

WCLTA 2011

Collaborative learning: what is it?

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Abstract

Collaborative learning (CL) is an educational approach to teaching and learning that involves groups of learners working together to solve a problem, complete a task, or create a product. This article seeks to present the basic concept of CL, enabling one to understand it while ensuring important elements are taken into account. The term CL refers to an instruction method in which learners at various performance levels work together in small groups toward a common goal. Five fundamental elements involved in CL, are: Positive interdependence, Individual and group accountability, Interpersonal and small group skills, Face-to-face promotive interaction, and Group processing.

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Keywords: collaborative learning, definition, concept, elements;

1. Introduction

Despite the term of collaborative learning (CL) has been used in a wide variety of ways across different disciplines and fields, there is a lack of consensus upon definition of the term (Jenni, R. & Mauriel, J., 2004). While there is no consensus on what CL is, there are some underlying features that will be identified.

Collaboration has become a twenty-first-century trend. The need in society to think and work together on issues of critical concern has increased (Austin, J. E., 2000; Welch, M., 1998) shifting the emphasis from individual efforts to group work, from independence to community (Leonard, P. E. & Leonard, L. J., 2001).

CL is an educational approach to teaching and learning that involves groups of learners working together to solve a problem, complete a task, or create a product. In the CL environment, the learners are challenged both socially and emotionally as they listen to different perspectives, and are required to articulate and defend their ideas. In so doing, the learners begin to create their own unique conceptual frameworks and not rely solely on an expert's or a text's framework. In a CL setting, learners have the opportunity to converse with peers, present and defend ideas, exchange diverse beliefs, question other conceptual frameworks, and are actively engaged (Srinivas, H., 2011).

CL represents a significant shift away from the typical teacher-centered or lecture-centered milieu in college classrooms. In collaborative classrooms, the lecturing/ listening/note-taking process may not disappear entirely, but it lives alongside other processes that are based in students' discussion and active work with the course material. Teachers who use CL approaches tend to think of themselves less as expert transmitters of knowledge to students,

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and more as expert designers of intellectual experiences for students-as coaches or midwives of a more emergent learning process (Smith, B. L. & MacGregor, J. T., 1992).

CL occurs when small groups of students help each other to learn. CL is sometimes misunderstood. It is not having students talk to each other, either face-to-face or in a computer conference, while they do their individual assignments. It is not having them do the task individually and then have those who finish first help those who have not yet finished. And it is certainly not having one or a few students do all the work, while the others append their names to the report (Klemm, W.R., 1994).

There is persuasive evidence that cooperative teams achieve at higher levels of thought and retain information longer than learners who work quietly as individuals (Johnson, R.T. & Johnson, D.W., 1986). Further evidence comes from Samuel Totten (1991), who claims that: The shared learning gives learners an opportunity to engage in discussion, take responsibility for their own learning, and thus become critical thinkers. Proponents of CL claim that the active exchange of ideas within small groups not only increases interest among the participants but also promotes critical thinking (Gokhale, A.A., 1995). This paper aimed at enabling one to understand the concept of CL, ensuring the basic elements have been considered.

1.2. Material & method

This review article starts with a brief history of the CL emergence, continues with basic definitions of the term while describing the fundamental elements essential toward reaching the goal of CL, discussing the difference between the concept of CL and the concept of cooperative learning. It concludes in presenting the concept of the term. Key issues were identified through review of literature on the CL and also on the elements thereof.

1.3. Results

The idea of CL came into being thanks to the efforts of British teachers and researchers in the 1950s and 1960s, Bruffee (1996) says. After studying the interaction of medical students with their teaching physician, M.L.J. Abercrombie concluded that the medical students who learned to make a diagnosis as a group reached to a good medical judgment, faster than individuals working alone. Bruffee also states that his first encounter with the belief of CL was when he encountered the findings of a group of researchers who thought that CL stemmed from an attack against authoritarian teaching styles (p. 85). During the 1970s, college professors became increasingly alarmed that students seemed to be having difficulty with the transition into writing at the college-level. Researchers looking into this problem decided that the help being offered to students was too similar to classroom learning. They needed not an extension of but an alternative to traditional classroom teaching (p. 86).

A good way to understand what CL means is to refer to the definitions presented by experts in the field, as follows:

- Collaborative teaching and learning is a teaching approach that involves groups of students working to solve a problem, complete a task or create a product (MacGregor, J.T., 1990).
- CL is an umbrella term for a variety of educational approaches involving joint intellectual effort by students, or students and teachers together. Usually students are working in groups of two or more, mutually searching for understanding, solutions, or meanings, or creating a product. CL activities vary widely, but most centre on student's exploration or application of the course material, not simply the teacher's presentation or explication of it (Smith, B.L. & MacGregor, J.T., 1992).
- CL is based on the idea that learning is a naturally social act in which participants talk among themselves. It is through the talk that learning occurs (Gerlach, J.M., 1994, p.12).
- CL has as its main feature a structure that allows for student talk, in which students are supposed to talk with each other, and it is in this talking that much of learning occurs (Golub, et al., 1988).
- CL is a situation in which two or more people learn or attempt to learn something together. Two or more may be interpreted as a pair, a small group (3-5 subjects) or a class (20-30 subjects). Learn something may be interpreted as follow a course; perform learning activities such as problem solving. Together may be interpreted as different forms of interaction which may be face-to-face or computer-mediated (Dillenbourg, P., 1999).

In education, collaboration is intended to promote the most effective teaching possible for the greatest number of students (Pugach, M. & Johnson, L. J., 1995).

Johnson et al. (1990) pointed out 5 basic elements in CL. CL is not simply a synonym for students working in groups. A learning exercise only qualifies as CL to the extent that the following elements are present:

- Clearly perceived positive interdependence; Team members are obliged to rely on one another to achieve the goal. If any team members fail to do their part, everyone suffers consequences. Members need to believe that they are linked with others in a way that ensures that they all succeed together.
- Considerable interaction; Members help and encourage each other to learn. They do this by explaining what they understand and by gathering and sharing knowledge. Group members must be done interactively providing one another with feedback, challenging one another's conclusions and reasoning, and perhaps most importantly, teaching and encouraging one another.
- Individual accountability and personal responsibility; All students in a group are held accountable for doing their share of the work and for mastery of all of the material to be learned.
- Social skills; Students are encouraged and helped to develop and practice trust-building, leadership, decision-making, communication, and conflict management skills.
- Group self-evaluating; Team members set group goals, periodically assess what they are doing well as a team, and identify changes they will make to function more effectively in the future.

CL is the instruction including these elements that involves members working in groups to accomplish a common goal.

1.4. Discussion

Bruffee (1996) claims; Though CL may share some characteristics of traditional classroom teaching, such as the tutor possessing more knowledge about writing than the student, collaboration means that both the student and the tutor provide input into and take insights out of the tutoring session. In the traditional classroom, there is no mandate suggesting that a teacher will learn from his students. But this mandate is an integral part of CL. But this discussion does not explain how CL actually works. After researching the workings of conversation, Bruffee contended that thought is internalized conversation. Thus, these two processes take place in a similar fashion (p. 87). He says that to think well as individuals we must learn to think well collectively; that is, we must learn to converse well (p. 88).

The traditional concept of CL as a group meeting regularly to work together highlights only one type of collaboration between students regarding their learning. Collaboration is a philosophy of interaction and personal lifestyle where individuals are responsible for their actions, including learning and respect the abilities and contributions of their peers. In all situations where people come together in groups, it suggests a way of dealing with people which respects and highlights individual group members' abilities and contributions. There is a sharing of authority and acceptance of responsibility among group members for the groups' actions. The underlying premise of collaborative learning is based upon consensus building through cooperation by group members, in contrast to competition in which individuals best other group members. CL practitioners apply this philosophy in the classroom, at committee meetings, with community groups, within their families and generally as a way of living with and dealing with other people (Panitz, T., 1996).

Johnson, Johnson & Smith (1991) define a new paradigm of teaching, that is: First, knowledge is constructed, discovered, and transformed by students. Faculty create the conditions within which students can construct meaning from the material studied by processing it through existing cognitive structures and then retaining it in long-term memory where it remains open to further processing and possible reconstruction. Second, students actively construct their own knowledge. Learning is conceived of as something a learner does, not something that is done to the learner. Students do not passively accept knowledge from the teacher or curriculum. Students activate their existing cognitive structures or construct new ones to subsume the new input. Third, faculty effort is aimed at developing students' competencies and talents. Fourth, education is a personal transaction among students and between the faculty and students as they work together. Fifth, all of the above can only take place within a cooperative context. Sixth, teaching is assumed to be a complex application of theory and research that requires considerable teacher training and continuous refinement of skills and procedures.

Dalziel and Peat (1998) suggest other less intensive activities that can be considered under a broader definition of CL; activities such as seeking assistance from a more senior student, swapping lecture notes, using classroom free

time to work on studies rather than social discussions, and spontaneous discussion of academic work in social settings. Viewed in this more general sense, CL is probably a common experience for many students, regardless of any attempt by universities to foster such activities. However, there may also be ways in which university programs can increase the likelihood of collaboration and support this type of learning.

Cooperative learning is to be distinguished from another now well-defined term of art, CL, which refers to those classroom strategies which have the instructor and the students placed on an equal footing working together in, for example, designing assignments, choosing texts, and presenting material to the class. Clearly, CL is a more radical departure from tradition than merely utilizing techniques aimed at enhancing student retention of material presented by the instructor (Paulson, D. R. & Faust, J.L., 2002)

Ted Panitz (1999) presents a basic definition of the terms, as;

- Cooperation is a structure of interaction designed to facilitate the accomplishment of a specific end product or goal through people working together in groups;
- Collaboration is a philosophy of interaction and personal lifestyle where individuals are responsible for their actions, including learning and respect the abilities and contributions of their peers.

Panitz continues with the discussion of difference between the terms and says: In the cooperative model the teacher maintains complete control of the class, even though the students work in groups to accomplish a goal of a course. The teacher asks a question and provides additional articles for the students to read and analyze, beyond the text, then asks the students to work in groups to answer the question. The groups then present their results to the whole class and discuss their reasoning. The students do the work necessary to consider the material being covered but the teacher maintains control of the process at each stage. In the collaborative model groups would assume almost total responsibility for answering the question. The students determine if they had enough information to answer the question. If not they identify other sources, such as journals, books, videos, the internet, to name a few. The work of obtaining the extra source material would be distributed among the group members by the group members. The group would decide how many reasons they could identify. The collaborative teacher would not specify a number, but would assess the progress of each group and provide suggestions about each group's approach and the data generated. The teacher would be available for consultations and would facilitate the process by asking for frequent progress reports from the groups, facilitate group discussions about group dynamics, help with conflict resolution, etc. The students develop a very strong ownership for the process and respond very positively to the fact that they are given almost complete responsibility to deal with the problem posed to them and they have significant input into their assessment.

The concept of CL, the grouping and pairing of learners for the purpose of achieving a learning goal, has been widely researched and advocated; the term CL refers to an instruction method in which learners at various performance levels work together in small groups toward a common goal. The learners are responsible for one another's learning as well as their own. Thus, the success of one learner helps other students to be successful (Gokhale, A.A., 1995). Development of higher-level reasoning skills, enable students to grasp the meaning of information and analyze, evaluate, synthesize, and apply it, which are in contrast to the traditional education that stresses the learning of facts (Klemm, W.R., 1994).

CL promotes these critical thinking skills much better than competitive or individualistic learning environments (Gabbert, B., Johnson, D.W. & Johnson, R., 1986; Johnson, D.W. & Johnson, R.T., 1981; Johnson, D.W., Skon, L. & Johnson, R.T., 1980). A pedagogical approach that technology is enabling and that 21st century learner is expecting, is CL through group/team projects. These projects can be developed using multimedia processes and provide a more powerful learning approach than a term paper-specifically, more authentic learning. Students are looking for practical applications in real-world context. The course focus should be more on applying classroom lessons to real-life problems, institutions, or organizations, thus allowing students to center on their learning style strengths (Rodgers, M., et al., 2006).

1.5. Conclusion

CL is an umbrella term for a variety of educational approaches involving the joint intellectual effort from small group projects to the more specific form of group work known as cooperative learning. CL suggests a way of dealing with people which respects and highlights individual group members' abilities and contributions. There is a

sharing of authority and acceptance of responsibility among group members for the groups' actions. The underlying premise of CL is based upon consensus building through cooperation by group members, in contrast to competition in which individuals best other group members. Key elements of CL include: Positive interdependence, Considerable interaction, Individual accountability, Social skills and Group processing.

References

- Austin, J. E. (2000). Principles for Partnership. *Journal of Leader to Leader*. 18 (Fall), pp. 44-50.
- Dalziel, J. & Peat, M. (1998). *Fostering collaborative learning during student transition to tertiary education: An evaluation of academic and social benefits*, In Rust, C. (Ed.), *Improving Student Learning: Improving Students as Learners*. Proceedings for the Fifth International Student Learning Symposium (pp. 272-283), The Oxford Centre for Staff and Learning Development, Glasgow: UK.
- Dillenbourg, P. (1999). What do you mean by collaborative learning? In P. Dillenbourg (Ed.), *Collaborative-learning: Cognitive and Computational Approaches*. (pp. 1-19). Oxford; UK, Elsevier Publishing.
- Gabbert, B., Johnson, D.W. & Johnson, R. (1986). Cooperative learning, group to individual transfer, process gain, and the acquisition of cognitive reasoning strategies. *J Psychol*, 120(3); pp. 265-278.
- Gerlach, J. M. (1994). Is this collaboration? In Bosworth, K. & Hamilton, S. J. (Eds.), *Collaborative Learning: Underlying Processes and Effective Techniques*, New Directions for Teaching and Learning, No. 59. (pp.5-14). San Francisco; USA, Jossey-Bass Publishing.
- Gokhale, A.A. (1995). Collaborative learning enhances critical thinking. *Journal of Technology Education*. 7(1), Retrieved 5 Nov. 2011, from: <http://scholar.lib.vt.edu/ejournals/JTE/v7n1/gokhale.jte-v7n1.html>.
- Golub, J. & NCTE Committee (1988). *Focus on Collaborative Learning: Classroom Practices in Teaching English*. Urbana, IL; USA, National Council of Teachers of English Publishing.
- Jenni, R.W. & Mauriel, J. (2004). Cooperation and collaboration: Reality or rhetoric? *International Journal of Leadership in Education*. 7(2), pp. 181-95
- Johnson, D.W. & Johnson, R.T. (1981). Effects of cooperative and individualistic learning experiences on interethnic interaction. *J Educ Psych* 73(3); pp. 454-459.
- Johnson, R.T. & Johnson, D.W. (1986). Action Research: Cooperative Learning in the Science Classroom. *Journal of Science and Children*, 24(2), pp. 31-32.
- Johnson, D.W., Johnson, R.T. & Smith, K.A. (1991). *Active Learning: Cooperation in the College Classroom* (p. 1-6). Edina, Minnesota; USA.
- Johnson, D.W., Johnson, R.T., Stanne, M.B. & Garibaldi, A. (1990). Impact of group processing on achievement in cooperative groups. *J Soc Psycho*, 130 (4), pp.507-516.
- Johnson, D.W., Skon, L. & Johnson, R.T. (1980). Effects of cooperative, competitive, and individualistic conditions on children's problem solving performance. *Amer Ed Res J*, 17(1); pp. 83-94.
- Kenneth, B.A. (1996). Collaborative Learning and the Conversation of Mankind. In Wiley, M., Gleason, B. & Phelps, L.W. (Eds.), *Composition in Four Keys* (pp.84-97). California; USA, Mayfield Company Publishing.
- Klemm, W.R. (1994). Using a Formal Collaborative Learning Paradigm for Veterinary Medical Education. *Journal of Veterinary Medical Education*, 21(1), pp.:2-6.
- Leonard, P. E., & Leonard, L.J. (2001). The collaborative prescription: Remedy or reverie? *International Journal of Leadership in Education*, 4(4); pp. 383-99.
- MacGregor, J.T. (1990). Collaborative learning: Shared inquiry as a process of reform. In Svinicki, M.D. (Ed.), *The changing face of college teaching*, New Directions for Teaching and Learning No. 42. San Francisco; USA, Jossey-Bass Publishing.
- Panitz, T. (1996). *A Definition of Collaborative vs Cooperative Learning*. Deliberations, London Metropolitan University; UK., Retrieved 5 Nov. 2011, from: <http://www.londonmet.ac.uk/deliberations/collaborative-learning/panitz-paper.cfm>.
- Panitz, T. (1999). *Collaborative versus Cooperative Learning: A Comparison of the Two Concepts Which Will Help Us Understand the Underlying Nature of Interactive Learning*. Cape Cod Community College, peninsula, Massachusetts; USA. Retrieved 5 Nov. 2011, from: <http://home.capecod.net/~tpanitz/tedsarticles/coopdefinition.htm>.
- Paulson, D. R. & Faust, J.L. (2002 May 18). *Active Learning For The College Classroom*. California State University, Los Angeles, CA, USA. Retrieved 5 Nov. 2011, from: <http://www.calstatela.edu/dept/chem/chem2/Active/index.htm>.
- Pugach, M.C. & Johnson, L. J. (1995). *Collaborative practitioners collaborative school*, (p.178). Denver, Colorado; USA. Love Company Publishing.
- Rogders, M., Runyon, D., Starrett, D., Von Hozlen, R., (2006). *The 21st century learner*. Proceeding of 22nd annual conference on distance teaching and learning, The Board of Regents of the University of Wisconsin System; USA, Retrieved 5 Nov. 2011 from: http://depd.wisc.edu/series/06_4168.pdf.
- Srinivas, H. (2011 Oct. 21, last updated). *What is Collaborative Learning?* The Global Development Research Center, Kobe; Japan . Retrieved 5 Nov 2011, from: <http://www.gdrc.org/kmgmt/c-learn/index.html>.
- Smith, B. L. & MacGregor, J. T. (1992). What is collaborative learning? In Goodsell, A., Maher, M., Tinto, V., Smith, B. L. & MacGregor J. T. (Eds.), *Collaborative Learning: A Sourcebook for Higher Education*. Pennsylvania State University; USA, National center on postsecondary teaching, learning, and assessment publishing.
- Totten, S. (1991). *Cooperative Learning: A Guide to Research*. Sills, T., Digby, A. & Ross, P. (Eds.), New York; USA, Garland Publishing.
- Welch, M. (1998). Collaboration: Staying on the bandwagon. *Journal of Teacher Education*; 49(1), pp. 26-38.