

The Effect of Cooperative Learning on Reading Comprehension and Reading Anxiety of Pre-University Students

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Abstract

This study aimed to investigate the effect of cooperative learning on L2 reading comprehension ability for pre-university students by comparing the cooperative learning instruction and traditional lecture instruction. Another objective was to discover the effect of cooperative learning on reading anxiety of students. It also tried to figure out the students' attitudes after providing cooperative learning intervention. In addition, the study intended to find the relationship among students' reading anxiety, attitudes and their reading performance. Seventy pre-university students majoring in experimental sciences in Shiraz (35 subjects in experimental group, 35 subjects in control group) participated in this study. The cooperative learning technique 'Ask together – learn together' model was used in the experimental group and the usual method, which is traditional lecture instruction, was used in the control group to teach four reading comprehension lessons from pre-university textbook for a period of eight weeks. The required data for the study were collected through three instruments: two reading comprehension achievement tests and an attitude questionnaire. The findings of the present study showed that cooperative learning method had a higher effect on L2 reading comprehension skills when compared with the effects of traditional teaching methods. The results also revealed that control group was more anxious in reading than experimental group. In the case of students' attitudes, the average mean of attitude score for students in the cooperative learning group showed a strong relationship with this learning approach. Finally, it was found that the correlation between reading performance, attitude and reading anxiety was significant.

Keywords: cooperative learning, English reading comprehension, foreign language reading anxiety, attitude

INTRODUCTION

Reading is one of the language skills that stimulate the acquisition of knowledge and exchange of information in language learning context (Liu, Chen & Chang, 2010).

Reading comprehension is the ability of perceiving a written text in order to understand its contents. The main concept in reading skill is 'comprehension'. It is greatly valued by students and teachers alike since it increases the process of language acquisition and helps students to read for different purposes. The most successful readers are those who use cognitive strategies to comprehend the text better (Behjat, Bagheri & Yamini, 2012). The requirements of reading comprehension increase as students reach higher grades when they are expected to comprehend more complex materials that are often concrete to requiring well developed reasoning skills as well as an ability to apply proper background knowledge in a range of contexts (Gardill & Jitendra, 1999 cited in Al Odwan, 2012). Unfortunately, conventional and text-centered classrooms do not provide instruction in the skills and strategies necessary for students to learn how to comprehend text (Tivnan & Hemphill, 2005).

During reading process the readers should make use of their background and linguistic knowledge to reconstruct the writer's intended meaning. "Comfortable reading needs to be unafraid. However, very often when one is studying something difficult or something that is difficult in one's own opinion, and when one is going to be tested, one's reading will not work well. These feelings make one feel it difficult to concentrate, to remember the ideas, and to learn anything new. If one is reading for fun, usually one will not have the feeling of worry and nerve and anxiety" (Huang, 2012, p. 1521).

Since language anxiety is a situational specific construct, each language context may lead to a specific form of anxiety. Therefore, they can be classified into speaking anxiety, listening anxiety, writing anxiety, and reading anxiety. Reading anxiety in a foreign language ends in anxiety and finally poor language achievement "in conjunction of students' levels of reading anxiety and general foreign language anxiety" (Saito, Thomas & Horwitz, 1998, p. 202).

The concept of Reading Anxiety (RA) first was introduced in 1991. It was suggested that, "reading anxiety represents a specific aspect of general anxiety that has been invested in the reading process" (Zbornik & Wallbrown, 1991, p.3 cited in Ghonsuli & Loghmani, 2012). MacIntyre (1995) explains that "when learners feel anxious during reading task completion, cognitive performance is diminished, performance suffers, leading to negative self-evaluations and more self-deprecating cognition which further impairs performance and so on" (p.92).

Therefore, it is necessary to make use of various methods and techniques which minimize the anxiety and help learners to study with more confidence. One of those approaches which is related to the theories and concepts of second language learning and teaching, like affective factors, the input hypothesis, the interaction hypothesis and output hypothesis, is cooperative learning (Jacobs, McCafferty, & DaSilva, Idding, 2006).

Cooperative language learning: A historical perspective

Cooperative learning (CL, since then on) is not a new concept; Henson (2003) stated that cooperative learning and student-centered instruction may be as old as formal

education itself. It dates back to the time of Confucius and Socrates which emphasized curricula that focused on the learner rather than the subject. Steven(1994 cited in Alharbi,2008) stated that , “early uses of cooperative certainly occurred in one-room school houses, where one teacher was forced to teach students with a range of abilities”(p.127). The cooperative approaches allowed more individuals to test their ideas and receive comment within a quite safe environment to maximize their own and each other’s learning. So, CL is not simply putting students in pairs or a group to work together on a task (Ledlow, 1999).

Many researchers believe that CL has five instructional models:

- The learning together model
- Group investigation model
- Student team learning instruction model
- Curriculum Packages instruction model
- The structural approach model

In the field of second and foreign language education, cooperative learning has gained popularity over the years. In the past three decades, many studies have been conducted on the cooperative learning approaches and reading comprehension. The studies which have been conducted in this field confirmed that students who work in collaborative groups also appear more satisfied with their classes (Beckman, 1990; Chickering & Gamson, 1991; Collier, 1980; Cooper & Associates, 1990; Goodsell, Maher, Tinto, & Associates, 1992; Johnson & Johnson, 1989; Johnson, Johnson, & Smith, 1991; Kohn, 1986; McKeachie, Pintrich, Lin, & Smith, 1986; Slavin, 1980, 1983; Whitman, 1988 cited in Pattanpichet, 2011) .

Several studies have shown the efficiency of cooperative learning in EFL reading classes (Ghaith & El-Malak, 2004; Law, 2011; Liao & Oescher, 2009; Suh, 2009; Jalilifar, 2010; Kazemi, 2012; Khan, 2008; Duxbury & Tsai, 2010; Al Odwan, 2012; Bölükbaş, Keskin, & Polat, 2011; Pan & Wu, 2013; Suwantarathip & Wichadee, 2010).

Technique of Ask Together - Learn Together

This technique is one of the techniques of the learning together model and developed by Açıkgöz (1990 cited in Bölükbaş et. al, 2011). According to Açıkgöz (1992 cited in Bölükbaş et. al, 2011), this technique is based on the cooperation among learners in a way that all learners have to participate in the activities. It gives greatest importance to positive interdependence within group, individual accountability, group processing, reward, and face-to-face promotive interaction. In Ask Together - Learn Together Technique, as cited in Bölükbaş et. al, 2011), the following materials could be utilized:

“-Reading Texts: Some excerpts or sections taken from books, stories or notes prepared by the teacher can be used as reading materials.

-Question-Response Cards: These are the cards on which the questions and responses of the group and individuals might be written and its size might vary depending on the activity.

-Theme Sheets: This is a paper on which important points to be considered during reading are listed.

-Group Presentation Evaluation Forms: It is developed by the teacher to evaluate group presentations in terms of content and organization.

-Examination: It consists of multiple choice or short-response questions which are about the subject. It must not exceed 10-15 minutes" (p.332).

RESEARCH QUESTIONS

The research questions of the study are the followings:

- Is there any significant difference in reading comprehension (RC) of pre-university students when comparing students taught using cooperative learning and those taught using traditional methods?
- Is there any significant difference in reading anxiety of pre-university students when comparing students taught using cooperative learning and those taught using traditional methods?
- What are the students' attitudes on cooperative learning after providing cooperative learning intervention?
- What is the relationship of reading anxiety, students' attitudes and reading performance of students?

METHODOLOGY

Design of the study

In the present study, experimental research model consisting of pre-test and post-test with a control group was applied. Experimental group was taught through Ask Together - Learn Together, whereas control group was taught through traditional teaching methods which involved lecturing and question-response.

Participants

The participants in the study were 70 girls of pre-university school majoring in experimental sciences (35 of the subjects were in experimental group, 35 students were in the control group). They were chosen from the pre-university schools of district one in Shiraz. The participants were chosen based on convenience sampling since they were the students who were most accessible to the researcher.

Instruments

The required data for the study were collected through three instruments: the reading comprehension tests, used as a pre-test and post-test, comprised 30 items assessing

the students' ability to identify main ideas, details, references, and guess meanings from a reading text. Two comprehension tests were borrowed from Mohammed, (2012). The reliability of the reading comprehension tests for the study was calculated using Cronbach's Alpha, and it was found that the reliability for the pre-test was 0.79 and the post-test was 0.78. Foreign Language Reading Anxiety Scale (FLRAS) developed by Saito et al. (1999) was also used to measure anxiety related to FL reading. The FLRAS consists of 20 likert-scale items also scored on a 5-point scale, each of which is answered ranging from "strongly agree" to "strongly disagree". Reliability of the FLRAS questionnaire achieved an alpha coefficient of 0.82. The Farsi translation of FLRAS by Mohammadi (2007) was used in this study. The FLRAS achieved an alpha coefficient of 0.78 in this study. The subjects had to answer a questionnaire containing 10 items related to their opinions towards the cooperative learning approach. The questionnaire was constructed by Wichadee (2005) and achieved an alpha coefficient of 0.82.

Procedures

The data of the study were gathered through Reading Comprehension Achievement Test. Firstly, during an 8-week period until the experimental tasks were finished, the objectives and skills which had been aimed to be taught were identified and a comprehension test was administered in order to test the level of achievement.

In order to understand the efficiency of cooperative learning method, pre- and post-test results were compared; their grades in the final reading exam were analyzed. Mean, Standard deviation and difference of means were computed for each group. Independent samples t-test was applied to measure the significance of the difference between the means of the two groups. Pearson Product-moment correlation was used to determine the correlation between reading anxiety, attitude and post-test scores.

RESULTS

Students' reading comprehension achievement level in pre-test

To see if there is any significant difference in reading comprehension (RC) of pre-university students when comparing students taught using cooperative learning and those taught using traditional methods, the independent sample t- test was run on the mean scores of pre-test. The following tables illustrate the results obtained.

The descriptive statistics for the two groups are presented in table 1. The mean scores for the experimental and control groups are (-1.73333) and (-1.73333) respectively. It can be seen that these scores are the same, and the fact that there is no significant difference between the mean scores of these groups show that groups were at a similar level of achievement at the beginning.

Table 1. A comparison of reading comprehension achievement pre-test Scores of experimental and control groups

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
7.479	.011	\bar{x} 1.103	28	0.279	-1.73333	1.57097	\bar{x} 4.95131	1.48465
		\bar{x} 1.103	21.267	.282	-1.73333	1.57097	\bar{x} 4.99784	1.53117

Students' reading comprehension achievement level in Post-test

To find the answer to the research question one, after the period of training, the post-test exam was given to the students. The results are presented in the following table:

Table 2. A comparison of reading comprehension achievement post-test scores of experimental and Control groups

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
.509	.481	\bar{x} 3.908	28	.001	-6.53333	1.67199	-9.95825	-3.10841
		\bar{x} 3.908	27.495	.001	-6.53333	1.67199	-9.96109	-3.10558

Post-test results of cooperative learning and traditional teaching method groups, their means scores, standard deviation scores were calculated and t-test was conducted in order to analyze the effects of cooperative learning method on reading comprehension skills and achievements of the students in control and experimental groups. The mean scores of the experimental group and control group are (-6.53333). As a result of the statistical 2-tailed t-test results, p value is lower than .05 and the t score is (3.908). The results show that there is a significant difference between the mean scores of the experimental and control groups and it was observed that cooperative learning method applied in experimental group had a higher effect on reading comprehension skills when compared with the effects of traditional teaching methods.

Students' reading anxiety level

To find out whether cooperative learning had an impact on students' reading anxiety, the mean scores obtained from the reading anxiety scale questionnaires were compared by using a paired samples t- test. The results indicate that the difference between control group and experimental group is statistically significant and show that control group is more anxious in reading than experimental group. The results are displayed and discussed in the following table.

Table 3. A comparison of reading anxiety of experimental and control groups

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
1.976	.171	7.412	28	.000	9.60000	1.29517	6.94697	12.25303
		7.412	25.659	.000	9.60000	1.29517	6.93602	12.26398

Students' attitudes toward cooperative learning

Another objective of the study was to figure out the students' attitudes on cooperative learning after providing cooperative learning intervention. The average mean of attitude score for students in the cooperative learning group was 4.30 which can be interpreted as having a highly agreement with this learning approach. The bar graph has been shown in figure 4.1.

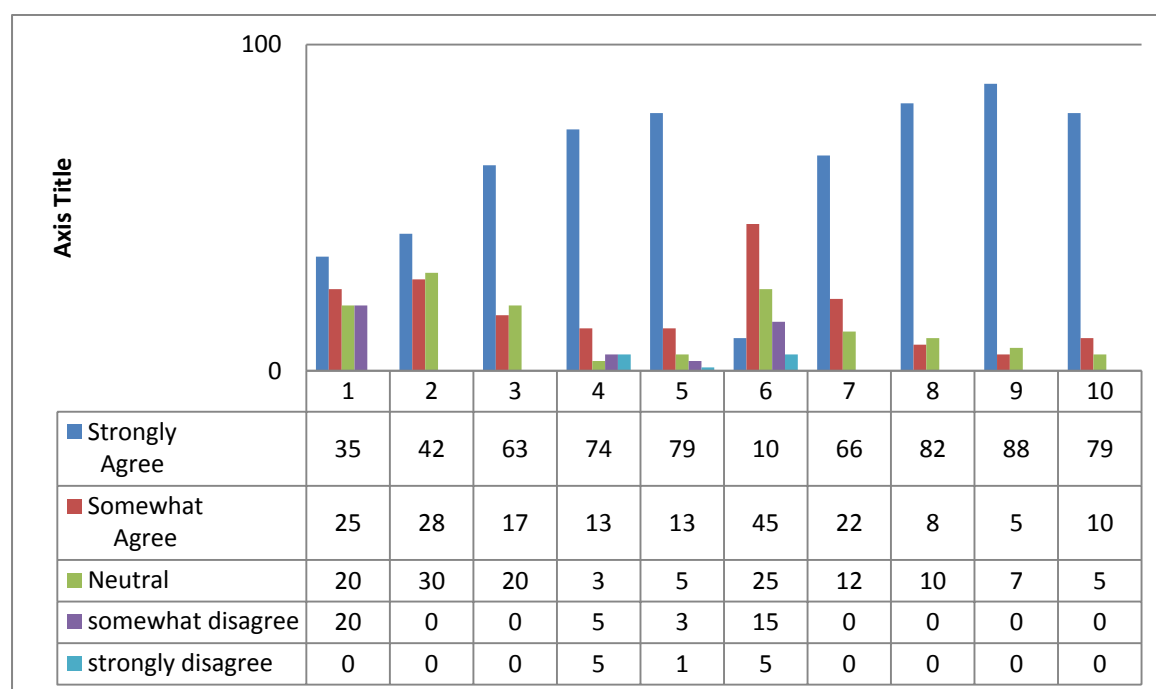


Figure 1. The bar graph based on the Percentage of Students Shown in Five Rating Scales

The relationship between students' reading anxiety, attitudes and reading performance

The last object of the study was to find out the possible relationship between students' reading anxiety, students' attitudes and reading performance of students.

To this end, Pearson product moment correlation was carried out. The correlation results are displayed in table 4.

Table 4. Correlation between post-test, attitude and anxiety

		posttest	Attitude	Reading Anxiety
Posttest	Pearson Correlation	1	.512	-.613
	Sig. (2-tailed)		.004	.000
	N	35	35	35
Attitude	Pearson Correlation	.512	1	-.650
	Sig. (2-tailed)	.004		.000
	N	35	35	35
Reading anxiety	Pearson Correlation	-.613	-.650	1
	Sig. (2-tailed)	.000	.000	
	N	35	35	35

Correlation analysis was used to describe the strength and direction of the linear relationship between three variables. Table 4 shows the correlation between post-test result and attitude is a positive correlation ($r=0.512$) and this correlation is statistically significant ($t=.004$). As table 4 indicates there is a negative correlation ($r=-0.613$) between the post-test result and reading anxiety and this correlation is significant too ($t=0.000$). Attitude and reading anxiety is also negatively correlated ($r=-0.650$) and the correlation is also significant (0.00).

DISCUSSION

As described in the result section, the results revealed that there is a significant difference between the mean scores of the experimental and control groups and it was observed that cooperative learning method applied in experimental group had a higher effect on reading comprehension skills compared to the effects of traditional teaching methods. It seems that cooperative learning is more effective in improving reading comprehension skills of EFL learners than traditional teaching methods. The finding of the present study supports the findings of various other studies carried out through reading comprehension and cooperative learning (Adams, 1995; Ghaith, 2003; Stevens, 2003; Jalilifar, 2010; Kazemi, 2012; Alodwan, 2012; Pan & Wu, 2013; Khan, 2008; Mohammed, 2012; Agustini, Marhaeni & Suarnajaya, 2013; Bolukbas, Keskin, & Polat, 2011).

According to this study, cooperative learning had an impact on students' reading anxiety. The mean scores obtained from the reading anxiety scale questionnaires were compared by using a paired samples t-test. The results showed difference between control group and experimental group was statistically significant and showed that

control group was more anxious in reading than experimental group. So far, there is no study regarding this issue (reading anxiety and cooperative learning). In previous studies (Suwantarathip & Wichadee, 2010, 2012) found the same result for language learning anxiety.

In this study, the average mean of attitude score for students in the cooperative learning group showed a highly agreement with this learning approach. The results can support the previous studies (Wichadee, 2005; Agustini, Marhaeni & Suarnajaya, 2013; Alhaidari, 2006.)

As literature revealed, the relationship between reading anxiety, students' attitudes and students' achievement in reading comprehension after using cooperative method had not been investigated yet. But there are some studies which found significant relationship between cooperative learning and students' achievement in reading comprehension (Adams, 1995; Ghaith, 2003; Stevens, 2003; Jalilifar, 2010; Kazemi, 2012; Alodwan, 2012; Pan & Wu, 2013; Khan, 2008; Mohammed, 2012; Agustini, Marhaeni & Suarnajaya, 2013; Bölükbaş, Keskin, & Polat, 2011; Marzban & Akbarnejad, 2013), and some others found significant relationship between students' attitudes and cooperative learning and students' achievement in reading comprehension (Wichadee, 2005; Agustini, Marhaeni & Suarnajaya, 2013; Alhaidari, 2006). There is also a study which indicated the significant relationship between anxiety and cooperative learning (Suwantarathip & Wichadee, 2010, 2012).

CONCLUSION

This study supports that cooperative learning is a good option in teaching reading comprehension and can work better than traditional direct instruction in improving the reading comprehension achievement of students. So, it is beneficial for teachers to develop reading comprehension knowledge, small group cooperative skills, and abilities of students in accordance with the academic requirements. Applying cooperative learning in the classroom does not mean abandoning the teacher-fronted mode, but it emphasizes various modes of learning. Therefore to achieve this goal, it is essential to train teachers to know how to participate students in learning process, how and when to assign learning objectives to learners and how to monitor each student within each small group. The findings of the study also proved the results of Johnson and Johnson (1995) who believe that if group mates feel positively interdependent with one another, a supportive atmosphere can develop their learning too. The findings of this study showed that the use of cooperative learning in reading comprehension classes can lead to students' reading anxiety reduction and higher performance in reading comprehension. It can be concluded that cooperative learning, especially think together-learn together technique which was used in this study, provide a comfortable non-stressful atmosphere and give opportunities to the students to support, encourage, and praise each other through discussion, creating and thinking in a group rather than in a whole class context. The results of attitude questionnaire confirm positive view of students toward this method. So, including cooperative learning in teaching programs and syllabuses can decrease students' anxiety toward that skill.

The limitation of this study is the small size of the groups which makes it difficult to make generalizable interpretations of the results. This study is just based on quantitative data; future studies could collect some qualitative data such as interviews, to provide more insight into student perceptions of cooperative learning.

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