CIRC and STAD in Iranian context: Through the five elements to cooperative learning of lexical collocations

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Abstract: Cooperative learning is an approach of teaching and learning that roots in communicative language teaching (CLT). There are five elements that build up the essence of this approach and its methods, namely, positive interdependence, individual accountability, face to face interaction, interpersonal skills, and group processing. Inspired by the gap in the literature, using a mixed-method design, this study attempted to investigate how these elements are at play in the context of Iran, which is relatively individualistic and competitive with regard to the learning culture. In the quantitative phase of the study, the comparative investigation on the impact of Student Teams-Achievement Division (STAD) and Cooperative Integrated Reading and Composition (CIRC) showed CIRC worked significantly better in improving EFL learners’ lexical collocation knowledge. This was followed by the qualitative phase, in which the participants’ perceptions about the process were explored through a directed interview and the strong and weak points of each method were identified. Delving into the answers, the researchers concluded that while the five elements are needed, they are not sufficient to make decisions about the effectiveness of a CL method and the importance of each element may differ in the context of Iran. It was suggested that personal characteristics and learning culture of the target context should be

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PUBLIC INTEREST STATEMENT

Cooperative Learning (CL) is an approach of teaching and learning which has attracted lots of attentions due to its proved effectiveness through theory and practice. However, the application of the approach and its methods in Iranian context has been reported very challenging as the dominant individualistic and competitive learning culture leaves a little room for cooperation. Using two methods of CL, namely STAD and CIRC, this study compared their impacts on lexical collocation achievement among Iranian learners and found out that CIRC is working better for them. A posterior interview was also conducted and the weak and strong point of each method was elicited from the students. Delving into the answers, the underlying reasons for the difference was explored and related to both culture and the five essential CL elements. It is hoped that the results of this study may pave the road for application of CL methods in Iran.
considered when deciding what method to use. The results of this study can be used both by those involved in the process of teaching and learning and as a reference for conducting further researches to shed more light on the matter in hand.

Subjects: Teaching Methodology & Practice; Teaching & Learning; English Language; Language Acquisition; Language Teaching & Learning

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1. Introduction

Vocabulary learning is one of the major concerns in language teaching and learning and plays an important role in these areas. Richards and Rodgers (2001), for example, state that “the building blocks of language learning and communication are not grammar, function, notions, or some other unit of planning and teaching but lexis, that is, word and word combination”, i.e. collocations. (p. 132). One especial issue regarding vocabulary learning is that of collocation. Collocation is a subcategory of formulaic language, also known as word combinations, which has been classified in various ways. Hsu (2002), for example, speaks of a continuum of automaticity, at one end of which are free combinations whereas idioms are at the other end, and word combinations may occupy different places in between. Yet, there is another broadly adopted classification of collocation proposed by Benson, Benson, and Ilson (1986). They divide collocations into two major classes: lexical collocations and grammatical collocations.

According to Bahns (1993, p. 57) grammatical collocations are combinations of “noun, or an adjective, or verb, plus a particle (a proposition, an adverb, or a grammatical structure such as an infinitive, a gerund, or clause)” whereas the grammatical elements do not exist in lexical collocations. Various combinations of lexical collocations are Verb + Noun, Adjective + Noun, and Verb + Adverb (Benson et al., 1986). The above classification is supported by different researches. Lewis (2000) also believes that “lexical collocations are combinations of two equal lexical components” (p. 133). Following their earlier works, Benson, Benson, and Ilson (1997) divide lexical collocations into the following categories, under one of which words can combine with each other: Verb+ Noun (creation) as in “make impression, compose music”; Verb+ Noun (eradication) as in “break a code”; Adjective+ Noun as in “strong tea”; Noun+ Verb (an action) as in “bomb explodes”; Noun+ Noun as in “dog pack”; Adverb+ Adjective as in “sound asleep”; and Verb+ Adverb as in “argue heatedly”.

The importance of collocations, in general, and lexical collocations, in particular, has been acknowledged by different researchers. Hill (2000, p. 53) claims that “it is possible that up to 70% of everything we say, hear, read or write is to be found in some form of fixed expression”. Hsu and Chiu (2008) state that collocational knowledge is what differentiates native speakers from second language learners. Nation (2001) also asserts that “language knowledge is colloca- tional knowledge” (p. 318). Not surprisingly, then, they are now being attended and emphasized in language classes more than ever. According to Lewis (2000), teaching collocations essentially aims to show the commonality of language use and equip learners with the ability to have fluent and accurate communication.

On the other hand, among the instructional methods that could also accelerate communication, Cooperative Learning (CL) is one of the most popular ones that has attracted lots of attention. Ruiz-Gallardo, Lopez- Cirugeda, and Moreno- Rubio (2012) define CL as a method in which students work in mixed-ability groups on definite tasks with the prospect that they will be rewarded based on group achievements. Slavin (2011) also refers to it as “instructional methods teachers use to organize students into small groups, in which students work together to help one another learn the content” (p. 2). CL has demonstrated the academic, social, affective, and psychological growth of students who work together in groups (Johnson & Johnson, 2008).
As stated by Song (2012), proponents of CL recognize five underlying principles that are shared by methods of CL: positive interdependence, individual accountability, face-to-face interaction, interpersonal and small group skills, and group processing. Generally, these elements, whose incorporation into the teaching process is known as the key to success, are the building blocks of CL.

Many studies (e.g. Ghasemi & Baradaran, 2018; Jahanbakhsh & Ajideh, 2018; Johnson, Johnson, & Stanne, 2000; Mohammadi & Salimzadeh, 2009; Yuliana & Sukoriyanto, 2013; Zarei, 2012) have explored how CL may affect and be affected by other factors. The synthesis of these researches makes a strong indication that the implementation of the elements and strategies of CL causes a significant improvement in learners’ achievements and interpersonal relationships. It is not, thus, surprising that its methods are now widely used as theory, research, and practice have proved its effectiveness. However, as Zarei (2012) stated, in Iran, CL has just been applied to other skills and most of the researches in this field have concentrated on learners’ achievements and developments, not the way the elements may help them overcome the difficulties of learning and get involved in effective cooperative learning.

The two methods of CL, namely Student Teams-Achievement Division (STAD) and Cooperative Integrated Reading and Composition (CIRC), used in this study, were developed by Slavin and his colleagues based on the above-mentioned five elements. Besides the effectiveness of CL methods, what made the researchers choose these two specific instructional methods was their applicability in the Iranian context. Considering the individualistic and competitive learning culture (Jahanbakhsh & Ajideh, 2018; Omidvar, Chan, Yap, & Boong, 2012; Zarei, 2012) in a teacher-centered learning context of Iran (e.g., Jahanbakhsh & Ajideh, 2018; Zarei, 2012) the application of CL was a challenging task. The context of education in Iran reinforces individualistic and competitive identities as the curricula and syllabi for each grade are determined by the Ministry of Education and students are only expected to learn these pre-determined issues and take care of their own learning. Consequently, the learners get accustomed to studying only for the sake of passing—or getting a higher score in—the single final exam. As STAD and CIRC both incorporate quizzes to their instructional framework, where the scores obtained are averaged for group scores, this could motivate students to work in groups if they want to pass the course or get higher scores. Moreover, as one of these methods, CIRC, gives the students the options of setting their own times of quizzes while the other method, STAD, sticks to the predetermined quiz schedules, the results could give more perspective on if this should be considered as influencing factors, as well.

Putting everything into a nutshell, using a mixed-method design, the study aimed to address one of the difficult components of English to be learnt, i.e., collocations, by utilizing two popular methods of CL in a very unique context of learning, where cooperation is not required, if not welcome, hoping to delve into the importance of the five elements of CL to see how they are perceived in the process by the learners. The quantitative phase of the study compared the effectiveness of the two methods while the qualitative phase was focused on developing deeper insight into the process and, in cases of possible contradictions, calling for initiation in future studies. Accordingly, following research questions were formulated.

The above-mentioned logic and problems rendered themselves to the following research questions:

Q1: Is there any significant difference between the impact of STAD and CIRC on EFL learners’ lexical collocation learning?

Q2: what do Iranian EFL learners think about the strong and weak points of STAD and CIRC?
2. Literature review

2.1. Collocations

Collocations are studied by scholars from different angles through various classifications. As mentioned before, one of the most-commonly-accepted classifications divides collocations into two major groups of grammatical and lexical ones. The present study, however, focuses solely on lexical collocations. The main reason is that, as Čeh (2005) notes, while grammatical collocations can often be found in dictionaries, lexical collocations are more problematic for L2 learners as they are less deterministic and lots of them are not easy to be found in dictionaries. Moreover, while there is always a limitation on the number of grammatical collocates; this is not the case for lexical collocations. In fact, listing the lexical collocations seems to be impossible as they encompass a wide range (Wei, 1999).

The use of collocations is a differentiating feature between learners and native speakers in both perceptive (e.g., Serrano, Stengers & Housen, 2015) and productive (e.g., Laufer & Waldman, 2011) tasks. The extensive amount of empirical studies (e.g. Barfield, 2002; Ghonsooli, Pishgaman, & Mahjoobi, 2008; Hsu, 2010; Huang, 2007; Shokouhi & Mirsalar, 2010; Zarei & Baniesmailli, 2010) done on collocation learning both in the context of Iran and other EFL/ESL contexts have acknowledged the challenges the learners face in learning collocations. Based on the results of the above studies, learners’ collocation proficiency is constrained and the students have lots of difficulties in making and understanding collocations due to their lack of collocational awareness. The educational system in Iran has also had a significant part in forming these difficulties. As referred above in the introduction section, the pre-determined syllabi have led both learners and teachers to focus on what is to be tested in the final paper exam, where writing and speaking are almost completely ignored and students are mostly tested based on their vocabulary, grammar, and reading skills. In other words, the traditional Grammar-Translation Method (GTM) or at best reading-based methods are still dominant in language classes. As English teachers, the researchers have seen lots of examples (e.g., find friends instead of make friends) where students put words together, based on the structural used they have learnt, which resulted in literal translation from their first language (L1). To use collocations in their production, they need to wipe out what has been formed in their minds and start to produce newly learnt collocations, for which the opportunity is not provided in school. Even when they are given the chance to produce, they still fail to use them fluently. Using the CL methods the researcher hoped to provide enough opportunity and awareness for students to overcome these problems.

2.2. Elements of cooperative learning

The cooperative learning methods were also selected as the instructional method due to their effectiveness in educational settings. According to Doymus, Karacop, and Simsek (2010), CL methods are based on a learning approach in which students can learn from each other through small mixed groups towards a common goal in an academic subject not only in the classroom but also in other environments. They stated that through CL, the learners’ self-confidence, communication skills, problem-solving ability, and critical thinking are enhanced and students are engaged in the process of education powerfully. CL requires students to collaborate in groups to gain a simple goal; thus, the opportunities of student-student interaction in a supportive and safe environment are expanded (Johnson & Johnson, 2005; Richards & Rodgers, 2001). Also, CL, as an alternative for instructional strategies, is appreciated in education media at all levels just because students learn from each other while making decisions and collaborating in problem-solving methods (Koç, 2014). Johnson and Johnson (1999) describe CL as “one of the most fertile areas of theory, research, and practice in education” (p. 5). All CL methods are grounded on the same five elements (principles) that aim to facilitate communication in learners by putting them in small communities, i.e. groups, in which they have to communicate and cooperate in order to master the course. Learning collocations lead learners to have fluent communications as well.
According to Johnson and Johnson (1989), the first and most essential element of CL is positive interdependence. The successful structuring of positive interdependence is dependent on this perception on the part of learners that in order for each member to succeed, all other members have to be successful. This can only be accomplished when every single member of the group senses that their contribution is necessary for the group’s success (Sharan, 1980). Jolliffe (2007) defined positive interdependence as the obligation group members feel in completing the task since they know the team could succeed only through everyone’s success. Kagan (2013) also maintains that positive interdependence happens when students see themselves on the same side, so they are motivated enough to encourage one another and help their partners to figure out how to learn and how to solve problems.

The second element, individual accountability, defined by Jacobs (2006, p. 5) as “the team’s success depends on the individual learning of all team members”, is closely related to the first one, i.e., positive interdependence. While positive interdependence focuses on the importance of each member of the group having a role in the learning of others, individual accountability draws attention to the importance of each individual doing his/her part of learning. Accordingly, learners need to be responsible for their own learning and contribute to the learning of teammates.

The third basic element of CL is Face to Face Interaction. This is the element dealing with the actual working together. The learners get involved in the process of sharing, helping, supporting, and encouraging in the process of interactional learning to promote each other’s success (Webb, 2008).

The fourth one is interpersonal skills, also known as social skills, which, according to Webb (2008), refers to the members of the group being required to be involved in a social interaction in which factors such as leadership, decision-making, trust-building, communication, conflict management, etc., are worked on. This way, they build a good interpersonal relationship. In the case of social skills, each group member describes what actions were helpful and unhelpful and the group agrees on what actions to continue or change. The purpose is to clarify and improve the effectiveness of each member’s contributions to the collaborative effort to achieve the group’s goals (Dollman, 2007).

The final element, group processing, is what happens during the discussion of group-members focusing on how successful they have been in achieving the course goals and what they can do in order to maintain effective working relationships (Webb, 2008). Webb adds that the continuous process of improvement happens as a result of continuous evaluation of the members’ experience-sharings that aims to determine the challenging areas and enhance the effectiveness of the learning by overcoming these challenges. This is also how members can realize what they need to improve to keep their group cohesiveness.

2.3. STAD and CIRC

The first method of CL used in this study is Student Teams-Achievement Division (STAD). It is a method in which learners are assigned into diverse groups of three or four and help each other to master a variety of subjects, from mathematics to social arts. Its effectiveness is tested and guaranteed by many scholars (Khan & Inamullah, 2011; Sharan, 2014; Slavin, 1995; Tiantong & Teemuangsai, 2013; Tran, 2014). According to Stewart and Sliter (2005), STAD is a method of teaching in which the teacher presents fundamental material and provided a task for the teams; Team study through which the students work on the project; Test that students take individual quizzes; and Team recognition that the best-performance of teams are pleased.

The second CL method of the study, i.e., Cooperative Integrated Reading and Composition (CIRC), is a school-based program originally developed to foster reading and writing ability mostly among intermediate learners (Slavin, 2010 as cited in Ghasemi & Baradar, 2018). Like STAD, this method also uses small groups; however, the major material used in the class is reading texts. The groups

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usually work in pairs to improve their reading comprehension abilities and grasp the gist of the text. The use of different reading practices and exercises, such as story-telling, summarizing, etc., makes it possible for every student to work with one another and focus on learning different aspects of language (Madden, 2004).

Both CIRC and STAD use heterogeneous grouping to involve students in problem-solving group-work on the materials briefly introduced by the teacher. The development of the two was based on the idea of bonding cooperative learning and cognitive aspects by elaborating and explain learnt materials to someone (Slavin, 2011). The review of the literature showed lots of experimental researches that reported the effectiveness of both methods (e.g., Jahanbakhsh, 2014). Sri Rengan (2004), for instance, used STAD to improve the achievement of the students and make them interested in learning. Tiantong and Teemuangsai (2013) showed its effectiveness in enhancing learning achievement. Jallifar (2010) reported the STAD technique as an effective method for reading comprehension and Nagarajan (2006) proved it is a technique to enhance the learners’ interest in the subject matter. Other scholars also reported significant effects of using STAD on improving both language skills and psychological factors related to learning (e.g., Fletcher, 2006; Vasanthi, 2011).

CIRC has also gained extensive numbers of evidence for its effectiveness. Susanti (2011) and Safitri (2011), for instance, reported how successful CIRC was in improving writing skills. Furthermore, Yuliana and Sukorizanto (2013) conducted a study on the effect of the application of the CIRC model, concluding that it can improve students’ skills in finishing story exercises. Zarei (2012) investigated the effects of STAD and CIRC on L2 reading comprehension and vocabulary. Ghasemi and Baradaran (2018) also reported CIRC as a better method than STAD in improving writing complexity.

The review of the literature also showed that STAD has been used in a wide variety of subjects. It is one of the most popular and well-proven methods of CL in teaching well-defined objectives. The body of the literature is replete with evidence of its effectiveness in teaching different courses, such as arts, language, mathematics, science, etc. (Barbato, 2000; Slavin, 1995). CIRC is also reported to have a high rate of success (Stevens & Durkin, 1992). The method is named after its success as Reading Wings by the Success for All Foundation (Slavin & Madden, 2009).

While both methods have a history of great success in different areas, there is a dearth of study on the effectiveness of these two methods in teaching collocations. Few studies, however, reported CIRC outperforming STAD in improving (e.g. Zarei, 2012) and writing (e.g. Ghasemi & Baradaran, 2018) abilities. As CIRC was designated for teaching reading and writing skills (Slavin, 2011), the results might not be surprising. However, one wonders if this is the case for other language skills or components, as well. If so, it seems that the shared five elements, which the proponents of CL call them the success reasons, or the intended context, in which the methods are originally developed to be used, might not be a sufficient reference for selecting the instruction method. Delving into the students’ perception, the study aimed to shed more light on the possible underlying reasons for the difference between the two.

3. Method

3.1. Design
The study was done in both quantitative and qualitative phases, hence, is considered as a mixed-method research. In phase one, using convenient sampling, sixty homogenous intermediate learners were selected out of ninety and randomly assigned into two experimental groups, each having thirty participants. A pretest-posttest comparison group design was used with the purpose of gathering quantitative data and making comparisons between the performances of the two groups. In phase two, i.e., qualitative exploration of the process, the participants’ perceptions about the teaching
methods and class situations were looked upon. A qualitative inquiry was done after the treatment, making this mixed-method research a sequential one. Furthermore, as both quantitative and qualitative results served to get a deeper understanding of the problem by focusing on both process and outcome, the purpose of the research is considered both triangulational and developmental.

3.2. Participants
Sixty pre-intermediate Iranian EFL learners studying English at Iranmehr Language Institute, Haft-e-Teer Branch, Tehran, with an age range of 13 to 17. They were both male (N = 33) and female (N = 27) and Farsi was their native language.

The initial sample of the study included 90 EFL learners. However, based on the results obtained from the proficiency test, only 60 homogenous learners were selected to participate in the main study. The initial sampling was a convenience one. However, the 60 homogenous learners were randomly assigned into one of two experimental groups, i.e. STAD (Female = 13, Male 17) or CIRC (Female = 14, Male = 16). Both experimental groups were taught by the corresponding author, who has more than seven years of experience in teaching English as a foreign language.

Moreover, 30 learners bearing almost the same characteristics of the participants in the main study took part in a pilot study.

3.3. Instruments
Following measures and materials were used during this research:

(a) A 2016 version of the Preliminary English Test (PET) was used to homogenize the participants in terms of their language proficiency. PET is a standardized language proficiency test developed by Cambridge University to assess intermediate learners. The test has 65 multiple choice items measuring the reading, writing, and listening abilities of the learners. Using Cronbach’s alpha formula in the pilot study, the reliability index of .791 was obtained. Two other items in the writing section were scored by two raters and the inter-rater reliability of the scores obtained from Pearson Product Moment correlation formula was .743. The speaking section was excluded since it was not the focus of the study.

(b) A 31-items multiple-choice lexical collocation achievement test developed by the researchers was used to measure participants’ lexical collocation learning. The test originally had 35 items, four items of which were discarded as the result of the piloting test showed these items were mal-functioning, i.e., they either had extreme item facility indices or negative or low item discrimination. The test was used both as the pretest and (delayed) posttest. The reliability index of .847 was obtained from the application of Cronbach’s alpha formula and the validity of the test was ensured by the acknowledgment of two experts in the field.

(c) Six quizzes were given to the students of both groups during the treatment. These quizzes were developed by the researcher based on the contents covered during the sessions. These quizzes were inherent parts of the two instructional methods, through which students both earned scores and made their contribution to the overall score of the group (setting the stage for positive interdependence). Each quiz comprised 4 researcher-made questions on the topics taught and the scores obtained from them were used both to reward groups (in cases of progress) and build up a part of their final scores. The scores of these quizzes, however, were not used in the analysis of the data and they merely were used as required by the two instructional methods.

(d) A directed interview was used after the treatment to capture participants’ perceptions of the effectiveness of the two methods and highlight their shortages and advantages. The interview mainly focused on the experience the participants went through. They were asked to talk about their likes and dislikes of the treatment. The interviewer tried to direct these talks towards eliciting the strong and weak points of the treatment as well as the participants’ overall opinions about the procedure. Questions like how was your experience? Was it good enough
to improve your learning? Do you think anything was missing? Did you experience any difficulties adapting to the treatment? Do you think these kinds of instructions could be beneficial for others? Did anything make you not want to continue the procedure? The answers were recorded and, through the content analysis, the frequently addressed issues were extracted.

3.4. Materials
Moreover, some teaching materials were used during the study, as follows:

(a) Some passages containing lexical collocations were used as a material in the classroom. These passages were provided by the teacher with the purpose of exposing the students to more examples of the collocations in the coursebook. Some new collocations were presented through the passages, though.

(b) The coursebook of the treatment which included most of the collocations was collocation in use published by Cambridge Publication in 2005. The authors are Michael McCarthy and Felicity O'Dell. The book contains 60 units under 10 classes. Each unit introduces some collocations embedded in sentences or a paragraph, followed by some exercises covering the unit's collocations. 10 units were taught during the treatment and the exercises were given as group tasks to students to work on.

3.5. Procedure
Initially, a pilot study was conducted with thirty learners bearing almost the same characteristics of the participant in the main study. The reliability of both PET and lexical collocation test was ensured in this phase. Then, the main study started with selecting sixty homogenous learners from the initial ninety participants based on the results obtained from the administration of the pre-piloted proficiency test, PET. Then, the selected learners were randomly assigned to two experimental groups of thirty members to receive either STAD or CIRC as their treatment.

In both experimental groups, the attempt was to fulfil the requirements of the five elements of CL. They were assigned to groups of 4 or 5 members. The grouping was done based on the participants’ pretest scores so that each group had at least one student whose score fell in the first quartile and one in the fourth. The common requirements for participants in both groups were interaction with group-mates throughout the class (and after that if needed), share ideas for understanding and improvement of the learning, and assist group-mates in every aspect that may help to boost the learning. The material used in both groups was the same and each group spent 60 minutes of each session receiving the treatment. The nature of both methods required a quiz to be given at the end of each session in which each of the participants had to answer individually. Although in CIRC, unlike STAD, the readiness to take the quizzes were determined by the groupmates, every individual was required to take six quizzes at the end of the treatment. Each individual’s score was taken into account to make the average score of the group in each session and the session-to-session improvements in the average scores were rewarded. So every individual had to be responsible for his/her own learning as well as the others’. This way, both positive interdependence and individual accountability were assured. The face-to-face interaction was a part fulfilled during doing the exercises. Interacting in the groups also contributed to participants’ social skills. This was also complemented by group processing where learners were trying hard to reach better achievements by discussing what they had already learnt as well as what was required to be learnt. In cases the students needed assistance, the first resources they could turn to for answers were their groupmates. The teacher tried to be the last source of help. He walked around the groups and made sure the cooperation is taking place. He only provided guidance where he realized the students cannot get over the problem by themselves. Even then, he tried to provide them with the path to find the answer rather than giving it to them.

In STAD, the class began with the presentation of the lesson by the teacher. Each unit in the textbook contained about five or six lexical collocations. Some other collocations were also
provided in the passages which the teacher presented. Then, students were asked to work within their teams on the presented lesson and answering the activities in the coursebook. The passages were also read by the teacher with the purpose of comprehension and provision of examples for the collocations. Each collocation was highlighted by the teacher and other examples were provided for a better understanding of their uses. After the presentation, the students were asked to work on the whole material presented by the teacher to make sure that all team members had mastered them. The reading passages had some comprehension tasks to be done. Moreover, the students were required to work on the sentences and make sure they comprehend the whole text and learn how to use the highlighted collocations. The teacher was supervising groups and providing them with clues and feedbacks whenever he realized that it is necessary. He, however, tried to be the last source of help and make sure that students would come up with solutions to the problems by their teammates’ help. The learners then discussed, practiced, and interacted to master the presented lessons. The final step was taking quizzes. All students were asked to sit in individual quizzes, every other session, on the taught material at the final ten minutes of the class. This time, they could not use their teammates’ help. Comparisons were done on the students’ quiz scores with their own past averages. In cases that students met or exceeded their own earlier performance, they were rewarded by extra points, the sum of which was calculated for each team and those that met the pre-set criteria were rewarded. The scores obtained in these quizzes built up students’ final scores while only the pre-test and (delayed) posttest scores were used as the data for the statistical analysis of the research.

The second experimental group received CIRC, in which the teacher focused more on the reading passages using reading groups, although the textbook was briefly worked on at first. The lexical collocations were put inside the reading passages. The class began by presenting the material by the teacher, as much similar to that of STAD. After the presentation was done, students were asked to work on the presented materials in their groups. All students were assigned to teams composed of two pairs from two different reading groups. They were first asked to read the passages and do the practices. During this time, the teacher was walking among the groups trying to help them with the passages. While the teacher was working with one reading group, students in the other groups were working on some activities like reading to one another or summarizing stories to one another, either orally or in a written form. The whole point of these activities was to make sure that all members of the teams master the main idea and learn the usage of the taught collocations. Finally, they were asked to sit in quizzes, like what students did in the STAD group, except that in CIRC students did not take the quiz until their teammates had mentioned that they were ready. Those who were not ready at the end of the instruction session were given a chance to take the quiz first thing in the next session. The points were awarded to teams based on the average performance of all team members on all reading and writing activities as well as the quizzes. As mentioned before, only the results obtained from the pretest and (delayed) posttest, and not the classroom quizzes, were used for statistical analysis of this research.

Twelve sessions of treatment, each taking one hour and a half, were held in order to cover all the material needed to be tested. However, it was expected that the quizzes may have a practice effect on the posttest and may influence the internal validity of the test. To minimize this, the post-test was administered two weeks after the program ended. Then the participants attended the directed interview and revealed their opinions about the methods used.

4. Results
As mentioned before, the piloted PET was administered to the 90 learners and the 60 homogenous learners were identified. The next step was to randomly divide the 60 participants into two experimental groups: Group 1 undergoing the STAD instruction and Group 2 the CIRC instruction. The assignment of the participants into groups was done randomly. Then, the collocation test was administered to them. Finally, the same lexical collocation test was used as a posttest to compare
the two groups learning. Table 1 presents the descriptive statistics of the two groups’ scores in all of the tests taken during the study.

The results obtained from the pretest showed that the two groups had no significant difference (t(58) = 1.89, p = .068). However, considering that the mean difference (MD = 1.46, 95% CI [.086, 3.019]) was nearly significant, the researcher decided to take this initial difference into account when analysing the posttest scores; therefore, in order to answer the first research question of the study, an Analysis of Covariance (ANCOVA) was run. Before running the test, the test-specific assumptions were checked. As the skewness ratios for both pretest and posttest scores (Table 1) fell within the range of ±1.96, the distributions were considered normal. Also, the inspection of the normality plot acknowledged the linearity of the relationship between the covariate and the dependent variable.

Furthermore, the inspection of regression slope showed that the interaction between covariate and treatment type was homogenous (F(1,56) = .007, p = .932 > .5). Finally, Levene’s test of equality of variance showed this assumption was also met (Levene’s F(1,58) = .464, p = .499 > .05). As all the assumptions were met, running ANCOVA was legitimized (Table 2).

The results of ANCOVA indicated that there was a significant difference between the two groups’ posttest scores when the effect of the pretest is controlled (F(1,57) = 5.49, p = .023 < .05, partial eta squared = .09, representing a medium effect size). In other words, CIRC was shown to have a significantly better effect than STAD on EFL learners’ lexical collocation achievement (adjusted MD = 1.141, SE = .487, 95% CI [.166, 2.116]).

After the treatment was done, a series of directed interviews were done with both groups’ members to explore more deeply their perceptions about the two methods. Through the content analysis, the answers were coded and the results revealed that students were more pleased with CIRC for different reasons. Table 3 reports the results obtained in this phase.

Table 3 shows the areas of difference between the two groups’ opinions. These issues are discussed in the following section.

5. Discussion
The obtained results from the quantitative phase was another proof for the effectiveness of CL methods in improving learning, supporting the previous researches (e.g., Jahanbakhsh, 2014; Jalilifar, 2010; Mohammadi & Salimzadeh, 2009; Safitri, 2011; Susanti, 2011; Vasanthi, 2011; Yuliana & Sukariyanto, 2013). Moreover, CIRC significantly outperforming STAD was in line with the findings of Zarei (2012) as well as Ghasemi and Baradaran (2018). They reported the same difference between the two methods in boosting the reading comprehension and writing complexity of EFL learners, respectively. Through the analysis of interview answers, a similar difference was reported with regards to the efficacy of the two. Although the results of those studies can be attributed to the nature of the practices, such as writing summaries of reading texts, embedded in CIRC, which help students to improve their reading comprehension skills and vocabulary development (Zarei, 2012), considering that, in the present study, STAD group had similar opportunities to produce within-group discussions and working on the contents and the focus was not on the writing and composition, the obtained result needs to be more carefully explored. One possible explanation may be the obligation of taking the quizzes. During the class sessions, the researcher found out that the participants in CIRC groups are more stress-free than those in STAD groups. The results of the interview indicated that this was probably because they knew that, unlike the participants in STAD groups, they would have another chance to take quizzes if their group members do not confirm that they are ready. Even though both groups had to take the same number of quizzes, the CIRC group reported less fear of the exams in the interview. The one session extra time they had to be prepared seemed to cause a sense of confidence in them. Moreover, as Zarei (2012, p. 171) “the educational culture of Iran, which is a function of the wider social culture,
Table 1. Descriptive Statistics of the Scores

|                  | N Statistic | Minimum Statistic | Maximum Statistic | Mean Statistic | SD Statistic | Skewness Statistic | Std. Error |
|------------------|-------------|-------------------|-------------------|----------------|--------------|--------------------|------------|
| PET              |             |                   |                   |                |              |                    |            |
| Initial Group    | 90          | 26.00             | 66.00             | 47.6278        | 9.57600      | -.174              | .254       |
| Homogenous Group | 60          | 39.00             | 57.00             | 48.2250        | 5.92569      | -.038              | .309       |
| Pretest          |             |                   |                   |                |              |                    |            |
| STAD             | 30          | 11.00             | 22.00             | 15.5333        | 2.88556      | .475               | .427       |
| CIRC             | 30          | 12.00             | 25.00             | 17.0000        | 3.11836      | .607               | .427       |
| Posttest         |             |                   |                   |                |              |                    |            |
| STAD             | 30          | 17.00             | 27.00             | 21.8000        | 2.60503      | .285               | .427       |
| CIRC             | 30          | 19.00             | 29.00             | 23.9333        | 2.83978      | -.179              | .427       |
is largely individualistic and competitive. The extra chance for taking the quizzes could have provided the needed opportunity to have some individual studying after a cooperative session; thus, fulfilling their individualistic prime of learning.

Furthermore, the CIRC group referred to the method as confusing first but going well later on. This also addresses the cultural issue of the Iranian context in which cooperation is not commonly exercised. The students in the CIRC group perceived the method more compatible with their competitive learning preference as the group-mates’ short of cooperation was not immediately resulted in losing scores and they had the chance to get ready to compete with other groups and get rewarded. The participants of both groups, however, objected to the methods as they were worried about their scores and they believed these methods do not reflect the actual efforts they have paid during the sessions. To quote one of them, it was stated that “no matter how hard I try, I cannot compensate for what others fail to do”. This objection, which is another indication of the students’ need to compete for the higher score, was more frequent among students of STAD. In some cases, the teacher even observed acts of leaving-the-group by some students to get back to

### Table 2. ANCOVA: Tests of between subjects effect

| Source          | Type III Sum of Squares | Df  | Mean Square | F    | Sig. | Partial Eta Squared |
|-----------------|-------------------------|-----|-------------|------|------|---------------------|
| Corrected Model | 307.934                 | 2   | 153.967     | 45.948 | .000 | .617                |
| Intercept       | 269.382                 | 1   | 269.382     | 80.392 | .000 | .585                |
| Pretest         | 239.667                 | 1   | 239.667     | 71.524 | .000 | .557                |
| Group           | 18.392                  | 1   | 18.392      | 5.489 | .023 | .088                |
| Error           | 191.000                 | 57  | 3.351       |       |      |                     |
| Total           | 31872.000               | 60  |             |       |      |                     |
| Corrected Total | 498.933                 | 59  |             |       |      |                     |

*R Squared = .617 (Adjusted R Squared = .604)

### Table 3. The results of interview

| Issues                              | CIRC         | STAD         |
|-------------------------------------|--------------|--------------|
| N        | Frequency | N        | Frequency |
| High Efficacy of the Method          | 25  | 83.33 | 13 | 43.33 |
| Confusing at first but going well    | 22  | 73.33 | 5  | 16.67 |
| Stress-free environment              | 19  | 63.33 | 6  | 20   |
| Support of the Teammates            | 16  | 53.33 | 10 | 33.33 |
| Enjoyable environment of discussion and learning | 12 | 40 | 7 | 23.33 |
| Not showing the actual ability of individuals | 9 | 30 | 23 | 76.67 |
| Worrying about the quizzes and losing scores | 7 | 23.33 | 20 | 66.67 |
| Not coming along with group mates    | 5   | 16.67 | 14 | 46.67 |
| Fear of being a burden to the group  | 3   | 10   | 7  | 23.33 |
| Other issues                        | 2   | 6.67  | 6  | 20   |
their old tradition of individual studying, which was ended as the teacher interfered and persuaded them to get back to work in groups.

Another point revealed from the interviews was that both groups reported relatively moderate support of teammates and enjoyable environment of learning. But, unlike CIRC, a significant percentage of the STAD students declared they could not come along with their fellow team-mates. The reasons for such conflicts were again the fear of losing the scores, being a burden for the group, or considering others’ as the reason they lose scores. This reminds what Johnson and Johnson (1989, p. 3) warned about, meticulously pointing out that “placing students in groups and telling them to work does not in and of itself result in cooperation”. What is believed to make the CL method successful is the effective implementation of the five elements in the actual teaching process. It seems that the STAD group could not reach their full potential as they failed to hold on to the first element, i.e., positive interdependence, effectively. The dual duties constructing positive interdependence, i.e. being responsible for learning material and making sure that all group members learn them, are surely crucial in this regard (Johnson & Johnson, 1989).

Furthermore, while positive interdependence and individual accountability are the two most emphasized elements of CL, the three other elements have to be taken more seriously. Sometimes, issues such as cultural factors may change the place of importance. As mentioned before, the context of Iran has caused a tendency towards individualistic and competitive learning among students. In such context, how the participants of the groups may interact with each other in discussions to manage the process of learning, being able to help each other by measuring the previous performances of members, and even being open to criticisms and suggestions for better future performances are deeply rooted in personal characteristics and cultural orientations of the group members. Unlike the participants of STAD who knew every single quiz at the end of sessions counts for their final score and they have to prepare both themselves and their groupmates if they want to get better score (as what matters in the individualistic and competitive learning), the CIRC group could focus their attentions to the three elements that may help them to reach better results, i.e., Face to Face Interaction, Social Skills, and Group Processing. The extra time CIRC members had to prepare themselves for the test, according to the answers to the interview, was what they took advantage of in building up more intimate relationships with each other. This is a fundamental issue before one can share, support, or encourage the work of others, i.e., the goals of the element of face to face interaction. Besides, the trust built as a result of such intimacy allowed the students to have effective leadership and conflict management. While, as a result of the dominant culture of learning among Iranian students, the majority of them are inclined to insist on their own solutions for better learning to be used by others, as the time went by, the researcher observed lots of increase in the acceptance of others’ opinions and getting away from individualistic towards group decision-making, which is exactly what the element of interpersonal skills is focused on. Consequently, as both face to face interaction and personal skills were improved, the last element, group processing, was shaped. The groups, who saw gradual improvement as a result of their works and discussion, maintained the process focusing on the ways they can reach more success. The motivation was built gradually to reach a stable and strong position. The confidence took over fear. To quote one of the students in the interview, “I was always afraid that I would let my groupmates down. But after a while, I was in a place that not only could I handle my lessons, but I was able to suggest how to proceed. I knew that now I was learning and I was able to get better if I just try a little harder. All I was thinking was how to keep the good work and how to contribute make my groupmates proud of me”. Such devotions, although made over time, is what makes a group keep trying to the end.

6. Conclusion and implications
While application of CL in contexts like Iran is a very challenging task (e.g., Ghahari & Farokhnia, 2017; Zarei, 2012), the results obtained from both quantitative and qualitative phases of present study indicated that it is, in fact, possible to bring cooperation among students with
individualistic and competitive primes as culture of learning is a fragile phenomenon that can be changed (e.g., Jahanbakhsh & Ajideh, 2018). Even though the dominant educational system is still at the teacher-centred era where “teacher’s knowledge, expertise, and practices are considered as the sole trustworthy resources in classrooms” (Ghahari & Farokhnia, 2017, p. 287), what teachers and practitioners need, sometimes, is as simple as finding what motivates the learning, in this case the final score, and use it to develop cooperation. CIRC which provided the opportunity for both cooperative learning in the class and individual learning at home, in case the former does not make the student ready to take the quiz, was compatible with Iranian students’ culture of learning and led to a significantly better result. Fulfilling the students’ prime needs of individual studying and competing for reaching a higher score, the room was opened for successful implementation of CL, where the underlying elements worked properly. Therefore, in implementing CL methods care should be taken as there might be other essential factors, such as stress, fear of losing score as a result of others’ lack of efforts, class circumstances, motivation, etc. in this case, at play that could jeopardize the whole process.

Another issue that is worth mentioning is the purpose for which the two methods were developed. STAD, which is one of the most popular methods of CL and has been used to teach different courses, is not specifically designated to teach a certain matter and has the potential to be used for different purposes. This is while CIRC was specially designated to integrate reading and composition, and there was no initial intention to teach vocabulary or collocations through this method. Yet, in practice, this was CIRC which outperformed STAD. The difference was addressed by the complementary information obtained from the interview and the conclusion was that the dominant class climate played a role. Care should be taken that every single setting has its own features and the methods should not be evaluated by their theory but their application in different contexts. The students’ responses to the two methods were different in the Iranian context, but it might not be the case for other settings and contexts. Therefore, it is imperative for teachers and practitioners to consider as many factors as they think might affect how the students react to a teaching method before actually making use of it.

Finally, it should be marked that while, at present, a large number of sources of professional teaching are derived from practices and researches in Western universities, the resources produced by them need to be attested for contextual and cultural realities of different circumstances. The present study was one of the researches which took these possible differences into it and, thus, could be a good reference for Iranian teachers to rely on. The findings indicated that despite the dominant learning culture of Iranian learners, CL methods could be both helpful for and accepted by them; thus facilitating and accelerating the process of learning. The result of the present study may also help teachers and learners to overcome this shortcoming in their classroom. The administrators may use CL methods to benefit from its effectiveness and the syllabus designers may also develop contents compatible with this CL method to be used in language classes.

It should not also be left unmentioned that this study was confounded by some imitations such as non-random sampling and limited age range of the participants. The results of the interview also may be affected by social desirability bias. With regard to ethical concerns, the participants were informed before the treatment that they are going to take a special kind of treatment, to which they all agreed. In order to avoid the Hawthorne effect, however, they were told that about the research after the study was done and their consent to publish the results were taken at the end of the interview session. Nevertheless, there is still a lot to be explored regarding CL. Much more dedicated studies are required in this area, as with any other teaching methods, to get a better understanding of the contextual and educational situations that may hinder or boost the use of CL. It is hoped that the results of this study serve, to some extent, as a starting point for conducting such researches.
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