

The Impact of Student Team Achievement Division (STAD) on Iranian EFL Learners' Reading Comprehension

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Abstract – Reading comprehension is a complex process and would be difficult for language learners. This study investigated the effects of the Student Teams-Achievement Divisions (STAD) on Iranian EFL learners' reading comprehension. It also sought to see if there was any difference between male and female EFL learners in reading comprehension through the use of STAD technique. Sixty male and female from Hoomaye Zarin institute in Zarin Shahr in Isfahan participated in the study which used a pretest-posttest design. The Oxford Placement Test was used to ensure the homogeneity of the participants. They were divided into four groups, two experimental groups, and two control groups. The treatment sessions were conducted in 10 ninety-minute sessions. In the experimental groups, STAD was used, but there was no STAD treatment for the control groups and they received reading comprehension instruction through current methods of the language institute. The analyses of covariance (ANCOVA) and t-test analysis revealed that total gain in reading performance by the experimental groups was significantly superior to the total gain in the control groups. STAD effectively improved the learners' reading comprehension of the experimental groups. The results of the study indicated that STAD was a more effective instructional paradigm for English as compared to the mainstream method of teaching. Due to its provision for higher learning engagement, STAD can be used as an active learning strategy for EFL Learners.

Keywords - Student Team Achievement Division (STAD), Reading Comprehension, EFL Learners, cooperative learning

1. INTRODUCTION

Reading is a receptive language process. It is the process of recognition, interpretation, and reception of written statement accurately and efficiently. Reading serves as an important role in every field of professional service Abdu (2006). According to Hyde and Grabe (2008), there are many advantages for reading; reading can also increase our vocabulary, develop intelligence of learner, and trigger our imagination's master in reading, students need to have reading desire and must be tried to read something intensive and continually.

Reading comprehension is a complex and dynamic phenomenon and it is considered as an important source of language input because there is a special interaction between the reader, the author and text (Berardo, 2006). Generally, reading comprehension is the ability to extract hidden meanings and concepts from different texts (Ahmadi, 2013). Therefore, the main purpose of reading comprehension is to construct meaning from context and it is a complex

cognitive ability that needs to integrate the present context with learners' background knowledge in order to result in mental representation (Sweet & Snow, 1990). Reading comprehension is a complex process; the process of meaning construction would be difficult for learners (Hyde & Grabe, 2008). Hence, reading comprehension needs specific procedure, since without using appropriate strategies, reading comprehension would be difficult (Chen, 1998).

Up to the 1970s, the main concentration was on the language teaching and teacher-centered methodology. It was not until then that language learning and the role of learners themselves drew attention. A very remarkable example of the common teaching methods in this area is the audio-lingual teaching methodology which is based on the structural linguistics and behaviorism. In this method, teachers were considered as the authority of the classroom and the learners were only considered as the passive imitators of the teacher's model. This teacher-centered paradigm did not hold out for a long time and was soon disremembered in the 1990s as the new trends of research in linguistics, psychology and sociology opened new perceptiveness on language teaching, learning and the role of learners in the language learning process. As a result of these shifts of focus, cooperative learning became particularly fashion of the day in the early 1980s and has developed and evolved afterwards.

Cooperative learning (CL) is a general term for various small groups in which students work together to maximize each other's learning (Johnson & Johnson, 1999). It is a term used to describe teaching methodologies that increase motivation on learning, self-esteem and redirection attribution for success and failure, fostering positive feeling toward classmates, and increasing performance on tests of comprehension, reasoning, and problem solving (Johnson & Johnson, 1995; Slavin, 1995). In this learning method, small groups of students work together to achieve a common goal; it is designed to extinguish winner or loser competition which is a prevalent characteristic in traditional learning environments. In fact, cooperative learning is a successful teaching strategy in which small teams, each with students of different levels of ability, use a variety of learning activities to improve their understanding of a subject (Johnson & Johnson, 1999). One of the methods in CL is Student Team-Achievement Divisions (STAD). Slavin (1995, p. 71) state that STAD is the simplest of all CL methods, and is a good model to begin with for teachers who are new to the cooperative approach.

STAD stands for Student Learning Team Development, a term coined by Slavin (1995) based on research on cooperative learning. STAD is a teaching strategy in which students are put into 4 or 5-member heterogeneous groups following a teacher presentation of the materials they are going to learn and the importance of learning these materials (Slavin, 1995). Team members work cooperatively with the teacher. Students take quizzes individually to demonstrate how much they have learned. The individual quiz scores are summed to form a team score, and teams are rewarded for their performance. For example, teams with low improvement receive good team certificate, teams with average improvement receive great team certificate and teams with high improvement receive 'super team' certificate.

STAD could motivate students and help them master the skill that is presented by the teacher. In other words, this technique could make students more active, have high self-confidence, and high motivation when do the task. As Trabasso and Edward (2002), mentions

"learners will often be motivated to give their best not for the sake of the learning itself but in order to beat their opponents in a completion". STAD technique can be used as an alternative method for teaching reading, and it could make students more active, or students-centered in teaching learning process.

This research examined the role of STAD technique in EFL learners' reading comprehension. There are various factors for learning such as motivation, anxiety, attitude, age. Also, there is a need to study STAD technique related to EFL learners and their reading comprehension.

Using STAD materials in EFL classroom is important. Most of EFL learners have no opportunity of learning through real situation and natural environment. Because of the importance of reading and the low level of students' comprehension in reading, the current research investigated the effect of STAD on the intermediate learners reading comprehension in order to consider difference between two genders of male and female learners in reading comprehension. Employing STAD technique in EFL classes can be considered as a possible solution for improving students' reading comprehension. Students look passive in teaching learning process because the class is dominated by the teacher, and student will take part when they do the task. In fact, the research results have shown that cooperative learning methods can enhance learning more than individualize or competitive method. In addition, students need a different atmosphere of classroom in learning English. Most of the students have low motivation in learning English because teacher rarely use other methods in teaching and learning process.

STAD technique highlights the role of the group working and being responsible for the success of the group members. Also, individual differences in terms of abilities and levels of proficiency and their efforts are also important in achieving learning goals. Therefore, the present study investigated if STAD technique had any significant effect on EFL intermediate learners' reading comprehension.

To fulfill the research purpose, the following research question was put forward:

- Does STAD technique have any significant effect on Iranian intermediate EFL learners' reading comprehension?

2. MATERIALS AND METHODS

2.1. Participants

To find the required population for the experiment, 60 female and male (30 females and 30 males) students were selected. They studied English in language institutes in the city of Isfahan. The participants of this study were intermediate EFL learners located in the city of Isfahan and aged from 18 to 28. Their level of English language proficiency was intermediate. The participant learners had been learning English for about 6 years and had reached the intermediate level. Moreover they had had the opportunity to study English at school or at university so they had an experience of exposing to English and, as the result, it was expected

that they had developed some basic reading skills after few years. Hence, it seemed reasonable to choose learners at this level of English proficiency as the participants of this study.

2.2. Instruments

The instruments of this research were Oxford Placement Test (OPT) and a reading comprehension test of TOEFL. OPT has been used to determine low and high level participants in terms of language proficiency. It was administered to assess students' knowledge of grammar, vocabulary and reading. It also enabled the researchers to have a greater understanding of what level their participants were at. The test contained 50 multiple choice questions assessing students' knowledge of key grammar and vocabulary from elementary to intermediate levels, and a reading text with 10 graded comprehension questions.

The reading test consists of 4 passages. Each passage contains 9 questions. Time limit was 60 minutes to complete all three parts of the reading test. This test was taken from TOEFL and it was used in order to measure the EFL learners' reading comprehension ability.

2.3. Procedures

Prior to the main study, in order to ensure the reliability of reading comprehension pretest and posttest, it was piloted on 20 Iranian EFL learners who were similar to the participants of the main study in terms of age, level of English language proficiency and gender. The result of reliability analysis using Cranach alpha was .83 that provided a satisfactory level of test reliability.

The first step of this study was determining the participants' level of English language ability. In order to ensure the homogeneity of the participants, Oxford Placement Test (Solutions) was administered. As the participants' intended language proficiency level for this study was intermediate, fourteen participants could not attain the minimum score for the intermediate level and they were excluded from the whole sample. The selected participants were randomly divided into two equal groups of experimental and control. The participants of two groups were pretested by TOEFL reading in order to check whether or not their reading comprehension ability is almost at the same level.

The treatment sessions were conducted according to the following procedure during 10 10 ninety-minute sessions. In experimental group, STAD was administered. The students were put into 5-member heterogeneous groups following a teacher presentation of the materials they were going to learn and the importance of learning these materials. Team members worked cooperatively with the teacher. Students took quizzes individually to demonstrate how much they have learned. The individual quiz scores were summed to form a team score, and teams were rewarded for their performance. For example, teams with low improvement received good team certificate, teams with average improvement receive great team certificate and teams with high improvement received super team certificate. The procedure of STAD implementation consisted of the following steps:

1. The first step was dividing students into groups from different academic level and ethnic background. According to Lie (2007), the composition of each group is made up of one student with high achievement level, two learners with average achievement level, and one student with low achievement level. The achievement level of students was based on their pre-test score.
2. The second step was explaining the STAD rules to learners. Every group had to discuss the materials, do the assignments, and make sure all members of the group understand the lesson. If the students had questions they should ask all teammates before asking the teacher.
3. The third step was explaining group and individual scoring. The students collected points for their group.
4. The fourth step was teaching the lesson. The teacher taught the lesson and asked the number of questions to students.
5. The fifth step was arranging group discussion. The students worked in groups and did the assignment that was given by the teacher. They worked together until each member was sure their teammates would obtain 100 in the quiz.
6. The sixth step was giving the individual quiz. The aim of individual quiz was to measure how far the students understood the lesson.
7. The seventh step was counting students improvement score.
8. The last step was giving reward for group achievement.

For the experimental group, the researchers made 6 groups of five participants. All the criteria mentioned above were observed in their classes for the experimental group. They worked exactly as it was mentioned in the criteria above, took quizzes, competed with another group and had the teacher as an advisor whenever necessary.

There was no treatment for control group and they received reading comprehension instruction through routine and current methods of language institute. In the control group, the learners read the passage directly without engaging in a pre-reading activity. In light of this, the passages were not read aloud from a script. Finally, all participants of the study took the posttest in order to find their reading comprehension achievement.

All the procedures of data collection were done without any major problem and they proceeded in the predicted order. All the participants were present in all phases of the study. Furthermore, to care for the tenets of the research, no one of the test papers during different phases of study was given back to the participants, and no information about the content of study was transpired before administering it.

3. RESULTS AND DISCUSSION

The data collected from the participant's pretest and posttest were analyzed quantitatively to answer the questions addressed in the study. This section is dedicated to answering the research questions and testing the related hypotheses. In doing so, the results of quantitative

data were analyzed through inferential statistics (t-test) and analysis of covariance (ANCOVA). In order to test the hypotheses of the study and remove the effects of the pretest, an ANCOVA was conducted. Before conducting an ANCOVA, its assumptions were examined:

In order to prove the normality of the scores of the pretest, one sample Kolmogorov-Smirnov test was performed. The results are presented in Table 1 below:

Table 1. One-Sample Kolmogorov-Smirnov of Pretest and Posttest

		Pretest	Posttest
N		30	30
Normal Parameters ^{a,b}	Mean	15.96	26.04
	Std. Deviation	3.11	8.49
Most Extreme Differences	Absolute	.08	.09
	Positive	.08	.09
	Negative	-.07	-.09
Kolmogorov- Smirnov Z		.68	.75
Asymp. Sig. (2-tailed)		.73	.61

a. Test distribution is Normal.
b. Calculated from data.

As Table 1 shows, the most extreme differences between the scores was not significant. The measured significance level for pretest and posttest were 0.73 and 0.61; it was higher than the assumed level of significance (i.e., 0.05), so it can be concluded that there was no significant difference between the observed distribution of selected scores of pretest and posttest scores and the scores are normally distributed. The first assumption was met.

In order to verify the second assumption, i.e., the homogeneity of variance, a Levene's test of equality of variances was performed and the results were presented in Table 2.

Table 2. Levene's Test of Equality of Variances

Dependent Variable: Posttest				
F	df1	df2	Sig.	
5.09	1	58	.208	

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.
a. Design: Intercept + Groups + Pretest + Groups * Pretest

The results showed that there was no significant difference between the variances ($F = 1.04, p > .05$) of the groups. Therefore, the variances are equal and the second assumption of ANCOVA was also met.

In order to verify the third assumption, i.e., the reliability of covariate assumption, the Cranach alpha was performed. The results are shown in Table 3.

Table 3. Reliability Statistics

Cornbrash's Alpha	N of Items
.83	30

The results of Cronbach alpha showed that the covariate had a good index of reliability. Therefore, this assumption was also met. The other assumption is the influence of treatment on covariate measurement. This assumption was also checked since the covariate (pretests) was measured prior to the treatment of the study (manipulation). "This requires that the relationship between the covariate and the dependent variable for each of the groups is the same" (Pallent, 2001). In order to meet this assumption, an ANCOVA was conducted to see whether there was an interaction between the treatment and the pretest scores. The results are reported in Table 4.

Table 4. Analysis of Covariance on Pretest for the Interaction Effect

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	636.78 ^a	3	212.26	477.97	.00	.96
Intercept	145.71	1	145.71	328.11	.00	.85
Groups	12.32	1	12.32	27.74	.00	.33
Pretest	384.57	1	384.57	866.00	.00	.93
Groups * Pretest	.00	1	.00	.01	.93	.00
Error	24.86	56	.44			
Total	9813.00	60				
Corrected Total	661.65	59				

a. R Squared = .962 (Adjusted R Squared = .96)

As Table 4 displays, the treatment for the pretest scores was not significant, ($F = .01$, $p = .93$). There was not any interaction between the treatment and the pretest scores. This indicates that there was not a very significant difference between the two groups in terms of their knowledge of reading before the treatment was conducted. Besides, the results in Table 4 show that the slope of the regression line in each group was similar and there was not any significant interaction between the treatment and the pretest scores. In addition, there was a linear relationship between the dependent variable (the posttest scores) and the covariate (the pretest scores). As Figure 1 shows, there are two straight lines and no indication of curvilinear relationship. Therefore, the above assumption was not violated and it was safe to conduct the analysis of covariance.

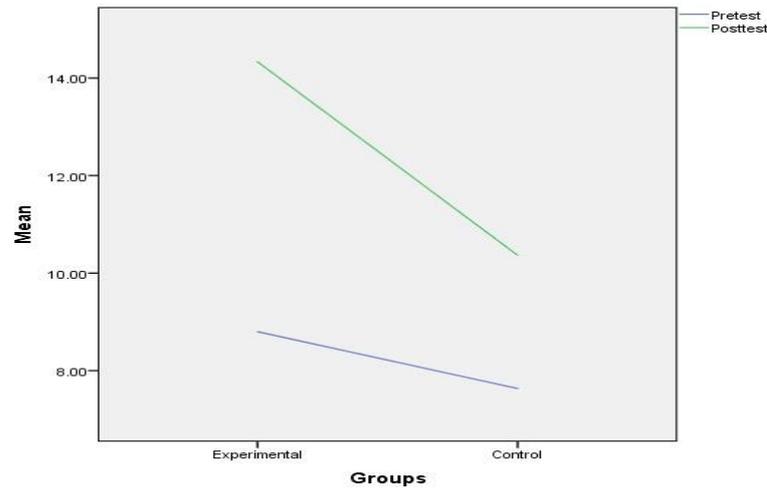


Figure 1. Scatter plot for the relationship between and dependent variable

Statistical analysis of independent variable (pretest) and dependent variable (posttest) and the results of the ANCOVA in both experimental and control groups are presented in the following tables. Table 5 shows that whether ANCOVA was statistically significant or not.

Table 5. Analysis of Covariance for the Treatment Effect on Posttest Scores

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	624.46 ^a	2	312.23	478.55	.00	.94
Intercept	133.41	1	133.41	204.47	.00	.78
Groups *	624.46	2	312.23	478.55	.00	.94
Pretest						
Error	37.18	57	.65			
Total	9813.00	60				
Corrected Total	661.65	59				

a. R Squared = .94 (Adjusted R Squared = .94)

The results showed that there was an overall statistically significant difference in posttest scores between the different groups (control and experimental groups) between adjusted means ($F = 478.55, p < .05$) in such a way that the experimental group outperformed the control group in reading comprehension. Therefore, the research question of the study was verified.

Conventional method emphasizes individual work in mastering the learning material. Students are the object of learning, because they do the activity base on the teacher and teacher’s instruction. It’s different from STAD where students should manage their activity with their team-mates in their group. The teacher presents a lesson, and then students work in their team to make sure all team members have mastered the lesson (Slavin, 1995).

The finding of Stevens and Slavin (1995) and Borich (2004) support that all the students in the cooperative group performed specific roles in solving problems which are presented in the classroom to the benefit of all members of the group. When learners are confronted with problems which they must solve, they are forced to reason and think critically in order to solve the problems. Bramlett (1994) and Megnin (1995) believed that when properly and carefully used cooperative learning activities engage the students in the learning process and seek to improve the critical thinking, reasoning and problem-solving skill of learners.

STAD technique is one of the simplest and most flexible of the cooperative learning method; it has been used in subject area as math, language art, social studies, and science. In the cooperative learning techniques, students are assigned to four or five members in groups, with each mirroring the others to make up the class in terms of ability, background, and gender.

The purpose of this study was to investigate the effect of STAD technique on reading comprehension of EFL learners. It also sought to see if there was any difference between two kinds of participants (male and female) in reading comprehension through the use of STAD technique. The data analysis of this study indicated that, first, the students' progress during the teaching and learning activity by using cooperative learning called STAD technique was good. The students' achievement in reading comprehension improved. It was supported by the result of the research showing significant improvement from the pretest to the posttest. Thus, the students' achievement increased.

REFERENCES

- Abdu, B. R. (2006). Cooperative learning methods. *Cooperative Research Journal*, 44, 802–805.
- Ahmadi, M. (2013). The impact of information technology to traditional methods of learning to student-centered learning methods. *Islamic Azad University, Karaj, educational and cultural center, Sama*, 20(3), 22-35.
- Berardo, S. (2006). The use of authentic materials in the teaching of reading. *The Reading Matrix*, 6 (2), 60-69.
- Borich, R. (2004). *Strategies to engage the mind of the learner: Building Strategic Learners*. Omaha: Dayspring.
- Bramlett, R. (1994). Implementing cooperative learning: A field study evaluating issues of school-based consultant. *Journal of School Psychology*, 32(1), 67-84.
- Chen, C. H. (1998). A comparison between cooperative learning and traditional, whole class learning- teaching English in a junior college. *Academic Journal of Kang- Ning*, 3, 69-82.
- Hyde, J. Sh., & Grabe, Sh. (2008). Meta-analysis in psychology of women. In F. L. Denmark & M. A. Paludi (Eds.). *Psychology of women: A handbook of issues & theories* (pp. 142-174). London: Praeger.

- Johnson D. W. & Johnson R. T. (1995). *Learning together and alone: Cooperative, competitive and individualistic learning*. Boston: Mlyn and Bacon.
- Johnson, D. W. & Johnson, R. T. (1999). *Making cooperative learning work*. Theory into practice, 38(2), 67-73.
- Megnin, J. (1995). *Combining memory and creativity in teaching mathematics*. *Teaching Prek.* 8, 25(6), 48-49.
- Slavin, R. (1995). *Cooperative learning: Theory, research, and practice*. Massachusetts: Allyn and Bacon.
- Stevens, R. J. & Slavin, R. E. (1995). *The cooperative elementary school: Effects on students' achievement, attitudes, and social relations*. New York: Psychological Dimensions.
- Sweet, M., Snow, K. (1990). *Genre analysis: English in academic and research settings*. Cambridge: Cambridge University Press.
- Trabasso, T., & Edward B. (2002). *Teaching readers how to comprehend text strategically*. In *Comprehension instruction: Research-based best practices*. NOVA Southeastern University.