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L2 Idioms Learning through Cooperative Teaching Techniques

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Abstract

The aim of this study was to investigate the effects of three techniques of cooperative learning (Jigsaw, Student Teams Achievement Divisions, and Group Investigation) on EFL learners' comprehension and production of English idioms. To this end, four classes of BA level Iranian EFL learners were selected. Each group was instructed in one of the above-mentioned cooperative techniques, and there was a comparison group, which received conventional non-cooperative treatment. Two one-way ANOVA procedures were used to analyze the data. The results showed statistically significant differences between cooperative and traditional teaching methods. All the three cooperative techniques turned out to be more effective in both comprehension and production of English idioms than individual learning. The findings can have implications for textbook designers, teachers, and learners.

Keywords: cooperative learning, individual learning, idiom comprehension, idiom production

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1. Introduction

The teaching of idioms has been one of the major practical challenges in foreign language teaching in recent years. Idioms have quite unpredictable meaning and extensive use (Liu, 2003). Accordingly, having the knowledge of idioms is regarded as a prerequisite for comprehension and production of ordinary conversations and for effective use of language. (Andreou & Galantomos, 2008). At the same time, in the decade of cooperative learning, cooperative teaching techniques can be applied to the learning of various areas of knowledge. The cooperative teaching techniques are those which provide opportunities for comprehensible and meaningful input and output by using group work in a non-threatening environment that is conducive to language learning (Ghaith, 2003).

The present study is aimed at investigating the effects of cooperative teaching techniques on the learning of L2 idioms. For reasons of manageability, this study has focused on Jigsaw, Group Investigation, and Student Teams Achievement Division techniques. The advantages of using these techniques have been acknowledged in previous studies (e.g., Apple, 2006; Willis, 2007). However, few, if any, studies have investigated their effect on learning idioms. In an attempt to fill the existing gap, the present study addresses the following research questions:

1. Are there any significant differences among the effects of cooperative teaching techniques on the comprehension of L2 idioms?
2. Are there any significant differences among the effects of cooperative teaching techniques on the production of L2 idioms?

2. Literature Review

2.1 Background on the teaching of idioms

A large body of second language research deals with different aspects of teaching idioms. For example, Liontas (2002) investigated learners' beliefs about learning idioms and about their notions of idiomaticity. Liu (2003) analyzed the most frequently used English idioms to address the problem of their limited usefulness to ESOL students. The etymology of idioms has also been examined by Boers, Eyckmans, and Stengers (2007), who found that in spite of the arbitrariness of the meaning of many idioms, their original and literal usage has motivated the meaning of idioms. Boers, Piriz, Stengers, and Eyckmans (2009) studied the pictorial elucidation of idioms and concluded that it helps comprehension and remembrance of their meaning.

From a pedagogical point of view, two approaches have been central to teaching idioms. First, the traditional view "which considered figurative idioms to be 'dead' metaphors that could only be learned through 'blind' memorization"; and second, "cognitive semantics [which] offers the prospect of more semantic and insightful learning of vast numbers of figurative expressions" (Boers, 2001, p. 35).

Idioms have been defined differently. Traditionally idioms were defined as fixed expressions whose constituents' literal meaning cannot determine their figurative meaning (Abel, 2003). Andreou and Galantomos (2008) define idioms as fixed combination of words the literal meanings of which cannot help their comprehension. Simpson and Mendis (2003) describe idioms as "a group of words that occur in a more or less fixed phrase[s] and whose overall meaning cannot be predicted by analyzing the meaning of its constituent parts" (p. 423). Irujo (1986) believes idioms are conventionalized expressions which are 'dead' or 'frozen' metaphors.

Idioms have been classified variously by different authors with regard to their semantic, syntactic, and functional dimensions. Grant and Bauer (2004) classify idiomatic multiword units into leximic idioms (including phrasal verbs, tournures, irreversible binominals, phrasal compounds, incorporating verbs, and pseudo-idioms) and sememic idioms (encompassing proverbs, familiar quotations, 'first-based' idioms associated with a national game like baseball, idioms of 'institutionalized politeness', idioms of 'institutionalized greeting', idioms of 'institutionalized understatement', and idioms of 'institutionalized hyperbole'). Kiango (2003) refers to the semantic categorization of idioms as follows:

1- Pure idioms which are the products of regular reutilization, then figurative spreading out, and fossilization.
2- Figurative idioms which have literal and figurative meaning.
3- Restricted collocations which are semi-idioms in which one word has a figurative meaning in a context and the other word has a literal meaning.
4- Open collocations whose constituent parts have literal and free use.

Along the same lines, Dumitraşcu (2007) refers to the four categorization of idioms based on their semantic intelligibility into transparent expressions, semi-transparent idioms which are considered as metaphors, semi-opaque phrases which are semi-incomprehensible metaphor idioms, and opaque phrases which are full idioms in which the

meanings of constituents cannot determine the meaning of the idiom. Finally, Andreou and Galantomos (2008) classify idioms into figurative idioms, historical and cultural idiomatic expressions, and pure idioms (non-compositional idioms).

2.2 Cooperative learning

It is currently believed that cooperative teaching techniques can be used for various areas of knowledge (Ghaith, 2003), and cooperative teaching and learning will improve learning outcomes. It follows that cooperative learning can also be applied to learning idioms. Fathi- Ashtiani, Salimi, Ayubi and Mohebbi (2007, p. 137) define cooperative learning as "the instructional use of small groups so that students work together to achieve shared goals". Gokhale (1995) uses the term 'cooperative learning' interchangeably with 'collaborative learning', and describes it as "the grouping and pairing of students for the purpose of achieving an academic goal. … refers to an instruction method" (p. 22).

The difference between cooperative learning and group work is that in group work the teacher is an information provider but in cooperative learning the teacher is a facilitator (Zingaro, 2008). Cooperative learning takes place within a group, each member of which can take on a specific role. In keeping with Cuseo (2002), the roles can be a function role: upholding a functional responsibility, a resource role: supplying information for the group, cognitive role: taking part in higher-level-thinking, and perspective role: involvement with one perspective.

According to Chen (2005), cooperation-based instruction is based on Piagetian theory, Bandura's social learning theory, and Vygotskian theory. Along the same lines, Thaphoothon (2002) holds that Zone of Proximal Development (ZPD), Input Hypothesis, and social learning theory advocate cooperative learning. Moreover, Liang (2002) avows that socially oriented lessons and group interaction, which are the constituents of communicative language teaching, are the essence of cooperative learning. Zingaro (2008) expounds on the relation between Constructivist Psychology of Cognition and cooperative learning. Constructivists are of the opinion that an individual's interaction with the social environment causes the acquisition of knowledge. Therefore, cooperative learning, which is based on interaction of members and social environment, is originated from Constructivist Psychology of Cognition. In sum, Bandura's social learning theory, Vygotsky's Zone of Proximal Development, Piaget's theory, Communicative Language Teaching approach, and Krashen's Input Hypothesis are considered to be the key foundations of cooperative learning or of team work. These theories are based either on

peer interactions, peer relations, communicative context, or comprehensible input which is provided by pair work and cooperative learning.

Johnson, Johnson, and Stanne (2000) divide cooperative learning methods into two categories. In the first category, teachers exactly follow the well-defined and lock-step procedures; in the second category, teachers use a conceptual framework as a pattern to fit their specific situations. The former is direct cooperative learning and the latter is conceptual cooperative learning method.

2.2.1 The merits and demerits of cooperative learning

Cooperative learning is claimed to have several advantages. It improves academic performance and interpersonal and communication skills. It can also provide students with insights about the principles of decision making, which may promote their democratic skills (Clemen & Hampton, 1994). According to Gokhale (1995), participants' interest and critical thinking can be increased by cooperative learning. Liang (2002) concludes that by cooperative learning, learners' anxiety decreases, learners' participation and learning retention increases, and that cooperative learning provides a non-threatening environment for learning, hence learners' language proficiency, social maturity, and affective growth are increased by cooperative learning. Besides, Chen (2005) believes that cooperative learning also improves students' self-esteem and can effectively improve language communication. According to Apple (2006), cooperative teaching techniques can be useful in providing a large amount of comprehensible input which is necessary for improving learning. Cooperative learning is also said to develop the leadership skill of students, and to provide a condition in which students respect each other. Finally, Cuseo (2002) illustrates content flexibility, task flexibility, pedagogical flexibility, temporal flexibility, and contextual flexibility as the characteristics of cooperative teaching techniques.

In spite of the above-mentioned advantages, teachers often defy cooperative teaching techniques. The reasons include failure in controlling the classroom, teachers' lack of self-assurance, fear of failure in covering predetermined content, lack of organized materials for implementing in class, teachers' sense of self and ego, poor acquaintance with alternative assessment techniques, fear of teacher appraisal and personal evolution, students' opposition against collaborative learning techniques, poor acquaintance with class management and cooperative techniques, lack of

teacher preparation in collaborative teaching methods, and outsized classes and inapt classroom arrangement (Panitz, 2005)

Apart from the above-mentioned reasons, the resistance of teachers can be the result of the problems of cooperative learning including coordination, heterogeneity, motivation, and social problems. Large class size, the use of students' social skills, and conflict among group members are also among the constraints of implementing cooperative learning (Wing, 2006).

2.2.2 Cooperative teaching techniques

According to Johnson et al. (2000), modern methods of cooperative teaching techniques include *Learning Together & Alone, Teams-Games-Tournaments (TGT), Group Investigation, Jigsaw Procedure, Student Teams Achievement Divisions (STAD), Complex Instruction, Team Accelerated Instruction (TAI), Cooperative Learning Structures,* and *Cooperative Integrated Reading & Composition (CIRC)*. The present study intends to investigate the effects of Jigsaw, Group Investigation, and Student Teams Achievement Division cooperative teaching techniques on the learning of L2 idioms. It needs to be noted that this study uses the terms 'cooperative' and 'collaborative' interchangeably.

According to Shehadeh (1999), Jigsaw is a standard communicative task which develops target language fluency. In Jigsaw, the members of a group separately work on the component pieces of a puzzle, then they put separate pieces together and construct the whole task. According to Ghaith (2003), "the Jigsaw method has five major components: reading, expert group discussion, team report, testing, and team recognition" (p. 453).

Chen (2005) is of the opinion that using the Jigsaw technique in the classroom encloses numerous merits. Chen believes that jigsaw offers a highly interactive learning experience and provides a great variety of study materials that are available at different levels of difficulty. Walker and Crogan (1998) studied the effect of Jigsaw on academic performance and prejudice of students. Results revealed that Jigsaw develops liking and academic performance of students. They attribute the success of Jigsaw to cooperative relations of group members as well as interdependent context. In a study conducted by Koç, Doymuş, Karaçöp, and Şimşek (2010) on the effects of GI and Jigsaw on students' achievement in chemistry in comparison with traditional teaching method, cooperative learning turned out to be more effective than traditional teaching method.

Group investigation technique was first introduced by Sharan and Sharan (1992), who defined it as "a co-operative learning strategy that

integrates interaction and communication in the classroom with the process of academic inquiry. It enables the classroom to become a social system built on co-operation among students in small groups and on co-ordination between groups in the classroom" (Vähäpassi, 1998, p. 14). Since it exposes students to the stages of scientific inquiry and meaningful learning experience, gives students the opportunity to choose topics of study, freedom to investigate their own ideas, and provides real-world experiences for students, GI is based on John Dewey's philosophy of education (Zingaro, 2008).

In Group Investigation, a small group of students decide on the whatness of subtopics which will be explored and the manner in which the investigation will be carried out. At the end of the investigation period, group members discuss the howness of the presentation of the results of their work. Meanwhile, the teacher and the students evaluate their effort (Cuseo, 2002). According to Vähäpassi (1998), investigation, interaction, interpretation, and intrinsic motivation of the students are the major distinguishing characteristics of GI; in addition, the teacher acts as a facilitator, source provider, and evaluator. Investigation refers to exploring a topic; interaction refers to students' helping each other in the process of exploration; interpretation refers to the clarification and elaboration of members' findings in order to comprehend the ideas; and intrinsic motivation refers to members' autonomy in the investigation process.

Tsoi, Goh, and Chia (2004) believe that learning in GI is personalized, occurs in an authentic context, allows for role interaction of members, and addresses personal discovery, problem solving, active learners, responsive learning environment, and intrinsic motivation of learners. On the other hand, Zingaro (2008, p. 6) warns that GI may also have negative effects on some students including "not wanting to research information on their own, feeling that GI wastes more time than direct instruction, not learning about other areas of the overall topic, not processing required research skills, and dissatisfaction with lack of cooperation".

The third technique is Student Teams Achievement Division (STAD). The STAD technique was first developed by Slavin (Balfakih, 2003). Balfakih (2003) defines STAD as heterogeneous teams in which group members study and practice together but take individual quizzes and learning takes place by the help of teammates. Balfakih identifies some reasons for the preference and selection of STAD over other cooperative teaching techniques. First, it makes students' interaction possible. Second,

it recovers interpersonal relationships, attitude, and self-esteem which lead to positive attitude towards science. Third, it takes high achievers as a tutor. And finally, it trains learners to work effectively and efficiently with their classmates. Armstrong and Palmer (1998) advocate STAD as an easy and practical technique which is appropriate for a block time table with fewer classes but extended period of instruction. They also maintain that this technique is suitable for presenting course content and encouraging group work. Van Wyk's (2010) study provides empirical support that STAD improves learners' performance.

2.3 Competitive learning

According to Johnson et al. (2000), competitive learning is the opposite of cooperative learning. In competitive learning, the participants are not compared and each participant attempts to achieve his or her goal individually (Liang, 2002). It is believed that in this approach to teaching, learner's self-interest and unawareness of others' accomplishment increases. This way, owing to the built-in self-centeredness, the success of others becomes threatening. In the traditional learning model based on competitive learning, classes are teacher-centered and learners are non-active. In such an approach, it is the teachers who are in charge of the teaching/learning process. Still, it is sometimes claimed that this approach to learning prepares students for real life experiences and enhances their self-confidence and self-reliance. Nonetheless, the use of competitive learning may cause students to develop apprehension and expressive and behavioral problems (Fathi-Ashtiani et al., 2007).

Attle and Baker (2007) combine cooperation and competition to enhance the learning outcomes. They define cooperation-competition as "an instructional strategy combining components of cooperative learning with the positive aspects of motivational competition through inter-group competition between collaborative teams…" (p. 79). Kolawole (2008) compared the effects of competitive and cooperative learning strategies on academic performance of Nigerian students, and concluded that cooperative learning is more effective than competitive learning.

In sum, studies conducted on cooperative teaching techniques have shown their effect on the motivation, satisfaction, participation, performance, and the amount of learning of students in various areas of knowledge. However, there seems to be a paucity of research as to the effect of cooperative teaching on the learning of idioms. In an attempt to fill part of the existing gap, the present study investigates the effect of Jigsaw, Student Teams Achievement Division, and Group Investigation as three techniques of cooperative learning on the comprehension and

production of L2 idioms and compares them with the traditional competitive teaching method.

3. Method

3.1 Participants

The participants were 137 male and female BA level juniors majoring in Teaching English as a Foreign Language or English Translation at Imam-Khomeini International University of Qazvin; Islamic Azad University, Takestan Branch; and Islamic Azad University, Abhar Branch, who were taking a course of idioms as part of the requirements of their BA program. Based on their performance on a Michigan proficiency test, the learners' proficiency level ranged from intermediate to upper intermediate. The participants were divided into four groups to receive different treatments. Group 1 received instruction through the Jigsaw technique, Group 2 through the Student Teams Achievement Divisions (STAD) technique, Group 3 through the Group Investigation technique, and Group 4 through Non-cooperative (competitive) method.

3.2 Instruments

To homogenize the participants in terms of their vocabulary knowledge, a 35-item multiple-choice vocabulary subtest of a Michigan general proficiency test was used. To minimize the effect of the participants' prior knowledge of the target idioms, a pretest was also administered. The pretest consisted of the idioms which were to be presented during the treatment. It included 150 multiple-choice items, each containing one selected idiom. Due to the time limitation of classes, the pretest was in multiple-choice format. Those idioms the meaning of which was not recognized in the pretest were selected for inclusion in the post tests.

The materials presented to the participants contained 28 chapters of the idiom book entitled "*English idioms in use*" by McCarthy and O'Dell (2002). The 150 idioms were presented over 10 sessions (15 idioms each session) spanning a whole semester. The post tests of the study were of two kinds: A 30-item multiple choice test was used to measure the participants' receptive knowledge of idioms, and to measure the participants' productive knowledge of idioms, a 30-item fill-in-the blank test was used. The English definition of the idioms was given in parentheses as a hint to help the students fill the blanks.

3.3 Procedure

To begin with, each group of participants was randomly assigned to one of the four different treatments. The multiple-choice vocabulary subtest of the Michigan general proficiency test was used to homogenize the participants. Data from those who scored more than one standard deviation above or below the mean were excluded from all subsequent analyses. After excluding heterogeneous learners, the treatment began. To minimize the effect of the participants' background knowledge of the idioms to be taught, a pretest was administered, as a result of which the idioms of which participants had prior knowledge were excluded from the post tests.

In one group, idioms were taught through Group Investigation (GI). GI technique was based on students' investigation of the meaning of intended idioms within interest groups of four members. All of the group members were required to bring an English dictionary or an English idioms dictionary to the class. The teacher gave them a list of intended idioms each session. Each idiom was used in a sentence without any font or size difference with other parts of the sentence. The group members were supposed to read the sentences, to specify the idiom part of each sentence, to check their specifications with each other, and to find the intended meaning of idioms. Then, they checked the meaning of given sentences with their findings and tried to make new sentences using the idioms. Groups were to present their findings to the class. The teacher's role was to supervise the groups to make sure that there was equal participation of members.

In the second group, idioms were instructed through the Jigsaw technique. Students formed interest groups of two members. The teacher gave them a list of key terms and the meanings of intended idioms each session. The idioms were presented puzzle-like. Groups were to solve the puzzles and find the idioms by looking up the keywords and checking which of the idioms had the meanings implied by the puzzles. Then, they had to use the idioms in a sentence and present their sentences to the class. The teacher's role was to supervise the equal participation of members and suitability of their sentences.

In the third group, idioms were presented through Student Teams Achievement Division (STAD). STAD was based on teacher's direct instruction of idioms. The teacher divided the class into four-member teams. Lecturing the course to students, the teacher gave fifteen to twenty minutes to students to study the lesson within teams. Within teams, those who were higher achievers were responsible for helping lower achievers. Then, students were individually tested and scored. The average of individual scores was given to the group. Each session, the group which

performed better and achieved a higher average score was rewarded a positive point for the final examination.

In the fourth group, idioms were instructed in a competitive way. Competitive learning was totally based on teacher's direct instruction. In keeping with individual learning, each individual participant attempted to achieve his or her goals. So, each participant's performance was compared with others' performance. It should be noted that the term competitive and individual learning are interchangeably used in the present research.

At the end of the instructional period, an idiom recognition post test (in multiple choice format) and an idiom production post test (in fill-in-the blank format) were administered. The collected data were then submitted to statistical analyses. Since the idiom recognition and production post tests were designed by the researchers based on the idioms which were presented in classes, their validity and reliability had to be established. To this end, (KR-21) method was used to estimate the reliability of the tests. The reliability index of the receptive and productive tests turned out to be (.80) and (.83), respectively. To check the validity, a correlation procedure was used during which the scores of the participants on the receptive and productive post tests were correlated with their performance on the vocabulary subtest of the Michigan test. The validity index of the receptive and productive tests turned out to be (.77) and (.73), respectively.

Two separate one-way ANOVA procedures were used to analyze the data. One ANOVA procedure was used to investigate the effects of cooperative teaching methods on idiom comprehension. The same procedure was repeated to compare the scores of the participants on the test of idiom production.

4. Results and Discussion

4.1 Investigation of the First Question

The first research question sought to investigate the effects of Jigsaw, Group Investigation, Student Teams Achievement Division, and non-cooperative learning techniques on the comprehension of L2 idioms. To this end, a one-way ANOVA procedure was used. Descriptive and test statistics are presented in Table 1.

Based on Table 1, it can be observed that the Jigsaw group has the highest mean, followed closely by the group instructed through Student Teams Achievement Divisions. It is followed by Group investigation group. The group instructed through non-cooperative learning method has

the lowest mean, which is noticeably lower than that of the other groups. Table 1 shows that there are statistically significant differences among the four groups. Therefore, it can be claimed that different methods of instruction of idioms have a significant effect on the learners' idiom comprehension. To locate the statistically significant differences between the means, a post-hoc Scheffe test was used, the results of which are presented in Table 2.

Table 1
Descriptive and Test Statistics for the ANOVA on Idiom Commprehension

Groups	*Mean*	*N*	*SD*
Jigsaw	18.94	34	4.34
GI	15.97	32	4.78
STAD	17.89	36	4.92
Non-Co	9.26	35	3.86
F = 32.60	Sig. = .001		

Table 2
Multiple Comparisons of Means for Idiom Comprehension ANOVA

(I) groups	*(J) groups*	*Mean Difference (I-J)*	*Std. Error*	*Sig.*
Jigsaw	GI	2.97	1.10	.071
	STAD	1.05	1.07	.812
	Non-Co	9.68*	1.08	.000
GI	STAD	-1.92	1.09	.382
	Non-Co	6.71*	1.10	.000
STAD	Non-Co	8.63*	1.06	.000

*The mean difference is significant at the 0.05 level.

As it can be seen from Table 2, there are significant differences between all the cooperative groups and the non-cooperative learning method. In other words, members of all the three cooperative groups have outperformed the participants of the non-cooperative group.

4.2 Investigation of the Second Question

The second research question sought to investigate the effects of Jigsaw, Group investigation, Student Teams Achievement Division, and non-cooperative learning method on L2 idiom production. To this end, another one way ANOVA was run. Table 3 contains the result of descriptive and test statistics.

Table 3
Descriptive and Test Statistics for the ANOVA on Idiom Production

Group	*Mean*	*N*	*SD*
Jigsaw	10.41	34	4.72
GI	6.59	32	5.07
STAD	8.39	36	5.70
Non-Co	3.09	35	2.54
F = 15.38 Sig. = .000			

Based on the mean scores of groups, it is evident that the group instructed through Jigsaw has the highest mean, followed by the group instructed through Student Teams Achievement Division. The third best result is related to the group instructed through Group Investigation. The individual learning group has the lowest mean, which is noticeably lower than that of the other groups. In addition, the observed F value of 15.38 and the significance level are indicative of significant differences among the groups. To locate the statistically significant differences between the means, a post-hoc Scheffe test was used. The results of the post-hoc comparisons are presented in Table 4.

As it can be seen from Table 4, there are significant differences between Jigsaw and Group Investigation, between non-cooperative learning method and all three treatment conditions. In other words, all the three experimental groups have performed significantly better than the comparison group. In addition, the participants of the Jigsaw method have outperformed the participants of the Group Investigation technique.

Table 4
Multiple Comparisons of Means for Groups' Idiom Production

(I) group	*(J) group*	*Mean Difference (I-J)*	*Std. Error*	*Sig.*
Jigsaw	GI	3.81*	1.14	.014
	STAD	2.02	1.11	.353
	Non-Co	7.32*	1.12	.000
GI	STAD	-1.79	1.13	.476
	Non-Co	3.50*	1.14	.027
STAD	Non-Co	5.30*	1.10	.000

*. The mean difference is significant at the 0.05 level.

4.3 Discussion

The results of data analysis indicated that the performance of Jigsaw, STAD, and GI groups was significantly better than the comparison group on the comprehension post test. Along the same line, Walker and Crogan (1998) found evidence in support of the use of Jigsaw technique among other techniques of cooperative learning, indicating that Jigsaw enhances students' performance. But they did not specify whether by learners' performance they meant comprehension, production, or both. Alajlan (2009) also reported that the Jigsaw technique is well suited to improve learners' achievement. The findings are also consistent with studies such as Van Wyk (2010), who found evidence in favor of STAD compared with Individual learning. Similarly, Nurcahyo (2009) concluded that STAD and Jigsaw improve students' comprehension, especially reading comprehension compared with individual learning. Zingaro (2008) indicated that as far as the comprehension of learners is concerned, Jigsaw and STAD are more effective in comparison with GI in that they emphasize the comprehension of materials. But the present study found no difference among the effects of Jigsaw, STAD, and GI on the idiom comprehension of learners.

It seems that the use of the Jigsaw technique, due to its puzzle-like shape and focusing the students' attention on the keywords of idioms, makes idioms more memorable. Although the Jigsaw group and the GI group learners were to use dictionary to look up the intended idioms, the Jigsaw group participants were more successful. The reason behind this may be that GI groups formed their interest groups of four or five members. While divisions of tasks among the members make this technique more favorable for participants than Jigsaw, the control of four to five-member groups may be more problematic for the teacher and students because some group members may not equally collaborate in the activity. On the other hand, Jigsaw groups formed their interest groups of two members; it is easier to match two learners with each other within a group than four to five learners. Another reason behind the success of the Jigsaw technique may have been the class environment. The Jigsaw technique made the classroom climate friendlier and enjoyable compared with GI. Due to instances of problems of equal task divisions and cases of conflict of interest among the group members, the classroom climate of the GI technique was relatively less pleasant and cooperative.

Reasons behind the success of STAD in improving the learners' comprehension may have been the course presentation by the teacher who is more knowledgeable in the given area than learners themselves, the interactions between lower-achievers and higher-achievers to achieve

higher scores, periodical and individual quizzes, and the allocation of average score to the group. On the other hand, in contexts such as the Iranian context, where teachers' lecturing is more dominant than cooperative learning, a mixture of the two in the form of STAD was easily accepted by learners; it reduced the wide gap between the teacher and learners and brought them closer to each other. Although the traditional teaching method and the STAD technique were based on teacher presentation, the STAD technique was more successful in comparison with the traditional teaching method. The success of the STAD technique may be due to the mixture of teacher presentation and group scoring, learners' cooperation, and interaction. Allocation of a portion of the class time to group study, and periodical quizzes at the end of each session may be other reasons.

Furthermore, the findings show that the Jigsaw group is the most effective technique in both receptive and productive knowledge. This finding lends support to the research conducted by Hänze and Berger (2007), which revealed that the performance of participants improved by the use of Jigsaw technique because of the activation of deeper level processing involved in Jigsaw. The findings of the present study also lend support to research conducted by Koç, Doymuş, Karaçöp, and Şimşek (2010), indicating that Jigsaw and GI are more effective than traditional teaching method in students' academic achievement.

The findings of the present study reveal that STAD is more effective than individual learning, Similar to this study, Adesoji and Ibraheem (2009) compared the effect of cooperative learning, especially STAD, with traditional teaching method, concluding that STAD was superior to individual learning. Mojoka, Dad, and Mahmood (2010) and Van Wyk (2010) also compared the effect of STAD and traditional teaching on the academic achievement of students, and found that STAD is more effective than the traditional lecture method. Their results are in the line with the findings of the present study. However, no significant difference was found between the two in Armstrong and Palmer's (1998) study.

The findings of the present study about the effect of cooperative learning on the production of idioms are also in line with those of Chen (2005), who studied the employment of cooperative learning in the college context and found that the implementation of cooperative learning is beneficial for students. The present study lends support to the findings of Apple (2006), who studied cooperative learning and described it as a

powerful source of learning English, especially in a non-native context similar to that of the present study.

The present study showed that the Jigsaw technique is the most effective technique on idiom production. The reasons behind the success of the Jigsaw technique may be, on the one hand, the small number of learners, just two, who were interacting, investigating, thinking, and collaborating with each other. On the other hand, it may be the equal participation of members and fair division of tasks. In the Jigsaw technique, groups were to collaborate equally to accomplish the tasks. But in the GI, due to the unfair divisions of tasks, some members ceded their tasks to others or came short in their tasks and did not effectively collaborate with others.

The relative success of STAD compared with traditional teaching method may be due to the higher level of engagement of learners in the process of learning. In the other words, as Mojoka, Dad, and Mahmood (2010) contend, the STAD learners make more effort and are more engaged with the learning of the materials than individual learning.

5. Conclusion and Implications

Based on the findings of the present study, it may be concluded that cooperative teaching techniques can significantly improve l2 idioms learning. Given the complexity of L2 idioms and the difficulties involved in learning them, finding a way of helping learners overcome the challenges they face in learning L2 idioms has always been a major concern of L2 teachers. Based on the findings of this study, it may be concluded that one way of alleviating learners' problems may be the instructional method. Since all the three cooperative techniques investigated in the preset study turned out to be more effective than the non-cooperative method on both idioms comprehension and production, it may be concluded that regardless of which cooperative method is selected, the result will be more encouraging than the traditional competitive mode of instruction. In other words, one way of facilitating L2 idioms learning could be the replacement of traditional teaching methods with more cooperative ones.

In addition, since there were significant differences between the effectiveness of cooperative methods, it could be argued that learning L2 idioms lends itself more readily to certain cooperative techniques than to others. From this, it could be concluded that a more informed choice of the right cooperative technique may influence L2 idioms learning in a meaningful way.

However, for such claims to have generalizability, it needs to be noted that the present study used only three techniques of cooperative learning, and that other cooperative techniques need to be further investigated. There is little doubt as to the positive effects of cooperative teaching techniques on learning outcomes, students' attitudes, and learners' motivation in comparison with competitive teaching method, but the extent of their effectiveness in comparison with each other needs to be further explored.

Nonetheless, apart from their implications for idioms instruction, these findings can have implications for syllabus and textbook designers as well. Knowledge of the advantages and functions of cooperative teaching techniques may help syllabus designers to make more informed decisions about the content and activities of idioms course books and to provide textbooks and exercises for cooperative class works rather than individualistic ones. The present study can also have implications for teacher educators because the success of cooperative learning depends, to a large extent, on teachers' knowledge of cooperative techniques. One obvious implication for teachers is that in cooperative learning the burden of learning is on the learner and the teacher is a facilitator, unlike traditional methods in which the teacher is a sole source of information.

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