

## The Effect of Problem Solving Task on Critical Reading of Intermediate EFL Learners in Iranian Context

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### ABSTRACT

The attempt in this study is to investigate the effect of teaching critical thinking through problem solving on reading comprehension performance of EFL intermediate learners. In so doing, forty including twenty male and twenty female intermediate students studying English in an institute in Ardabil, Iran, were selected based on their scores on Preliminary English Test and assigned into control and experimental groups. Afterwards, the sample TOEFL reading comprehension pre-test was administered to both of these groups to ensure homogeneity. The learners in experimental group were taught through problem solving instruction and the learners in control group were taught through traditional method of instructing reading comprehension. After ten sessions of instruction, the same sample TOEFL reading comprehension as post-test was given to the learners to measure the possible differences between pre-test and post-test. The finding revealed teaching problem solving had statistically significant effect on EFL learners reading comprehension performance. Conclusion can be drawn to confirm that teaching critical thinking through problem solving bring better understanding of the text.

**Key words:** Reading Comprehension, Critical Thinking, Problem Solving, EFL, Intermediate

### INTRODUCTION

Nowadays, reading comprehension is becoming an integral element in modern life and it is becoming increasingly difficult to ignore. Recent studies in the area of reading comprehension led to a renewed interest in problem solving technique through which students can identify, clarify, and solve problems exist in reading (Waters, 2000). In recent decades, critical thinking is an integral component in modern education and receives a great deal of attention. According to Stapleton (2001), critical thinking has a vital role in the reading acquisition. Understanding the implied meaning in text needs different thinking skills. CT can be considered one of those skills help students achieve more success in their academic life and if the students are provided with CT and meta-cognitive skills, they will have better understanding of the texts (Jouhson, Archibald, & Tenebaum, 2010: cited in NourMohammadi, Heidari, & DehghanNiry, 2012). Facione and Facione (1994) believed CT is identified by its subscales: analysis, evaluation, inference, deductive and inductive reasoning.

Although it is proved that teaching CT has a critical role in EFL students' reading comprehension, it is not employed in many EFL classes in Iran. According to Healy (1990), the students should be encouraged to express their own point of views and ideas instead of finding right or wrong answers for the questions. He believes encouraging students to find wrong and right answers may stop their critical thought.

Few studies have been conducted to examine the effect of CT teaching on reading comprehension. Therefore, this study aimed at investigating the effect of teaching CT through problem solving on EFL students' reading comprehension.

### Statement of the Problem

Critical thinking accounts for the major goal of education; therefore, lack of critical thinking among EFL Learners can cause serious problems in their future jobs and education. In Paul' view: "lecture, rote memorization, and (largely ineffective) short term study habits are still the norm in college instruction and learning today" (1990, P. 1). Fahim and Ahmadian (2012) introduced education system as the main problem in Iran and believed that students in Iranian education system are regarded as passive learners who do not take their learning responsibility and teachers must transfer their knowledge to the students. Halvorsen (2004) claimed instructors who value critical thinking skills will do their best to apply some strategies in teaching to help learners enhance their critical thinking ability. He suggested three techniques (debate, media analysis, problem-solving) commonly used in classes as tools to teach critical thinking skills. As a consequence, the present study employs problem-solving technique as a solution to teach critical thinking skills and improve reading comprehension performance of EFL students.

### Significance of the Study

Nowadays, critical thinking as an integral element in education captures the attention of many researchers. Admittedly, teaching critical thinking has become a central concern in modern education. On the other hand, reading comprehension is an important issue to consider in education. In spite of the key role of CT in academic context, there is a gap in the domain of teaching critical thinking in different skills of a language in Iran. As a consequence, examining the effect of teaching critical thinking through problem-solving on EFL learners' reading comprehension can benefit students and teachers in modern education.

Generally, the results of the current research will help teachers improve their students' reading comprehension by applying useful techniques in teaching critical thinking skills. To put it in other words, the study can illustrate a suitable way of instruction to teachers in order to force students to put aside the rote learning and memorization.

### Review of Literature

A number of studies investigating the effect of teaching CT on reading comprehension revealed that instructing CT assists EFL learners in their reading comprehension. For instance, a research by Hassani, Rahmani, and Babaei explored the relationship between Iranian EFL learners' critical thinking and reading comprehension performance in journalistic texts. The results showed there is a strong relationship between reading comprehension and learners' critical thinking (2013). Furthermore, Aloqaili (2011) sought the relationship between reading comprehension and CT. He reported there was a positive relationship between CT and reading comprehension. Additionally, Barjesteh and Vaseghi (2012) conducted a study to examine the effect of critical thinking skills on EFL learners' reading comprehension using Bloom's Taxonomy. The study suggested teaching critical thinking skills had a significant effect on reading comprehension performance of EFL students. Alternatively, the findings revealed there was no significant difference across variant proficiency level. Furthermore, a recent study by Danaye Tous, Tahri, and Haghighi (2015) examined the effect of teaching CT through debate on EFL students' reading comprehension. Eighty-eight students were randomly divided into experimental and control groups. The students in experimental group were instructed through debate. This study showed that instructing CT through debate had a significant effect on EFL learners' reading comprehension ability.

There are a few studies delving into the role of gender in CT. A research carried out by Walsh (1996) indicated the female outperformed the male in terms of CT. However, in another study by King Mines and Wood (1990) the male outperformed female in terms of CT. On the other hand, Claytor (1997) and Danaye Tous et al (2015) showed there was no significance difference between male and female performance of their CT ability.

This study intends to determine the effect of teaching critical thinking skills through problem solving on reading comprehension of intermediate EFL learners. The attempt is

made to answer whether teaching CT through problem solving have any significant effect on reading comprehension of male and female EFL learners.

### METHOD OF STUDY

#### Participants

Forty students including twenty male and twenty female ones participated in this study. They were selected from a population of fifty-six EFL learners. Since the researcher had access to the limited number of intermediate EFL learners, a small sample was chosen. All of the participants were aged between seventeen and twenty-six. The subjects were native speakers of Azerbaijani and had taken sixteen credits of English in this institute.

The homogeneity of the participants was checked through PET and forty students were chosen as the subjects of this study. The PET discriminated the participants as intermediate EFL students. After the subjects were selected on the basis of homogeneity of their language proficiency, they were given pre-test of reading comprehension. They then received CT teaching instruction through problem solving for ten sessions. Afterwards, they were asked to complete post-test of reading comprehension to measure the possible differences between pre-and post-tests.

#### Materials

As to the treatment of the study in experimental group, ten social problems were identified. Pictures and short introductory texts were used to introduce the problems. Later for each problem follow-up questions were provided to engage the students and through the questions the students were asked to find solutions for the problems. Each day treatment took about 30 minutes of class time and the passages were instructed by the researcher. The same texts were used to instruct the students in control group. But the students were asked to read the text loudly one by one and to translate the new words to Persian.

#### Instruments

##### *PET*

The Preliminary English Test one of the Cambridge English exams was administered to check the homogeneity of the participants in this study. Preliminary is an intermediate level test and it is used for intermediate students, so it was adopted to ensure the students are intermediate students. PET is designed in three papers to test four skills (reading comprehension, writing, listening, speaking) of the students. The reading part includes 35 questions, writing one includes seven questions, listening includes twenty-five. The time allocated for this paper is two hours. Preliminary speaking paper is consisting of four parts and the allocated time for each pair of candidates is 10-12 minutes.

##### *Reading comprehension test*

A sample TOEFL reading comprehension paper-based test (PBT) (Broukal, 2005) was used in this study. Then to ensure

the homogeneity of the learners in reading comprehension and also to measure the possible differences between two groups, a sample TEFL Reading Test was administered as a pre-test. This test had four passages and thirty-eight questions. The scores were calculated out of thirty-eight and the time allocated to complete the test was thirty-five minutes. After five weeks of treatment, the reading comprehension was given to the learners of both groups as a post-test to check the possible differences in the learners' reading comprehension ability.

### Procedures

In this research, some particular procedures were followed to collect the data. In the first instance, a placement test (Preliminary English Test) was administered to determine the students' proficiency level and homogeneity. Following that, according to the results of PET, forty (20 males, 20 females) students were chosen for the purpose of this research. In the first session, TOEFL Reading Comprehension Test (Broukal, 2005) was chosen as a pretest, which had four passages and thirty-eight questions. The scores were calculated out of thirty-eight and the time allocated to complete the test was thirty-five minutes. This test was administered as pre-test in control as well as experimental group. After five weeks of treatment, the same sample TOEFL Reading test was administered as post-test to check the possible differences in the learners' reading comprehension ability between two groups. Experimental group was instructed critical thinking through problem solving. As to the treatment of the study, ten social problems were identified. Pictures and short introductory texts were used to introduce the problems. The selection of the material was exactly like the one recommended by Halvorsen (2004) and all the steps mentioned by Halvorsen were taken into consideration. The suggested first step was to identify some problems the students might have inside or outside of the classroom. As a result, ten social problems that all of the students may encounter were identified by the researcher and the texts were chosen based on these problems to engage the students with reading texts. Afterwards, by the pictures and short texts the problems were introduced. Later, each text included follow-up questions to ask the students for the cause of the problems and pro's and con's. And the last question of the text required the students to give their ideas on action plan and list some solutions for those problems. The same texts were taught to the learners in the control group, however, the method of instructing reading comprehension was traditional through which the learners were asked to find new vocabularies and structures, translate them in Persian and memorize.

### Research Design

The data gathered in the current study were quantitative. indeed, the students' scores on reading comprehension test were quantitative. The study is a quasi-experimental with a factorial design. There are two groups of control and experimental and their reading comprehension scores of pre-test and post-test are compared. The method of teaching critical thinking –problem solving- was the independent variable and the reading comprehension performance was the dependent

variable. The factor of gender was used as the moderator variable and the language proficiency level was used as the control variable.

### Data Analysis

The main purpose of the present study was to investigate empirically the possible effects of teaching critical thinking skills through problem solving on Iranian male and female EFL learners' reading comprehension.

The reliability of the reading comprehension test was estimated through running Cronbach's Alpha. Descriptive statistics were run to the results of the PET forty intermediate EFL learners (20 males and 20 females) EFL learners were selected. Then, an independent T-test was administered to the results of the pretest of reading comprehension to assess their prior reading comprehension abilities. To provide answer to the research question, the GLM Univariate procedure was run to the results of the posttest of reading comprehension.

### RESULTS

The reliability of the instrument used in this study was established through a pilot study with 20 EFL learners. The estimated values of Cronbach's Alpha for reading comprehension test was ( $\alpha_{\text{reading comprehension test}} = .714$ ) which was higher than the least possible amount required (i.e., .70). The results are presented in Table.1.

#### Measure of L2 Proficiency (PET Test for Examining the Homogeneity of the Samples)

To ensure the main subjects of the study were approximately at the same level of language proficiency, PET was administered to (N=56) EFL learners. The participants took four parts that included items related to reading comprehension, writing, listening, and speaking with a maximum possible score of 170 points. The results of the PET test for (N=56) students is available in table. 2:

Table.2 showed the results of group statistics and numerical information for the PET test scores which was administered for selecting homogeneous sample out of (N= 56) EFL students. Measures of central tendency including the mean (M= 144), the median (Md= 147.00), the mode (Mo= 153.00) and measures of dispersion namely the range (R= 48.00), the variance (V= 114.42), and the standard deviation (SD= 10.69) together with measures of distribution such as Skewness (-1.182) and Kurtosis (1.334) were displayed for the PET.

#### Checking the Normality Assumption

The assumption of T- Tests; namely, normality was examined before running the main statistical analyses for the pre-test scores. It was assessed by computing Skewness and kurtosis values and obtaining trimmed means. Table.3 presents the results of normality tests.

In Table.3, the descriptive statistics for the variable were presented. Since the trimmed means and the original mean values were not very different for the reading comprehension

sion test for both groups, the normality assumption was established. In other words, the 5 % trimmed means were within the range of lower bound and upper bound of 95% Confidence Interval for the Mean. Division of the statistic of Skewness and Kurtosis by the standard error established the results of the Skewness and Kurtosis analyses. The findings

**Table 1.** Reliability statistics for reading comprehension test

	Cronbach's alpha	N of items	N of sample
Reading comprehension test	0.714	38	20 EFL students

**Table 2.** Statistics for the results of PET test

N	
Valid	56
Missing	0
Mean	144.7143
Median	147.0000
Mode	153.00
Standard deviation	10.69701
Variance	114.426
Skewness	-1.182
Standard error of skewness	0.319
Kurtosis	1.334
Standard error of Kurtosis	0.628
Range	48.00
Minimum	110.00
Maximum	158.00
Sum	8104.00

**Table 3.** Statistics for the reading comprehension

	Statistic		Standard error	
	Groups		Groups	
	Control	Experimental	Control	Experimental
Reading comprehension test scores 1				
Mean	20.1500	21.5500	0.79893	0.89876
95% Confidence interval for mean				
Lower bound	18.4778	19.6689		
Upper bound	21.8222	23.4311		
5% Trimmed mean	20.1111	21.4444		
Median	21.0000	21.0000		
Variance	12.766	16.155		
Standard deviation	3.57292	4.01936		
Minimum	14.00	16.00		
Maximum	27.00	29.00		
Skewness	0.002	0.324	0.512	0.512
Kurtosis	-0.840	-0.999	0.992	0.992

revealed that they were all within the range of +2 suggesting that the distributions were all normal and symmetric.

### Descriptive Statistics for the Pre -test Scores (Reading Comprehension Test)

Prior to the main study, all the participants took part in the pre-test. The purpose was to set up a baseline from which gains on the post-test could be examined and interpreted. Table.4 and.5 show the results of an independent samples t- test used to analyze the students' scores in the pretests of reading comprehension.

The descriptive table displayed the sample size, mean, standard deviation, and standard error for both groups at the beginning of the study. For reading comprehension test, the mean scores for the control and experimental group were ( $X^{\text{reading comprehension (control)}} = 20.15$ ) and ( $X^{\text{reading comprehension (experimental)}} = 21.55$ ), respectively, and they varied some points (mean difference= 1.40) around their average. When it comes to the degree of the variation of the scores around the mean score, the degree of variation for the pretest of reading comprehension for the control group ( $SD^{\text{reading comprehension (control)}} = 3.57$ ) was smaller than that for the pretest of reading comprehension of experimental group ( $SD^{\text{reading comprehension (experimental)}} = 4.01$ ).

Independent samples t- test were run to see if these differences were statistically significant. The results of independent samples- t- test are presented in Table.5.

For The Levene statistic, that examined the equality of the variances, the significance value of the statistic for pre-test of reading comprehension was higher than (.05). Since these estimates were larger than 0.05, it could be concluded that the groups had equal variances and thus the findings of first row were reported. Based on Table.5, there was no significant difference between the mean scores of the two groups in pre-test of reading comprehension ( $p \geq .05$ ). In other words, the control and experimental groups were almost at the same level of proficiency in terms of their reading com-

**Table 4.** Group statistics for the pre-test scores of the reading for the control and experimental groups

	Groups	N	Mean	Standard deviation	Standard error mean
Reading comprehension test scores 1	Control	20	20.1500	3.57292	0.79893
	Experimental	20	21.5500	4.01936	0.89876

**Table 5.** Independent samples test for the pre-test scores of the control and experimental groups

	Levene's test for equality of variances		t-test for equality of means					
	F	Sig.	t	df	Sig. (2-tailed)	Mean difference	95% confidence interval of the difference	
							Lower	Upper
Reading comprehension test scores 1								
Equal variances assumed	0.39	0.53	-1.16	38	0.25	-1.40	-3.83	1.03

**Table 6.** Descriptive statistics for the posttest of reading comprehension

Gender	Groups	Mean	Standard deviation	N
Female	Control	21.2000	4.13118	10
	Experimental	23.1000	4.97661	10
	Total	22.1500	4.55695	20
Male	Control	19.5000	3.56682	10
	Experimental	24.6000	4.90351	10
	Total	22.0500	4.92550	20
Total	Control	20.3500	3.85630	20
	Experimental	23.8500	4.86962	20
	Total	22.1000	4.68385	40

**Table 7.** Levene's test of equality of error variances for the reading comprehension test

F	df1	df2	Sig.
0.455	3	36	0.716

Design: Intercept+Gender+Groups+Gender \* Groups

prehension at the beginning of the study before introducing the specific treatment

**Research Question**

RQ. Does teaching critical thinking skills through problem solving have any statistically significant effect on male and female EFL learners' reading comprehension?

The following null hypothesis was suggested:

H. Teaching critical thinking skills through problem solving does not has significant effect on male and female EFL learners' reading comprehension.

In order to answer the first research question, The GLM Univariate procedure was run to the results of the posttest of reading comprehension. The GLM Univariate procedure provided analysis of variance for the dependent variable

(reading comprehension) by the two variables (gender and type of treatment). The factor variables divided the population into groups including males vs. females and experimental vs. control groups. Using this General Linear Model procedure, the null hypothesis about the possible effects of gender and treatment variables (traditional vs. Teaching critical thinking skills through problem solving) on the means of the dependent variable (reading comprehension) was examined. The interactions between factors (gender \* type of treatment) as well as the effects of individual factors (gender and type of treatment) were inspected. The results are shown in the following section.

The above table displayed descriptive statistics for the combination of factors in the model. There were equal cell sizes (10 participants in each group) and the standard deviations were somewhat similar. The findings showed that there was a *treatment* effect and the participants of the experimental group performed better than the control group. The total mean of the control group came to (20.35) and for the experimental group equaled (23.85). The findings also disclosed that there was a *gender* effect. In fact, male participants in the experimental group performed better compared to female participants. Therefore, the possible interaction effect between *gender* and types of *treatment* was examined since the mean differences in reading comprehension scores for the experimental group differ across gender.

Following descriptive statistics, Levene's test was also examined for the posttest of reading comprehension to ensure the homogeneity of the distributions.

Since the significance value of the Levene's test, (sig=.716), was higher than (.05), the equal variances assumption was met. It meant that, the slight variations in standard deviations observed in the descriptive statistics table were simply due to random variation.

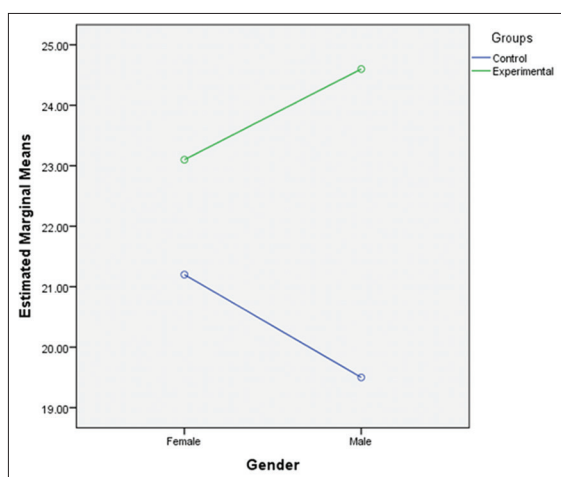
After establishing the homogeneity of the variances, the possible interaction effect between *gender* and types of *treatment* was inspected through computing model-estimated marginal means. The findings are presented in Table.8.

Table.8 shows an interaction effect between gender and types of treatment. If there were no interaction, the

difference between types of treatment for male and female participants was constant. Profile plot was presented to show the interaction effect.

The profile plot visually represented the marginal means. The factor levels of *gender* is shown along the horizontal axis. Separate lines were produced for each types of group (control & experimental).

Since the lines in Figure.1 were not parallel, there was interaction effect. It was revealed that the difference in posttest of reading comprehension was greater for male participants of the experimental group, as the line for female participants dropped downward and that for male participants dropped upward. This was an interaction effect and the tests of between-subjects effects were run to see if the interaction effect was statistically significant or it was simply due to chance



**Figure 1.** Estimated marginal means for the posttest of reading comprehension

variation. The results of tests of between-subjects effects are presented in Table.9.

In Table.9, an analysis of variance was run and each factor in the model as well as the model as a whole, was examined for its ability to account for variation in the dependent variable namely male and female EFL learners' reading comprehension scores. The significance value for the whole model was less than (.05). Therefore, teaching critical thinking skills through problem solving had significant effect on EFL learners' reading comprehension. However, the effect of gender factor was not statistically significant ( $P > .05$ ). Moreover, the interaction effect between gender and types of treatment was not statistically significant ( $P > .05$ ).

The partial eta squared statistic reported the practical significance of each factor, based upon the ratio of the variation (sum of squares) accounted for by the factor, to the sum of the variation accounted for by the factor and the variation left to error. Larger values of partial eta squared indicated a greater amount of variation explained by the model factor, to a maximum of one. The findings of partial eta squared showed that simply the group (types of treatment) had the greatest effect on the value of post reading comprehension scores ( $r = .148$ ).

The two other factors including gender and interaction of group and gender were not statistically significant and consequently did not have great effect on the value of post reading comprehension scores. The findings of the analysis partially rejected the first null hypothesis and implied that teaching critical thinking skills through problem solving had statistically significant effect on EFL learners' reading comprehension. Nevertheless, no statistically significant difference was reported between the mean scores of reading comprehension for the male and female participants in the experimental group.

**Table 8.** Estimated marginal means for group \* Gender (Reading comprehension test scores 2)

Dependent variable		Mean	Standard error	95% confidence interval	
Gender	Groups			Lower bound	Upper bound
Female	Control	21.200	1.402	18.357	24.043
	Experimental	23.100	1.402	20.257	25.943
Male	Control	19.500	1.402	16.657	22.343
	Experimental	24.600	1.402	21.757	27.443

**Table 9.** Tests of between-subjects effects for the reading comprehension test

Source	Type III sum of squares	df	Mean square	F	Sig.	Partial Eta squared
Corrected model	148.200 <sup>a</sup>	3	49.400	2.514	0.074	0.173
Intercept	19536.400	1	19536.400	994.219	0.000	0.965
Gender	0.100	1	0.100	0.005	0.944	0.000
Groups	122.500	1	122.500	6.234	0.017	0.148
Gender * Groups	25.600	1	25.600	1.303	0.261	0.035
Error	707.400	36	19.650			
Total	20392.000	40				
Corrected total	855.600	39				

a. R squared=0.173 (Adjusted R squared=0.104)

## DISCUSSION

This study set out with the aim of examining the effect of teaching CT through problem solving on Iranian male and female EFL learners' reading comprehension. The results of this study indicated that the problem solving technique had a statistically significant effect on the learners' reading comprehension. This study produced results which corroborate the findings of a great deal of the previous work in this field. This finding is in agreement with Facione's (1992) view that believed there is a significant relationship between reading comprehension and CT. In addition, the result is consistent with Grabe's (1991) who suggested adopting some CT skills used in reading comprehension (inference, analysis, synthesis, evaluation) can help the learners promote their reading comprehension. Moreover, the result of this study agrees with the findings of studies carried out by Barjesteh and Vaseghi (2012), Hassani, Rahmani, and Babaei (2013), and Danaye Tous, Tahriri, and Haghghi (2015) in which instructing CT had a statistically significant effect on Iranian EFL learners' reading comprehension and teaching CT brought better understanding of the text. Indeed, the current study supports the idea that there is positive correlation between CT and reading comprehension.

The findings of the current study also indicated the effects of gender factor was not statistically significant. Indeed, the same mean score changes across gender for both control and experimental groups was observed. The findings of this study do not support the previous research carried out by Walsh (1996) in which females outperformed males in terms of CT. This result also differs from King Mines and Wood's (1990) study in which the male outperformed the female in terms of CT. This finding is consistent with those of Claytor (1997) and Danaye Tous, Tahriri, and Haghghi (2015) in which there was no significance difference between male and female performance regarding their CT ability. In fact, this result showed there was no relationship between CT and gender.

## CONCLUSION

This study has examined the effect of teaching critical thinking on reading comprehension performance of EFL learners. Problem solving as a technique of CT instruction was adopted to improve EFL learners' reading comprehension. It was found that instructing CT through problem solving brought better understanding of the text. Actually, the current study supports the idea that there is positive correlation between CT and reading comprehension.

Since critical thinking has a key role in developing effective language learning, it needs to be improved among EFL learners. Waters (2000) suggested using CT activities in English classroom can help learners enhance their level of thinking and also understand the main meanings of the text. Indeed, Waters (2000) believed adopting CT activities has a significant role in English language classrooms and teachers take it into consideration in their classes. In this study, problem solving as a technique of teaching CT has brought better

understanding of the text and as a significant technique can be used by teachers in their English classes to improve the learners' reading comprehension. To conclude, English language teachers need to put more emphasis on CT tasks to enable students to make decisions and solve problems effectively in their real lives.

The generalizability of this study is subject to certain limitations. This study was carried out with a small size forty students aging between 17-26 participated in this study. As a result, the result of the study might not be generalized to other learners in Iranian English language institutes. In addition, this study lasted for one month and a half with 10 thirty minutes of treatment. Therefore, future studies might investigate the effect of teaching CT through problem-solving with large number of students and long period of treatment.

## Implications of the Study

Drawn upon this study, problem based texts in EFL classes can improve the students' reading comprehension. It has been suggested problem solving as a technique of CT instruction can be used in classes to enhance the students' level of thinking and encourage them to learn effectively. In fact, students can be engaged with learning because of the challenge of the task. In order to engage students, the instructors use problem-based activities which are learner-centered and involve the higher-order cognitive intellectual skills (Lai, 2011).

Therefore, the teachers who would like to apply critical thinking in their classes should be aware of the point that they need to choose the right technique of instructing CT skills. Problem solving is one of those techniques can be used in teaching critical thinking to help the students promote their overall learning achievement. Furthermore, if the teachers implement problem-solving technique, they should select appropriate activities, steps and texts to promote the students' reading comprehension. First, they should identify the problems students may have in the classroom or outside of the classroom. Afterwards, the students should be introduced to the problems. Later, the students would be asked to find cause of the problems and discuss the pro's and con's. Finally, the students should list some solutions for the introduced problems. In addition, the materials selected to teach problem solving are to be consistent with the level of the students.

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