

Promoting Collaborative Learning among Students

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Abstract What is the distinction between collaborative and co-operative learning? In co-operative learning action is adjusted by individuals in a group to achieve individual goals. In collaborative learning, actions are adjusted to achieve shared goals. They not only learn from the teacher, but also from each other. In contrast in co-operative learning, the teacher still remains in control of what is going on in the class. The design of the collaborative task is crucial to the effectiveness of collaboration. The task must not be one which can be completed only by one person in a group. It should require a contribution from each member of the group. The group members should be interdependent upon each other to successfully complete the task. The task should not be a 'right answer' task. There should be several possible answers so that the group members could discuss which answers are better and the reason why some answers are better. What are the challenges of collaborative learning? Participants may only be used to isolated learning, where they compete with other students, and if that is the case, they would find it difficult to adjust to collaborative learning. Some students prefer to be taught and be passive learners, rather than be active learners, which would require more effort on their part. Another challenge is teachers who find it difficult to give up their teacher-centred instructional role and move to a facilitator of learning role. What are the advantages of collaborative learning? Such learning improves communication and dialogue between participants in a group, and assists in socially and intellectually connecting with members of the group. Students are motivated as they are actively involved in the learning process. The retention rate improves and students perform better at assessments, as they have engaged in deeper and more meaningful learning. As students are engaged in discussing and debating they are more likely to become critical learners. When students learn in a group, with other students explaining concepts to them, they will find different interpretations, which will result in students having to re-think their own understanding. There will be development of higher-level thinking skills, oral and written communication (in online collaborative learning), leadership and teamwork skills. A disadvantage of collaborative learning is that there might be one or two who dominate. There might be some who do not make much contribution despite having the opportunity to do so. Collaborative learning may not be suitable to some individuals who prefer isolated learning. They may not gain much benefit if they are forced into collaborative learning situations. Research has shown frustration among some students who have experienced collaborative learning. There may be some students who prefer to learn from an expert on a subject rather than from other students who they perceive to be lacking in knowledge. Students may find that they are studying at a different pace than others in the group, which may cause difficulties to themselves and their group members.

Keywords: *collaborative learning, design, challenges, advantages, disadvantages, student perception*

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1. Introduction

The concept of collaborative learning emerged from Piaget and Vygotsky who believed that more effective learning takes place through interpersonal interactions in a co-operative rather than a competitive environment [1].

What is the distinction between collaborative and co-operative learning? In co-operative learning action is adjusted by individuals in a group to achieve individual goals. In collaborative learning, actions are adjusted to achieve shared goals. They not only learn from the teacher, but also from each other. In contrast in co-operative learning, the teacher still remains in control of what is going on in the class. In co-operative learning, there is a

division of labour between the members of the group so that each is responsible for a particular section of the problem to solve, whereas in collaborative learning the participants mutually engage in a co-ordinated effort to solve the problem [2].

The design of the collaborative task is crucial to the effectiveness of collaboration. The task must not be one which can be completed only by one person in a group. It should require a contribution from each member of the group. The group members should be interdependent upon each other to successfully complete the task. The task should not be a 'right answer' task. There should be several possible answers so that the group members could discuss which answers are better and the reason why some answers are better.

What are the challenges of collaborative learning? Participants may only be used to isolated learning, where they compete with other students, and if that is the case, they would find it difficult to adjust to collaborative learning in a non-competitive atmosphere. Some students prefer to be taught and be passive learners, rather than be active learners, which would require more effort on their part. Another challenge is teachers who find it difficult to give up their teacher-centred instructional role and move to a facilitator of learning role. Some teachers prefer to continue teaching in the same traditional way that they were taught.

What are the advantages of collaborative learning? Such learning improves communication and dialogue between participants in a group, and assists in socially and intellectually connecting with members of the group. Students are motivated as they are actively involved in the learning process. The retention rate improves and students perform better at assessments, as they have engaged in deeper and more meaningful learning. As students are engaged in discussing and debating they are more likely to become critical learners. When students learn in a group, with other students explaining concepts to them, they will find different interpretations, which will result in students having to re-think their own understanding. There will be development of higher-level thinking skills, oral (in face-to face situations) and written communication (in online collaborative learning), leadership and teamwork skills.

A disadvantage of collaborative learning is that there might be one or two who dominate. There might be some who do not make much contribution despite having the opportunity to do so. Collaborative learning may not be suitable to some individuals who prefer isolated learning. They may not gain much benefit if they are forced into collaborative learning situations. Research has shown frustration among some students who have experienced collaborative learning. There may be some students who prefer to learn from an expert on a subject rather than from other students who they perceive to be lacking in knowledge. Students may find that they are studying at a different pace than others in the group, which may cause difficulties to themselves and their group members.

2. Co-operative Learning and Collaborative Learning

Co-operative and collaborative learning both involve students working in groups. Although the two concepts have the similarity that they both involve group work, they are distinct. Some of the literature reveals a confusion of these two concepts. In co-operative learning they do not have a shared goal. They are trying to achieve their own individual goal [3]. In collaborative learning the students have a common goal. They are working with each other to mutually search for understanding, finding a solution to a problem, creating a product [3]. In collaborative learning learners may have to adjust their actions in order to achieve the common goal. In collaborative learning the teacher becomes a facilitator of learning [4]. The students teach each other, they teach the teacher and the teacher teaches the students [5]. In co-operative learning the teacher remains in control of the learning process [5]. In collaborative learning the students take almost full

responsibility for the learning [5]. The aim of collaborative learning is student autonomy and self-directed learning [5]. In collaborative learning students become partners of the learning process, as the teacher and students are equal participants teaching each other and learning from each other.

3. Design of Collaborative Learning

The design of the collaborative task is crucial. According to Watkins [6] there are three essential elements in designing a collaborative task. Firstly, it should not be possible to complete the task by one individual. Secondly, the task must require the effort of all participants to achieve completion. The students should be dependent on each other for the completion of the task. Thirdly, it should not be a 'right answer' task. There should be more than one answer, so that the students could consider the possible answers and decide which is better, and the reason for one being better than the others.

As the students may have been engaging in isolated and competitive learning, the teacher should explain to them the skills and expectations necessary for collaborative learning, in order to prepare them for the task. They could initially be asked to work in pairs so they develop their skills of communication. Then they could be placed in groups of three or four. Students should be advised that preparation for the discussion, by engaging in the recommended reading is important for a successful outcome of the discussion [7]. When some students are not prepared for the group discussions, this causes frustration among the students who are prepared.

In designing collaborative learning there should be 'group goals' and 'individual accountability' to achieve the common goals [5]. The collaborative learning task should ensure that each member of the group has learnt something [5]. The teacher could divide the key concepts to be learnt and assign to each student a concept, giving them the responsibility of learning the concept and explaining to their fellow-students [5]. In explaining to other students, they act as teacher, which experience is beneficial to them, as well as other students.

Group size is important in the design of the collaborative project. If the group is too large, while active members contribute frequently to the group, the less active members do not contribute frequently. The group size should be large enough to have different perspectives, but small enough so that each member feels confident to participate in the group discussion [7].

The discussion topic needs to be relevant [7] so that students are motivated to participate in the discussion. In a study reported by Jianxia Du *et al* student perception was that the quality of the online discussion was important for the success of the group project and knowledge construction [7]. The quality depends on whether the participants have done the necessary research, so that the discussion is evidence-based.

In using groups in a collaborative environment it is necessary to create the groups, structure the learning activities and facilitate group interactions [8]. Instructors need guidance to set up and deliver instruction for their students in collaborative learning projects [9].

4. Challenges of Collaborative Learning

Designing and maintaining a collaborative learning experience is a challenge for teachers who have been adopting traditional methods of teaching. It is also a challenge for students who have been taught in a traditional teacher-centred setting [4]. There may be technological difficulties for students engaged in online collaboration [10]. The technological skill needed for online collaboration may be a challenge for students and teachers [11]. Technical difficulties hamper collaborative learning and create a high level of frustration among learners [12]. Some students prefer to learn by themselves rather than learn in a collaborative setting [7]. It is important to recognise that students have different learning styles, rather than adopting a 'one-size fits all' approach.

In one study the delay caused by asynchronous communication between participants in different time zones resulted in a lack of interest in the collaborative task [12]. Collaborative learning did not suit autonomous learners who preferred to work independently and complete the work without having to wait for a response from other participants [12]. The different level of language proficiency was a barrier in the communication required in collaborative work over the internet [12].

While it may be assumed that designing a collaborative learning experience in a large class is difficult, research indicates that it is possible [13].

5. Advantages of Collaborative Learning

Collaboration promotes dialogue between learners. Explaining difficult concepts and principles to other learners increases one's own understanding. As students are exchanging ideas, debating and negotiating ideas student interest in learning is increased and they are more likely to become critical thinkers [5]. In collaborative learning students learn more of what is taught, retain information longer and are more satisfied with their classes [5].

Students work at higher intellectual levels when working collaboratively than working in isolation [5]. Students have to re-think their interpretations in the light of explanations by other students [5]. Students working in isolation cannot check whether they have understood the subject-matter.

Collaborative learning develops oral communication skills in face-to face learning, written communication skills in online learning, leadership skills, self-management skills, assists in student retention, and is a preparation for real-life social and employment situations [14]. Collaborative learning enables students to develop teamwork skills, which is an employability skill [15]. The collaborative learning process enables passive learners under traditional methods to become active learners [16]. 'Working in groups allows students to reflect on their learning and the effectiveness of the strategies employed [17]'

An experiment with students who had a low level of proficiency in English found that participating in a collaborative learning programme increased their self-efficacy and interest in learning English [18]. The communication taking place between learners and

between learners and the teacher would increase the opportunity to practice their English language skills.

Collaborative learning enables more capable learners to assist in the development of less capable learners who can achieve more than they can while learning individually in isolation [19]. The more capable learners act like teachers and in explaining difficult concepts to their peers, they enhance their understanding of the subject-matter.

Students who experience a collaborative learning environment are more satisfied with their learning experience than those exposed to the traditional lecture method of teaching [20]. Students obtain a sense of satisfaction in actively engaging in the learning process.

In a study of undergraduate students doing engineering courses, it was found that active and collaborative methods produced statistically significant and substantially greater gains in students learning in comparison with the traditional lecture method of instruction [21]. The skills better developed in a collaborative learning environment were design, communication and group work [21].

Online collaborative learning in discussion forums assists distance learners who are otherwise isolated [7]. Web-mediated asynchronous collaborative learning enables social interactions unrestrained by space, time and pace [1]. Unlike in face to face collaborative learning, online collaborative learning maintains a permanent record of communications taking place in collaborative learning [1] which students can return to and reflect upon. Online collaborative learning, giving equal opportunity to make contributions to the discussion, is particularly advantageous to students who are shy to speak in public in a face-to-face setting [5]. Students also have more time to do research and reflect before posting an answer to the online forum. An analysis of student contributions to online discussion demonstrates the effectiveness of collaborative learning [22]. There is also evidence that online collaboration could be as effective as face to face collaboration [22].

When there was online communication between learners, they became more autonomous, more critical in thinking, more effective in knowledge synthesis, performed better in their courses, provided psychological support to each other, reducing the feeling of isolation and dropout rates, encouraged introverts and students of non-western cultures to express their views as they had more time to consider other views and post their responses [23]. Computer-mediated collaborative learning is a more effective problem-solving strategy than individual learning [24].

6. Disadvantages of Collaborative Learning

Students in collaborative learning projects may have a sense of frustration owing to internal and external factors [25]. One reason for the frustration is the perception of the difference in commitment among group members and different study habits [25]. In face to face classes some students may not attend regularly and when they do attend are unable to fully participate as they are unaware of the discussions taking place when they missed the classes. Frustration can lead to students dropping out of the course [25].

Capdeffero and Romero reported frustration among learners in online collaborative learning environments [26]. Reasons for frustration are the stress of working with people they do not know well; the delay of the interactions and feedback, time pressure, time zone differences and the reduced level of cues within the social activity and context. Capdeffero and Romero also report that students coming to online education for the first time may be apathetic or hostile to group work. Some students find interdependence with other students difficult and remain subjective and individualistic [26]. The fact that some group members do not fully contribute, may lead to a sense of frustration among others [26]. Difficulties with communication with other group members may also lead to a sense of frustration [26]. The lack of nonverbal communication cues and the lack of spontaneity led to frustration [26]. The presence in the group of one member who was the 'expert' and who was dominant was an obstacle to a shared understanding and effort [26]. Some students viewed the group assessment without having regard to individual contribution as unfair [26]. Another source of frustration was the lack of participation in the learning process by the instructor [26]. It is important that where the teacher establishes a collaborative learning environment, online or face-to-face, the teacher is an equal participant in the learning process, contributing to the debate and discussion, so that students have the opportunity to learn from the teacher. Technological difficulties may also lead to frustration [26].

Some learners are passive, others may wish to dominate, some are shy to participate, some do not do the work required, some are frightened to present in public, international students may find it difficult to participate owing to language difficulties [27]. The teacher should offer encouragement to all participants and devise ways of encouraging participation, such as by asking questions from students who do not participate frequently, so that they have to respond. The teacher should also offer praise, publicly and privately, for the contributions made by students to the learning environment.

Not all learners may obtain the benefits of online collaboration as some learners may not actively participate in online discussion [23]. Some learners will only participate in online discussion if the discussion is linked to the assessment [23]. In the University of Liverpool LLM courses where the online discussion posts are assessed, the students have an incentive to participate. Except for one or two students who drop out in the early stages of the module, the other students make several substantial contributions each week, after doing considerable research.

In both real and virtual environments, frustration in the collaborative learning experience may affect motivation and engagement of students [28]. Poor IT equipment, faulty electronic supply or inadequate internet services present obstacles to online collaborative learning [28].

In one study seven problems were found in some collaborative learning situations i.e. student antipathy towards group work, the selection of the groups, a lack of essential group work skills, the free rider, possible inequalities of student abilities, the withdrawal of group members and the assessment of individuals within the group [29]. The teacher should design the collaborative activity so that the problems are overcome.

7. Student Feedback on Collaborative Face to Face Learning and Online Learning

The author conducts the Private International Law seminars at Birkbeck College in a collaborative learning environment. The author spends 30 minutes explaining the basic concepts of the topic. In the second 30 minutes the students are divided into groups and asked to discuss the questions, each group being given a different question. In the last 30 minutes, a student from each group informs the entire class about their findings, with the author also commenting on the discussion outcome.

In week 9 the 16 Birkbeck students who attended the class were given a questionnaire to evaluate their satisfaction with the course. The questionnaires were anonymous, except for a blind student, to whom I had to email the questionnaire and who sent me the completed questionnaire by email. As his responses were similar to the responses completed anonymously, I decided to include his responses in the survey.

The following are the responses (relevant to collaborative learning) of students made in 2014 in the student evaluation questionnaire.

'Very helpful, the seminars and fellow students every week, helps with the overall learning.'

'Very pleasant and was able to clearly understand the subject with the class split into small groups and support of the tutor.'

'The short lecture from the module convenor is very helpful in guiding the seminar topic. However, what was very helpful was working in groups and discussing the same issues we had. Also, it helped to discuss with fellow students to see and learn things more clearly.'

'The module convenor is good at explaining complex concepts and having a group discussion among students to increase understanding of subjects & learning from fellow students.'

'I am very much supportive of the teaching style of giving the necessary guidance and instruction on the general subject matter, followed by discussion on seminar questions held between smaller groups who finally present the outcomes of their discussions to the overall class.'

'The teaching style of this module was very effective. Having a lecture style run down of the topic followed by focused class discussions were very helpful for learning the topics. The lecture notes that were provided were extremely helpful to provide direct guidance of reading around the subjects and all relevant cases to study. Overall, a very interesting topic which will hopefully become very handy in a career at the commercial Bar.'

'I found this pattern of learning very helpful, informative & interactive. To hear others views & opinion helped me. She (the tutor MRS Kumari) is very clear in her teaching style.'

'Very enjoyable course! More preparation on the part of some of the other students would have helped in discussions of the seminar questions, but overall a well-balanced and thoughtfully constructed course.'

The last comment indicates that this student was dissatisfied with the preparation made by some students in the group. However, overall, there is clear satisfaction by the students of the collaborative experience of discussion

with other students in a small group and learning from the discussion.

Among the online LLM students who studied Conflict of Laws in Business and Commerce, with the author as instructor, appreciative comments of learning from other students were found in an analysis of posts in the discussion forum. For example, in week 3, part of the discussion question read: 'The computers were shipped f.o.b. from Liverpool and were delivered to Assurance Ltd's warehouse in Spain for sale in that country.' Many students thought that delivery took place in Spain, as the question stated this and that Spanish courts had jurisdiction to hear the case. However, one student argued that as the goods were shipped f.o.b. according to the rules of international trade, the delivery took place in England when the goods were loaded on to the ship. There was a considerable debate on this among students and finally, by citing references, he convinced most students that delivery was in England. There were appreciative comments such as the following: 'X's detailed tutorial is instructive and I appreciate the clarity of explanation. Given the learning from your responses, I now consider that the place of delivery is England, Liverpool port,...' Another student said: 'That was a great explanation of something I only barely understood. Thanks for that.'

In an online LLM Conflict of Laws in Business and Commerce class taken in 2015, of 13 students who completed the student questionnaire, in response to the question 'The interaction with my fellow students made a helpful contribution to my understanding of the module subject' 54% agreed with the statement and 38% strongly agreed with the statement, while 8% neither agreed nor disagreed with the statement.

It is clear that both in face-to-face learning and online learning, a collaborative learning environment leads to student satisfaction in the learning experience.

8. Discussion and Conclusion

Collaborative learning should not be confused with co-operative learning. In co-operative learning the teacher remains in control and the students, although in a group, are pursuing their individual goals. In collaborative learning the teacher is a facilitator and an equal participant in the learning process and the participants have a shared goal.

To provide an effective learning experience, good design of collaborative learning environments is essential. The contribution of all participants should be required to complete the task. The task should have more than one possible answer. Instructors should be trained in designing collaborative learning environments and students should receive training of what to expect in a collaborative learning environment.

The challenges of collaborative learning include the prior isolated, passive and competitive learning experience of students and the teacher-centred traditional teaching role of instructors.

There are advantages of collaborative learning in comparison with traditional learning. Students are more engaged in the learning process as they have the opportunity to be active. They not only receive the teacher's interpretation of the subject-matter but also that

of their fellow-students. The diversity of interpretations enable them to be critical learners. There is opportunity for the development of higher-level thinking skills, oral and written communication (in online collaborative learning), leadership and teamwork skills.

A disadvantage of collaborative learning is that it does not take account of the fact that the pace of learning may be different among students in the group and that students have different learning styles. Some students may dominate the learning group and others may not wish to contribute to the discussion. Students may be frustrated if they perceive a difference in the level of commitment and contribution to achieving the group goals. There are also students who think that the teacher who is the expert should teach them and are not willing to listen to other students. The continued participation of the instructor in the learning process may assist in reducing the sense of frustration among students, if they are left to their own devices. Technological training of staff and students also assist in preventing technological difficulties forming an obstacle to a collaborative learning experience.

The author's experience of setting up a collaborative learning environment, face-to-face and online, and that of other researchers, provide evidence that such an environment is satisfying to the majority of students and motivates them to continue their learning experience. Satisfied students are also motivated and perform well in assessments. The qualitative data presented provide evidence of student satisfaction with collaborative learning.

Statement of Competing Interests

The author has no competing interests.

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