International Journal of Research in English Education (IJREE)

Original Article **Published online: 20 December 2022.**

The Effect of Interactive Jigsaw Method on Iranian EFL Learners' Reading Skill and Anxiety

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Received: 18 August 2022
Revision: 10 November 2022
Accepted: 30 November 2022
Published online: 20 December 2022

Abstract

The present study trailed a proper experimental design to examine jigsaw reading method in our setting. The data collection process encompassed qualitative and quantitative evaluations. The scrutinization aimed to influence the interactive jigsaw method on EFL intermediary Iranian learners' reading capability and anxiety. 205 Iranian learners acquired the Oxford Placement Test, 135 intermediary learners were selected as the research sample. A random control group (CG) and an experimental group (EG) were designated to the participants. The instrumentation was pre-and post-tests for evaluating the reading performance, and the subjects replied reading anxiety questionnaire, which was validated by Zoghi (2012). The EG outperformed the CG in their reading performance comprehension, which is indicated in the results. Also, EG participants' reading anxiety reduced after considerable management. The outcomes also did not reveal any significant variance among the two age groups. The findings might accord creative intuitions in jigsaw interactive learning and reading, and the situation could encompass the conclusions of the associated literature. The research results can be advantageous to instructors by invigorating their learners' L2 reading ability. Moreover, learners become skilled in regulating their anxiety and acting more assertively amid the tasks.

Keywords: anxiety, intermediate Iranian learners, jigsaw interactive method, reading conception

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[DOR: 20.1001.1.25384015.2022.7.4.4.9]

1. Introduction

An important component in the learning environment is cooperation, and it contributes to an indispensable role in the conception of reading texts (Lewis, 2019). Nevertheless, the current problematic issues of anxiety may weaken reading skills (Mohammadpur & Ghafournia, 2015). A significant amount of EFL learners have struggled in contributing and giving out their thoughts and understanding to other learners (Sabbah, 2016). Therefore, reading anxiety could encumber comprehension and the connected characteristics related to this ability. An EFL teacher must recognize learners' interests, learning styles, and efficient teaching methods (Dwiniasih & Nugraha, 2019). Teachers can use varied cooperative mixtures or group learning (Pang, 2003).

1.1 Statement of the Problem

According to Tamah (2011), learners do not search for topics and components diagnostically as learners have the entire text in traditional reading skills. Also, learners are not challenged to understand the themes after sharing ideas with others. Jigsaw interactive method contributes learners to intensify self-assurance and be familiar with other individuals. Suyanto (2012) debates that applying the interactive jigsaw method can make learners extra answerable in the teaching-learning procedure. As a result, learners take part in a group dynamically.

Jigsaw is considered one of the most significant current discussions in interactive learning. The absence of cooperation and interaction is a common disorder characterized by previous studies. Collaboration is an essential element in the jigsaw method and plays a crucial role in learning. Recent progress in group works has emphasized the importance of cooperation (Siahpoosh et al., 2021). In recent years, an increasing interest was observed in applying cooperative methods. However, a significant problem with collaborative approaches is finding appropriate ways. So far, the combined method has been applied to pre-university learners, and they have benefited from this technique. The research to date has focused on learners' and teachers' benefits of cooperative learning in general rather than Iranian intermediate language proficiency. In addition, no study has surveyed the influences of applying the jigsaw method among adults and adolescents considering intermediate language ability. A question that needs to be asked, however, is whether jigsaw cooperative learning contributes to the learners' reading skills and anxiety or not. In this respect, how we can improve intermediate learners' reading skills and decrease their anxiety in favor of the interactive method is raised. Based on the cooperative method, the research has focused on enhancing reading skills rather than intermediate adults and adolescents' anxiety levels. Previous studies illustrated the improvement of learners' reading conception considerably in favor of interactive learning.

1.2 Purpose of the Study

This article aims to scrutinize the effect of the interactive jigsaw technique on the reading skill of Iranian EFL learners and their anxiety. The primary assumption is that such an interactive method can diminish or control reading anxiety. This study analyzes the difference between the two age groups since there are possible differences between adults and adolescents' degree of concerned feeling over reading perception. Likewise, this study is likely to increase learners' self-assurance and confidence. The aim is to teach them to act and improve a supportive learning style. The key goal is to realize if learners would achieve their dreams and increase their reading skills by the jigsaw method. Additionally, this study aims to know whether the jigsaw method can reduce learners' nervous feelings and scrutinize the extent of teamwork between learners. In this vein, this study tries to address the subsequent inquiries:

RQ1. Does jigsaw cooperative learning increase learners' reading ability?

RQ2. Do adults and adolescents vary draw from interactive jigsaw method?

RQ3. Does learners' anxiety decrease in favor of the jigsaw cooperative learning method?

2. Review of the Related Literature

2.1 Reading Comprehension

According to Kimberly (2017), conception is the depth of reading. Besides, she points out that reading ability is an operational procedure in which the readers get information about the context. Kirmizi (2010) claims that the crucial goal of teaching reading is the conception and the content of the text, which is analyzed by the learners (Namaziandost, Pourhosein Gilakjani, & Hidayatullah, 2020). Major ability necessitates reading skills; thus, McKee (2012) claims that various abilities are involved in understanding reading. Three factors, text, reader, and context, have formed the

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current literature as regards reading comprehension (Pearson & Cervetti, 2016). Reading comprehension is principally established by deliberated reading passages and responding to respective questions (Collins, 2019). Based on Pang et al. (2008, p. 6), reading is understanding texts, and compound activity includes both views and thought. Snow states reading comprehension is taking out the theme of the text through communication and participation with other learners (as cited in Rassaei, 2015).

2.2 Reading Anxiety

Anxiety as an emotional factor plays a consequential part in learning a foreign or a second language (Al-Shboul, Ahmad, Nordin, & Rahman, 2013a). The anxiety learners encounter through reading in the objective language is Reading anxiety (Zhou, 2017). Demanding themes and subjects that are not stimulating for learners may result in reading anxiety (Sellers, 2000). As a result, learners have reported feeling anxious in the language classroom (Al-Shboul, Ahmad, Nordin, & Rahman, 2013b). In this respect, Kuru-Gonen (2009) found that the basis of reading anxiety is uninteresting themes (Sheikh Ahmad et al., 2013). Another reading anxiety is unacquainted words. Thus, EFL reading anxiety may cause poor language success (Gença, 2016). Sheikh Ahmad et al. (2013) claim that learners have anxieties during reading in a foreign language.

Foreign language reading is affected by foreign language anxiety; many learners are hindered by reading-related anxiety, which can cause poor reading conception (Saito et al., 1999; as cited in Mohammadpur & Ghafournia, 2015). According to Zhao (2009), unacquainted texts, uninformed topics, and anxiety about conception are the primary origins of foreign language reading anxiety among EFL learners. Hence, reading task occasionally fosters anxiety for many second or foreign language learners (Brantmeier, 2005; Bektaş-Çetinkaya, 2019); Huang, 2001; Wu, 2011; Zhao, 2009, as cited in Al-Shboul et al., 2013). Factors that are affected by anxiety, such as situation, teaching methods, learners' views about language learning, and their interaction with other partners, impact the second language learners' reading performance (Brown, 2000; Ellis, 1994; Larsen Freeman & Long, 1991; Oxford, 1989; Wharton, 2000).

2.3 Jigsaw Interactive Reading Method

Richards and Schmidt (2010) indicated that interactive learning is a teaching technique in which rooms are arranged to permit learners to work together in small provision teams. Christison (as cited in Fu, 2013) clarifies interactive learning as "to assist learners in improving a self-positive image and others to come up with a critical thinking device and solving of problem and to persuade cooperative social skills, a method for the classroom that is used to intensify motivation and preservation" (p.140). Jigsaw interactive reading is a reviewed form of the universal jigsaw method. In groups, learners are provided with story parts or a text to read independently. Learners read and comprehend a written text individually then report to other group members. Afterward, each member shares different text fragments, and in the group, they rearrange the pieces to develop the original text with one another (Rashtchi, Porkar, & Ghazi MirSaeed, 2021). Learners acquire similar study material from the complement group and perform the given task (Fu, 2013). Approximately those reflect jigsaw reading playing around with a puzzle (Lai, 2010). In the jigsaw reading method, a reading text is cut into pieces to understand the text, and the learners' responsibility is to rearrange it to its proper order. Learners can achieve many communicative challenges when discussing how to order the parts of the text (Johnson, Johnson, & Stanne, 2002). Moreover, a jigsaw can genuinely contribute to creative learning in favor of face-to-face and group interaction (Gallardo, Guerrero, Collazos, Pino, & Ochoa, 2003).

2.4 Advantages of Jigsaw Interactive Reading

According to Aronson (2008), the jigsaw method increases separate and group challenges and boosts teamwork. Jigsaw learning decreases uncomfortable emotions and inspires self-assurance (Mengduo & Xiaoling, 2010). The jigsaw method delivers a scheme in which learners can present individual answerability, lead interaction, and debate through groups (Parmadyani, 2013). Perhaps the significance of this method is that its advantages are more than its disadvantages. Similarly, Astane and Berimani (2014) have added that one of this method's critical benefits is learners' acceptance of more teamwork. However, a serious weakness with this argument is whether all types of personalities accept teamwork and have a positive attitude or not. The four benefits of the jigsaw method have been concluded by Hamzah Alamri (2018).

First, learners can practice with different groups containing distinct characters and beliefs to achieve particular academic goals. Second, there are collaborations and participations. Third, it develops learners' investigation,

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synthesis, and assessment abilities. Fourth, it gives learners a chance to strategy their performances and formulates specific questions that augment enthusiasm and assist through the mandatory tasks. Usually, the jigsaw technique influences the principal's gratitude by learners and constructs a better learning environment.

Furthermore, the important improvement of jigsaw reading is that learners be able to dominate additional tasks in a small number of time, particularly considering the main part of the text. However, a question that needs to be asked is whether both adults and adolescents can benefit equally from this method. Jigsaw reading used to be very straightforward in the classroom and a free stress method. Jigsaw reading can be helpful through cooperative learning at any capability level through the instruction of reading comprehension. Kagan (1994) vied that jigsaw is a method to utilize whenever learners want to intensify mastery on a topic at hand, advance their conception growth, improve selected debate amid learners, along increase the group project involvement and learning. One of the explanation boundaries is that it does not elucidate the usefulness or ineffectiveness of different types of individuals of different ages.

Suyanto (2012) also states that learners can be more answerable in teaching-learning to apply jigsaw cooperative learning. Therefore, they understand a difficult and solve it together in a group. The jigsaw method indicates that learners' reading comprehension progress increases considerably. The delinquent with this claim is that it fails to take the outcomes of reading anxiety into account. Cooperative class is never dull, and learners are not bored as well as they take part in class communication and learn the lessons well (Amedu & Gudi, 2017). It seems that Amedu and Gudis' understanding of the jigsaw cooperative framework is questionable. Mengduo and Xiaoling (2010) state that learners' unwillingness and nervousness to take part in tasks was decreased by the jigsaw method, and also it can boost their self-esteem and confidence. Stimulating learner contribution and eagerness along with a useful strategy is an effective way for language learners to achieve learning tasks. One major criticism of Mengduo and Xiaoling's work is whether all age groups' nervousness can decrease in favor of the jigsaw method.

Based on Dwiniasih and Nugraha's examination (2019), the jigsaw is another interactive learning approach that may possibly increase learners' reading ability. The outcomes designated that jigsaw cooperative learning makes learners' achievement better. It seems that, in general, this method can be beneficial in learning settings. Besides, Azmin (2016) scrutinized the influence of the jigsaw method on learner performance in psychology and their outlooks towards it. The participants' outlooks indicated that they enjoyed from jigsaw method and acted better after the involvement significantly. This research revealed that the jigsaw approach could upsurge the learners' reading skills. We can claim that this method may positively impact learners' attitudes. Similarly, Nazari et al. (2016) explored the impact of jigsaw tasks as an interactive method on the reading skills of EFL learners. The outcomes demonstrated the benefit of the jigsaw method contrary to the customary one. According to their achievement, in contrast with the jigsaw method, traditional methods cannot positively affect learners' accomplishments.

Sabbah (2016) studied the consequence of the jigsaw strategy on learners' success in reading skills. The consequences indicated significant variations for the experimental group. However, the need to ask whether this method affects learners' low level of reading anxiety or not. Moreover, Amedu and Gudi (2017) examined learners' attitudes concerning the collaboration method. Findings revealed that learners had positive outlooks toward the cooperative jigsaw method. This method probably has positive impressions based on the learners' perspective. Tahrun, Simaibang, and Iskandar (2017) reconnoitered the impact of the cooperative jigsaw method and conventional technique regarding learning interest concerning reading ability accomplishment of business letters. Outcomes showed a significant impact of jigsaw learning concerning reading ability success of business letters. Based on their outcomes, it was indicated that this interactive method may positively affect other subject matters as well.

Also, Ghafournia and Mohammadpur (2015) explained that reading anxiety influences reading accomplishment. The results indicated substantial changes surrounded by the participants in diverse levels of reading capability. The learners at the great along with intermediary reading levels varied extensively from those at a lower reading level in reading anxiety. One major criticism of Mohammadpur and Ghafournia's work is that their study had not scrutinized any interactive method. Although there is evidence of the impact of anxiety on reading skills in their research, two age groups' differences had not been investigated and compared, which is one of the aims of the current study. A great deal of literature has been found on applying the suitable method in a learning situation. In this respect, Ghorbani Nejad and Keshavarzi (2015) explored the impact of cooperative learning on reading skills and pre-university learners' reading anxiety. The results exposed that the control group was more restless in reading than the experimental group. One of the limitations of this explanation is that it does not focus on the particular cooperative learning technique.

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Likewise, focused on the difference in age groups was not investigated. It has been demonstrated that cooperative learning results in participants' tendency to provision the application of interactive approaches in reading conception (Farzaneh & Nejadansari, 2014).

Mei and Michelle (2014) suggested the connections among reading anxiety and reading conception, together with the issues enhancing reading anxiety, relating first language and second language. The outcomes revealed that associated reading anxiety with both first language (L1) and second language (L2) reading performance. Moreover, the discoveries specified that reading frequency contributed to a significant reduction in English reading anxiety. One of the boundaries of this description is that it does not elucidate why and how reading contributed to the decrease in reading anxiety without applying any specific methods. Tran and Melbourne (2012) examined the jigsaw method's impact on learners' outlooks in a higher education study room. The outcomes indicated that most learners were interested in working with others, debating and exchanging information, instructing others, assisting each other, and enjoying the jigsaw learning.

However, one question that needs to be asked is whether other language proficiencies, such as intermediate learners, have a positive attitude about this method or not. Mengduo and Xiaoling (2010) considered whether the jigsaw method could effectively accomplish the intended task in the college English class. As a result, the jigsaw method is an operational way to encourage learners' contribution and eagerness and a suitable method for learners to attain learning errands in the EFL classroom. Correspondingly, Kazemi (2012) investigated the jigsaw approach impact on the accomplishment of Iranian learners regarding their reading success. The outcomes similarly revealed the usefulness of the jigsaw method. One major criticism of Kazemi's work is that the learners' level of reading anxiety was not focused or investigated, which presents the study's aim.

3. Methodology

3.1 Design of the Study

The current study trailed a true experimental design. The examination involved jigsaw technique as an independent variable with reading comprehension and reading anxiety as two dependent variables. Hence, the present study's target is to scrutinize the reading comprehension classes on the basis of jigsaw technique and examines its probable influence on reading comprehension, as well as reading anxiety of the foreign language learners of English.

3.2 Participants

As many as 205 EFL participants established the population. They were studying English at Acer English-café (Jahad Daneshgahi) in Zanjan Province, Iran. The learners shared similar cultural and linguistic backgrounds. A reduced sample, comprising 100 intermediate learners, was selected through convenience sampling which contained both adults and adolescents and both genders. The adults' age range was 19-40 and the adolescents' age was 13-18. They were quite willing to participate in the project, mainly because they were informed of the research purpose and goals. Considerations regarding research ethics, namely seeking consent, confidentiality, and anonymity of individuals were observed as much as research limitations allowed (Creswell, 1998). Participants were allocated into two groups of intermediate learners: the control group (CG) and the experimental group (EG) randomly. To know participants' language level and also to realize whether they are homogeneous groups or not, the Oxford Placement Test was taken. The control group and the experimental group consisted of forty (N=40) and sixty (N=60), respectively. The EG was administered by instructing an interactive jigsaw reading method. The CG group did not receive any treatment. Table 1 summarizes participants' demographic features.

Table 1. Demographic information of participants in the study

Variable		Frequency	Percentage
Gender	Male	46	46%
	Female	54	54%
Total		100	100%

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Age groups in the experimental class	Adults	29	48.33%
	Adolescents	31	51.621%
Total		60	100%
Students in the experimental study	Control group	40	40%
	Experimental group	60	60%
Total		100	100%

3.3 Instruments

3.3.1 Reading Comprehension (Pretest and posttest)

Two equivalent tests were directed as the pre-test and post-test for measuring reading capabilities. They encompassed 5 passages of reading with eighteen MC items. The reading passages were selected arbitrarily from the sample tests regularly used to quantify learners' reading skills in Iranian educational settings. These texts were arbitrated to be fitting for intermediary level learners. Each pre and the post-test question was worth one point in assessment. To improve the validity of the tests, the researchers revised the tests several times after consulting with a team of experienced EFL teachers and Ph.D. holders in the field of Applied Linguistics. The experts were asked to consider the face validity and content appropriateness for the intended group of participants. The tests were piloted with 20 students similar to the target group. Since these tests were teacher-made, they were piloted first and Cronbach's alpha reliability coefficients were 0.69 and 0.71 for pre and post-test, respectively. The pre-test and post-test were also validated through exploratory and confirmatory factor analyses running the IMB SPSS software and IBM AMOS (ver. 22). The final indices including the chi-square value, $X^2(۱۳۱) = ۶۴۶.۵۳۲$, p=0.000; NFI = 0.947; TLI = 0.944; CFI = 0.955; RMSEA = 0.046; SRMR = 0.029 display the model goodness of fit and confirm the validity of both tests accordingly.

3.3.2 Reading Anxiety Questionnaire

The third instrumentation was a reading anxiety questionnaire. The participants responded to the questionnaire before and after the treatments which were validated by Zoghi (2012). Zoghi (2012) investigated the internal consistency, test-retest reliability, and construct validity indices of the questionnaire and argued for its acceptable reliability and validity. Cronbach-alpha internal consistency estimate for EFLRAI, including 27 items was found to be 0.89. Zoghi and Aliverdfard (2014) examined the factor structure and psychometric properties of the EFLRAI using Exploratory and confirmatory factor analyses. Reliability analysis was also conducted to provide an indication of the internal consistency of the measurement instrument. The findings of the study confirmed the adequacy of the three-factor model for the EFLRAI and an acceptable internal consistency. The results not only supported the EFLRAI's multidimensionality, but also indicated the usefulness of the EFLRAI in reading anxiety research among non-English major students. Accordingly, this questionnaire was adopted for measuring anxiety. The researchers administered the Persian translation of EFL Reading Anxiety Inventory (EFLRAI) by Zoghi (2012) to the experimental group before and after the treatments and instructions.

3.4 Procedure

3.4.1 Teaching Process in the CG

The teaching started with 40 intermediate learners from both age groups and genders. A text was chosen from the Oxford Intermediate Reading textbook. Then the reading text was distributed, each individual had all the parts of reading. The instructor asked the learners to read the text separately and translate the text. As a final point, the learners responded to the reading conception questions separately. This process takes one term and lasts four or five weeks. For assessing reading ability, the participants took a pretest of multiple-choice reading comprehension before the beginning of the instruction. After performing the instruction, the learners took a multiple-choice reading comprehension as a posttest.

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3.4.2 Teaching Process in the EG

Learners were separated into minor groups. The experimental group was assigned a reading text from a similar origination. Then, separate paragraphs were distributed between the learners. The teacher made new small "Skillful" groups with those who needed to read similar content. The learners discussed what they were required to read and their probable responses following their return to their respective cooperative groups. The original interactive jigsaw groups were reformed by the instructor. Then each individual explained the materials involved in the text to the other group. The learners shared knowledge, ideas, and the info they had grasped from the text they read. Each fellow of the "skillful group" took duty and exchanged their study material with the different group fellows so that they may perhaps have a way into the entire text and were able to rearrange it. Then each fellow of the group collaborated with the other group regarding the content. Each person in the group was also accountable for learning from the others. Finally, the instructor closed with numerous significant questions for learners to debate the facts with the groups or the whole class.

3.5 Data Analysis

For analyzing data, the Statistical Package for the Social Sciences (SPSS) version 25 was applied. In order to answer each research question, an appropriate analytical technique was chosen. More specifically, independent samples t-tests were applied to answer the first two research questions, and a paired samples t-test was used for the data analysis related to the third research question.

4. Results

4.1 Outcomes of the First Research Inquiry

The first research question aimed at identifying the possible effect of jigsaw method as the treatment in the study on the learners' reading ability. In this line, the test of reading ability was administered to the control and experimental group to ensure the homogeneity of learners' level of reading ability prior to the intervention in the EG. A test of normality was run to investigate the normality of the distribution of data. The results of Kolmogorov-Smirnov and Shapiro-Wilk statistics indicated that the data distribution was normal. Table 1 shows the results of Kolmogorov-Smirnov and Shapiro-Wilk statistics indicating that the data distribution is normal. This led us to choose a parametric statistical technique. Independent samples t-test was then conducted to find if there is a significant change in the mean scores in terms of learners' level of reading skill. Table 2 displays the descriptive statistics for the pretest findings of reading comprehension.

Table 2. The results of normality test for the pre-test scores

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
Pre-test	.214	100	.091	.908	100	.250

a. Lilliefors Significance Correction

Table 3. Descriptive statistics for the reading comprehension pretest

	Group	N	Mean	Std. Deviation	Std. Error Mean
Pretest on Reading comprehension	Control group	40	1.7392	0.27500	13.525
	Experimental Group	60	1.7783	.22958	13.583

Table 3 demonstrates the results of independent samples t-test for the pretest on reading conception.

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Table 4. T-test results for the reading comprehension pretest

	Levine's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Pre-test	.191	.663	-.162	98	.872	-.05833	.35985	-.7724	.6557

As represented above, there is no statistically significant variance among CG along with EG in their reading ability [t (98) = -0.162, p = 0.872]. This outcome shows that the learners in both groups were homogenous regarding their performance on the test of reading conception before treatment was applied to the EG.

Afterward, the study aimed to compare the reading ability scores in the post-test for CG together with EG after treatment application. However, a preliminary analysis was conducted to ensure no violation of the assumption of normality. The results of Kolmogorov-Smirnov and Shapiro-Wilk statistics indicating that the data distribution is normal (Table 5). Accordingly, an independent samples t-test was conducted to compare the scores of the reading skill in the post-test for CG and EG after the application of treatment. Table 6 displays the statistics for the posttest results.

Table 5. The results of normality test for the post-test scores

Tests of Normality

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Post-test	.159	100	.091	.936	100	.080

a. Lilliefors Significance Correction

Table 6. Descriptive statistics for the reading comprehension posttest

	Group	N	Mean	Std. Deviation	Std. Error Mean
Posttest on Reading comprehension	Control group	40	14.1000	1.41058	.22303
	Experimental Group	60	15.7667	1.58774	.20498

As shown above, the mean score for the learners in the EG (M = 15.76, SD = 1.58) is greater than the mean of the CG (M = 14.1, SD = 1.41). Table 7 proves the results of independent samples t-test, including the significance level of the mean difference between the groups.

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Table 7. T-test results for the reading comprehension posttest

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Post-test	2.525	.115	-5.37	98	.000	-1.66667	0.31021	-2.2822	-1.0510

As the above table specifies, there is a significant difference in scores for CG and EG [t (98) = -5.37, p = 0.000]. The effect size was calculated to be large (eta squared= 0.227).

4.2 Outcomes of the Second Research Inquiry

This potential age effect of the study hypothesis was anticipated to reconnoiter the learners' reading conception capability as the arbitrator variable in the research. The learners in the EG were allocated into two adults groups and juveniles rendering to their age variety. Introductory normality investigation outlined ordinary data dissemination (Table 8). Formerly, an independent samples t-test was utilized in comparison to the learners' scores on the reading comprehension post-test in these two groups. Table 9 designates descriptive statistics of grown-ups' as well as juveniles' scores on the post-test.

Table 8. Normality test results for the post-test in two age groups

	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Post-test	.169	60	.076	.887	60	.080

a. Lilliefors Significance Correction

Table 9. Descriptive statistics for adults and adolescent' scores in the EG

	Age	N	Mean	Std. Deviation	Std. Error Mean
Post-test	Adult	29	16.0000	1.43925	.26726
	Adolescent	31	15.5484	1.70956	.30705

As signified in the beyond the table, the grown-up's mean scores surpass those of the young teenagers. Nonetheless, as indicated in Table 10, the t-tests outcomes disclosed the alteration in the mean scores is insignificant.

Table 10. Test for adults and adolescents' scores in the EG

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper

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Post-test	2.649	.109	1.103	58	.275	.45161	.40943	-.36795	1.27117

The post-test discoveries indicated the discrepancy amid the learners' scores was non-significant for grown-ups (M = 16, SD = 1.43) and young-teenagers [(M = 15.54, SD = 1.70), t (58) = 1.10, p = 0.275].

4.3 Outcomes of the Third Research Inquiry

The third research inquiry addressed the possible contribution of jigsaw method to the reduction of learners' reading anxiety. The results of Kolmogorov-Smirnov and Shapiro-Wilk statistics indicate that the assumption of normality is met for the obtained data (Table 11). As a result, since the scores of the learners in the EG on their reading anxiety were compared on two different occasions (i.e., before and after the implementation of jigsaw method as the treatment), paired-samples t-test was adopted as an appropriate analytical technique to compare the mean scores. A paired-samples t-test was conducted to evaluate the impact of the intervention (i.e., jigsaw method) on the learners' scores of EFL reading anxiety.

Table 11. Normality test results for the reading anxiety tests

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
RAtime1	.087	60	.300	.984	60	.0642
RAtime2	.144	60	.103	.908	60	.0801

a. Lilliefors Significance Correction

Table 12. Descriptive statistics for reading anxiety of time 1 and time 2

	Mean	N	Std. Deviation	Std. Error Mean
Reading Anxiety Time 1	62.1667	60	13.43177	1.73403
Reading Anxiety Time 2	44.9333	60	11.01750	1.42235

Table 12 displays the statistics for the paired samples in the t-test. Time 1 refers to the group of scores obtained before the application of the treatment in the class. However, time 2 includes the scores collected when the test was administered after the treatment has been introduced to the class. Table 13 reveals the results of paired samples t-test for the test of reading anxiety prior to and after the treatment.

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Table 13. Paired-sample T-test for the experimental group's reading anxiety before and after treatment

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	RATIME1* RATIME2**	17.23	12.34	1.59	14.04	20.42	10.81	59	.000

*Reading anxiety time 1

**Reading anxiety time 2

As indicated in Table 8, there is a statistically significant decrease in reading anxiety scores from Time 1 (M = 62.16, SD = 13.43) to Time 2 [(M = 44.93, SD = 11.01), t (59) = 10.81, p<.05)]. The eta squared statistic (0.65) indicated a large effect size.

5. Discussion

The current paper inquiry was to evaluate the intermediate development reading capability of Iranian learners through the jigsaw method. Statistical results investigation in the EG discovered that the learners' mean score was more significant than the mean score of the CG. It further implies that the learners furthered from the jigsaw method in the EG. However, the placebo applied to the CG was more favorable to the learners. Furthermore, learners are not challenged to understand the themes after sharing ideas. The findings of this research inquire with Tomah's theory of cooperative learning assessment (2011). He claims that in traditional reading, learners do not search for topics and components diagnostically, and as a result, teachers and learners do not have a chance to have a dynamic class. Based on this theory, the jigsaw technique encourages cooperative learning and cooperative assessment accordingly, resulting in establishing a fluid class with dynamic peer learning, *per se*. According to Aronson (2008), the jigsaw method increases separate and group challenges and boosts teamwork. The outcomes of the first inquiry are in line with Sami Ali's (2001) study. He scrutinized the consequence of the jigsaw interpretation method on the EFL pre-service teachers' English language reading anxiety and understanding. The research results exposed a substantial variety amongst the experimental and control groups. This specifies that using the jigsaw interpretation method reduces foreign language reading anxiety. Also, the outcomes agree with nearly all of the earlier research results. Kazemi (2012) investigated the jigsaw teaching impact on the Iranian EFL learners' success. The research established between post-test reading scores and the learners' pre-test scores, indicating comparison and improvement.

Similarly, the present research outcomes can be supported by Marleni (2016), who investigated the learners' first-semester reading understanding of the English study program of reading understanding by utilizing the jigsaw method. The outlined outcomes improve the learners' reading understanding over the jigsaw approach. Similarly, Nazari et al. (2016) studied the influence of the jigsaw task as an interactive method on reading skills of Iranian EFL learners' improvement. The outcomes proved the effectiveness of the jigsaw method compared to the customary one. The results also support Ghorbani Nejad and Keshavarzi (2015) and Sabbah (2016). Ghorbani Nejad and Keshavarzi (2015) discovered the collective learning impact on pre-university learners' reading skills and reading anxiety. The outcomes showed a substantial variance among the mean scores of the experimental and control groups. It suggested that the control group was more concerned with reading than the experimental group.

Correspondingly, Sabbah (2016) probed the influence of cooperative jigsaw techniques on learners' success in reading ability. She indicates that there were substantial distinctions for the EG. Moreover, the outcomes agree with Tahrun et al. (2017) and Rashtchi et al. (2021), who investigated the impact of the jigsaw method and conventional training approach regarding learning interest towards the achievement of reading comprehension among business letters. They reported no substantial impact of the jigsaw method. Dwiniasih and Nugraha (2019) examined the jigsaw technique in learning that possibly will fortify learners' reading ability. The results showed that jigsaw implicates learners' success. Based on the outcomes of the gathered data and some previous studies in the literature, learners understand a

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difficulty along with solving it in a group. It can be concluded that the jigsaw method might significantly enhance the learners' reading understanding.

The 2nd study presents a research inquiry of any transformation amongst grown-ups and young teenagers concerning the impact of the jigsaw method on their reading comprehension performance. Results of the statistical investigation indicate no substantial alteration in this respect. The researchers' best knowledge illustrated no related research outcome was covered in the associated literature. Therefore, these discoveries appear to be innovative investigation result that entails advanced research to be decisively proven.

The 3rd research inquiry deals with whether the jigsaw method reduces reading anxiety or not. Statistical examination revealed that learners' reading anxiety scores were higher prior to treatment than later treatment. In other words, learners' level of reading anxiety was substantially diverse after implementing the jigsaw method. Correspondingly, the jigsaw method was a benefit to the learners' emotions. Supported by Mohammadpur and Ghafournia (2015), Namaziandost, Pourhosein Gilakjani, and Hidayatullah (2020), and Barbosa, San Joe, and Robles Concepcion (2020), who explained the influence of foreign language anxiety on the achievement of reading conception among Iranian EFL learners. They found a substantial alteration between the applicants. The research outcomes inquiry is also in line with the claim of Mengduo and Xiaoling's theory of self-assurance (2010), based on which jigsaw learning decreases learners' uncomfortable emotions, diminishes their anxiety, and inspires self-confidence well. Based on this theory, the jigsaw technique stimulates learners' greater confidence. It promotes higher levels of encouragement which ultimately leads to lower measures of anxiety and stress in tackling learning tasks. Based on data analysis, learners could foster good relationships with one another. Similarly, this method fortifies class participation and decreases learners' uneasy emotions, and inspires self-assurance (Mengduo & Xiaoling, 2010).

6. Conclusion

According to previous studies, the jigsaw method can make learners more control the teaching-learning process. The study findings may come up with ground-breaking intuitions in jigsaw interactive reading along with learning; in addition, it might integrate the conclusions of the interrelated literature. Throughout this research, the scholars have performed a cooperative-based method in the investigation to obliterate those mutual fallbacks in reading conception through employing the jigsaw method. Moreover, teachers can take advantage of the research outcomes by invigorating their learners' L2 reading ability in favor of the jigsaw method. Based on the two age groups' challenges in reading conception, and since there is no significant difference in adult and adolescents' degree of anxious feeling through reading performance, this study tends to examine the difference between these two age groups. Likewise, this research manages to overwhelm the barriers that encumber reading comprehension and elevate learners' self-assured and self-regard. More precisely, the focal objective of this research is to ascertain whether learners would be more efficient in achieving their desire and upsurging their reading capabilities by executing the jigsaw method.

The outcomes designated a perceptible influence on learners' reading comprehension accomplishment in the post-test. A substantial modification in mean scores of the EG vs. the CG was seen. Consequently, it was decided that the directive thru the jigsaw method provided learners' momentous achievements in reading activities. The 2nd study inquiry probed any potential alteration in grown-ups' reading performance vs. juveniles treated with the jigsaw reading method. The post-test outcomes outlined that the alteration transversely between middle age (M= 16) and young teenagers (M= 15.54) did not display significance. Therefore, undoubtedly no extensive variance through the prerequisite of grown-ups and young-teenagers from this method was present. The 3rd study inquiry paid attention to the potential impact of the jigsaw method on decreasing learners' reading anxiety. The outcomes unveiled a statistically substantial decline in reading anxiety scores. Henceforth, reading anxiety was subsequently lessened by the jigsaw method's carrying out.

6.1 English Language Teacher's Implications and EFL Learners

Numerous recommendations are mentioned based on this study's results to assist teachers in distinguishing the challenging issues between their learners in the study rooms. Instructors can deliberate these commendations to manage the obstacles along to generate vibrant and observant classes (Namaziandost, Pourhosein Gilakjani, & Hidayatullah, 2020). Initially, since learners' relations and contribution are crucial aspects of cooperative learning, the teacher must inspire and reassure learners to collaborative work. In this vein, learners develop information-sharing capability with different associates together with getting a chance to work with different characters along with

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individualities inside the group (Tran & Melbourne, 2012). Secondly, teachers ought to elevate learners' self-assurance by making them accountable for the given tasks and attainment (Mengduo & Xiaoling, 2010).

Thirdly, teachers should increase the learners' understanding of the whole theme, reduce their anxiety along with creating an environment without stress alongside working on a task. This assists the learners in feeling self-assured and calm and rendering their duties successfully. 4th and last, the instructor's primary duty is to implement particularly along with determined responsibilities and study resources associated with the learners; the teachers may take advantage of cooperative models and observe the pragmatism of this method for attaining academic goals (Hamzah Alamri, 2018). Various kinds of interactive forms can be beneficial for learners, and they can progress their social abilities and identify the significance and benefits of group work (Amedu & Gudi, 2017). Teamwork puts learners in charge of the tasks both in and outside the group. Learners developed proficiency in regulating their anxiety and performance assuredly amid the tasks.

6.2 Limitations of the Study

Similar to any other study, the present study faced certain limitations. Conducting this research required and took considerable time, the researchers had serious challenges to ask for the permission of the institute's manager. Also, in order to conduct this study in the CG the researchers asked the other teachers for their collaboration, but some of them were reluctant to spend their own time administering the tests in their own classes. Likewise, administration of placement tests required a separate session and it was challenging to assemble sufficient participants from two age groups in one session. Meanwhile, time limitation was another vital problem. The participants and teachers needed sufficient time to administer the study. The learners required more time to respond and complete the selective questions and the researchers needed more sessions to give treatment.

6.3 Suggestions for Further Research

This study only holds on intermediate learners. Prospect research can be directed with other language proficiencies, such as advanced, upper-intermediary, or elementary, attended with different cooperative learning methods natures like Inside-Outside Circle, Learning Together, Complex Instruction, Group Investigation, Constructive Controversy, Teams-Games-Tournaments, etc. (Namaziandost, Pourhosein Gilakjani, & Hidayatullah, 2020). Subsequent researchers will manage the jigsaw approach with different language skills, such as jigsaw listening and jigsaw writing in terms of diverse or similar ages along with skills. Other language components along with jigsaw cooperative learning such as jigsaw grammar and jigsaw vocabulary will be investigated by the later scholars.

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