The Effect of Jigsaw Cooperative Learning Strategy on Fourth Graders' Achievement in Teaching EFL at Qalqilya City

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ABSTRACT

This study aimed at investigating the effect of jigsaw cooperative learning strategy on the fourth graders' achievement in teaching EFL at Qalqilya city. The study examined the effect of the following variables: gender, academic qualifications and years of experience on Palestinian fourth graders' achievement. To achieve the purpose of the study, the researcher developed one tool: a 21item questionnaire. The researcher distributed the questionnaire randomly on a sample of 29 Palestinian fourth graders' English language teachers in Qalqilya city. A quantitative method was used to analyze the collected data. The collected data were analyzed and treated statistically using SPSS. The results of the study showed that Palestinian fourth graders' have positive attitudes towards using jigsaw cooperative learning strategy as a tool of teaching EFL. In the light of the results of the study recommended that teachers should avoid merely using lecture method in teaching EFL for the fourth graders that leads for poor participation and poor understanding of the concepts. Schools teachers should concentrate on teaching techniques or teaching methods like jigsaw strategy, which will enable pupils to understand properly the concepts taught in class. In addition, it suggested that further researches should be conducted on the effect of jigsaw cooperative learning strategy on different English skills and other school subjects.

INTRODUCTION

In the past few decades, the communicative language teaching" the communicative approach" has been overwhelmingly acknowledged as the main strategy in ESL/EFL teaching (Lai, 2002). Different models and activities for cooperative learning such as Learning Together (Johnson & Johnson, 1994), the Structural Approach (Olsen & Kagan, 1992), Student Team Learning (Slavin, 1994), Jigsaw II (Slavin, 1994), and Asking Together, Learning Together (Açıkgöz, 2002). One of the most promising cooperative learning techniques widely considered is Jigsaw (Aronson, 2005). Although there are differences among these models of cooperative learning, all cooperative learning activities share basic properties that have an influence on creating a positive affective classroom climate (Crandall, 1999). Cooperative learning is one kind of student-centered approaches different from traditional pedagogy centered on teachers (Chu, 2014).

Research on cooperative learning was scarce before 1970's, however since this date the amount and the quality of research on cooperative learning has greatly accelerated given its great appraisal and

positive effects on education (Slavin, 1996). Numerous studies have stressed the positive effects that cooperative learning has on academic achievement (Jensen et al., 2002; Rojas-Drummond, Hernandez, Velez, & Villagran, 1998; Ferguson-Patrick, 2007) and social interaction (Choi, Johnson, & Johnson, 2011) among other outcomes. Cooperative learning has become such a widely used instructional procedure in all educational contexts that it is even difficult to find instructional material that does not refer to this methodology (Johnson, Johnson &Stanne, 2000).

Cooperative learning is the structured, organized instructional technique in which small groups work together to achieve a common goal (Slavin, 1996). Cooperative learning strategies employ many of the following characteristics and strategies in the classroom: positive interdependence, face-to-face interaction, individual accountability, social skills, and group processing. Positive interdependence is the belief that students are linked together with other students in such a way that one cannot succeed unless the group members also succeed (Hendrix, 1999).

Past researches on cooperative learning have focused on a wide variety of outcomes that such an instructional method which leads to higher academic achievement, motivation, social development, moral reasoning, social support, self-esteem, friendship and attitudes towards a task, among other outcomes (Johnson, Johnson &Stanne, 2000). In addition to special attention has been given to the effects of cooperative learning interventions on academic achievement and for mastering teaching and learning skills, as this instructional methodology is considered to enhance learning gains and arrange ideas due to the substantive conversations and active learning that it promotes. Moreover, cooperative learning gives learners the opportunity to verbalize their individual knowledge, which may lead to higher cognitive elaboration, deeper reflections, awareness of individual knowledge and misconceptions, and expansion of knowledge (Van Boxtel, 2000).

Various studies have analyzed the effectiveness of cooperative learning on reading skill in different educational levels and subject's areas. Wei (2002) wrote that reading is an important language skill for academic success and for professional development. Written language was seen as a system to support the learning of oral language, grammar and vocabulary, not as a skill in its own right. However, more attention has recently been paid to writing as a skill. In addition, writing "effectively is becoming increasingly important in our global community, and instruction in writing is thus assuming an increasing role in both second and foreign language education".

The significance of the study springs from the fact that jigsaw cooperative learning strategy has been introduced to the field of education. Moreover, it is the first study, as far as the researcher is concerned to be conducted in the field of English language in Palestine. For this reason, the study may be highly significant for English language teachers' intending to implement new steps, procedures, activities and techniques based on cooperative learning; i.e. cooperative learning to improve students' skills proficiency, encouraging and motivating students to use it to improve their skills proficiency. This study is limited to **t**he population of the study, which consists of the fourth graders' governmental schools in Qalqilya city. The sample of the study acts as representative of each group. The study was carried out in the second semester during the academic year 2017 – 2018. It was conducted using cooperative learning i.e. jigsaw strategy. It focuses one of the most important point in teaching English language that is students' achievement.

LITERATURE REVIEW

Cooperative Learning Activities and Methods:

There are several cooperative learning methods, both formal and informal. The informal methods are such as Jigsaw, think-pair-share, thinking-aloud pair problem-solving (TAPPS), In-class teams, etc. The formal cooperative learning methods are such as Jigsaw, Team-Games- Tournaments (TGT), Group Investigation (GI), Constructive- Academic Controversy (CAC) and Student Team-

Achievement Divisions (STAD). Cooperative learning activities and methods such as Think-Pair-Share, Numbered-Heads Together, Jigsaw, Teams-Games-Tournaments, and Group Investigation (Slavin, 1995) can be used in language classes to effectively teach all skills in language learning. Turnbull (1996) adapted two cooperative learning activities, Timed Pair-Share and Round Robin, to use for all language skills and received positive feedback from students.

Previous researchers have conducted several studies using the jigsaw learning model. The research on the jigsaw type of cooperative learning model has been proven as an effective way for improving learning achievement and students' understanding and in increasing positive educational outcomes (Tran & Lewis, 2012). Using strategy like jigsaw helps a teacher to solve the problems in the class especially in the reading activity. Through the application of this strategy, the students get many benefits such as during teaching and learning process the students can interact with their friends to share their opinion or idea so they can practice their speaking skill orally. The students work in a group so they can learn to hold the responsibility not only for themselves but also to their group. A study conducted by Septami (2018), jigsaw strategy affects students reading comprehension ability. This strategy can improve the students' results in many aspects. The previous research applied the Jigsaw learning model to find out the learning achievement and levels of students' understanding of material. So, the researcher adopted the Jigsaw method in this study.

Jigsaw strategy

The Jigsaw Classroom, originally designed by Elliot Aronson in Austin, Texas, in 1971. As "each member of the group has a piece of information needed to complete a group assignment" in the EFL classroom, jigsaw is a cooperative learning strategy that allows everyone to work together to create the final product. Just as in a jigsaw puzzle, each piece — each student's role — is important for the creation and full understanding of the final product. If the part of each student is important, then each student is essential. That is exactly what makes this strategy so successful.
 Jigsaw is said to be able to increase student learning because ' (a) it is less challenging for many students, (b) it increases student engagement in the classroom, (c) it decreases the need for competition, and (d) it reduces teacher supremacy in the classroom. 'Consequently, a jigsaw approach will effectively minimize students ' reluctance to take part in classroom activities and help create an engaging learning-centered environment.

Studies showed that it was only under certain conditions that cooperative efforts may be expected to be more productive than competitive and individualistic efforts. Johnson, Johnson (1994) put forward five principles for jigsaw strategy:

a. Positive interdependence
Each group member's efforts are required and indispensable for the group success. Each group member has to make unique contributions to the joint effort.

b. Face-to-face promotive interaction
Group members have to explain orally how to solve problems, teach one's knowledge to others, check for understanding, discuss concepts being learned and associate the present learning with the past one.

c. Individual and group accountability
The size of the group should be kept small, and the smaller the size of the group, the greater the individual responsibility.

d. Interpersonal skills
Social skills are the key to the success of jigsaw learning in the classroom. Social skills include leadership, decision-making, building trust, communication, conflict management skills, and so on.

e. Group processing

Group members discuss how well they are achieving their goals and maintaining effective working relationships, describe what member actions are helpful and what are not, and make decisions about what behaviors to continue or change.

Jigsaw learning makes it possible for students to be introduced for material and yet bear a high level of personal responsibility. It helps develop teamwork and cooperative learning skills within all students and a depth of knowledge not possible if the students learn all of the material on them own. Finally, because students are expected to report their own results to the home group on jigsaw learning, it often shows the student's own understanding of the concept as well as any misunderstandings.

Traditional vs. Cooperative Classrooms

Traditional classrooms are characterized by teacher-centered activities (based on methods such as the Grammar Translation Method or the Audio-Lingual Method) that usually involve teacher-student or student-initiated interactions (it should be noted that student-student interactions are minimal). Students sit in separate desks or are placed in pairs and the teacher is situated at the center of the classroom, as a controller of the teaching process, assessor of the students' performance, major source of knowledge, assistance, feedback, reinforcement and support. Traditional Methods view language learning as a passive process of memorizing grammar and vocabulary rules and items in order to acquire the ability to understand and employ the morphology and syntax of the respective foreign language. This type of learning is centered on activities such as knowledge recall and review, phrasal or sentence pattern practice, role-play and translation. Due to the low level of English proficiency, Palestinian English teachers still use conventional approaches to teaching English in primary grades, owing to the traditional way in which English is taught by students. Their main concern is consistency and language training, which focuses on literacy skills rather than on the use of language for communicative purposes. This may have arisen from a lack of knowledge of the interpretation and application of English in classrooms.

On the other hand, when working together cooperatively, students are responsible for their own behavior and learning, while the teacher monitors them and helps them work independently, giving them feedback; moreover, the teacher organizes and counsels group work, facilitates the communication tasks and intervenes in order to teach collaborative skills (Bawn, 2007). At first, some students may be too dependent on their teacher and expect to be helped, corrected, and encouraged all the time. In this case, in order to increase their level of independence, the teacher can place them into collaborative small groups with less teacher-dependent students, or pair them up with students that are more independent. Therefore, if in traditional language learning, the students' interdependence is viewed as negative, the learner being only a receiver or a performer, in cooperative learning, interdependence plays a positive role, as the learner is active and autonomous. In terms of materials, the teacher provides each student with a complete set for materials, in order to make them work together, in a collaborative way.

According to (Church study, 2012) titled "Taking Forward the Jigsaw Classroom: the Development and Implementation of a Method of Collaborative Learning for First Philosophy Tutorials". He conducted this study of Jigsaw method in which the students from the expert groups had to teach other students by posting their discussions online and then meeting up with the tutor giving presentations to the class. Overall, the students achieved marks that were significantly higher than before as well as a decrease in the number of failures. The students' feedback was very encouraging as they requested the researcher to continue using Jigsaw method.

Jigsaw cooperative learning approach was also examined by (Huang, Liao, Huang, & Chen, 2014) titled: "A Jigsaw-based Cooperative Learning Approach to Improve Learning Outcomes for Mobile Situated Learning". The participants used Google+, as a learning platform to discuss the approach with other students and upload materials. The results from this study proved the "Jigsaw"

cooperative learning approach to be successful and were favored by both the low and medium achievement students while the high-achievement students preferred individual learning.

That means, high-achievement students may not find jigsaw method interesting because the content would be too easy for them. However, the researcher thinks that the motivation of students could be affected by the type of task given to them depending on the level of difficulty. Thus, the high-achievement students are more likely to enjoy working together if the task is challenging to them.

Jigsaw strategy made every member of the group equally important. The students had to pay attention and obtain much information from other group members. This allows for each member of the group to add a small piece of the larger picture so that they are all important to the group. This teaches the students to rely on each other and reduces their competitive attitudes toward each other because they need everyone in their group to do well because their grade depends on the other students.

METHODOLOGY

Quantitative method was used to achieve the main purpose of the study as well as to answer the research question. The researcher used one tool of the study namely questionnaire to fit the variables and the hypotheses of the study.

RESULTS AND FINDINGS

What is the effect of jigsaw cooperative learning strategy on the fourth graders' achievement in teaching EFL at Qalqilya city?

In order to answer this question, the researcher calculated the means, percentages, levels, and ranks for students' attitudes towards using jigsaw cooperative learning as a tool of teaching in English language. Table (1) shows the results.

Table 1 Means, percentages and levels of students' attitudes towards using jigsaw cooperative learning as a tool of teaching in English language

No.	Items	Means	Percentage	Level
1.	The Teacher has active teaching strategies that are capable of using jigsaw cooperative learning strategy for fourth graders.	3.97	79.40	High
2.	The teacher can link the use of jigsaw cooperative learning strategy with the surrounding environment on fourth graders.	4.1	80.00	Very high
3.	The teacher can employ jigsaw cooperative learning strategy to encourage students for collaborative learning.	4.21	84.20	Very high
4.	The teacher contributes in raising the students' achievement using jigsaw cooperative learning strategy for fourth graders.	3.86	77.20	High

5.	There are qualified teachers using jigsaw cooperative learning strategy for fourth graders.	3.62	72.40	High
	Total degree	4.0057	80.11	Very High

Table (1) shows students' attitudes towards using jigsaw cooperative learning strategy on the learning process for fourth graders were very high on items (2,3,4) where the percentage of higher than (80%) and was high on items (1,5,6) where percentage of between (70%-79%) and the percentage of response on total score was very high where the percentage (80.11%).

After analyzing the data and computing the meanand percentages for each item and their respective domain and the total score of the effect of jigsaw cooperative learning strategy on the fourth graders' achievement in teaching EFL at Qalqilya city.

1.The first hypotheses states that: "There are no statistically significant differences at ($\alpha \leq 0.05$) in the effect of jigsaw cooperative learning strategy on the fourth graders' achievement in teaching EFL due to **Gender**." After data analysis, it was found that there are no significant differences at (α=0.05) in the effect of jigsaw cooperative learning strategy on the fourth graders' achievement in teaching EFL due to gender. The researcher used T-Test for independent samples. The level of significance for its (T) values was more than (0.05), and so the zero hypotheses is accepted.

Table 2 T-test results according to gender variable

No	Domains	Male		Female		(T)	Significant
		Mean	Deviation	Mean	Deviation		
1	Teacher	3.9583	.34359	4.0133	.28835	-.346-	.732
2	Student	4.0000	.48990	4.0480	.31770	-.261-	.796
3	curriculum	3.8500	.52599	3.5760	.30177	1.522	.140
4	Educational environment	3.6000	.71181	3.7200	.41231	-.489-	.629
	Total Degree	3.8521	.50582	3.8393	.18053	.099	.922

2. The data analysis of the second hypotheses," There are no significant differences at (α=0.05) in the effect of jigsaw cooperative learning strategy on the fourth graders' achievement in teaching EFL due to Academic Qualification.". The results revealed that there are no significant differences at (α= 0.05) in the effect of jigsaw cooperative learning strategy on the fourth graders' achievement in teaching EFL due to **Academic Qualification** in the domain of the effect of jigsaw cooperative learning strategy. The researcher used T-Test for independent samples. The level of significance for its (T) values was more than (0.05), and so the zero hypotheses is accepted.

Table 3 T-test results according to academic qualification variable

No	Domains	B.A. or less		M.A. or more		(T)	Significant
		Mean	Deviation	Mean	Deviation		
1	Teacher	3.9931	.31653	4.0667	.09129	-.509-	.615
2	Student	4.0500	.34515	4.0000	.31623	.298	.768
3	Curriculum	3.6250	.36978	3.5600	.16733	.381	.706

4	Educational environment	3.6917	.48982	3.7600	.16733	-.304-	.763
	Total Degree	3.8399	.25792	3.8467	.07086	-.057-	.955

3. The data analysis of the third hypotheses," There are no statistically significant differences at ($\alpha \leq$ 0.05) in the effect of jigsaw cooperative learning strategy on the fourth graders' achievement in teaching EFL due to the **years of experience**." The results revealed that there are no significant differences at (α=0.05) in the effect of jigsaw cooperative learning strategy on the fourth graders' achievement in teaching EFL due to the years of experience. The researcher used One-Way ANOVA to test the hypotheses.

Table 4 T-test results according to the years of experience variable

No	Domains	5 years or less		More than 5 years		(T)	Significant
		Mean	Deviation	Mean	Deviation		
1	Teacher	3.9848	.30235	4.0185	.29087	-.298-	.768
2	Student	4.2364	.23355	3.9222	.33704	2.710	.052
3	Curriculum	3.4909	.28794	3.6889	.35792	-1.550-	.133
4	Educational environment	3.9091	.33898	3.5778	.46974	2.032	.052
	Total Degree	3.9053	.15258	3.8019	.27055	1.156	.258

CONCLUSION

Based on the findings of the study, the researcher arrived at the following conclusions: jigsaw cooperative learning strategy created with the goals of reducing conflict, enhancing positive educational outcomes, helping students to realize that they are essential components of a whole and encouraging cooperation in a learning environment. This strategy motivated students towards an independent practice of English language instead of direct directions. It was clear through group work activities and their asking for extra strategies during the lesson. Jigsaw cooperative learning strategy developed collaborative learning among participants. This was clear because students learned through idea exchange and learned from their own mistakes as well as the mistakes of their partners. It provided great opportunities for low and intermediate achievers to get involved with high achievers and learn from them. Itis a very beneficial strategy for teaching EFL where participants in the experiment showed remarkable improvement in their achievement and jigsaw cooperative learning strategy helped participants build a sense of leadership because groups always have leaders.

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