

Cooperative Learning and its Efficiency in the University Classroom

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Abstract

The term cooperative learning refers to the instruction that involves students working in teams, structured under certain criteria, to accomplish a common goal. This teaching instruction is recently used widely in classrooms of primary, middle and secondary schools but its use is still limited in higher education classes, where the dominant teaching method is the traditional lecture mode. Hence, this article is introduced to investigate the effectiveness of cooperative learning in the university classroom through the review of findings of both empirical and theoretical studies on the subject matter. It also accounts for cooperative teaching techniques suitable for university classes and suggests solutions for possible obstacles in the implementation of cooperative learning instruction.

Key words: Cooperative learning - active learning- university classroom - traditional lectures.

ملخص

إنّ التعلم التعاوني هو منهجية تدريس تقتضي تقسيم الطلبة إلى مجموعات صغيرة بطريقة مدروسة و تحتمل لمعايير محددة بغرض تحقيق هدف تعليمي مشترك. لقد أضحت هذه المنهجية التعليمية شائعة الاستعمال في أطوار التعليم الابتدائي و المتوسط و الثانوي إلا أن استعمالها بقي محدودا في التعليم الجامعي الذي يرتكز أساسا على الطريقة التقليدية التي تتمثل في المحاضرات. لذلك يسعى هذا المقال لمعرفة مدى فعالية استخدام التعلم التعاوني في التعليم الجامعي و ذلك عبر مراجعة كل من الدراسات النظرية و التطبيقية السابقة التي تناولت الموضوع. ويهدف هذا المقال أيضا لتقصي تقنيات التدريس التعاونية التي يمكن استخدامها في التعليم الجامعي و يقترح حلولاً للمشاكل التي يمكن أن يواجهها الأساتذة أثناء تطبيقهم لهذه التقنية.

الكلمات المفتاحية: التعلم التعاوني - التعلم التفاعلي - التعليم الجامعي - المحاضرات.

Introduction

In spite of the numerous teaching theories, methods and techniques that sprang out within the last decade, university teaching seemsto be locked in the traditional lecturing mode. Many of the modern teaching methods such as collaborative, active and cooperative learning have proved their efficiency at both theoretical and academic levels, however, researchers (Faust & Paulson, 1998; Weimer, 2008; Fink, 2004) highlight that university teachers still show resistance and hesitation to transform their traditional lecture mode classes into cooperative learning instruction classes (Jones & Jones 2008).

The reason behind this resistance and hesitation lays in their belief that this instruction method will be an alternative to, rather than an enhancement of the academic lecture(Faust & Paulson 1998).Therefore, this article is introduced to investigate the efficiency of cooperative learning at the university level and account for the cooperative teaching techniques to be used in university classrooms, the possible difficulties for their applicationand suggest solutions to them.

1. Cooperative learning

The term cooperative learning is generally used to refer to any situation where students work together into groups yet this is not a correct use of the term. According to Johnson, Johnson & Smith (1991) cooperative learning is an instruction that involves students working in small “carefully structured” groups to achieve a common goal with the aim of maximizing their own and each other’s learning (p, 12). In addition to that, for a learning instruction to be characterized as cooperative, it should meet the five pillars of cooperative learning demonstrated by Johnson, Johnson & Smith (1991):

1. **Positive interdependence** : The members of the group have to depend on one another to accomplish the goal, and in case one of the group members fail to do his/her part of the work, all the group members suffer from the results of that failure.
2. **Individual accountability** : Each member of the group is required to do his/her part of the work towards the achievement of the common goal and is accountable for the mastery of all the content to be learned.
3. **Face-to-face promotive interaction**: All members of the group help and encourage one another to learn, and although some of the work can be performed individually, the members of the group should sit together and interact with one another, clarify, provide feedback, teach and support one another.
4. **Interpersonal and small group skills**: Students are urged and encouraged to develop social skills needed to achieve an effective communication among group members and efficient conflict resolution and problem solving.
5. **Group processing**: Group members reflect on their goal, discuss what has been performed and how it was done and make necessary changes to achieve a more effective functioning in the future.

When these five principles of cooperative learning are present in a teaching /learning situation, it is then called a cooperative learning situation.

Furthermore, a distinction should be made among the term cooperative learning and other terms such as active learning and collaborative learning that are usually used synonymously to cooperative learning. According to (Faust & Paulson, 1998), “the term cooperative learning covers the subset of active-learning activities that students do in groups of three or more, rather than alone or in pairs” (p, 4), whereas collaborative learning is a more general term that refers to any situation where students work together in groups.

2. Cooperative learning at university classroom

Cooperative learning instruction has proved its efficiency in achieving higher academic achievement over the other competitive and individualistic structures (Johnson et al, 1998; 2000; 2007; Johnson & Johnson 1989; Salvin, 1996; Springer et al, 1998) ,however, the majority of studies ,that tackled the subject matter, focused on its use within primary and secondary school situations (Herrmann, 2013), and cooperative learning remained “underutilized method of instruction at the college level” (Jones & Jones, 2008, p. 63). In fact, “due to the expert nature of higher education, much evidence suggests that many college professors still cling to the notion of expounding knowledge to their students rather than engaging them to discovering such knowledge through active learning” (Ediger, 2001; Murry & Murry, 1992; Felder, 1992 cited in Jones & Jones, 2008, p. 62).

Accordingly, in his study, Weimer (2008) pointed out that 76 % of university teachers, who were questioned about the teaching method they used in their classes, said that they employed traditional lecture mode. It is evident that it is not possible to “advocate the complete abandonment of lecturing”, however, the use of lecture as “the sole mode of instruction represents problems” (Faust & Paulson, 1998, p.4) such as passivity and lack of engagement among university students. Hence, within the increasing awareness of the need for a more motivating teaching instructional methods (Herrmann, 2013), Cooperative learning is the solution to promote students engagements in the process of learning and therefore enhance learning opportunities at university classroom. Therefore, “in recent years, the scholarly interest in cooperative learning has increased in higher education research” (Cvanagh, 2011; Hammond et al., 2010; Hillyard et al., 2010 cited in Herrmann, 2013, p.176).

3. The effectiveness of cooperative learning in the university classroom

The majority of cooperative learning research studies, conducted at the university level, have reported positive results on the effectiveness of this instruction method (Felder & Brent, 2007)

The positive outcomes do not cover only the cognitive side, yet they include the social side as well. Hence, the benefits of using a cooperative learning instruction in higher education should be pointed out and carefully analyzed in order to investigate the effectiveness of this instruction method when utilized in the university classroom.

Research-based benefits of cooperative learning:

- Johnson, Johnson and Smith (1998) declared that since 1924 till 1997, more than 168 studies has proved that cooperative learning is effective for students over 18 years old.
- Students, working in a highly structured cooperative learning environment, showed more interest, understanding and mastery of the studied content than students working in competitive and individualistic environments (Johnson, Johnson &Stanne, 2000).
- Cooperative learning does not only improve the cognitive outcomes, however, it helps enhancing the affective ones as well. Students taught in a cooperative environment developed communication skills and teamwork skills; they also exhibited positive attitudes about the learning experience, the studied subject and the university. (Spinger, Stanne& Donovan, 1998; Johnson, Johnson & Smith, 1998; Towns et al, 2000).
- According to Frederick (1987) cooperative learning is significantly effective in large classes, which is the case in most of university classes especially lectures of undergraduates’ classes. Therefore, when using small cooperative learning groups, instructors will overcome the challenges they usually face in teaching large classes such as opening a class discussion, monitoring the class, or even providing feedback. (Weimer, 1987; Cooper &Mueck, 1990).
- In their study *Active Learning in the College Classroom*, Faust and Paulson (1998) reported that The use of active learning techniques within a cooperative learning environment is a useful and effective teaching method that can be applied in different university faculties “ the fact that a chemistry professor and a philosophy professor both can successfully employ the techniques...speaks well for the university of this teaching

pedagogy” (ibid, p.19).When professor Paulson compared the classical lecture method he was using to teach organic chemistry for majors during the period 1984-1993 and the cooperative learning shift he made during the period 1994- 1998, Paulson found out that the overall retention rate increased from 0.38 to 0.75. Moreover, Paulson declared that students who were taught within an active learning instruction had better performance in laboratory sections of their course in terms of both average and retention rate. Whereas for professor Faust in the two introductory philosophy courses that he teaches 91 % of 700 students from five large lecture sections claimed that they benefited from group projects and their academic achievement has increased. In addition to the enhancement of their learning outcomes, when students were asked about the positive aspects of cooperative learning, they listed social and psychological benefits such as the opportunity to hear different opinions and ideas, the ability to interact with classmates and make new friends and the ability to have fun which is not available in traditional lectures. Faust & Paulson (1998) believe that “Such social benefits indirectly affect students’ academic performance as well (p. 21).

4. Cooperative learning techniques suitable for university level

In their paper, Faust and Paulson (1998) listed a wide range of active learning techniques applicable in the university classroom and which have been applied and tested by them. Hence, cooperative learning-related techniques from this list will be listed and discussed.

1. **Active review sessions:** They are sessions in which the instructor asks questions and the students discuss and answer them in cooperative learning groups, then they share their answers with the whole class, after that the groups discuss the differences in the provided the answers. This method helps students develop critical thinking and reasoning better than the traditional class review method that consist in students asking questions and the instructor answering them while the students spend most of time copying down the instructors’ answers without focusing on the content (Faust & Paulson, 1998).
2. **Work at the blackboard:** The work on blackboard is usually used in problem solving courses such as physics, mathematics, critical thinking...etc. In classical lectures the instructor is the one who assess students’ work, provides corrective feedback and mainly solves the problems himself rather than the students, which may result in low learning outcomes since students remember the things they were engaged and interested in better than the things they just heard or saw. However, in a cooperative learning environment, instructors make students solve the problems themselves via inviting them to go to the blackboard in small groups and discuss collaboratively with one another about the ways of solving the problem (ibid, 1998).
3. **Role playing :** In role playing activities, students are expected to act out a situation or incident or perform a play. This depends on the nature of the module and time devoted for each session, for example, in an EFL class, instructors may ask students to perform plays of Shakespeare, this will help them develop their speaking skills and gain new vocabulary and students of philosophy might recreate the trial of Socrates, which can

help them have a good understanding of the theories and topics discussed in the lectures.

4. **Panel discussions** : Panel discussions are suitable in sessions, where students are asked to give class presentations or reports; they help the instructor involve all the students in the presented content. First, the instructor assigns each group with a specific topic to be demonstrated in a panel presentation. Then, each panelist presents his/her topic briefly. After that the floor is given to the audience to ask questions about the presented content. Finally, to make the discussion more interesting, the teacher may give students in the audience different roles. For example, “if the students are presenting the results of their research into a medical ethics problem such as euthanasia, some of the other students might take on the roles of clergy, patients’-rights advocates, hospital officials, and so forth” (*ibid*, 1998, p.16).
5. **Debates** : Debate method is applicable when the topic accepts two opposing views. In this case the instructor divides the class into two debate teams and for each team, he gives a position to defend and support with strong arguments. At the beginning, the first team represents their arguments and then the opposing team is given the floor to refute these arguments. After that, the first team is given the opportunity to respond to the second’s team arguments. This method is very effective for courses where the reasoning skills are accentuated. (Seech, 1984; Johnson & Johnson, 1994 cited in Faust & Paulson, 1998, p.16).
6. **Games** : It is expected that some instructors might not see playing games at university level as an appropriate idea yet, in certain situations, it can be a very effective instructional tool. “For example, a game that stimulates social inequalities and forces students to “live” at a lower socioeconomic position will dramatize aspects of social and political reality that cannot be transmitted via lecture” (Groves, Warren & Witscher, 1996 cited in Faust & Paulson, 1998).

5. Obstacles in cooperative learning implementation with suggested solutions

Despite the fact that cooperative learning has become a solid teaching method that is supported by both theory and classroom research (Felder & Brant, 2007), this teaching method is not without its problems. In fact, most of its problems spring out from the unwillingness of university teachers to switch from the classical lecture method to cooperative learning environment believing that cooperative learning is an instruction suitable only for primary or secondary school classes. Furthermore, problems may occur as a result of “individual student resistance and dysfunctional teams” (Felder & Brant, 2007 p.7). Hence, to overcome the obstacles that may occur in the implementation of cooperative learning in the university classroom, here are the main possible obstacles and suggested solution for each one.

- One reason that may lead to failure in adopting a cooperative learning instruction is the attempt of the instructor to use all the teaching methods of cooperative learning at once. When he does so, the instructor will have to deal with many new techniques at one time and consequently will end up with doing none of them in the appropriate way. At the same time the students will be annoyed by a range of unfamiliar classroom activities

which may lead them to stop interacting with their teacher or even rebel against him. (Felder & Brant, 2007). Therefore, instructors, who are not familiar with cooperative learning, had better choose the cooperative learning techniques that both them and their students are comfortable with, then they can add other techniques gradually, whenever they get used to the previous ones.

- Another factor that may make instructors hesitate to use cooperative learning is the “coverage problem” as many instructors avoid using cooperative learning or any other active learning techniques, which they consider time consuming and their adoption risks the coverage of all the content in the syllabus, and depend mainly on classical lectures, which they find time saving and helpful for finishing the program (Faust & Paulson, 1998, p. 17). Despite the fact that cooperative learning might be more time consuming in comparison with traditional lectures yet a modest content taught in a cooperative instruction, that engages students in the learning process, is more beneficial for students than a vast content that they do not understand or cannot use in a complex situation. Silberman (1996) described the importance of engaging students in active learning activities and how it affects their learning outcomes as follows

“What I hear, I forget;

What I hear and see, I remember a little;

What I hear, see, ask questions about or discuss with someone else, I begin to understand;

What I hear, see, discuss and do, I acquire knowledge and skill;

What I teach to another, I master” (p.97).

On the other hand, Faust and Paulson (1998) call instructors’ choice to cover the content of syllabus over students’ engagement “devil’s bargain” which makes the instructors either choose to cover all the content and have their students learn less or teach less content and make their students learn more (p. 17). Accordingly, in order to avoid the problem where the content was covered but the students did not learn, it is preferable that instructors engage their students in the learning process and guarantee that their learners are really learning before assuring if they covered all the content of the syllabus or not.

- A third reason that leads to the non implementation of cooperative learning in the university classroom is the instructors’ fear that when implementing a cooperative learning instruction, they will lose control of the sessions by giving a margin of freedom to their students. However, if they apply the five pillars of cooperative learning (mentioned here above in this article), instructors will manage their classes better than they used to in traditional lectures.
- Lessons’ preparation is another reason why university instructors avoid implementing cooperative learning in their classes since the time devoted for lessons’ preparation will automatically increase with the adoption of new teaching techniques and this can be tiring and time consuming for instructors who already have many university-related tasks to fulfill. This rejection of using cooperative learning instruction increases when the instructor is familiar with the module and he already has all the lectures prepared and he has already dealt with all the lessons. In fact, no one can deny the effort and time

the instructors will have to deal with at the beginning of cooperative learning implementation in their classes however once they get familiar with techniques of this method and the group formation strategies they will be able to apply them easily to any course they teach (Faust & Paulson, 1998).

Finally, inviting university instructors to implement cooperative learning in their classes is not a call to abandon lecturing yet it is an initiative to try a new teaching instruction, that was approved by many scholars as effective and suitable for different disciplines, and to apply it in their classes to maximize learning, create a peaceful collaborative learning environment and enhance students' academic achievement.

Conclusion

The findings explored within the review of literature on both theoretical and empirical studies that tackled cooperative learning and its effect on students' performance and the enhancement of their level show that cooperative learning is an effective learning method that can be applied in different disciplines at the university level. This instruction method, when implemented successfully, does not only maximize learning and enhance students' academic achievements, yet it also improves their metacognitive and intrapersonal skills and help them develop their own and each other's communication skills which will help them survive in their professional carriers in the future.

References

- Cooper, J., & Mueck, R. (1990). Student involvement in learning: Cooperative learning and college instruction. *Journal on Excellence in College Teaching*, 1, 68-76.
- Faust, J.L., & Paulson, D.R. (1998). Active learning in the college classroom. *Journal on Excellence in College Teaching*, 9 (2), 3-24.
- Felder, R.M., & Brent, R. (2007). Active Learning: Models from the Analytical Sciences, ACS Symposium Series 970, Chapter 4, pp. 34–53. Washington, DC: American Chemical Society.
- Fink, L.D. (2004). Beyond small groups: Harnessing the extraordinary power of learning. In Michaelsen L., Knight, A. & Fink, L.D. *Team-Based Learning: A transformative use of small groups*. Sterling, VA: Stylus Publishing.
- Frederick, P. (1987). Student involvement: Active learning in large classes. In Weimer, M. G. (1987). *Teaching large classes well* (pp. 45-56). San Francisco: Jossey-Bass.
- Herrmann, K.J. (2013). The impact of cooperative learning on student engagement: Results from an intervention. *Active Learning in Higher Education*. 14(3) 175 –187.
- Jones, K.A., & Jones, J.L. (2008). Making cooperative learning work in the college classroom: an application of the 'five pillars' of cooperative learning to post-secondary instruction. *The Journal of Effective Teaching*, Vol. 8, No. 2, 2008, 61-76.
- Johnson, D.W., Johnson, R.T., & Smith, K. (1991). *Active Learning: Cooperation in the College Classroom*. Edina, MN: Interaction.
- Johnson, D. W., Johnson, R. T., & Smith, K. A. (1991). *Cooperative learning : Increasing college faculty instructional productivity*(ASHE-ERIC Higher Education Report No. 4.) Washington, DC: School of Education and Human Development, George Washington University.
- Johnson, D.W., & Johnson, R.T. (1989). *Cooperation and competition: Theory and research*. Edina, MN: Interaction.

- Johnson, D.W., Johnson, R.T., & Smith, K.A. (1998). Cooperative Learning Returns To College: What Evidence Is There That It Works?, *Change*, 27-35.
- Johnson, D.W., Johnson, R.T., & Smith, K.A. (2007). The state of cooperative learning in postsecondary and professional settings. *Educational Psychology Review*. 19(1): 15–29.
- Johnson, D.W., Johnson, R.T., & Stanne, M.B. (2000). Cooperative Learning Methods: A Meta-Analysis. The Cooperative Learning Center, The University of Minnesota.
- Silberman, M. (1996). Active Learning: 101 Strategies to Teach any Subject (p.97). Boston, Massachusetts, USA: Allyn & Bacon Publishing.
- Slavin, R. (1996). Research on Cooperative Learning and Achievement: What We Know, What We Need to Know. *Contemporary Educational Psychology*, 21(1), 43-69.
- Springer, L., Stanne, M. E., & Donovan, S. S. (1998). Effects of small-group learning on undergraduates in science, mathematics, engineering and technology. Madison, WI: National Institute for Science Education.
- Towns, M. H.; Kreke, K.; Fields, A. An Action Research Project: Student Perspectives on Small-Group Learning in Chemistry. *J. Chem. Ed.* 2000, 77, 111–115.
- Weimer, M. G. (1987). Teaching large classes well. San Francisco: Jossey-Bass.
- Weimer, M. (2008). Active Learning Advocates and Lectures. Retrieved November 10, 2008 from <https://www.facultyfocus.com/articles/teaching-and-learning/active-learning-advocates-and-lectures/>