



COOPERATIVE LEARNING: PEDAGOGY IN HIGHER EDUCATION

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Abstract

Without disproving the importance of traditional teacher-led discussions in class, an increasing number of teachers are acknowledging the worth of allocating group work to their students. It is a false notion that cooperative learning is a replacement for the methods we use at present for teaching-learning rather it can be used to augment or enhance learning. This paper discusses the key elements of cooperative learning: positive interdependence, individual accountability, promotive or face to face interaction, interpersonal and small group skills and group processing. The research validating effectiveness of this method is summarized. The paper outlines the methods for implementing cooperative learning in higher education for successful learning to take place. The common hurdles in the implementation of cooperative learning and how to overcome them are discussed in the present study. The present study may lead to the enhancement of practices and approaches.

Keywords: Cooperative learning, pedagogy, higher education

With increasing number of teachers identifying and acknowledging the worth of working as a unit, we cannot refute the fact that traditional teacher led instruction is becoming an obsolete way of learning. Despite the fact that students learn more by active participation, there is reluctance to integrate the traditional lecture method classes into a cooperative learning environment. It is a false notion that cooperative learning is replacement for the methods we use at present for teaching-learning. It can be used to augment learning by the students by implementing the cooperative learning method. The teachers allocate more time in preparing their interactions with students and arranging their curricula, instead they can plan to enhance student-student interaction. In a learning environment accomplishing a goal is the prime concern. Thus each goal is organised in such a way that there is effective learning. This directs us to learning in a cooperative way. Cooperative learning involves students working together in small groups to accomplish shared goals. (Gillies, R., 2007). Small groups are formed to promote learning by each member in the group or unit. It is often seen that slow learners may cease work of the task given in case of hindrance or inability to comprehend the subject matter, but by working in a group the weak students may get assistance and certainty to carry on and hold up. The weak students get facilitation by other students and the stronger ones can fill in the gaps in their own work. When the bright students know that the others are relying on them, they become more accountable for their group members and work with more enthusiasm. It can be advantageous as it induces a sense that every member in the group is accountable to each other, also getting no restrictions in carrying on their work which ultimately enables them to get perfection and hold over their task and subject matter at hand.

Cooperative Learning

In the early 1900s the concept of social interdependence was formulated by Kurt Koffka who was one of the founders of Gestalt school of psychology. He emphasized that groups working as one unit had members interdependent on each other which could vary. In 1920s and 1930s, Kurt Lewin redefined interdependence as a change in the state of any one member will affect the group as a whole. The members of the group have an impact on each other. In the late 1940s, Morton Deutsch, redefined Lewin's reasoning about social interdependence and gave a theory of cooperation and competition (Deutsch, 1949, 1962). The elements for cooperative learning (Johnson, D. & Johnson, R., 2010) are as-

Positive interdependence: All the members of the group are linked to and dependent on each other. All the members

harmonize to achieve the desired goal. If one of the members is not successful to do his part of work then the whole group has to face the undesirable outcome. Individual accountability: All members of the group are responsible and liable for the work they do and its mastery. Promotive interaction: All members provide help and feedback to complete the task at hand. Here encouragement is provided by members to each other in order to successfully complete the group work. Interpersonal and small group skills: Interpersonal skill is interaction with each other by expressing ones opinion, listening and acceptance by all group members. Small group skills is giving turn to each member to speak, sharing views, decision making by accepting everyone's viewpoint. Group processing: It is reflecting on group work, choose actions that were helpful and discard the ones that were not helpful. Changes necessary are recognised to be implemented in group work in future. Thus cooperative learning in education with the implementation of these elements can promote successful learning.

Research Validating Cooperative Learning in Higher Education

While cooperative learning may be new to some but it has been implemented in certain countries. Various researches have been conducted and validate the effectiveness of learning in cooperative environment. Boyer (1990) stated that for any democratic environment or country, cooperation is the key element. He therefore encouraged students to work in a group cooperatively or collaboratively as cooperation is as important as competition. Much of the research has been conducted as field experiment. The study by Slavin (1980, 1983) had control and experimental group where practical techniques were used. The duration was of two weeks. The variables that were studied were academic achievement, self esteem, mutual concern, intergroup relations, attitude towards school and ability to work cooperatively. The studies by Cooper et al., 1990, Goodsell et al., 1992 also support the fact that cooperative learning is a better method as compared to traditional method of learning. The reason for the effectiveness of this method is that the students get feedback from their peers and understanding of the subject is made effective by this way. (New Horizons, 2008). Johnston et al (1981) in their review used three procedures which were: voting method, effect size method and the z-score method. They compared cooperation, cooperation with intergroup competition, interpersonal competition, and individualistic effort. A total of 122 reviews were done. The result of the study point out that cooperative learning is helpful to increase the academic achievement and

also interpersonal relationship. Cooperative learning is practiced in professional education (Cinelli, Symons, Bechtel & Rose-Colley, 1994; Glendon & Ulrich, 1992). Research by Strom & Strom, 2003; Lie 2008; Goodwin, 1999 support the fact that by cooperative learning the students become effective communicators, listeners and leaders. Astin (1993) studied 22 outcomes and 88 factors and concluded that interactions among students, interaction among student and teacher were effective tool for learning. His result also stated that formal curriculum is not so important as how students learn in cooperative environment. The traditional method of teaching was not as effective as collaborative learning. Terenzini and Pascarella (1994) reviewed books, book chapters, monographs, journal articles, technical reports, conferences, papers and research reports on student learning. They also gave supplementary bearing to the fact that collaborative and cooperative learning is effective as compared to traditional method of teaching-learning. Collaborative learning is effective tool for active learning by students at university level. Students can master content and skills by this method. The social skills are enhanced by cooperative learning and students endeavour for incessant enhancement. (Williams, 2007). A research done in cooperative learning in high school and college chemistry courses, it was found that the students who got 50th percentile when studying with traditional method got 64th percentile when studying with cooperative learning method. Positive interaction effect was seen similarly in college courses studying with cooperative method of learning. (Bowen, 2000). In introductory physics course, on collection of pre-post test gains in force concept inventory scores, it was found that in interactive engagement there was an average gain two standard deviations greater than traditional method of teaching. (Hake, R. R, 1998). Similar study done in engineering capstone design courses it was seen that learning by collaborative method was more fruitful than traditional method of teaching and students learning in interactive session or collaborative method outperformed those with traditional method. (Terenzini et al, 2001). In comparison to the student taught in a competitive learning environment the students taught cooperatively have higher self esteem and better social skills and also had better perspective and attitude about the subject. (Johnson et al, 1998). In physical chemistry class, the attitude of students towards group activities was found out. It was seen that students felt group work and interaction was positive to enhance their learning. (Townsend et al, 2000).

Implementing Cooperative Learning in Higher Education

Cooperative learning can be implemented in classrooms, but all methods or techniques followed at one time will not be fruitful. Gradually approaching towards this method will tend the instructor to be familiar with the way to go about the method and students to comfortable with the new technique. The suggestive methods given by Johnson et al. (1998), Oakley et al. (2004) and Smith et al. (2005) are as: Forming teams: Instead of students choosing their own teams, the teacher can form teams. The reason behind this is that students with same ability may cluster, making the group homogeneous. Groups formed should be heterogeneous in nature. It should include students with diverse abilities such as intellectual ability, cognitive and learning styles and interests. Before forming teams, questionnaire can be given to students to determine their abilities and interests. Thus when selecting members of groups, students can be selected on the basis of questionnaire or can be selected randomly. The task or assignment is then

decided and given to the students. Encouragement and guidance at the beginning of task or assignment is needed so that students can proceed in the right direction. Initial plan is to be discussed with the teacher or instructor so that useful suggestions can be given. Regular check of the activities to be carried out in future is to be discussed or written in flow chart form. A checklist can be prepared for the activities to be done. Students should be given freedom to make their own choices or plan of action. Students will provide their contribution in the task given. The instructor will evaluate the student. An individual student as well as the whole group is assessed. Students can provide feedback and state improvements that can be done to improve group work. Jigsaw: Groups are set up. Each member of the group is given material to learn and also teach his group members. Students discuss how to teach the topic and the important points of the topic are discussed. After practice, students teach each other followed by test or assignment. Think Pair-Share: All the students are given a topic and time is given to think silently about the topic or question posed by the teacher. Students are then paired up and the thoughts are shared. Then each member in the pair shares his thoughts with other pairs and exchange of ideas takes place. Three step interview: Groups are formed. Then each member will choose his pair to be his partner. The pair ask each other questions and discuss the subject matter at hand. In the next stage, the pairs may reverse their tasks. Later, all the members of the team discuss with each other their opinion and discuss the gist of the subject matter. The three steps include initial discussion with members of the pair, later their functions are turned around. All the members of the team discuss their response. Round Robin: Small groups may be formed. Open ended question is posed before the students. The students will think about the answer. Time is given for thinking various answers. The students will share the answers with each other after thinking in round robin way. One member is selected to record the responses given by all the members of the team. The answers are to be discussed until told to cease the discussion. Three minute review: It is also thought to be a time for reflection of all that has been done, said or discussed. The instructor may at any point stop the discussion going on and ask the students to think, review and reflect on the discussion or the answers given by each member. The members are given three minutes to review. The members may also clarify their doubts during this period. Answers are given to the questions being posed to clarify doubt. Numbered heads together: Groups are formed. The members of the group are given numbers. Questions are posed to the groups. The particular number of all the groups gives answer to the question. The teacher may call out any number and all the numbers of groups give answer to the question posed.

Overcoming Obstacles in Implementation of Cooperative Learning

Large group size takes many resources for the implementation of learning. Hence smaller groups are recommended. A group size of three to four students is good and effective learning with less time takes place. Carrying out the learning session without any icebreaking is ineffective. Student-student and teacher student interaction in general to be carried out first followed by the activities. Students' working without any understanding of use of cooperative learning is futile. Hence activity or session to be conducted to make them acquainted with the benefits of cooperative learning. Acceptance of views and opinion of others is important. If this is not followed by



students then it may lead to clash of opinion. Communication or interaction forms the basis of this learning; hence it should be clear and not biased or hostile in nature. Interaction skills can be taught first and implemented during the learning process. Stagnation is a problem in group work. Monitoring the group activity will not let the goal go haywire. Constant helping, being a part of the group, reinforcement boosts the learning process. Randomly assign and monitor the group activities which will keep the group active. Random groups are desired as learners can build rapport with all members. Divergence is anticipated at each interaction session. Efforts to be made that each member pairs up or is a part of every other member of the group. Students choosing their own groups may lead to them getting off task. Burdening the students with complex task will lead them to go to the wrong path. Simple tasks to be taught first followed by complex ones without assuming that students will be able to complete the task without assistance. Short activities to familiarize them with the activities to be conducted later can be implemented in class. The way for working in groups can be taught first. Coordination, teamwork and positive interpersonal relationship in group is essential. Practise followed by feedback on how to work together successfully is to be practised. Grading the students should be fair. Students should not give grades to each other which may create havoc in the session while learning. Students can assess themselves but with guidance and verified by the teacher.

Conclusion

Cooperative learning is well-researched but not employed in the classroom. Cooperative learning is not bound by fixed procedures and practises and variations are there to suit the need of the hour. It is flexible in nature and tailored to suit the goal, needs, environment of the learning session. Nonetheless, research validating the cooperative learning in classrooms supports the use of it in higher education. Amalgamation of the essential elements: positive interdependence, individual accountability, promotive interaction, interpersonal and small group skills and group processing will lead to the successful implementation of cooperative learning in its proper right. It can be used to suit a variety of disciplines in higher education. Various techniques to implement are suggestive ways to execute it in classrooms along with the tactic to overcome obstacles in its implementation. A range of activities beyond the content-centred goal gives a robust opportunity for learning and divergent thinking. The evaluation of student's activities is an arena shaped with many alternatives. Moreover students' evaluating the group members and themselves promotes their active engagement in learning.

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