The Effect of Jigsaw Technique on Enhancing EFL Intermediate Students' Writing Skill

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تاثير تقنية جكسو على تعزيز مهارة الكتابة لدارسي اللغة الانكليزية لغة أجنبية لطلاب المرحلة المتوسطة

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الملخص:

تهدف الدراسة الحالية الى اكتشاف تأثير استخدام تقنية Jigsaw في تحصيل طلاب الثاني المتوسط في مهارة الكتابة. تضمن مجتمع البحث جميع طلاب الثاني المتوسط في مركز محافظة بابل للعام الدراسي (2016–2017). اختيرت شعبتين عشوائيا من متوسطة صفي الدين للبنين لتمثل المجموعة التجريبية (30) والمجموعة الضابطة (30). قام الباحث ببناء اختبارين تحصيليين (قبلي وبعدي) لمهارة الكتابة. استعمل الباحث الاختبار التائي لعينتين مستقلتين لتحليل البيانات التي تم الحصول عليها. أظهرت النتائج ان تقنية Jigsaw تعتبر اكثر فاعلية, مفيدة ومواتية لتعليم مهارة الكتابة اكثر من الطريقة التقليدية.

الكلمات المفتاحية: مهارة الكتابة, جكسو .

Abstract:

The present study aims at finding out the effect of using jigsaw technique on the achievement of 2nd intermediate school students in writing. The population of the study comprises the second-year students at the intermediate schools for boys in the center of Babylon Governorate for the academic year (2016-2017). Two samples were randomly selected from Safy Al-Deen Intermediate School for boys to represent the experimental group (30 students) and the control group (30 students). pre and post tests were constructed by the researcher. A T-test formula for two independent samples is used to analyze the obtained data. The results showed that Jigsaw technique is considered more effective, useful, and favorable to teach writing skill than the conventional one.

Key words: Jigsaw, Writing skill.

1. Introduction

1.1.Statement of the Problem:

writing is an active skill which requires production more than recognition, so L2 writers have to note the higher level skills of planning and organizing and lower level skills of spelling, punctuation, word choice, and so on (Richard and Renandya, 2002: 303)**.**

The problem of this study is that Iraqi EFL intermediate school students face many difficulties when they manifest their writing performance. This is due to lack of suitable teaching techniques used by teachers to teach writing.

1.2 Aim of The study

This study tries to find out the effect of using jigsaw technique on the achievement of intermediate school students in writing.

1.3 Hypothesis

It is hypothesized that:

There is a statistically significant difference between the students' mean scores of performance of the experimental group which is taught writing performance by means of the proposed technique and that of the control group which is taught writing according to traditional method of teaching.

1.4 Value of the Study

It is hoped that this study will be of value in the following aspects:

1- The suggested technique will be of value for teachers through providing the learners with new strategies such as Jigsaw which can be used by teachers to help students develop their writing skill.

2- The suggested study will be of value to syllabus designers through presenting and including syllabuses that focus on culture and presenting authentic material in their books.

2.Theoretical Background and Related Studies

2.1 History of Cooperative Learning

The concept of cooperative learning as a teaching method gained momentum in the early seventies. According to Sharan(1994:3) "the new wave of cooperative learning appeared in the early seventies following the pioneering work of John Dewey and later Alice Miel and Herbert Thelen in the 1950.

Colonel Francis Parker was one of the most influential proponents of CL in the late nineteenth century. His fame and success originated in his suggestions of links between CL and democratic education, his enthusiasm to advocate for the use of CL in public schools, and his efforts to spread CL perspectives and practical procedures. His methods of structuring cooperative groups influenced American education through the turn of the century. In the early twentieth century, John Dewey (1924) developed Parker's connection between CL and democracy and extended the use of CL in his project method of instruction at school. Dewey maintained that building up a democratic and cooperative setting at schools is vital for individuals to be cooperative and live democratically in real life. Around the late 1960s, on the basis of Deutsch's perspectives, David Johnson and his brother Roger Johnson (Johnson et al., 1994, 1998) established social interdependence theory. It is developed by David Johnson and Roger Johnson in 1970s, asserts that the way social interdependence is structured determines how individuals interact which, in turn, determines outcomes. (Johnson et al., 1998:3-6).

CL regained strength in the 1970s as a well-recognized effective school practice for providing students of different ethnic groups with opportunities, cooperative interactions (Slavin, 1995:51). Since then studies on CL have abounded and some leading CL researchers (e.g. Elliot Aronson, Lynda Baloche, Elizabeth Cohen, Robyn Gillies, George Jacobs, David Johnson, Roger Johnson, Spenser Kagan, Shlomo Sharan, Yeal Sharan, Robert Slavin) have engaged in exploring specific 18 applications of CL to classroom teaching, which has resulted in a number of different methods and models.

In the mid of 20th century where applications of cooperative learning drew its development to sociology and social psychology specifically to Morton Deutsch's studies of group dynamics. This continues on, as Cooperative Learning is believed to make educational magic in a uniquely 21st century way.

2.1.1 Jigsaw Technique (IV)

Jigsaw was first designed in 1970s by Aronson and his colleagues, as an attempt to implement the desegregation of schools and build up good relations between children in multiracial situations. Its name derives from the metaphor of putting together the pieces of a puzzle to create a whole picture (Clarke, 1994: 36).

Having tried Jigsaw II and III in a social classroom studies at both the middle and high school levels, certain concerns were brought to the fore front by student surveys addressing cooperative learning and in particular the jigsaw strategies. This research in the use of the cooperative learning technique Jigsaw III(Holliday,2000) at the secondary level found these concerns to be apparent to students: A) How do I know I have the right answers? B) How do we know as a group our answers are correct?

The same research indicated several concerns by the teachers involved with the use of the strategy. A) How do I know the students learned the required material to move on sufficiently? These concerns were addressed by the creation of Jigsaw IV.

These concerns were addressed by the creation of Jigsaw IV illustrated in the chart (Figure 1) which is a comparison of Jigsaw II,III and IV. This chart shows the major differences between these three distinctive, though related strategies. Note that the major differences between Jigsaw III and Jigsaw IV Is found in an introduction to the lesson, and the two quizzes that check for accuracy of information gathered by the students. A third slight difference is the re- teaching of material that was considered not learned by the students after reviewing the assessment. This is up to the discretion of the teacher and may or may not be needed. The chart is illustrated below.

Jigsaw II	Jigsaw III	Jigsaw IV
1.		Introduction
2. Expert sheets assigned to expert groups.	Same as II	Same as II
3. Groups answer expert questions prior returning to home teams	Same as II	Same as II
4.		Quiz on material in the expert groups checking for accuracy
5. Students return to Home Teams sharing their information with other members of the group	Same as II	Same as II
6.		Quiz on material shared checking for accuracy
7.	Review process	Same as III whole group by Jeopardy, or Quiz Bowl,etc
8. Individual assessment and grade	Same as II	Same as II
9.		Re- teach any material missed on assessment as needed

2.1.2 Benefits of Using Jigsaw as a Technique

Tewksbury (2000:3) states the benefits of the jigsaw technique as follows:
1. Students have the opportunity to teach themselves, instead of having material presented to them. The technique fosters depth of understanding.
2. Each student has practice in self- teaching, which is the most valuable of all the skills. This can help them to learn.
3. Students have practice in peer teaching, which requires understanding the material at a deeper level than students typically do when simply asked to produce in an exam.
4. Each student has a chance to contribute something that is difficult to achieve in large group discussion. Each student develops an expertise and has something important to contribute.

2.1.3 Teachers' Role

Lie (1990:3), Flowers and Ritz (1994:15), and Thanasoulas (2002:2) assert that the teacher plays several roles in this process. These roles are defined as follows:
- Planning dynamic lessons for transfer of learning.
- Encouraging students to learn.
- Extending participation.
- Motivating high level thinking.
- Balancing interactions: teacher to student, student to material, student to student.
- Evaluating students.

2.1.4 The Role of the Group

Ventimiglia (1993:22) suggests a number of group roles that create social interdependence among students, and Joyce (2003:5) asserts that each member of a group assigns a task and gives a role by the instructor. These role cards are distributed among the students and they are as follows:
1. Recorder is the student who takes notes during the group discussion and compiles a presentation for the whole class.

2. Reporter is the student who presents the group   information to the   class.

3. Checker   is the student who monitors the group members' understanding of the topic under discussion and stops the group work for clarification when someone is confused.

4. Encourager is the student who ensures that everyone has opportunity to participate in the groups' praises members for their contributions.

5. Observer is the student who monitors and records the overall behaviors of the group.

2.2 The Principles of Cooperative Learning

Teachers must apply the following principles of CL

2.2.1 Positive Interdependence

Joyce (2003: online) states that learners must feel that they need each other and each one has a role and responsibility to finish the task. Team members are compelled to depend on one another to fulfill the goal. If any team members fail to finish their part, everyone will get unexpected consequences.

2.2.2 Individual Accountability

(Ibid) states that there are many ways to build individual accountability like: each student takes quizzes individually; each student in each group is accountable for a specific piece of information or portion of a task; each must be able to summarize another's ideas; any student may be asked randomly to answer the group.

2.2.3 Face-to-Face Primitive Interaction

To obtain meaningful face-to-face interaction, the size of groups needs to be small from(two to four members) as the perception that one's participation and efforts are needed it increases as the size of the group decreases. On the other hand, as the size of the group increases the amount of pressure peers may be placed on unmotivated group members.(Johnson & Johnson,1999:6).

2.2.4 Social Skills

The success of a cooperative learning effort needs personal relationships and small group skills. The teacher must be active to teach the students the social skills that require high quality in cooperation and use them effectively. Leadership, decision-making, communication, and conflict-management skills have to be taught accurately as academic skills. (Ibid)

2.2.5 Group Processing

Johnson and Johnson (2002:1) claim that Group processing is an assessment of how groups are participating inside and outside the classroom to fulfill their goals and preserving effective working relationships. They also need to explain what group actions are helpful or not helpful about what groups progress and make decisions concerning what behavior they want to change or adopt . Group members discuss the achievement of their common goals and establish effective working relationship.

2.3 Writing Skill

Heaton (1975: 135) states that the writing skills are complex and sometimes difficult to teach, requiring mastery not only of grammatical and rhetorical devices but also of conceptual and judgmental elements. The following analysis attempts to group the many and varied skills necessary for writing good prose into five general components or main areas.

1) Language use: the ability to write correct and appropriate sentences;

2) Mechanical skills: the ability to use correctly those convention speculiar to the written language - e.g. punctuation, spelling;

3) Treatment of content: the ability to think creatively and develop thoughts, excluding all irrelevant information;

4) Stylistic skills: the ability to manipulate sentences and paragraphs, and use language effectively;

5) Judgment skills; the ability to write in an appropriate manner for a particular purpose with a particular audience in mind, together with an ability to select, organize and order relevant information.

2.4 Skills of Writing

In order to write, the learner needs a lot of skills to accomplish this task. Writing process involves various aspects, some are mechanical and sophisticated processes involved in written communication (Hadley, 2003:290). Crystal (2006:136) shows three types of skills required to learn writing:

2.4.1 Motor Skills

They include the correct formation of letter shapes, letter sizes, word spaces, spaces between lines, margins and other matters of layout need to be consistent, if a writing style is to be acceptable.

In addition to the writing posture (the position of the body for writing), finger movement and management strategies such as the need to move the writing paper upwards as one near the bottom of a page (rather than to move oneself, which is what some children do).

2.4.2 Functional Skills

These skills entail ways of formulating thoughts reflecting on what the learners mean. Here, writing is an integral part of the process of learning .Writing is used for an indefinitely large number of purposes to express feelings, tell stories, report events, complete forms, and keep records and much more.

2.4.3 Linguistic Skills

In addition to motor ability and functional awareness, young writers need to develop the ability to use structures of language appropriately and other mature manner. This ability takes several years to emerge. At the beginning of learning writing system is used to express the patterns of speech. Later writing diverges from speech. The importance of drafting, revising and editing are essential ways of obtaining the best expression. The end of the process is a stage when writers have such a good command of language that they can vary their stylistic choices and develop their personal voice.

2.5 Classification of Writing Problems

It seems that there is a consensus among educationalists that writing, whether in first language (henceforth L1) or second language (henceforthL2), is the most difficult skill to master. Writing difficulties denote problems students encounter in the process of writing. Therefore, the classification of types of writing problems is various and different researchers have different directions for studying and sorting such problems according to their factors. According to Ellis (1994:342), writing problems come from the two main factors:

1. Social factors, and **2.**Cognitive factors.

Myles (2002:1-20) indicates that learners may continue to exhibit errors in their writing for the following social reasons:

1. Negative attitudes toward the target language.

2. Continuous lack of process in the L2.

3. A wide social and psychological distance between them and the target culture, and

4. Lack of integrative and instrumental motivation for learning.

3: Procedures and Methodology

The following pages shed light on the design of the experimental work and presents a detailed description of the procedures that are followed in order to achieve the aim of the present study.

3.1 Design of the Study

The experimental design in this study is a non-randomized pre-post tests and control-experimental groups design. (Best and Kahn ,2006:177).

3.2 Population of the Study

The population of the present study comprises all second-grade students in the intermediate schools in the city center of Babylon province.

3.3 Sample of the Study

The sample is represented by Safy Al-deen intermediate School which has randomly been selected. It includes 138 second-grade students distributed into four sections A,B,C and D. The researcher has non randomly chosen section (C) as an experimental group and section(A) as a control group. Section (C) consists of 33 students and section(A) consists of 34 students. After excluding the repeaters in every section, the number of the students has become 30 for each group, as shown in Table 1.

Table 1 The Sample of the Study

Groups	Section	Type of treatment	N before excluding	N after excluding
Experimental	C	With Jigsaw	33	30
Control	A	Prescribed way of English language teaching	34	30
Total			67	60

3.3 Equivalence of Subjects

In order to confirm that both EG and CG were initially equivalent, the two groups were equalized in the variables such as the subjects' age, the level of fathers' education, the level of mothers' education, the subjects' scores in the mid-year examination(2016-2017) and the subjects' scores in the pretest.

The extraneous variables jeopardizing internal and external validity that have been determined in order to avoid confounding the results of the study.

3.4 The Instructional Material

The researcher adopted material taken from *English for Iraq, Book 8*. Units 5,6 and 7 of the student's book and activity book were used in the experiment for both groups EG and CG. He taught them units4, 5 and 6, not just the composition writing section, because he applied the experiment as a teacher not as a researcher.

3.5 Instruction

The experiment started on the 20th of February 2017, and ended on the 27th of April 2017; that is; it lasted for nine weeks. Five lessons were dedicated to each group per week. The students of the EG and CG had the same circumstances except that the EG received the treatment of Jigsaw technique for teaching composition writing while the CG was taught composition writing by employing the prescribed technique. Both groups were taught by the researcher himself using model lesson plans exposed to a jury of experts.

3.6 The Pre-test

The purpose of the pre-test is to equalize the study subjects in their previous level in composition writing as well as to choose the leaders of the groups. The pre-test consists of one passage from English for Iraq: *"Restaurant"*

1. Reorder sentences (6 items);one score for each item.
2. Paragraph writing ; nine scores for full answer with right idea, the scoring of this question is as follows:
   a. Nine to eight scores for a full answer without grammatical and spelling mistakes.
   b. Seven to six scores for a full answer with simple grammatical and spelling mistakes.
   c. Five to four scores for an incomplete answer with grammatical and spelling mistakes.
   d. Three to two scores for an incomplete answer but the idea is correct.
   e. two to one scores for writing a few relevant words.
   f. Zero score for an irrelevant answer or no answer.
3. Reorder sentences (3 items); two scores for each correct item.
4. Paragraph writing ; nine scores for full answer with right idea, the scoring of this question is discussed above (2).
5. Punctuation marks (5 items); three scores for each correct item.
6. Reorder sentences (3 items); two scores for each correct item.
7. Paragraph writing; nine scores for full answer with right idea.

3.7 The Post-test

The posttest also involves one passage from English for Iraq (Book8) *"My favorite place in Iraq"*

1. Paragraph writing ; nine scores for full answer with right idea, the scoring of this question is as follows:

a. Fifteen to thirteen scores for a full answer without grammatical and spelling mistakes.

b. Twelve to ten scores for a full answer with simple grammatical and spelling mistakes.

c. Nine to seven scores for an incomplete answer with grammatical and spelling mistakes.

d. Six to four scores for an incomplete answer but the idea is correct.

e. Three to one scores for writing a few relevant words.

f. Zero score for an irrelevant answer or no answer.

2. Reorder sentences (3 items); two scores for each item.

3. Letter writing (9 marks); the scoring of this question is as follows:

   a. Ten to nine scores for a full answer without grammatical and spelling mistakes.

   b. Eight to seven scores for a full answer with simple grammatical and spelling mistakes.

   c. Six to five scores for an incomplete answer with grammatical and spelling mistakes.

   d. Four to three scores for an incomplete answer but the idea is correct.

   e. One to two scores for writing a few relevant words.

   f. Zero score for an irrelevant answer or no answer.

4. Completion items(6 items); one score for each item.

5. Paragraph writing (nine marks). The scoring of this question is discussed above (3).

6. Punctuation marks (5 items); three scores for each correct item.

3.7.2 Validity of the Tests

According to Shipley and McAfee (2008:6), test validity means that a test truly measures and assesses what it intends to measure. As a matter of fact, several types of validity have been proposed by the EFL specialists such as face validity, content validity, construct validity, etc. The major types of validity are face, content, construct and empirical validity

Content validity is " the extent to which a test measures a representative sample of the subject matter content" Seliger & Shohamy, 1989:88). A few slight modifications of the test materials were provided. Suggestions and comments of the jury members were taken into consideration when making the final version.

For the sake of securing face and content validity of the tests, they were checked by a jury of university and secondary school teaching staff members. The jury gave their notes regarding the test items; therefore, the researcher adjusted some procedures and items. Then, all the jury members with a percentage of 100 agreed that the test were valid in their face and content.

3.7.3 Piloting of the Tests

Piloting of the two tests was conducted at the second semester of the academic year 2016-2017 in Nafi'a bin-Hilal intermediate School for Boys in Babylon province (the pre-test on Feb.21 , 2017 & the post-test on Apr.18,2017).The pre-test was piloted on a random sample of second year intermediate students (n=45),whereas the post-test was piloted on another random sample in Aljihad intermediate school of second year intermediate students (n=45).

The pilot study was conducted to (1) determine the construct validity and reliability of the test; (2) estimate the time allotted for completing the test; (3) have an idea about the arrangement and requirements for the test, (4) make any necessary modifications on the test, and (5) have a clear-cut picture of the scoring scheme.

3.7.4 Reliability of the Tests

Reliability is the consistency of test results on its repeated applications on the same sample under corresponding circumstances (Das and Das,2008:249). By applying Kuder- Richardson formula 20 the reliability is found to be 0.64 which indicates that the pre-test is reliable and acceptable (Gravetter and Forzano, 2011:479).

This procedure was conducted with regard to the objective items of the pre-test. Concerning the subjective test items, Alpha Cronbach formula was used to measure their consistency and reliability, yielding a reliability of 0.45 which is considered acceptable.

To measure the reliability of the objective items of the post-test, the researcher employed Kuder-Richardson formula 20 yielding a reliability coefficient of 0.62, which Indicates a high reliability. Through the application of Alpha Cronbach formula for subjective items, the reliability coefficient is found to be 0.30 which is considered acceptable.

Chapter Four: Data Analysis
4.1 The Results
4.1.1 Presentation of the Results

T-test formula for two independent samples is used to manipulate the data of the post-test. The mean score of the experimental group is 39.73 with an SD of 8.53 and the mean score of the control group is 32.86 with an SD of 10.13. Hence, there is a statistically significance difference in the overall performance of both groups on the post-test in favour of the experimental group because the calculated t-value (2.83) is higher than the tabulated value (1.68) at 0.05 level of significance and 58 degrees of freedom. As a result, the null hypothesis is accepted. (See Table 2).

Table 2 The t-test Statistics for the Subjects' Performance on the Posttest

Variable	Group	No.	M	SD	DF	t-value	
						Calculated	Table
Subject's Performance on the Posttest	EG	30	39.73	8.53			
	CG	30	32.86	10.13	58	2.83	1.68

4.2 Interpretation of the Results

The results showed that jigsaw IV is a successful method in teaching writing composition and this may be due to the following:

1. The students are motivated and feel more confident in their potentialities because they have the assistance and encouragement of fellow group members.
2. Participation and interaction among group members increase their psychosocial adaptation since the effort of each member is encouraged and supported in order to achieve group process.
3. Experts in jigsaw groups feel the importance of their roles since they perform the roles that are fundamental for the completion of the group tasks.
4. The students have opportunities for using a variety of instructional techniques such as whole-class brainstorming, discussion, question and answer.
5. Quiz on material is given to group members check accuracy.
6. The construction of groups from students of heterogeneous levels of proficiency enforces those of low levels to work hard to be equal with their mates and they get benefit from those of high levels through exchanging information.
7. Review process is applied to the whole groups to insure that all group members have learned the given material or not and whether there are a number of questions raised by the students to discuss them.

Chapter Five: Conclusions, Recommendations and Suggestions
5.1 Conclusions

Based on the findings of this research, theoretically and practically, the results of the present study lead to the following conclusions:

1. The jigsaw method provides students with the opportunity to be actively involved with the learning process.
2. Jigsaw IV technique is more effective than the prescribed method in the development of writing skill of the students in the experimental group.
3. Jigsaw groups have higher scores than those in the control group because students in the cooperative (Jigsaw IV) group entirely learn their subject topics by fulfilling their individual responsibilities, try

to make their friends understand the topic, have effective interactions with their friends, and are all actively involved in the process.

4. Jigsaw IV is an effective technique for teaching writing composition for Iraqi intermediate school students, because such a cooperative technique provides target language practice in which learners try to communicate in the foreign language.

5. The prescribed method where teachers are the main source of questions and answers limits the learners' creativity, because learners receive a recurring pattern of questions; this will create a boring atmosphere of teaching void of excitement.

6. Cooperative learning is a tool to cope with the massive influx of information. Obviously, each individual has his own information that can be shared with others.

5.2 Recommendations

In the light of the study results and conclusions, many recommendations can be presented such as:

1. Using jigsaw technique as a new technique for teaching writing composition.
2. Using jigsaw technique in teaching other subjects such as Arabic, geography, sciences, mathematics…etc.
3. Using jigsaw technique in teaching EFL in primary schools, secondary and college.
4. Providing curriculum material as well as training on how to instruct learners in using jigsaw technique.
5. Using jigsaw technique to teach EFL learners writing and communicative skills because jigsaw provides EFL learners with good opportunities to negotiate meaning.
6. Instructing learners to practice immediate feedback and debate. Members of the group motivate one another to get rid of mistakes, errors and search for better solutions and higher quality understanding appear.
7. Jigsaw technique requires a highly qualified teacher who does his best to make writing composition and jigsaw fruitful.

5.3 Suggestions for Further Studies

In view of the result and conclusions of the present study, the researcher suggests future studies on:

1. The impact of jigsaw technique on children with autism.
2. The effect of jigsaw technique on improving students' speaking skills.
3. The Effect of using jigsaw strategy in enhancing the grammatical accuracy of general writing quality of advanced vs. elementary proficiency EFL Learners.
4. The impact of using jigsaw for primary school pupils and college students.
5. The Effect of Jigsaw Learning on Students' Attitudes in Higher Education Classroom.

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