

THE EFFECTIVENESS OF USING JIGSAW VS. THINK- PAIR-SHARE TECHNIQUES IN IMPROVING STUDENTS' READING COMPREHENSION ABILLITY

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Abstract

Reading is assumed to be the central tool for learning new information and gaining access to alternative explanations and interpretations .This study aims at finding out the effect of Using Jigsaw and Think - Pair - Share Techniques on the Development of the Reading Comprehension Skills of Iraqi Secondary School Students .To fulfill the aims of study , a non- randomized control group pre-test and post-test design have been applied to a sample of 85 from Al-Yarmouk Intermediate School for female. The study demands two experimental groups and a control one. The subjects of the three groups have been statistically matched according to their age (in months), their final scores in the previous exam (the midyear), and the academic level of their father and mother. Results, obtained by the statistical treatment of the data, have shown that:

1. there is a statistically significant difference between the first experimental group, taught by jigsaw technique, and the control group, taught by traditional method of teaching in teaching reading comprehension, in favour of the first experimental group.
2. There is a statistically significant difference between the second experimental group, taught by TPS technique, and the control group in teaching reading comprehension, in favour of the second experimental group.
3. There is a statistically significant difference between the first experimental group and the second experimental one in teaching reading comprehension in favoure of the first experimental group.

According to the results of the study, a number of recommendations are stated and suggestions for further studies are put forward.

1.1 Problem of the study and Its Significance

Reading in any language is cognitively demanding, involving the coordination of attention, memory, perceptual processes, and comprehension skills (Kern, 1994:137). Reading comprehension isn't just understanding words, for sentences, or even texts, but involves a complex integration of the reader's prior knowledge, language proficiency and other learning strategies (Hamrnadou, 1991:27).

Many techniques are used to contribute to make reading comprehension easier to understand for the learner .Two of these techniques are namely: jigsaw technique and think - pair - share technique. Both are cooperative learning techniques. Jigsaw has been long used as a cooperative and collaborative learning strategy in all levels of education (Aronson and Patnoe, 2011:116)

As it is stated above, these two techniques are important in reading comprehension. The relationship between the two has strongly been suggested in research or theorized by reading experts. Wide knowledge in the way of teaching is a factor which is correlated most highly with comprehension (Davis, 1968:449).

1.2 Aims of the Study

The present study aims to investigate the effect of using jigsaw and think - pair - share techniques on the development of the Reading Comprehension at Iraqi Secondary School students.

1.3 Hypotheses

For the sake of experimentation, the following two null hypotheses are posed:

1. There is no statistically significant difference between the mean scores of the three groups (jigsaw group, think - pair - share group and the control group) in the reading comprehension post-test using and that of the control group who are following the teacher's guide instructions on the post test.
2. There is no statistically significant difference between the means scores of the jigsaw group and that of the think - pair - share group in reading comprehension post-test.

1.4 Limits of the Study

The population of this study is restricted to the female 2nd grade pupils of the Secondary schools in Baghdad for the academic year 2013-2014.

1.5 The Value of Study

This study can be useful in:-

1. improving intermediate pupil's reading comprehension,
2. helping EFL curricula designers to include Jigsaw and think- pair- share Technique in teaching reading comprehension, and
3. making use of the results reached in this study in teaching reading comprehension in Iraqi schools.

1.6 The Procedures

The following procedures will be undertaken in order to achieve the purpose of the study:

The experimental work which includes:

1. Selecting a representative sample from the population of the study and dividing into three groups, two as experimental and one as control.
2. Using appropriate statistical tools.
3. Describing the activities selected for material presentation for the experimental group and control group.
4. Constructing and validating a test to be used as a tool of investigation (pre and post-test).
5. Conducting an experiment to apply the suggested strategies.
6. Describing the statistical means used to analyze the results of the test.
7. Presenting the obtained results to come up with conclusions, and suggestions for farther studies.
8. Making pedagogical recommendations and suggesting a number of projects based on the findings of the present study.

1.7 Definitions of Basic Terms

1.7.1 Effect

Richards and Schmidt (2002:175) define it as "a measure of the strength of one variable's effect on another or the relationship between two or more variables.

1.7.2 Jigsaw Technique

According to Richards, Platt and Platt (1992:87) "jigsaw is a type of cooperative or collaborative learning which each member of group has a piece of information needed to complete a group task".

1.7.3 Think- Pair- Share

A technique where teacher poses a question, students think of a response. Students discuss their responses with a partner. Students share their partner's response with the class (Aronson and Patnoe, 2011:126).

1.7.4 Technique

According to Ur (1996:4) a technique is implementation that which actually takes place in a classroom. It is a particular trick, strategy, or contrivance used to accomplish an immediate objective. Technique must be

consistent with a method and therefore in harmony with an approach as well.

1.7.5 Reading

Reading is a complex skill that requires eye-movement, recognition of graphic forms associating them with their identified sounds and then the interpretation of what has been read (Darwesh& A1-Jarah, 1988:47).

1.7.6 Comprehension

Comprehension is an active process that requires an intentional and thoughtful interaction between the reader and the text. Although it is true that comprehension is far more than recognizing words and remembering their meanings, it is also true that if a reader does not know the meanings of a sufficient proportion of the words in the text, comprehension is impossible (Stahl, 1994:360).

1.7.7 Reading Comprehension

Harris (1982:266) defines reading comprehension as "the linguistic process of reconstructing the intended message of a text by translating its lexical and grammatical information into meaningful units that can be integrated with the reader's knowledge and cognitive structures".

1.7.8 Skill

The ability of one's knowledge, practice, aptitude, etc., to do something well (Webster's, 1985:1791 as cited in AL-Alqamawi, 2005:21).

1.7.9 Secondary School

It is a school beginning with the next grade following primary school and it includes intermediate and preparatory stages. Each stage consists of three grades (Ministry of Education in Al-Duliamy, 1981:17).

2.Theoretical Background

2.1 Cooperative Learning

Cooperative learning is group learning activity organized so that learning is dependent on the socially structured exchange of information between learners in groups and in which each learner is held accountable for his or her own learning and is motivated to increase the learning of others (Kagan,1991:8).

2.1.2 Elements of Cooperative Learning

The basic elements of cooperative learning can be considered essential to all interactive methods. Student groups are small, usually consisting of two to six members. Practitioners agree upon the following to be the major elements of CL:

- a. Positive Interdependence
- b. Individual Accountability
- c. Face-to-Face Promotive Interaction

d. Appropriate Use of Collaborative Skills

e. Group Processing

2.1.3 Theories Underlying Cooperative Learning

Cooperative group learning is one typical theme of constructivism which is hardly a new school of thought, yet it emerged as a prevailing paradigm only in the last part of the twentieth century. Other themes include: interactive discourse, sociocultural variables, interlanguage variability, and interactionist hypotheses (Brown, 2000:136). Constructivism is a theory of learning which posits that students learn by actively constructing their own knowledge. Two main approaches under constructivism are cognitive and social. The former is associated with the work of Piaget and the latter with that of Vygotsky. The two approaches are not mutually exclusive, as underpinning both is the belief that students learn by constructing their own knowledge.

2.2 Jigsaw Technique

Gregory and Chapman (2007:7) believe that jigsaw technique is able to lead to a shared responsibility model of learning that focuses on both inter and intra-personal components because of considering each student as invaluable to the learning process.

Winstead (2001:1) shows that Jigsaw name is derived from its technique of making each learner an informational puzzle piece that learning groups assemble to fully understand a subject.

According to Aronson (2008:196-9) there are ten steps considered important in the implementation of the jigsaw classroom:

1. Students are divided into 5 or 6 persons in a jigsaw group. The group should be diverse in terms of ethnicity, gender, ability and race.
2. One student should be chosen as the group leader. Those persons should initially be the most mature student in the group.
3. The day's lesson is divided into 5-6 segments (one for each member).
4. Each student is assigned one segment to learn. Student should only have direct access to only their own segment.
5. Student should be given time to read over their segment at least twice to become familiar with it. Students do not memorize it.
6. Temporary experts group should have been formed in which one student from each jigsaw group join other students assigned to the same segment. Student in this expert group should be given time to discuss the main points of their segment and rehearse the presentation they are going to make to their jigsaw group.
7. Student comes back to their jigsaw group.

8. Student presents his or her segment to the group. Other members are encouraged to ask question for clarification.
9. The teacher needs to float from group to in order to observe the process, intervene if any group is having trouble such as a member being dominating or disruptive. Otherwise, the group leader should handle this task. Teacher can whispers to the group leader as to how to intervene until the group leader can do it themselves effectively .
10. A quiz on the material should be given at the end so students realize that the sessions are not just for fun and games but they really count.

Letendre (2009:23) enumerates five benefits for the jigsaw technique as follows:

1. Teacher is not information giver.
2. Positive effects on learning process.
3. Students are responsible for own and others' learning.
4. Students are active in learning process.
5. Building interpersonal and interactive skills.

2.3 Think – Pair – Share Technique

Think - Pair - Share is a technique first developed by Professor Frank Lyman at the University of Maryland in 1981 and adopted by many writers in the field of cooperative learning since then.

Millis and Cottel (1998:online) believe that the use of TPS provides all students with opportunities to discuss their thoughts and ideas; i.e. they start to construct their knowledge in these discussions and also to discover what they do and do not know. This active process is not normally available to them during the traditional lecture. Jones (2006: online) regards TPS as a helpful technique because it raises a discussion among students in the class. In TPS the teacher should:

1. ask a question. Be aware that open-ended questions are more likely to generate more discussion and higher order thinking,
2. give students a minute to two (longer for more complicated questions) to discuss the question and work out an answer.
3. ask students to get together in pairs or at most, groups with three or four students and ask for responses from some or all of the pairs or small groups and include time to discuss as a class as well as time for student pairs to address the question. (Bouras, et al, 2002:73)

2.4 Reading

Staiger (1973:37) maintains that reading is essentially a cognitive process during which the reader does not only comprehend ideas found in a text but also interprets and evaluates them.

the term "reading" requires all the following:

1. the skills and knowledge to understand how phonemes, or speech sounds, are connected to print,
2. the ability to read fluently,
3. the ability to decode unfamiliar words,
4. sufficient background information and vocabulary to foster RC,
5. the development of appropriate active strategies to construct meaning from print, and
6. the development and maintenance of a motivation to read.

(Peter and Rodgers, 2006:12)

2.4.1 Reading As an Act of Communication

Communication is a reading or any other form requires the participation of two parties to convey a message. The first party is the sender (in our case the writer) and the second is the receiver (the reader). The message has to be encoded by the sender and processed by the receiver . According to Brown (2007:119), messages differ in the amount of information they convey. This depends on how much new and important information the message contains (Darwesh, 1998:22).

2.4.2 Reading Comprehension

Biemiller (1999:6) defined reading comprehension as the "ability to answer reasonable questions about a passage one has heard or read".

It seems that most of the opinions and views are based on the main idea; that is, the interaction between the reader's mind and words printed on a page. For example, Diliner and Olsen (1976:11) identify RC as "the process of meaning elaboration or thinking in relation to written symbols".

2.4.3 Strategies in Reading Comprehension

Brantmeier (2002:1) summarizes reading strategies as follows:

The strategies may involve skimming, scanning, guessing, recognizing cognates and word families, reading for meaning, predicting, activating general knowledge, making inferences, following references, and separating main ideas from supporting ideas.

3. Methods of the Research

3.1 Experimental Design

The experimental design is "a particular type of plan for assigning subjects to experimental conditions and the statistical analysis associated with the plan" (Kirk, 1968:1). The nature and the aims of this study demand the use of one of quasi-experimental designs, namely the Non Randomized Control Group Pre-test-Post-test Design .

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Table 1
The Experimental Design of the Study

Group	Pre-test	Independent variable	Dependent variable	Post-test
1 st Experimental	T1	Jigsaw	Reading comprehension skills	T1
2 nd Experimental	T1	Think - Pair - Share		
Control	T1	Traditional technique		

3.2 Population and Sample

The population of the present study is made up of girls in Baghdad Governorate specially the third Directorate General of Education in AL–Risafa Sectors and it was chosen randomly.

The sample of the study consists of the 2nd year female students at the AL-Yarmuk Intermediate School. The total number of the population is 85.

The nature of this study requires three groups of students. Thus, sections H, C and D have been chosen to be the research groups. Section C has been chosen randomly to be the first experimental group, section D to be the second experimental group, while section H is the control group. Section C has 34 S, D has 33, and H has 36. After excluding students who are repeaters at the second stage - the three sections H, C, and D include 31, 28, and 26 Students respectively. Such exclusions are done for statistical purposes only (see Table 2).

Table 2
The Sample of the Study

Group	Section	No. of students before Exclusion	No. of Excluded students	No. of students after Exclusion
1 st Experimental	C	34	6	28
2 nd Experimental	D	33	7	26
Control	H	36	5	31
Total		103	18	85

3.3 Group Equalization

The three study groups are made equivalent statistically by balancing some variables. These include; age of students (in months), their final scores in the previous exam (the mid-year), and the academic level of their fathers and mothers.

3.3.1 The Subjects' Age

Information related to the age of the subjects is obtained from the students themselves. Then, age is turned into months. The statistical treatment has revealed that the mean of the 1st experimental group is 159.6429 , and it is 161.3462 for the 2nd experimental group, while it is

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162.3871 for the control group, while the standard deviation of the 1st experimental group is 6.60647 , and it is 3.28563 for the 2nd experimental group, and 4.34877 for the control one (Table 3).

Table 3
The Mean and Standard Deviation of the Subjects' Age

Group	No. of Subjects	Mean	Standard Deviation
1 st Experimental	28	159.6429	6.60647
2 nd Experimental	26	161.3462	3.28563
Control	31	162.3871	4.34877

By applying ANOVA, it is found that the computed F-ratio is 2.279 while the tabulated F-ratio is 3.09. Clearly, the computed F-ratio is lower than the tabulated one at (2, 82, 84) degrees of freedom and at 0.05 level of significance. This indicates that there is no statistically significant difference among the three groups and they are all equivalent in terms of this variables (see Table 4).

Table 4
ANOVA Results of the Subjects' Age

	Sum of Squares	d. f	Mean Square	F	Sig.
Between Group	112.026	2	56.013	2.279	.109
Within Group	2015.668	82	24.581		
Total	2127.694	84			

3.3.2 The Subjects' Final Scores in the Mid-year Exam

Information related to students final scores in the mid-year exam is obtained from the school records. ANOVA is applied and it reveals that the differences among the three groups of the study are statistically insignificant at 2,82,84 degree of freedom and 0.05 level of significance because the tabulated F-ratio 3.09 is higher than the computed one 2.82 (see Table 5 and Table 6). This indicates that the three groups are equivalent according to this variable.

Table 5
The Mean and Standard Deviation of the Subjects' Final Scores in the Mid-year Exam

Group	Number of Subjects	Mean	Std.Deviation
First Experimental	28	66.7857	14.56367
Second Experimental	26	59.1923	41.52727
Control	31	65.5806	61.73873

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Table 6
ANOVA Results of the Subjects' Final Scores in the Mid-year Exam

	Sum of Squares	df	Mean Square	F	Sig.
Between Group	895.652	2	447.826	1.892	.157
Within Group	19408.301	82	236.687		
Total	20303.953	84			

3.3.3 Fathers' Academic Level

The frequency of each academic level for fathers' is computed. Then the researcher uses chi-square to test the statistically significant differences. No statistically significant differences are found between the three groups in the fathers' academic level, where the computed chi-square value is (.969) which is less than the tabulated chi-square value which is (5.99) at (0.05) level of significance and (3) degree of freedom. See Table (7):

Table (7): Results of Chi-square Test for the Significance of Differences between the Groups in Fathers' Academic Level

Group	No.	Primary	Intermediate	Secondary	Institute + College	Computed X ² - value	Tabulated X ² -value	d.f.	Level of Significance
Ex1	28	3	8	7	10	.969	5.99	3	0.05
Ex2	26	2	7	8	9				
CG.	31	6	8	8	9				
Total	85	11	23	23	28				

3.3.4 Mothers' Academic Level

The frequency of each academic level for mothers' is computed. Then chi-square is used to test the statistically significant differences. No such differences were found between the three groups according to the mothers' academic level, where the calculated chi-square value was (1.442) which is less than the tabulated value which was (5.99) at (0.05) level of significance and (3) degree of freedom. See table (8) below:

Table (8): Results of Chi-square Test for the Significance of Differences between the Groups in Mothers' Academic Level

Group	No.	Primary	Intermediate	Secondary	Institute + College	Computed X ² - value	Tabulated X ² -value	d.f.	Level of Significance
Ex1	28	7	6	9	6	1.442	5.99	3	0.05
Ex2	26	7	8	6	5				
CG.	31	9	10	7	5				
Total	85	23	24	22	16				

3.4 The Pilot Study

The researcher chose (78) female pupils from AlBatoool Secondary school for pilot study. The examination was done on the 16/2/2014. After applying the test through the pilot study, the researcher recorded the time when the first pupil finished the test or answered the questions and the last one who finished with the calculated average time for answering the test which continued for 45 minutes.

3.5 The Statistical Analysis of the Research

Statistical analysis of research items was done to find out their easiness or difficulty and to distinguish the variation factor. This helps in judging validity and measurement ability of the items included in the test (Al-Russan et al., 1995:82).

Thus the researcher applied the test prepared through the pilot study which contained (78) female pupils.

Table (10)
The Discrimination Power and the level Difficulty of Test Items

No. of item/ Q	upper group score	lower group score	Difficulty Level	Discrimination Power
1	29	11	0.61	0.55
2	31	19	0.76	0.36
3	28	16	0.67	0.36
4	32	14	0.69	0.55
5	25	12	0.56	0.39
6	33	26	0.89	0.21
7	32	22	0.82	0.30
8	21	7	0.42	0.42
9	27	10	0.65	0.51
10	33	17	0.75	0.49
11	26	12	0.58	0.42
12	31	16	0.71	0.46
13	26	17	0.65	0.27
14	26	10	0.55	0.48
15	26	8	0.52	0.55
16	26	11	0.56	0.45
17	29	21	0.76	0.24
18	29	9	0.76	0.24
19	33	24	0.86	0.27

3.6 Validity

Validity is perhaps the most complex concept in the test evaluation. It refers to the degree of success with which a technique or other instrument measures what it claims to measure (Verma, 1981:87).

To determine the validity of the test, it is given to a jury of English educational specialist in the field of TEFL, linguistics and language testing

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see Table (3) who are specifically requested to decide the suitability of the texts and the questions and the accuracy of their classification depending on the taxonomy of Bloom's (1982).

No.	Academic Title	Name	Certificate	Place of Work	Pre-post tests
1	prof.	Al-Rifa'I, Fatin ,Khairi	Ph.D.	College of Education Ibn-Rushd/University of Baghdad	X
2	Prof	Al- Shaikhly Lubna	Ph.D.	Islamic University College	X
3	Prof	Darwash, Abdul-Jabbar	Ph.D.	College of Basic Education/ University of Mustansiriya	X
4	Prof.	Hassan, Dhuha Atallah	Ph.D.	College of Basic Education/University of Mustansiriya	X
5	Prof.	Manhal , Munther	Ph.D.	College of languages	X
6	Prof.	Slaiby , Sabah	Ph.D.	College of Languages	X
7	Asst.Prof	Al-Bakri, Shaima	Ph.D.	College of Education Ibn-Rushd/University of Baghdad	X
8.	Asst.Prof	Al-Marsumi, Istiqlal H.	Ph.D.	College of Arts/University of Mustansiriya	X
9	Asst.Prof	Al-Saady Shatha	M.A.	College of Education for Woman	X
10	Asst.Prof	Bnaya Amer	Ph.D.	University of Al-Iraqia	X
11	Asst.Prof	S'adoon, Bushra	Ph.D.	College of Education Ibn-Rushd/University of Baghdad	X
12	Asst.Prof	Sarhan, Sa'ad S.	M.A.	College of Basic Education/ University of Mustansiriya	X
13.	Instr.	Arif, Ali	Ph.D.	College of languages	X
14.	Instr.	Dakhil, Ridha Ghanim	Ph.D.	College of Basic Education/ University of Mustansiriya	X

In this study the content validity has been done through the table of specification to guarantee the extent to which the test represents the educational material and behavioral aims. Thus, such a test is called "verified".

3.7Reliability

Reliability is a measure of the degree to which a test gives consistent results. A test is said to be reliable if it gives the same results when it is given on different occasions or when it is used by different people (Longman, 2010:495).

The method for calculating reliability is Cronbach's Alpha which is a measure of internal consistency based on information about (a) the number of items on the test, (b) the variance of the scores of each item, and (c) the variance of the total test scores. Mathematically speaking, it is equivalent to the average of the reliability estimated for all possible splits. Internal consistency reliability is a measure of the degree to which the items or parts of a test are homogeneous, equivalent or consistent with each other. It is based on single test administration and obviates the need for parallel forms of a test, which are often expensive and difficult to develop (Longman 2010:147-294).

Thus, reliability coefficient is (0.652). This indicates that the test has a high reliability ground.

3.8 The Scoring Scheme of the Test

The researcher follows the following scoring scheme: one mark (1) is given for the correct answer of each item, and Zero (0) for the wrong one. There are 19 items in the test. The upper mark for the test is 19, while the lower mark is Zero. Zero is given for those who leave out any item or fail to tick any choice.

4. Results, Conclusions, Recommendations

4.1 Results Presentation

The results are going to be presented in relation to the dependent variable, which is the Reading Comprehension Skills of Iraqi Secondary School Students.

Since the current study aims at discovering the effect of using two kinds of technique of cooperative learning (Jigsaw and Think -Pair - Share) on the development of reading comprehension by second intermediate students, the data obtained through the achievement test are treated by inserting scores gained by students in the three groups into computer to analyze them by using statistical package for social sciences. The lower and higher scores, means and standard deviations were calculated for each group. The results can be stated as follows:

Table (12): the Results of the Three Groups in the Test

Group	N	Means	Standard Deviation
First experimental	28	15.4286	2.36375
Second experimental	26	13.0000	2.54558
control	31	9.2903	3.24750

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For making the comparisons among the means of the three groups in post-test, the data are analyzed by using Tukey-Kramer analysis of variance. The results show that there are significant statistical differences among the three groups. The calculated (F) value is (36.8) which is higher than the tabulated (F) value (4.79) at 2 and 82 degree of freedom.

Table (13): Results of the One-way Analysis of Variance for the Significance of Differences among the Groups in the Test.

Source of Variance	Sum of Squares	D.f	Means of Squares	F-value		Level
				Calculate	Tabulate	
Between groups	565.768	2	282.884	36.864	4.79	0.05
Within groups	629.244	82	7.674			
Total	1195.012	84				

The results of ANOVA analysis of variance indicate differences among the three groups. Testing the hypotheses of the research requires conducting a post-test for making double comparisons between the two groups. Therefore, Tukey-Kramer test is used since this test is preferred when the size of the cells is not equal (i.e. when the number of subjects of the groups differs).

The Results of T.K Value for the Comparison among the Three Groups

Group	1 st experimental	2 nd experimental	Control group	T.k
1 st experimental		2.4287	6.138	T.K 1= 10.330
2 nd experimental	-2.4287		3.70968	T.K 2= 8.985
Control	-6.138	-3.70968		T.K 3 = 4.557

*** T.K critical value is 2.84 at 0.01 level of significance**

1. The computed T.K Value for the difference between the mean scores of the control group and the 1st experimental group is - 6.138 which are higher than the critical T.K value which is 2.48 at 0.01 level of significance. This indicates that there is a statistically significant difference in favor of the 1st experimental group which is taught by Jigsaw technique.
2. The computed T.K value for the difference between the mean score of the control group and the 2nd experimental group is 3.70968 which is higher than the critical T.K value 2.84 at 0.01 level of significance. This indicates that there is a statistically significant difference in favor of the 2nd experimental group which is taught by TPS technique.
3. The computed T.K value for the difference between the mean scores of the 1st experimental group and the 2nd one is -2.428. This value is higher than the critical one which is 2.84 at 0.01 level of significance. This indicates that there is a statistically significant difference in favor of the 1st experimental group which is taught by Jigsaw technique.

4.2 Conclusions

1. Implementing new and modern techniques in teaching contributes to the development of students' skills, knowledge, and achievement. Cooperative learning is one of the innovative pedagogies that has been found to be positively effective on students' development in RC.
2. Engaging students in learning allows them to reach their fullest potential in all aspects of development.
3. Classroom based pedagogies of engagement, C.L is one of pedagogies of engagement, can help break the traditional lecture-dominant pattern. To maximize students' learning, instructors should not allow them to remain passive while they are learning. One way to get students more actively involved is to structure cooperative interaction into classes, getting them to teach course material to one another and to dig below superficial levels of understanding.
4. It is vital for students to have peer support not only to learn the material at a deeper level, but also to know their classmates and to build a sense of community with them.

4.3 Recommendations

Depending on the results of the present study, the following recommendations are presented:

1. Teachers should help students understand how complex the task they are facing, give them the tools to learn the subject effectively.
2. Teachers should make the students work on the words instead of simply going over them in a fill in the blank exercises or according a matching quiz.
3. Teachers should be encouraged to incorporate into RC in classroom.
4. A special emphasis should be given to the way of teaching the material .
5. A special emphasis should be given to the use of cooperative lessons because the results of the present study indicate that cooperative activities can lead to better learning.
6. Materials in the secondary schools should be modified to help students understand the complexities of RC.

4.5 Suggestions for Future Studies

1. A study is to investigate the effect of other cooperative learning strategies and techniques on motivation.
2. A study is to investigate the impact of other innovative pedagogies on developing RC of the students.
3. A study is to measure the effect of cooperative learning techniques on other subjects.

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