

The Effect of Using a Self-Regulated Jigsaw Task on Female Students' Performance in the Course of Curriculum Reading in English at Umm Al-Qura University in Saudi Arabia

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Abstract

This study aimed to answer the questions related to the effect of using self-regulated jigsaw task as a technique to improve the students' performance in the course of curriculum reading in English, and to find out the learners' perceptions of using jigsaw task in their learning. This study is important since jigsaw task could help learners to become autonomous learners as well as to promote cooperation between learners. The study sample consisted of 40 (two classes) female students studying the course of curriculum reading in English in the Master's Program of curriculum and instructions at Umm Al-Qura University. The classes were allocated to the experimental group (n=21 students), which was taught using self-regulated jigsaw task, and the control group (n=19 students), which was taught using traditional tasks. Pre-and post-tests have been conducted to find out the statistical differences. Further, an open-ended questionnaire was given to the participants in the experimental group (n=21 students) to find out more about their perception of using the jigsaw technique in the learning process. Wilcoxon Signed Rank test was used as a statistical procedure to analyze the participants' scores on the post-test, and the Greenhouse-Geisser test was applied to investigate the differences between groups. The results of the study showed that the difference in performance between students taught using self-regulated jigsaw task and those taught using traditional tasks was statistically significant. Further, the participants in the experimental group perceived that using the jigsaw task had a positive effect on the learning process, enhanced their relations with other learners, and increased their motivation in learning. It is hoped that this study could encourage university instructors to design and implement jigsaw tasks into different courses in higher education.

Keywords: academic achievement, curriculum reading in English, female students, jigsaw task, self-regulated

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Introduction

In higher education, learners need to master the learning process and take a role in constructing knowledge with instructors and with other learners. Many researchers have stated that teaching methods could reflect negatively on learners when they passively receive the required knowledge. The individualized methods of teaching would not help learners improve the intellectual abilities they need for higher education. The teaching methods in higher education should be improved by implementing more innovative techniques to help learners enhance their learning and communicate with others. These methods could prepare learners for social communication and could help them to be active participants in the community.

In cooperative learning, students together are responsible for their achievement in the task, while in individual learning, each student is responsible for his/her learning (Arslan, 2011). Cooperative learning could result in a positive result for learners, whereby they cooperate and share knowledge together. On the other hand, individual learning could have a positive result, in which learners would be responsible for their learning and depend more on themselves rather than on groups. Thus, in higher education, learners need a self-regulated task to help them be responsible for their learning as well as a technique to help them cooperate and share their knowledge with others. Therefore, jigsaw task could be an effective technique to help learners be responsible and tackle their learning.

Developing a self-regulated jigsaw task would help learners to advance their learning and reflect positively on independent learning. Further, it could help learners in cooperative learning, since the jigsaw would require that learners work on some parts individually and then work on it together in groups. The importance of the current study is that it is based on the theory of constructivism, which is the most common theory that is effective in developing learning and improving student achievement. The problem in teaching students in higher education in Saudi Arabia is that when the instructor applies cooperative learning strategies, there is some dependency among students. For example, if some of them are not sure how to complete the task, other expert members could complete it for the group. Therefore, the instructor would not be able to assess the individual learner when they apply cooperative learning strategies without specifying a particular procedure. Thus, I hope in this study to find out the effect of applying self-regulated jigsaw task, which combines individual responsibility and the sharing of knowledge in cooperative learning.

Previous researchers have stated many benefits of jigsaw techniques and clarified how it related to constructivism (Tewksbury, 2000). Jigsaw technique would create a chance for students to teach themselves rather than depend on the teacher to present the knowledge to them. It could help learners to improve their in-depth knowledge. Helping students to learn by themselves would reflect positively on all other important skills in the learning process. It would also help learners to contribute something that is not easy for them to achieve in large group discussion, since each student needs to explain in depth the part that they have worked on. Working on jigsaw task would help learners to develop all learning skills, since it requires them to listen, read, comprehend, write, summarize, and present. Thus, the purpose of the study is to find out the effect of using self-regulated jigsaw task to enhance learners' performance. Another objective is to find out the learners' perceptions of using the self-regulated jigsaw task in regard to the learning aspects

(academic performance) and social aspects (their relationships to other learners). Accordingly, this study aims to answer the following research questions:

- 1- Are there any significant differences among the pre-test and post-test score averages of the experimental group (students using self-regulated jigsaw task) and control group (those taught using traditional tasks)?
- 2- How do the Saudi female learners perceive using the jigsaw task affects their learning and their relationships to other learners?
- 3-

Literature Review

Self-Regulated Learning and Jigsaw Task

The self-regulated skills include good use of time, increased confidence, and ability to make connections between all the information in the process of learning (Eker, 2014). In the self-regulation process, students are responsible for their own learning. Zimmerman (1989) stated that self-regulated learning could reflect the self-controlled method where students were able to transform their intellectual skills in tasks that focused on academic skills (Zimmerman, 2001). The meaning of self-regulated learning is the continued participation and interaction, which reflect metacognitive learning (Zimmerman, 1989).

In previous studies, researchers tried to identify the suitable process and stages that students could go through in self-regulated learning (Montalvo & Torres, 2004). Zimmerman (2008) identified three stages of the self-regulation process: forethought, performance, and then self-reflection. Students could go through these stages when they completed the task. The first stage was forethought, in which students could set the goal of learning, the suitable strategy to use in learning, and identify the task value. In this stage, students intended to plan their learning (Alderman, 2004). In the second stage: performance, students would be able to have self-instruction as well as use metacognitive skills, which would help them to monitor their learning. In this stage, students would be able to develop appropriate strategies in their learning, while they completed the task. In the last stage, self-reflection, consistent with self-evaluation, students reacted to the self-regulated skills through evaluation of their own learning (Barnard-Brak et al., 2010).

Cooperative learning could activate self-regulated skills for learners. This is because during cooperative learning, learners divide the responsibilities between them, and they share and discuss the productive knowledge (Olukayode & Salako, 2014). Sharing the responsibilities could promote self-regulation skills. Learners would be able to take decisions to use suitable strategies in cooperative learning. Thus, they manage their learning themselves and through their cooperation with other learners. Cooperative learning tasks could be reflected in learners' systematic interactions, individual accountability, and group dynamic (Berger and Hens, 2017; Sudrajat et al. 2019).

Therefore, there is a clear link between self-regulated and cooperative learning, and the jigsaw technique could be an ideal way of connecting them. This is because working on the jigsaw task would be reflected in learners' self-regulated skills. Further, Jacobs (1998) stated that the Jigsaw Strategy could also be related to the Cooperative Learning and was initially established in the 1970s by Elliot Aronson. The Jigsaw Strategy comprises cycle stages of activities that contain first

reading, then grouping, and finally regrouping. After that comes expert group discussion, then stating, and finally team acknowledgment. Thus, the stages of self-regulated learning and jigsaw techniques are similar.

Moreover, Rolheiser and Stevahn (1998) correlate both the Jigsaw Strategy with Wittrok's theory of cognitive restructuring, which highlights the significance of practicing, explaining, and expanding on reading material to connect information into existing cognitive constructions for time retention (Millis & Cottell, 1998). In the Jigsaw Strategy, each individual in a group has part of the task to research well and every student is accountable for teaching their part to the other students in the group. When all the pieces are combined, the students should have the full image of the completed work.

In more detail, the Jigsaw Strategy includes the following processes next: splitting the group into a home team, and splitting the reading activities into a number of sub-themes or subjects based on the number of students in the home group. Then, the members of the groups in each home group who are sharing or learning the same part join together to develop an expert group to discuss and study their part, and gain deep knowledge and become experts in that part of task. Expert groups then return to the home groups to teach their part to other members in home group (Thompson & Pledger, 1998).

Additionally, the self-regulated task would help students to organize and use effective learning strategies in order to achieve the task. Arslan (2011) claimed that there was a positive effect of using Jigsaw IV on self-regulating students' learning because students were better at planning in both situations: individually and in groups. They used the strategies of learning well, received feedback, and gave peer feedback to each other. Arslan (2011) claimed that the result of his study discovered that the Jigsaw IV method helped increase the self-efficacy beliefs for students in comparison to traditional methods. In cooperative learning, when students support and encourage each other, they are helped to reflect positively on self-regulation skills (Arslan, 2011).

The jigsaw technique could help the instructor give an equal chance to all learners, since the task should be divided between group's members. This behavior would be reflected in students' feeling that all learners are equal in the provided content and in being capable of working on achieving the target knowledge, particularly if learners are from different ethnic groups (Olukayode & Salako, 2014). Further, the jigsaw task could help learners that they have difficulties in speaking in front of others; they could practice speaking, presenting, and teaching other members in groups. So, it could help learners to practice the required skills in a more flexible and comfortable environment (Olukayode & Salako, 2014).

Azmin (2016) claimed that learners need an assistant to resolve academic problems in an effective way. She suggested that to help them get an assistant, we need to implement more student-centered methods rather than teacher-centered methods, and the cooperative jigsaw technique is an example of that. She said that learners need support in some of the difficult tasks, such as writing, since they need to be more confident and enjoy their learning in order to be creative and productive in achieving the written task (Azmin, 2016; Gull & Shehzad, 2015; Hamadneh, 2017).

Researchers (Berger and Hens, 2017; Sudrajat et al. 2019) also recommended using the jigsaw task for many purposes. It could help improve the learners' intrinsic motivation, since it could help them enjoy the learning so it reflects positively on their abilities. Sudrajat et al. (2019) said that the jigsaw task could help improve learners' autonomy, which would help them enhance their competence in learning. The jigsaw task requires learners to structure the process and be an expert in part of the task, then act as a teacher for the others. All these skills could enhance learners' autonomy and experiences in learning. Furthermore, using the jigsaw task could help learners to enhance their community in a class (Samuel, 2018; Sudrajat, Iasha & Femayati, 2019; Suresh & Reddy, 2017). So, learners might have good relationships, helping them to share knowledge and exchange experiences Ayden & Biyikli, 2017; Baroody, Clements & Sarama, 2019; Evcim & İpek, 2013).

On the other hand, there are many challenges involved in using the jigsaw technique. The most challenging is that it is time consuming, as learners need to work on the task in different stages with different students. Particularly in the last part, there would be not enough time for presentations from all groups. Another challenging factor is the students' behavior of domination during their work in groups (Aronson, 2008).

Previous studies have been conducted to explore the effect of the Jigsaw Strategy in language classrooms. Sami Ali (2001) conducted an experimental research to investigate the result of applying the jigsaw method in reading EFL pre-service. His study focused on using the Jigsaw Strategy for reading passages. The control group in his study read the same text but individually. He used the test of English as foreign language (TOEFL) to check students' two comprehensions, as well as a questionnaire used to check students' anxiety. The findings showed that the experimental group had lower anxiety than the control group, which reflected positively on their performance.

Another study, carried out by Badawi (2008), investigated the improvements in the relationship between reading achievement and motivation when using the jigsaw technique. The findings showed that there were no differences between the experimental and control groups with regard to reading accomplishment; however, there were significant effects for the students' motivation.

Furthermore, several previous studies have been conducted to find out the effects of using the jigsaw technique in different subjects (Artut & Tarim, 2007; Doymus, 2008; Gömleksiz, 2007; Mari & Gumel, 2015; Mengduo & Xiaoling, 2010; Olukayode & Salako, 2014; Şahin, 2011; Tarhan, Ayyıldız, Ogunc & Sesen, 2013), and they concluded that jigsaw techniques had a positive effect on the learners' performance and positively affected different learning skills.

Methods

Participants

The study sample consisted of 40 (two classes) female students studying the course of curriculum reading in English in the Master's Program of curriculum and instructions at Umm Al-Qura University. The study was conducted in the first term of 2020. The two classes were allocated to the experimental group (n=21 students), which was taught using the self-regulated jigsaw task, and the control group (n=19 students), which was taught with traditional tasks. Pre-and post-tests

have been conducted to find out the statistical differences before the jigsaw technique was practiced.

The reason for choosing the course of curriculum reading in English was because the research involved teaching this course to two groups, so it would be a chance for me to be the instructor in both groups. The main objective of the course of curriculum reading in English is to help students be aware of common educational terminologies in the English language as well as to be able to understand in English the academic articles in curriculum fields. The instructor, the classroom environment, and the educational learning environment in the University were the same for both groups. Also, the numbers of students in each group were similar.

Instruments and Procedures

Pre- and post-tests have been designed by the researcher. The question in the test covered all the content related to the course. The test was based on reading comprehension and identifying the meaning of educational terminologies. The instruments used were previously tested by different experts in the field to ensure their validity and reliability. In order to achieve high quality in the reliability of the instruments used in this study, the researcher designed the pre and post-test based on the content of the course, trying to cover all related knowledge to the course of curriculum reading in English. The researcher designed a pilot project to ensure the validity and reliability of the instrument.

In the first stage of my study, a pre-test of reading comprehension was conducted, and then jigsaw practice activities were performed with the students in the experimental group. In the jigsaw technique, group members shared information with each other. Students began in their home group, then worked individually on their own part, before working with the expert group. The last stage saw them return to the home group to teach their parts.

The researcher introduced the reading text for the experimental groups, and then divided the text into four different parts. Every member of the group obtained a different part and worked on it individually. Then, after they had completed their work, each member of the group found those with the matching part and formed expert groups, sharing information and solving problems together, if they were in any confusion. Learners returned to their groups, and then swapped their information and finalized their ideas about the topic of the full text. The researcher monitored the work and assisted students in their development. In the last session, the researcher gave a test to assess learners' progress in the course of curriculum reading in English.

Further, at the end of the term, the researcher gave them an open-ended questionnaire to explore their perceptions regarding using the jigsaw in learning. The questionnaire consisted of four questions focusing on finding out learners' perceptions about how the jigsaw task affected their learning and their relation to other learners. The questions of the questionnaire were as follows:

- 1- *Do you like using the jigsaw task in the course of curriculum reading in English, and why?*
- 2- *What are the benefits, if there are any, that you received from working on the jigsaw task in the course of curriculum reading in English?*
- 3- *How does the jigsaw task affect your relationship with your colleagues in the classroom?*

4- *How does the jigsaw task affect your motivation to learn the course of curriculum reading in English?*

In the control group, the participants received the same reading text, but no self-regulated jigsaw technique was used. The students worked individually at the same time. Then the researcher asked the learners questions to check their comprehension of the text, before starting to familiarize the students with important words and structures in the text. Learners read the passages individually and then they had to answer the comprehension questions as well as identify the new terminology. Finally a post-test of reading comprehension was administered to the control group.

Results

Quantitative Results

This research sought to establish whether there was a statistically significant difference in achievement between students taught using the self-regulated jigsaw task, which was the experimental group, and those taught using traditional tasks (the control group). To achieve this objective, I will first present the key descriptive statistics, then complete the general comparison of the significance of the difference between the two groups, and lastly present the comparison of the difference between the groups.

Descriptive Statistics

Both the pre-test and the post-test results were quantitative and, in this respect, according to Field (2016), the suitable summarization of the statistics would be the mean and the measures of central tendency, that is, the standard deviation beside skewness and kurtosis. The results are presented in the Table one below.

Table 1. *Summary statistics*

Group		N	Mean	.Std Deviation	Skewness	Kurtosis
Experimenta 1	Pre-test Result	21	55.05	19.138	738.	388.-
	Post-test Result	21	67.43	17.628	568.	644.-
Control	Pre-test Result	19	56.63	20.012	268.	929.-
	Post-test Result	19	61.53	18.228	309.	445.-

For the experimental group, the mean pre-test performance was 55.05 (SD = 19.138), while the mean post-test performance was 67.43 (SD = 17.628). This shows that the performance developed after the intermediation. However, for the control group, the mean pre-test performance was 56.63 (SD = 20.012), while the mean post-test was 61.53 (SD = 18.228). Once again, a development in the performance was observed. Generally, the experimental group had the highest skewness as compared with the control group, while the kurtosis for all the groups was consistently negative, indicative of platykurtic distributions (Technik & Fidela, 2012).

Comparing Pre-and Post-Test Performance

Because of the small sample size for both groups, and in order to test whether the differences in the pre-test and post-test were statistically significant or not, the non-parametric Wilcoxon Signed Rank test was carried out, instead of the parametric paired-samples t-test as prescribed by

O'Dwyer and Bernard (2013) as well as Kent (2015). They argue that t-test assumes normality of the data and in that respect, according to the central limit theorem, the minimum sample would be 30. However, in this study, we had two independent groups, the highest having a sample of 21 and the other 19, and hence the t-test was not the optimal test. The respective hypotheses were:

H_0 : There is no difference in the performance between the experimental pre-test and post-test

H_2 : There is a difference in the performance between the experimental pre-test and post-test

H_0 : There is no difference in the performance between the control pre-test and post-test

H_2 : There is a difference in the performance between the control pre-test and post-test

The results showing the mean ranks and sum of ranks are presented in the Table two.

Table 2. *Related-Samples Wilcoxon Signed Rank Test - Ranks*

Group			N	Mean Rank	Sum of Ranks
Experimenta 1	Post-test Result – Pre-test Result	Negative Ranks	1 ^a	6.50	6.50
		Positive Ranks	18 ^b	10.19	183.50
		Ties	2 ^c		
		Total	21		
Control	Post-test Result – Pre-test Result	Negative Ranks	3 ^a	12.67	38.00
		Positive Ranks	16 ^b	9.50	152.00
		Ties	0 ^c		
		Total	19		

a. Post-test Result < Pre-test Result

b. Post-test Result > Pre-test Result

c. Post-test Result = Pre-test Result

The mean pre-test positive rank was the highest for the experimental group ($M = 10.19$) as compared with the control group ($M = 9.50$). However, for the negative ranks, the highest was for the control group ($M = 12.67$) and the least was the experimental group ($M = 6.50$). The overall Wilcoxon Signed Rank test statistic results are presented in Table three:

Table 3. *Related-Samples Wilcoxon Signed Rank Test Statistic*

Group			Post-Pre-test
Experimenta 1	Z		3.574 ^b -
	Asymp. Sig. (tailed)	(2-	000.
Control	Z		2.304 ^b -
	Asymp. Sig. (tailed)	(2-	021.

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks

For the experimental group, $Z = -3.574$ ($p = 0.000$), and because the p -value was less than 0.05, the null hypothesis is rejected. For the control group, $Z = -2.304$ ($p = 0.021$) and again, the p -value was less than 0.05. The null hypothesis, is again, rejected. From the findings, it can be stated that there was enough statistical evidence at alpha 0.05 to conclude that there was a statistically significant difference between the pre-test and post-test performance for both the experimental and control groups. However, because the Z -statistic was higher in magnitude for the experimental group than for the control group, it meant that the magnitude of the difference was higher for the experimental group than for the control group.

Comparing Experimental and Control Group for Pre-and Post-Test Performance

Having tested the differences in the pre-test and post-test across the two groups, the third research hypothesis tested whether the magnitude of the change in the experimental group was statistically different between the pre-test and the post-test. This entailed the between-groups testing, and according to Oakshott (2012), Warner (2012), and Wywial (2015), the ideal test was the repeated measures mixed effects model, or simply, mixed model ANOVA. The tests of the within-subjects effects are presented in Table four.

Table 4. *Tests of Within-Subjects Effects*

Source		SS	df	MS	F	Sig.	Partial Eta Squared
Exp	Sphericity Assumed	1557.613	1	1557.61	22.38	.000	.365
	Greenhouse-Geisser	1557.613	1.000	1557.61	22.38	.000	.365
	Huynh-Feldt	1557.613	1.000	1557.61	22.38	.000	.365
	Lower-bound	1557.613	1.000	1557.61	22.38	.000	.365
Error(Exp)	Sphericity Assumed	2713.887	39	69.587			
	Greenhouse-Geisser	2713.887	39.00	69.587			
	Huynh-Feldt	2713.887	39.00	69.587			
	Lower-bound	2713.887	39.00	69.587			

The Mauchly's test of sphericity was not computed since there were only two groups, and in this respect the Greenhouse-Geisser test was considered. From the findings above, $F(1, 39) = 22.384$ ($p = 0.000$, $\eta^2 = 0.365$). Because the p -value was less than 0.05, it follows that, considering both the experimental and control groups, overall the post-test performance was statistically different from the pre-test performance. This was an overall confirmation of the results presented above. However, the third hypothesis focused on the comparison between the experimental group and the control group and in this regard, the between-subjects effects was to be considered (Judd, McClelland & Ryan, 2008; Bartolucci, Bacci Gnadi, 2016). The corresponding hypothesis is presented below, and the results are presented in Table five.

H_0 : There is no difference in the performance between the control and the experimental groups

H_3 : There is a difference in the performance between the control and the experimental groups

Table 5. Tests of Between-Subjects Effects

Source	SS	df	MS	F	Sig.	Partial Squared	Eta
Intercept	290043.612	1	290043.612	463.825	.000	.922	
Error	24387.887	39	625.330				

From the outcome, $F(1, 39) = 463.825$ ($p = 0.000$, $\eta^2 = 0.922$). In this regard, because the p -value was less than 0.05, the null hypothesis is rejected. It follows, therefore, that there was enough statistical evidence at the 5% significance level that the performance improved significantly for the experimental group than the control group. The difference in the performance between students taught using the self-regulated jigsaw task and those taught using traditional tasks was statistically significant. In other words, teaching using the self-regulated jigsaw task results in better performance than using the traditional task does.

Qualitative Result

To analyze the open-ended questionnaire data, the researcher used a thematic analysis by identifying a theme for each question in the questionnaire. For example, the second question is: *What are the benefits, if there are any, that you received from working on the jigsaw task in the course of curriculum reading in English ?* The suitable theme for this question is the benefits and difficulties of using the self-regulated jigsaw task. Therefore, I identified three themes from the questionnaire data.

Perceived Academic Benefits and Difficulties of Using the Self-Regulated Jigsaw Task

Most of the participants stated that using the self-regulated jigsaw task helped them to increase their cooperation, interaction, and communication in order to complete the task. They also stated that the jigsaw task helped them to exchange knowledge to reach suitable answers to complete the task. Most of the students claimed that the self-regulated jigsaw task helped them to deepen their knowledge in the subject, so they were able to improve their comprehension of the reading.

Many of the participants claimed that the self-regulated jigsaw task helped in exchanging experiences and receiving feedback from each other. Therefore, it helped them to complete all stages and steps of the required task appropriately. It also helped them to remember the new knowledge on the long run.

Students said that working with other learners on the self-regulated jigsaw task gave them the chance to ask other students in case they needed help. Students claimed that, with the jigsaw task, the process of receiving knowledge and getting was easier, meaning they understood more than in the traditional way. Also, some of them stated that it helped in saving time than working on the task individually.

However, some learners stated a difficulty of working on self-regulated jigsaw task, which is the size of the classroom, was not suitable, and it is not big enough in order to move smoothly and

exchange groups between home and expert groups.

Perceived Effect of Self-Regulated Jigsaw Task on Students' Relationship

All participant students claimed that working together on the self-regulated jigsaw task helped to strengthen the relationship between all students in the classroom. This was because they had a chance to work with more than one group during the lesson: the home group and expert group. Also, some of them stated that the strong relationship between students helped them become aware of the importance of working with others, as well as helping them to work with all students, even those in different subjects and lessons.

Good relationships between students enhanced their cooperation and interactions in order to complete the task and present it in the best way. Further, some students stated that strengthening the relationship between all students in the classroom helped their team-working skills to improve. Further, some students stated that these relations between students helped remove the barriers and difficulties when working in groups as well as helping their thinking skills to improve.

Many of the participants stated that working with more than one group in a class helped them to understand different characteristics from different learners. Therefore, students respected each other's opinions and listened to different perspectives in the class.

Perceived Effect of Self-Regulated Jigsaw Task on Students' Motivation to Learn

Many of the participants stated that the self-regulated jigsaw task helped them to learn in a fun atmosphere, helping them to enjoy their learning. This atmosphere helped learners to increase their interactions and activity in the class, and participate in completing the task. Some of students stated that they perceived the positive effect of the self-regulated jigsaw task on facilitating the learning process. Thus, students stated that the self-regulated jigsaw task helped their motivation in the course of curriculum reading in English to improve their levels of achievement.

Discussion

In the present study, the result of using the self-regulated jigsaw task was investigated. The findings stated that there was a significant difference between the experimental group and the control group in favor of the experimental group. The findings of this study seem to be in line with previous research (Artut & Tarim, 2007; Doymus, 2008; Gömleksiz, 2007; Mari & Gumel, 2015; Mengduo & Xiaoling, 2010; Olukayode & Salako, 2014; Şahin, 2011; Tarhan, Ayyıldız, Ogunc & Sesen, 2013).

In the study, it can be seen in the post-test that the self-regulated jigsaw task technique was more effective than the traditional task technique. Therefore, it found that the self-regulated jigsaw technique was more effective. The self-regulated jigsaw task increases students' interest, motivation, and confidence in discussing the work with other learners. Previous studies found that working on the jigsaw task would create an exciting environment in the class, which in turn could reflect positively on learners' performance (Azmin, 2016; Gull & Shehzad, 2015; Hamadneh, 2017). Further, students working with others in the jigsaw group shared knowledge, engaged in critical discussion, and interacted with others, which helped them to improve and learn more effectively (Aydin & Biyikli, 2017; Baroody, Clements & Sarama, 2019; Evcim & İpek, 2013).

The findings of this research seem to be in line with previous studies (Samuel, 2018; Sudrajat et al., 2019; Suresh & Reddy, 2017), as they found some benefits of using the jigsaw task. It could help learners to enhance the sense of community in a class. The jigsaw technique would help to develop learning, increasing cooperation, enhancing confidence, and helping learners to be more active. Also, it could help learners to improve or build good relationships in large classes; sometimes students can spend all year studying with the same people in a large class without getting to know them well. This is because they do not have a chance to work with them. Therefore, the jigsaw technique would help all learners in the same class to communicate with each other, teach each other, and share knowledge.

On the other hand, a few studies, such as Berger and Hänze (2007), claimed that using the jigsaw technique would not be more effective than the traditional methods. This is because they conducted a study investigating the effect of the jigsaw technique for students in 12th-grade physics classes and compared it with the traditional, direct instruction methods.

Conclusion and Recommendation

The focus of the current study was to explore the effect of using the self-regulated jigsaw task to improve students' performance in the course of curriculum reading in English. The findings of this study revealed that the self-regulated jigsaw task was more effective. The findings showed that the self-regulated jigsaw task can help increase students' interest, motivation, and confidence in discussing subjects with other learners. Another main finding is that the self-regulated jigsaw task can help learners to enhance their relationships with colleagues in the class. This is because learners have a chance to engage with each other, in a setting that is very effective for communication, in order to complete the task. Thus, the jigsaw technique can help increase learners' cooperation and make them more active. However, there are many aspects to be applied by the instructor if the jigsaw task is used in the classroom. Learners need to be aware of the purpose and benefits of using the technique. This recommendation could help students to be aware of the benefits, and it could enhance their cooperation in learning. Another recommendation is that the instructors need to set aside suitable time to apply the technique in the lesson, since there needs to be sufficient time to help learners work properly in the class, and to benefit all the processes they go through when completing the task. A further recommendation is that the space of the classroom needs to be suitable for the number of students, because they need to change their groups from home to expert and thus need a suitable space that enables them to move smoothly between groups.

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Declaration of conflicting interests

The author has no conflicts of interest to declare

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