



Constraints of Cooperative Learning in University Classrooms: A Qualitative Study in Iran and Australia

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| ARTICLE INFO | ABSTRACT |
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| <p>Received: 25 October 2020 Revised: 20 November 2020 Accepted: 26 November 2020 Online: 27 February 2021</p> | <p>Although identifying the constraints of cooperative learning can play an important role in improving the quality of its implementation, few studies have been conducted in this field, especially among different cultures. The present study is a small step towards bridging this research gap. Ten classes in the field of Educational Sciences at University of Tehran in Iran and the University of Queensland in Australia were observed. The classes were purposefully selected. Thematic analysis was selected as the method of analysing data. The results show that there are similarities in Iran and Australia such as unfamiliarity of students and faculty members with cooperative learning, insufficient time, grading, competitive culture and previous education. The present study showed that some constraints are specific to Iran. These constraints include gender, low motivation of students, unequal opportunity, discussing non-subject matter in groups, abuse of class freedom, irregularities and noise in the class, inflexibility of syllabus, non-circular chairs, inadequate educational space and unfamiliarity of university managers with cooperative learning. In addition, the present study identified three major constraints in Australia: cultural differences of international students, language problem for non-Australian students and high emphasis of faculty members on content. We think that constraints in both countries are related to the quality of implementing cooperative learning. This could identify a new vision for future research. Findings of this study have implications for faculty professional development. The results of the study motivate faculty members to turn the constraints into an opportunity for better implementation in the classroom through familiarity with cooperative learning.</p> |
| <p>KEYWORDS</p> <p>Constraints Cooperative Learning, Faculty Member Iran Australia</p> | |

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1. Introduction

Cooperative learning is based on the social interdependence theory which proposes that when students are interdependently connected, they will collaborate with each other to achieve their goals. It contains five basic features including positive interdependence, face to face interaction, individual accountability, interpersonal skills, and group processing (Johnson & Johnson, 2009). The term “cooperative learning” refers to students’ reciprocal learning which encourages them to learn together cooperatively creating new academic attainments, rather than absorbing the content provided by the faculty member. This approach implies the usage of small groups of university students in a real or virtual class. In this context class tasks are set in such a procedure that all members of the team become interdependent, but appropriately self-directed to master the content as well as to solve academic problems. Cooperative learning was developed by a group of teachers from Goldsmith’s College, University of London in Great Britain in the mid-1960s (Sumtsova et al., 2018). Later, in the 1980s, many progressive teachers all over the world took an interest and several teams of researchers from the University of Johns Hopkins, Minnesota State University and Jonathan David Aronson’s team from California developed a detailed methodology for this approach. Since that time the problem of organizing the educational process by means of cooperative learning was considered and examined in the literature by researchers internationally (Sumtsova et al., 2018).

Cooperative learning is an approach through which students work together in heterogeneous groups in terms of academic achievement, race, language, culture, and gender to maximize their own learning and others (Gillies, 2008). To achieve this purpose, faculty members have tried to form different kinds of cooperative activities in their classroom. In this study, we report on our observations of cooperative activities that faculty members have implemented to enhance students’ learning. In fact, we focused on the constraints of implementing a cooperative learning approach in the classroom. Cooperative learning is an effective teaching (Van Ryzin & Roseth, 2018) that is applied to strengthen learning (Cámara-Zapata & Morales, 2020; O’Connor, Michaels, Chapin & Harbaugh, 2017), and critical thinking capacities (Erdogan, 2019), to improve communicative abilities (Dendup & Onthanee, 2020), to improve the academic motivation (Sanaie, Vasli, Sedighi, Sadeghi, 2019) and also to increase interaction between students (Nicole & Johannes, 2019). Faculty members can facilitate this interaction (Gillies, 2016). Defining clear expectations plays a crucial role in the implementation of cooperative learning (Sumtsova et al., 2018).

According to Zhu (2012), cooperative learning is a social interaction that includes a group of learners where members obtain and share experience or knowledge. It also provides us with various forms of interaction learners can use to gain new knowledge (Sumtsova et al., 2018).

In University classes, students need to study together in small groups, based on tasks such as seminars, presentations, and group projects. This is why, some investigators have deliberate active learning and its profits in university classes compared with the traditional method of teaching-learning (Masek, 2019; Xue & Lingling, 2018; Cohen, 2014); profits such as creating learning opportunities, reinforcing motivation (Gisbert et al., 2017), high academic performance (Swanson, McCulley, Osman, Lewis, & Solis, 2019), gaining a deep understanding of the subject matter (Estébanez, 2017), creating meaningful learning, and inspiring commitment on assignments of learning (Gillies & Nichols, 2015). Despite these benefits, cooperative learning has some constraints (De Hei, Strijbos, Sjoer, & Admiraal, 2015; Gillies, 2010; Janssen, Erkens, Kirschner, & Kanselaar, 2012; Miyake & Kirschner, 2014). Constraints such as negative attitude to collaboration (Laal, 2012), dependence on others for problem solving (Nokes-Malach et al., 2015), the lack of time considered in the curriculum (Buchs et al, 2017), the loss of teaching time for subject matter (Lumpe et al, 1998), students' lack of group work skills (Janssen & Wubbels, 2018), sense of misunderstanding in students (Hennebry & Fordyce, 2018), students' individual differences including gender, age, education, and English language skills (Chen & Squires, 2007), and low instructors' knowledge (Völlinger & Supanc, 2019). Of course, in this regard, some studies such as Nguyen-Phuong-Mai (2019), Hirst and Slavic (2001) and Slavin's (2004) have found diversity useful.

Previous studies have documented the advantages of cooperative learning in Iran (Keramati, 2007, 2008, 2009, 2010, 2011, 2012, 2017) and other countries including Australia (Chiu & Cheng, 2017; Gillies, 2011; Gillies & Boyle, 2010; Johnson & Johnson, 2009; Volet & Mansfield, 2006), but fewer studies have specifically studied constraints of cooperative learning through objective observations in classrooms. Moreover, little comparative research on cooperative learning seems to have been conducted in other countries with different social, religious, and cultural systems (Tran, 2019). In addition to the above-mentioned reasons for the need to conduct the present study, it should be said that cooperative learning is widely employed in primary and secondary schools (Hussien, 2020; Sutarman, & Mulyati, 2019), but little evidence is available on what is its constraints in higher education level. Like Nguyen-Phuong-Mai (2019), we believe that teaching practices should be understood in a given cultural context. The finding obtained from the

current study will lead to expanding of the knowledge, and understanding of the constraints of implementing cooperative learning in university courses in Iran and Australia with two different cultures. The purpose of this study was to identify this knowledge as a teaching practice for enhancing teaching – learning process by answering the following questions:

- What are the constraints of implementing cooperative learning in university classrooms in the field of Educational Sciences in Iran and Australia?
- What are the similarities and differences between the selected universities in Iran & Australia in terms of the constraints of cooperative learning?

2. Research Method

Ten classes in the Faculty of Psychology and Education at University of Tehran (UT) in Iran and the School of Education at the University of Queensland (UQ) in Australia were observed. The process for selecting classes for observation was as follows:

First, all faculty members at both faculties were informed that those who implement the cooperative learning approach in the classroom and volunteer to have their classroom observed should inform the researchers. Five faculty members volunteered at the University of Queensland and seven faculty members at the University of Tehran. They could choose to introduce one of their classes to the researcher for observation. At the University of Tehran, five classes were selected from seven classes because after observation, the researchers found that the teaching method in two classes was not cooperative. In fact, sampling was purposeful. The observation sessions were 90 minutes long. The criteria used include: implementation of CL in the class, and willingness of faculty member to let the classes be observed. Classroom observations were conducted by main researcher at the UQ who is the first author of the current article, and also is full-time faculty staff at UT. Classroom observations were conducted at UT in March, April, and May 2019, and also classroom observations were conducted at the UQ in September, October, and November 2019. Observations in each university were 20 sessions. The observation process and data collection was as follows:

The observer was first informed of the class time and location by the faculty member. The observer then came to the classroom before the start of the class. After the arrival of the faculty member and before the beginning of the lesson, she/he introduced the observer to the students and then the

observer participated in the groups as a member and interacted closely with the group members. Spradley (1980) uses the term "complete participant" for researchers studying the fields of which they are currently a member. According to Anderson (2006), this provides access to a wide range of data because people feel that they are dealing with a friend or colleague, not a researcher, and as a result, the observed behaviour is more explicit and honest. At the present study as observer interacted, he wrote down his observations of the cooperative learning constraints in that class. Sometimes group members unconsciously point to constraints without the observer asking students about the constraints. At the end of the class, the observer completed the observations by taking notes in his office in the faculty. The observer discussed his field notes with the faculty members after each lesson. He also discussed his field notes with the second author of current article. After these discussions, some statements were removed and some of them were revised. Observation field notes were categorised thematically. Thematic analysis is a method for classifying, analyzing and reporting themes within data. It minimally arranges and describes data set in (rich) detail (Boyatzis, 1998). Based on the nature of our research and using the Braun & Clarke's (2006) framework, the data analysis process was designed and implemented as follows:

A. Acquainting with data, B. Reading and re-reading the data, C. Creating initial code, D. Searching for themes, E. Revising themes, F. Defining and specifying themes, G. Final analysis of selected extracts, relating back of the analysis to the research question and literature, and producing an academic report.

A standard protection for observations is often the guarantee of confidentiality and privacy (Cohen, Manion & Morrison, 2018). Faculty members were assured that their personal information which is the result of classroom observations was protected.

3. Results

We read notes several times, extracted constraints and refined themes several times to place sub-themes within main themes and we then classified the concepts based on their similarities. We grouped the various statements that emerged from the observations into two main themes, four sub-themes, and six concepts that showed similarities in Iran and Australia and also twelve concepts that indicated the differences in the constraints of cooperative learning in both countries (Table 1).

Table 1: Qualitative data analysis of themes, sub-themes, and concepts

| Themes | Sub-themes | Concepts | | | | | |
|--------------------------|----------------|---|---|---|------------------|------------------------|--|
| | | Similarities Iran and Australia | F* | Iran | Differences F | Australia | F |
| In-class constraints | Student | Unfamiliarity with cooperative learning | 40 | Gender | 20 | International students | 16 |
| | | | | Low motivation | 12 | | Language problem for non-Australian students |
| | Faculty member | Unfamiliarity with cooperative learning | 40 | Unequal opportunity | 10 | High focus on content | 12 |
| | | | | Non-subject matter | 8 | | |
| Out-of-class constraints | University | Insufficient time in the curriculum | 24 | Class freedom | 4 | - | - |
| | | | | Fear of inability to manage the classroom | 8 | | |
| | Society | Competitive culture | 40 | Inflexibility of syllabus | 16 | - | - |
| | | | | Previous education in family and school | 40 | | |
| University | Grading system | 40 | Inadequate educational space | 20 | - | - | |
| | | | Unfamiliarity of managers with cooperative learning | 20 | | | |

* F is frequency of statements recorded during observation sessions.

In-class Constraints

Student

Observations in all lesson session revealed that students in both countries were not familiar with cooperative learning, and this approach was not introduced in the form of various courses in the faculty. Many thought that cooperative learning was the same as group work. In early classroom sessions, they did not know how to work together, how to manage a small group as a group leader, and how to report as a group or critique each other's reports.

In Iran, girls and boys cannot work together in a group because of religious beliefs. Students' motivation to learn was low. The observations showed that there was no equal opportunity for the participation of all members of the group, and students with higher verbal and social skills spoke more than others. In some sessions, non-curricular discussions took place in groups, and some students abused the freedom given to them and disrupted class order. For

example, the faculty member posed a question so that students could find answers in groups of four. Sometimes it was observed that team members talked about non-academic topics. At one of the sessions, students living in the dormitory were discussing the division of responsibilities for buying dinnerware, cooking, and washing dishes. Despite the fact that the number of students in classrooms in Australia was higher than in Iran, the above problems were not observed in this country. A serious constraint in Australia was the presence of students from different cultures in the classroom who could not easily communicate and work together in a group due to cultural differences, especially linguistic differences.

Faculty member

According to the observations, one of the most obvious constraints was the unfamiliarity of faculty members with the cooperative learning approach in both countries. This constraint was observed in all sessions. Although faculty members in both countries stated that they were implementing cooperative learning in their classroom, they were not completely familiar with the cooperative learning approach and this was one of the main constraints for effective implementation of cooperative learning in the classroom. However, their classrooms seemed to be the best possible examples of cooperative classrooms in college that could be observed. One of the constraints in Iran was that faculty members were afraid of disrupting the classroom and thought that they could not control the classroom well by implementing cooperative learning in the classroom. Regarding the faculty member sub-theme, there were two constraints in Australia: faculty members focused too much on content and tried to present more in a classroom through power-point and speaking. As a result, there was less opportunity for interaction, thinking, and group processing.

Out-of-class constraints

University

Classroom observations as well as friendly observer-friendly conversations with faculty members after the session showed that they needed more time to teach the syllabus and to implement cooperative learning effectively. This constraint was observed in more than half of the sessions observed in both countries. Grading was another constraint of the university system in both countries and was beyond the faculty member's control. Faculty members, after observation sessions and in friendly conversations with the observer, stated that the grading system is very boring and because the final evaluation is done individually and group performance measurement

has its own challenges, so the grading system is a serious constraint on implementing cooperative learning in the classroom.

There were no constraints on sub-theme of university in Australia, but there were four major constraints in Iran: First, the syllabus is set by the Ministry of Science, Research and Technology and the amount of content to be presented is very large, and this worries faculty members that if they implement cooperative learning, there may not be enough time. Second, the arrangement of chairs in classrooms in Iran is designed based on the method of lecturing, and the faculty member must change them in a circular shape in each session. Classroom observations showed that moving chairs made noise in the classroom and lost some of the class time. Third, the size of the classrooms is not large enough to form cooperative groups, and fourth, university and college managers are not familiar with the cooperative approach and therefore cannot support faculty members to implement this approach.

Society

In informal conversations with faculty members outside the classroom, it was found that a competitive culture at the community level makes the tendency to compete in the classroom environment greater than cooperation. This constraint was also evident in the classroom observations in the groups. Faculty members also said that students in elementary and high school have been educated in a competitive environment and now it is very difficult for them in university classrooms to work together to achieve their common goal which is deep learning, because in the past they have learned to compete more than to cooperate with each other. The observer in the groups heard similar conversations from the students. For example one of them said:

“We must work to change the culture to which we have been accustomed for years. We enjoy learning together for a short time in this class, but this is not the case in all classes”.

In Australia, students stated similar statements during observations, and faculty members after observation sessions focused on competitive culture and previous education as the main constraints. An Australian faculty member said:

Students may have never experienced cooperative group work before. I have no idea what they come from in their secondary school environment. They might be used to individual work. Then, it takes time to create that cultural shift because this is also an effective way to learn.

And another one said:

In Australia there are many competitive agendas, for example school principals are looking for teachers to work in a cooperative way, but by the same token there might be rewards for success. Rewards provide the basis for competition, and this is not in line with a cooperative culture.

4. Discussion, implication and suggestion for future studies

The present qualitative study identified the constraints of cooperative learning through classroom observations in Iran and Australia. We want to discuss the constraints of cooperative learning in the form of similarities and differences between the two countries in four sub-categories: student, faculty, university, and community.

Similarities

The current study showed that unfamiliarity of students and faculty members with the cooperative learning approach is common constraint in Iran and Australia. In this regard, Janssen and Wubbels (2018) point to the lack of cooperative skills in students. Also, Völlinger and Supanc (2019) emphasizes the low knowledge of faculty members as a constraint of the implementation of cooperative learning in university classrooms. Therefore, professional development centres of faculty members in universities can acquaint faculty members with new teaching-learning knowledge through workshops and training courses, especially active approaches, including cooperative learning. This study was conducted in two faculties of education in two different countries. It seems that holding workshops and training courses for faculty members in the field of cooperative learning in other faculties that are not familiar with the field of education is more necessary.

In the university system of both countries, the time devoted for the courses was not enough to implement the cooperative learning approach. Although some studies also acknowledge the constraint of insufficient time (Buchs et al, 2017; Lumpe et al, 1998), it seems that time can be generated by the effective implementation of cooperative learning and by creating a synergistic environment. Synergy makes optimal use of available time. With the proper implementation of cooperative learning, students' individual and group efforts during the semester can be the basis for evaluating their performance. In fact, in such a situation, formative evaluation can replace the current boring and time-consuming grading system.

Competitive culture and students' previous habits of traditional teaching methods are two serious constraints that, unlike other constraints, do not seem to be easily managed. In other words, these constraints are beyond the control of faculty members and even beyond the control of university policy makers. Working with students who have already grown up in a competitive environment or who have been trained in traditional ways is difficult but not impossible. If we can't start the change of competitive culture to cooperative culture in the society level, perhaps we can provide the context for such a change by educating the youth in the university. They are the future managers and leaders of the future. In fact, they are the change makers of the future.

Differences

Iran

In Iran, due to religious values, it was not possible to form heterogeneous groups in terms of gender. Of course, it seems many faculty members and students agree with a heterogeneous group composition in terms of gender, but the formation of such a combination requires the cooperation of all faculty members and students. At the same time, the field of cultural vice chancellorship in Iranian universities does not fully support the formation of gender heterogeneous groups in the classroom and sometimes may show sensitivity to such decisions. Therefore, faculty members do not want to be involved in such challenges. Another difference was low academic motivation of students, not all students participated equally in group discussions, sometimes non-academic topics were discussed in the class, and some students abused these freedoms because of the cooperative environment and disrupted the discipline of the class. These constraints do not seem to be related to the nature of cooperative learning, but rather to the quality of its implementation. Values are respected in any country, and faculty members can form heterogeneous groups based on other characteristics such as race, language, culture, social skills, and academic achievement. This heterogeneity, as Gillies (2008) states, is an inherent feature of cooperative learning, and faculty members can form cooperative groups in the classroom according to the different characteristics of students. This heterogeneity is important and as previous studies have shown, group heterogeneity significantly increases the productivity of cooperative learning (Hirst & Slavic, 2001; Nguyen-Phuong-Mai, 2019; Slavin, 2004).

Observations in Iran show that low academic motivation of students is one of the constraints of cooperative learning. This constraint can have different reasons. Studying these reasons is important and can be the subject of future research. On the other side, effective

implementation of cooperative learning can be effective in increasing students' motivation to learn (Gisbert et al., 2017; Sanaie, Vasli, Sedighi, & Sadeghi, 2019). These two variables of academic motivation and cooperative learning are probably related to each other. Examining the how of this relationship can be explored in future research.

During the observations and during the analysis of the data, we were always faced with the question that if the cooperative approach is implemented properly in the classroom, the opportunities for participation may still be unequally distributed among the students? Whether non-subject matter be raised in the classroom? Whether students are abusing classroom freedom? We did not see a complete and comprehensive model of cooperative learning in the classroom to answer these questions clearly, but the research literature makes it clear to us that cooperative learning can strengthen commitment (Gillies & Nichols, 2015) and individual responsibility (Johnson & Johnson, 2009) and help students gain a deeper understanding of the subject matter (Estébanez, 2017).

Some faculty members in Iran who implemented cooperative approach in the classroom were concerned about losing control of the classroom. It may be necessary to emphasize in courses and workshops that noise is a prerequisite for a cooperative class and should not worry faculty members. Inflexibility of syllabus, non-circular mode of the seats, inadequate educational space and unfamiliarity of managers with cooperative learning there were four constraints that could be removed in Iran. If university managers believe in a cooperative learning approach, they can facilitate the implementation of this approach by purchasing the necessary facilities and equipment in the classroom, developing the physical space of the classroom, and renewing the syllabus.

Australia

Although some studies consider the combination of culturally heterogeneous cooperative groups as an advantage (Hirst & Slavic, 2001; Slavin; 2004), in the present study it was found that the presence of students from different cultures and countries at the beginning of the semester prevents effective communication. Chen and Squires (2007) refer to poor English language skills as a challenge to cooperative learning. The present study also showed that the English language problem of non-Australian students is a serious constraint for communication in groups. In the current study, this constraint was very obvious at the beginning of the sessions, but as Nguyen-Phuong-Mai (2019) stated it can be a unique opportunity to increase the productivity of teams.

The University of Queensland has students from many different countries. Students came from countries such as China, India, Malaysia, Singapore, Thailand, and Japan, Vietnam and even European and Middle Eastern countries. Perhaps by implementing cooperative learning in the classroom, students can be introduced to different cultures, thereby strengthening the relationships between students and expanding mutual trust between them. However, this constraint could show us a new vision for research in Australia.

The high emphasis of the faculty on the content misses opportunities for discussion and critique, and this was one of the observations made in the classrooms in Australia. Perhaps it is because of the content-oriented approach of the teaching-learning process that some researchers consider the lack of time as an important challenge of cooperative learning (Buchs et al, 2017; Lumpe et al, 1998). It seems that if fostering thinking is a priority, faculty members will be less concerned about time and will try to teach students how to think and how to learn through active teaching-learning approaches. This study had two main limitations: Firstly, at both the Schools of Education at the University of Tehran and the University of Queensland, we selected classes for observation that the instructors of those classes stated they were implementing cooperative learning and announced their readiness for observation. There may be classes where cooperative learning is implemented and we have not been able to involve them in our study. Secondly, although the second author of this article was of Australian origin and played an important role in conducting observations in Australia, the observer in both countries was of Iranian origin. The language problem could be a limitation for our study in Australia.

5. Conclusion

This study discovered similarities and differences in two different cultures and showed that cooperative learning should be considered as a valuable teaching-learning approach in higher education and its usage should be extended to college classrooms. This study can make a significant contribution to the development of cooperative learning knowledge by giving a clear message to faculty members:

Familiarity with the cooperative learning approach can improve the quality of implementation of this approach and improving the quality of implementation can minimize its constraints. This message can be important for faculty professional development centres. Faculty members do not learn teaching-learning approaches during the graduate program. They start the teaching profession and obtain teaching knowledge through experience. This reveals the need to

design cooperative learning courses and workshops for them, especially in disciplines other than Education. Of course, removing the constraint of competitive culture requires a strategic plan at the society level. The societal constraints identified through this study have been largely ignored in the literature. Although Nguyen-Phuong-Mai (2019) emphasizes the study of teaching methods in the context of cultures, but our study showed that cooperative learning can be an international approach in the field of teaching-learning. An international agreement on the application of cooperative learning in primary, secondary and higher education can lead to a cooperative generation rather than a competitive one, and restore peace to our planet. Perhaps in such situation where success of each country depends on the success of another, crises including Covid19, environmental pollution, poverty and inequality can be better managed.

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