explicit teaching of collaborative skills and teacher monitoring of the use of these skills |
| How student interaction will be structured | Students decide how they will interact with groupmates and other students | Teachers decide how students will work together, e.g., will each member take a turn to think aloud or will they first work in groups of two and then groups of four. |
| Will students care about the learning of their groupmates | Trusting students to want to help each other | Social engineering to encourage students to care about their groupmates' success, e.g., rewarding groups based on how well each member does compared to their past performance, with all group members receiving the same reward |

Following the table, implications of these issues are discussed.

Please bear in mind three points.

1. The issues in Table 1 are not either-or choices. Instead, student centered/teacher centered is best seen as a continuum, with the views and practices of educators lying at many different points along this continuum.
2. When examining educational practices as a whole, any approach making use of group activities already resides toward the student centric end of the continuum.
3. Educators' choice of practices along the continuum may well be affected not only by the educators' view of how education best proceeds but also by the students they are currently teaching, including the degree to which their students' are ready to exercise independence and the students' motivation levels, as well as the overall contexts in which the teachers are working, e.g., the policies of the educational institution at which they are teaching.

Amplifications of Issues along the Student Centered/Teacher Centered Continuum

What Is the Main Perspective on How Learning Takes Place

Knowledge transmission (Faulkner, 2006), a concept linked to behaviorist psychology (Skinner, 1938), sees knowledge flowing directly from teachers to students, just as if teachers were pouring knowledge into their students' heads. According to a knowledge transmission view,

information and skills go into learners' heads without being filtered by what is already there. Questions with right or wrong answers tend to predominate in instruction based on a knowledge transmission perspective. Furthermore, in this perspective, the main role of groups lies in making sure group members master the material transmitted to them by their teachers, so as to be able to display that mastery on exams.

Knowledge construction (Driver, Asoko, Leach, Scott, & Mortimer, 1994) is a concept from cognitive psychology (Piaget, 1980). Perhaps, the most popular version of the knowledge construction view is social constructivism (Palincsar, 1998). The name *social constructivism* flows from the belief that learners construct their own networks of knowledge by collaborating with others as they connect new information to their present knowledge and interests. Because each person is different, students come away from the same activity or lesson with different individual representations of the ideas studied. Teachers can facilitate this construction work, but the key is what happens in each individual's mind, which, in turn, is affected by what other people (peers and teachers) are thinking, doing, and saying. A knowledge construction perspective is consistent with the use of open ended questions and projects. From this perspective, group activities provide a venue for peer interaction, which in turn provides opportunities for students to build and try out their developing knowledge.

Who Chooses What Will Be Studied and Which Materials to Use. At the teacher centered end of the student centered/teacher centered continuum, teachers not only attempt to pour knowledge into students' heads, teachers also decide what knowledge should be poured and from whence that knowledge should come. In contrast, when teachers adapt a more student centered approach, students are invited to have input on the topics they study and the materials they use to study those topics. For instance, students may be welcome to search for materials and share

materials they find. Content and materials sourced by and chosen by students may increase students' engagement in learning.

What Is the Main Type of Motivation? Motivation plays a key role in learning (Pintrich, 2003). Teacher centered approaches to education foreground extrinsic motivation (Stanlee & Popham, 1963), i.e., external sources of motivation, principally teachers, attempt to promote learning by offering students rewards for pro-learning behaviors. In group activities, peers can also function as providers of extrinsic motivation. In contrast, student centered approaches place greater value on intrinsic motivation (Deci, 1975), i.e., motivation from within each learner. From this perspective, group activities may build students' intrinsic motivation by fulfilling their intrinsic needs for competence, relatedness to others, and control over their lives.

As an aside, in yet another example of the changeable use of terms in education, Ryan and Deci, who did seminal work on extrinsic and intrinsic motivation in the 1970s and 1980s, have more recently (Ryan & Deci, 2000) advocated a re-examination of extrinsic motivation, proposing that in addition to indicating control by others, extrinsic motivation might also be a reflection of self-regulation (Zimmerman & Schunk, 2011). Thus, perhaps extrinsic/intrinsic motivation is another example, similar to student centered/teacher centered, of how what might be thought to be a dichotomy is actually more of a continuum.

How Are Students Assessed? On the teacher centered end of the student/teacher centered continuum, teachers do all the assessment, as they are the ones with the most knowledge, and involving students in assessment may confuse students when peers offer incorrect feedback. Such a negative view of any role for students in assessment does not promote the use of peer feedback in groups. In contrast, student centered approaches see peer and self feedback as useful learning tools and as means of enhancing students' proclivity toward and ability at engaging in lifelong learning.

As with the other issues on the continuum, many middle points exist in regard to students' role in assessment. For example, peer and self assessment can be done prior to teacher assessment, and only teacher assessment can be utilized in grades. Additionally, student feedback can focus on fewer, less complex areas, e.g., on a writing task, students can offer feedback on structural aspects of an essay, such as the use of topic sentences and the use of examples, whereas teachers can give feedback on content as well.

How Many Students Per Group? The number of students in each group is affected by a number of variables. Two of these variables are the nature of the task the group will do and the time the group has to complete the task, with the idea being that complex tasks and short time spans suggest that larger groups may be needed. Also, larger groups provide more groupmates to help with tasks and with coaching peers, and the larger the groups, the fewer groups there are for teachers to monitor.

On the other hand, smaller groups, including groups of two, have advantages. For instance, groups of four divide into pairs and, as David Johnson, a leading developer and researcher in cooperative learning, once said at a workshop, "It's impossible to be left out of a pair." Thus, in smaller groups, each student may have more opportunities to interact. For instance, in a class of 40 divided into groups of eight, only five students (one per group) may be talking at any one time, whereas potentially ten students are speaking when the class forms groups of four, and 20 are speaking when students use groups of two. An advantage of foursomes divided into twosomes is that after discussing with one partner, students can share ideas in their foursome, thereby maintaining the peer interaction.

Teachers nearer to the teacher centered end of the student/teacher centered continuum generally devote more thought to matters of group functioning and, therefore, are more likely to

decide the size of groups. On the other hand, teachers using a more student centered approach may allow students to decide on the size of their groups. That said, as with all the issues discussed in this paper, various middle ground positions exist. For instance, students might decide, but teachers might first lead a discussion on the pluses and minuses of various group sizes, or teachers could suggest upper limits to group size.

Which Students Work Together? Related to group size is group membership. Four main options exist for determining which students join each other as groupmates:

- a. Students choose their groupmates
- b. Teachers choose the group members
- c. Students form groups with whoever is currently sitting near them.
- d. Groups are formed at random, e.g., by counting off to 13 in a class of 52 and then forming groups of four by a process of all students with the same number coming together to form a group, e.g., the four students whose number is nine form a group.

More student centered approaches allow students to choose their groupmates, while teacher centered approaches suggest that teachers choose group members. Characteristics teachers might use in selecting groups include past achievement, ethnicity, nationality, sex, social class, and personality. Forming heterogeneous groups based on past achievement may promote peer tutoring, whereas mixing on sociological variables may help overcome barriers that sometimes exist between students from different backgrounds (Aronson, et al., 1975).

How Group Seating Is Arranged? Once group size and membership have been decided, the next question is how the groups should be seated, unless students are working online outside the classroom. Some issues to consider in regard to group seating include:

- a. Can group members easily hear each other and see what each other is doing?

- b. Can all members conveniently see the teacher, the board, the projection screen, etc.?
- c. Is there space for teachers and students to move between groups?

A more student centered approach invites students to consider these issues, whereas from a more teacher centered perspective, teachers should quickly decide and instruct students to carry out their teachers' seating decisions.

How Well Can Students Work Together? Group activities seldom enjoy success unless students know and deploy effective group interaction skills, such as giving each other specific praise, disagreeing politely, asking for reasons, checking that others understand, and encouraging others to participate. In general, teacher centered approaches favor teacher intervention to promote these and other desired behaviors. This intervention can take such forms as explicit teaching of interaction skills, including teacher, peer, and self monitoring of students' use of these skills during group activities. On the other hand, more student centered approaches may be more likely to trust groups of students to work out for themselves the appropriate ways to interact with each other. For example, one student centered strategy is for teachers to allow groups to fail due to inadequate use of interaction skills and to trust that eventually students will, on their own, become more skilled at peer interaction.

How Will Student Interaction Be Structured? Another area of group functioning in which teachers often feel tempted to intervene concerns the roles students play in their groups. Indeed, many teaching techniques structure group interaction. For example, in Circle of Speakers (Jacobs, Power, & Loh, 2002), groups of 2-4 students take turns to speak to their groupmates, and then, teachers call a number, and students with that number share their group's discussion with the rest of the class. Or, in Exchange A Question (Jacobs & Kimura, 2013), students write questions for their partners, write answers for their own questions, exchange only their questions, not their

answers, with their partners, answer each other's questions, and compare answers. A more student centered approach might eschew such techniques in favor of students deciding for themselves how they will interact.

In-depth peer interaction may foster more learning. Kennedy (personal communication) cited the depth of student-student interaction as a distinction between cooperative learning and collaborative learning environments. Using the example of a group project, in cooperative learning, according to Kennedy, each group member does their part of the project task, and then, the parts are combined and handed in without interaction among the group members about their respective parts of the project. This is not cooperative learning or collaborative learning.

The author of the present paper experienced this ineffective lack of interaction when teaching a section of a course on Educational Psychology for pre-service teachers. Groups of four were presented with a problem, e.g., rewards were used to motivate a hypothetical class of primary school students to read, and although initially the rewards seemed to increase the amount of reading done, students read less when the rewards were no longer offered. In the Educational Psychology class, the groups' task was to analyze the problem using four different theories of learning. Unfortunately, groups seemed to go about the task by assigning each of the four group members to study, analyze, write up, and present only one of the four theories, with little interaction among the group members.

In contrast, collaborative learning, according to the distinction suggested by Kennedy, encourages more extensive, deeper interaction, e.g., in the earlier example, all students are involved in analyzing the problem using all four learning theories and discussing their analysis in their groups. What can teachers do to encourage this enhanced peer interaction? Going back to the student centered/teacher centered continuum, more student centered paths might involve teachers

modeling a passion for the topic and helping students find ways to apply what they learn in their project to real life situations. From a more teacher centered perspective, tactics for promoting deeper and broader peer interaction include assessing students' understanding of all parts of their group's project, e.g., after a group presents, randomly asking questions to group members, rather than allowing the student who did that part of the presentation to respond to questions about that one part.

Similarly, cooperative learning also encourages deep interaction among students. For instance, students may be taught interaction skills, such as asking for reasons and disagreeing politely. An example of a structured cooperative learning technique that encourages deep interaction is SUMMER (Jacobs, Power, & Loh, 2002, adapted from Hythecker, Dansereau, & Rocklin, 1988).

The steps in SUMMER are as follows:

1. **S – Set the mood:** Students are in groups of two and set a friendly tone via some chit-chat.
2. **U – Understand by reading silently:** The text has been divided into sections. Both members read the first section silently.
M – Mention key ideas: One of the members recalls and summarizes the key ideas in the section without looking at the reading material.
3. **M – Monitor:** The other member praises the partner for the summary and points out any possible errors, omissions and information overloads in the summary while looking at the provided reading material. The roles of Mentioner and Monitor are switched for the next section.
4. **E – Elaborate:** Both members elaborate on the ideas in the section. They need to connect ideas in the section with own experiences, apply the ideas, ask questions, disagree or agree, add more information and suggest what more could be learned.
5. **R – Review:** Steps 2-5 are repeated for each section of the text. When, the text has been finished in this manner, the two partners combine their thoughts to summarize the entire text.

The next section of this paper offers further ideas on enhancing peer interaction.

Will Students Care about Their Groupmates? A principal theoretical underpinning of cooperative learning derives from Social Interdependence Theory (Deutsch, 1949; Lewin, 1935), with positive interdependence being the main concept derived from that theory. Positive interdependence represents a feeling among group members that their outcomes are positively correlated, i.e., what benefits the learning of one group member benefits all and what hinders the learning of one group member hinders the learning of all.

Those who differentiate between collaborative and cooperative learning may feel that teachers using a collaborative learning perspective should trust students to feel positively interdependent with their groupmates. However, Johnson, Johnson, and Holubec (2008), who are associated with cooperative learning, describe nine ways that teachers can promote a feeling of positive interdependence among group members. Three of these involve the use of goals, celebrations/rewards, and resources. Using goals to encourage students to feel positively interdependent means that groups have clear goals that involve the learning of all group members. For instance, a goal could be that all group members are capable of solving a particular type of mathematics problem or that all group members improve on their score on the previous quiz, except for those students who had a perfect score on the earlier quiz. It is important to note that the goal involves not the group as a whole, e.g., the group working together can solve mathematics problems. Instead, the goal involves the individual learning of each group member, e.g., as a result of the interaction in the group, each group member is now better at solving such problems on their own.

Related to group goals are celebrations and rewards. The idea here is that students may be more likely to feel that their outcomes are positively correlated because either everyone celebrates when the group achieves its goals, or no one celebrates when the goal fails to achieve its goals.

Celebrations can be distinguished from rewards, as celebrations tend to be more internally generated, such as performing a team cheer, whereas rewards are more externally generated, such as receiving bonus points awarded by teachers or recognition by teachers.

Dividing resources among group members offers a third means of encouraging students to feel as though they and their groupmates sink or swim together. The Jigsaw technique (Aronson, 2014) provides one of the best known ways of using resources to promote positive interdependence. In Jigsaw, students begin in home groups in which each home group member is given or finds unique information on a related topic, e.g., one member has or searches for information on health advantages of vegetarian diets, another on environmental advantages of such diets, a third on advantages for farmed animals, such as chickens, and the fourth group member has or finds information on how to eat a healthy vegetarian diet. Students then leave their home groups and form expert groups with classmates who have or are finding information on the same sub-topic. The experts help each other understand their “piece of the jigsaw puzzle” and prepare to teach it to their home group members. Next, in Jigsaw, students return to their home groups where they teach their pieces to each other. Finally, students do a task or take a quiz which requires information from all their pieces.

Conclusion

This article has argued that the terms cooperative learning and collaborative learning should be treated as student centered equivalents, and that any differences should be seen as options for teachers and students to consider in promoting effective interaction in the classroom and beyond. The article discussed some of the issues that exist along the student centered/teacher centered continuum and how these issues impact group activities. Whether educators use the term *cooperative learning* or *collaborative learning*, the use of group activities by whatever name stands

in stark contrast with approaches to teaching that emphasize teacher talk.

Commonalities of approaches that highlight students studying in groups, regardless of where an approach lies on the student centered/teacher centered continuum, include:

- a. belief that students learn by doing and by discussing with others, discussions which include higher order thinking;
- b. attempts to provide students with more control over their own learning;
- c. appreciation of the need that humans feel for belonging;
- d. advocacy of life-long learning with and for others;
- e. trust that collaboration/cooperation can be a powerful force for good in the classroom and beyond.

The bottom line is that whether educators call what they are attempting *collaborative learning* or *cooperative learning*, they are attempting a student centered pedagogy.

Another reason for treating cooperative learning and collaborative learning as equivalent terms lies in the existence of models (some would call them “techniques,” “strategies, ” or “methods”) which flow from the cooperative learning tradition but which stand near the student centered end of the student centered/teacher centered continuum. Perhaps Group Investigation (Sharan & Sharan, 1992) provides a good example of such a model. In the 1970s, Group Investigation’s developers, Yael Sharan and Shlomo Sharan, were among the founders of the International Association for the Study of Cooperation in Education (IASCE), an organization long associated with cooperative learning (IASCE, 2014). Group Investigation was inspired by the ideas of Dewey (1929). The steps in Group Investigation are as follows.

- a. Teachers, in consultation with students, decide on a topic for the class to investigate and then discuss subtopics.
- b. Students choose their own groups based on common interest in a subtopic.
- c. Each group plans how they will investigate their subtopic, and each member does a share

of the investigation.

- d. Group members discuss what they learned and prepare a report for the rest of the class.
- e. Groups present their reports to the class.
- f. Peers and teachers assess each group.

There are several ways in which Group Investigation resides near the student centered end of the student centered/teacher centered continuum, e.g., including students' voice in choosing what they will study, who will be their groupmates, how their groups will collaborate, and what grades peers' work will receive. Other models/techniques/methods/strategies found in the cooperative learning literature are designed to be implemented or could be adapted to be implemented in ways that lie near the student centered end of the continuum.

Some people who talk about collaborative learning, such as Kenneth Bruffee (in an unpublished, invited address at the 1994 IASCE conference), have said that cooperative learning is for primary and secondary students, because these students lack the skills/attitudes necessary to work without a fair amount of teacher structuring. However, with these younger students research (e.g., Rohrbeck, Ginsburg-Block, Fantuzzo, & Miller, 2003) suggests that they can indeed work together well, even in settings toward the student centered end of the continuum. Furthermore, some experts on collaborative learning focus on younger learners (e.g., Hill & Hill, 1990). At the same time, Bruffee may have overestimated what older students are ready for. Students of all age groups, including graduate students and people in courses specifically designed for senior citizens, can benefit from learning or being reminded how to cooperate with peers.

To conclude, perhaps the key to successful group interaction lies not in the label educators use for what they and their students do but in the flexibility with which teachers and students choose from the growing literature on group activities and the equally large and impressive body of undocumented teacher and student experience. This flexibility enables teachers to scaffold for their

students (Wood, Bruner, & Ross, 1976) about how to study in ways that promote both cognitive and affective gains, and that enable students to live lives in which collaboration or cooperation (whichever term you prefer) plays an important role in promoting their own well being and the well being of those in the wider world.

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