

Turning knowledge into wisdom: Improving the reading comprehension ability of EFL students through thinking analytically and reading critically

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Abstract. This study explores the ways in which Critical Reading (CR) practices can improve reading comprehension ability of Iranian EFL students. In the present study, the following null hypothesis was proposed: The application of critical reading has no significant effect on improving the reading comprehension ability of Iranian EFL students. The proposed design was a pretest-posttest groups design. Hence, a group of seventy homogeneous students were selected. They were randomly assigned to control and experimental groups. Then both groups enjoyed a series of similar instructions except that the students in experimental group were required to express their own opinions about and react critically to the reading passage they had just read. The students in order to express their own ideas about and react critically to the passage had to activate and use their background knowledge. Finally, in order to capture the probable significant relationship between critical reading and reading comprehension a t-test was used. The results rejected the null hypothesis, and indicated that critical reading practices positively affected students' reading comprehension.

Keywords: critical reading, reading comprehension, EFL students, control and experimental groups

1. Research Background

In the literature about critical reading, one of central skills in learning to “turn knowledge into wisdom” is critical reading: the ability to learn from text, to think analytically and critically and to develop an ethical and reasoned position as a result (Wilson, 2004). According to Flynn (1989) critical reading is an interactive process which use several level of thought simultaneously. Critical reading is the deliberate act of testing concepts, trying ideas on for size. Critical reading as an educational concept has been widely addressed in the reading e.g. (Paul 1993, Flynn 1989, Hickey 1998) and various researchers have offered their own definitions of the notion. For instance, (Gillet, 2008) state that “critical reading means mentally arguing with books, texts, authors, in particular analyzing books for hidden biases or subtle suggestions that one group is superior to another (p.20). (Hillman, 1990)” critical reading skills –including the ability to analyze reading passage – are absolutely necessary for success at university (p.308). Paul (1993), for instance, writes that a critical reader “actively looks for assumptions, key concepts and ideas, reasons and justifications, supporting examples, parallel experiences, implications and consequences, and any other structural features of the written text, to interpret and assess it accurately and fairly” (p. 461). This conception of critical reading follow in roughly the purposes of this research, then, researcher will take critical reading to involve a reader engaging or dialoguing with (the writer of) a text, questioning, analyzing, interpreting, and evaluating the content and structure of the written text, and making connections between the text and the reader’s own lived experiences.

2. Method

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1.1. Participants

Seventy Iranian EFL students are, through administering a pre-test, selected. The age-limit of subject is 18 to 19. The advantage of this age range is that the students' educational background will provide them with similar prior knowledge which will be required for comprehension. The subjects are homogeneous in terms of language proficiency. In this study, the sex variable is removed because all subjects are male students.

1.2. Instrumentation

In order to determine the homogeneity of the groups regarding their level of proficiency, a standard test will be used. The test will use as the pre-test is the Nelson Test from 150 A. It will contain 50 multiple-choice items. The reading comprehension tests will be used for post-test are a set of teacher – made test. They will consist of 30 multiple-choice items in the form of a cloze test and reading comprehensions. According to (Mousavi, 2009) in this situation, test objectives can be based directly on course objectives and test content derived from specific course content. In as much as instructor, test writer, and evaluator are all the same individual, the students know pretty much what is expected of them?

1.3. Design

According to (Creswell, 2008) True experimental design has several key central ideas:

- Random assignment
- Control over extraneous variables
- Manipulation of the treatment conditions
- Group comparison
- Threats to validity (p.300).

These characteristics allow us to avoid almost all the problems associated with internal and external validity. The present study has all the above characteristics, so we can call it a true experimental research. As the researcher is going to study how background knowledge of the students will be activated through critical reading as post-reading activity, so the design which will be used is a pretest-posttest groups design. In this design, there are two groups – an experimental group which receives the special treatment and a control group which does not. The subjects are randomly assigned to one or the other group, and the decision as to which group will be the experimental group is also decided randomly. A pre-test and a post-test are administered before and after the treatment. The procedure the researcher applied to carry out his study is as follow.

3. Procedures

In order to have two homogeneous groups, the pre-test is going to be administered to 140 Pre-university students. Then on the basis of the information is obtained, 70 students are chosen as the key informants. The selected subjects are randomly assigned to two groups that will be two experimental and control groups. Afterwards, both groups will receive a series of similar instructions expect that the students in the experimental group are required to express their own opinions about and react critically to the passage they have just read. For the control group each session is held as follows: The passage is first read by teacher. Then, the new vocabulary and grammatical structures is explained. Next, the students are required one by one to read some parts of the passage. Finally, reading comprehension questions are asked by the teacher. For the experimental group the same procedure is followed, expect that the experimental group have to express their idea about the passage before comprehension questions being asked. And finally, the post – test will be administered to both groups.

4. Findings and Discussion

The data obtained from the test administration were put into analysis. Great effort was made to find whether the proposed null hypothesis would be confirmed or rejected. The T-value is then entered in a special table of T-values included in most statistics books and which indicates whether T-value is statistically significant. In the present study, the performance of each two groups in both experiments was compared through T-Test. The mean is the measure of central tendency. If the scores of experimental group in the pre-test are distributed along a scale, (14.6) will fall exactly at the balance point. The standard

deviation is the measure of variability and it looks at the average variability of all scores around the mean. Because of small standard deviation of the experimental group, it can be said that distribution is close to the central point. Also the average deviation of all scores from the mean can be found out. In (Table 1) the value of mean and standard deviation of both groups in the Pre-Test are described:

Table1: Values of Mean and S.D of Both Groups on Pre-Test

Group	N	Σ	ΣX^2	X	S.D
Experimental	35	511	8014	14.6	4.03
Control	35	500.5	7662.75	14.3	3.85

The experimental and control groups have got nearly equal values of mean. This indicates that the subjects of both groups are homogenous. After the computing the values, the two means were compared through T-Test. First, the standard error of differences between the means was obtained.

$$S (X_e - X_c) = 0.54$$

Now that we have the standard error of difference between the means, we can find the t-value.

$$t_{abs} = 0.55$$

The critical value for t is needed when the sample size is 35 and we have two groups. So each group has 34 d.f. since there are two groups. The total d.f. ($n_1 - 1 + n_2 - 1$) is 68. The number of d.f., 68, is not listed but falls between 60 and 120. So 60 were chosen as being the more conservative estimate and it was checked across to the .05 column. The t-value needed for the selected significance level of .05 is 2.000. The result of T-Test analysis is shown below (Table 2):

Table2: Value of T-observed on the Pre-test

T-critical	Two-tailed probability	d.f	T-observed
2	0.05	68	0.55

The value of t-observed obtained through T-Test confirms the homogeneity of the proficiency of the two groups. After the pre-test was administered, the treatment began and it lasted for about five weeks. Throughout the treatment, the subjects of both experimental and control groups were taught the reading comprehension which were mentioned before. The treatment for both groups was the same except that the critical reading was reinforced through using reading comprehension for the experimental group. A session after the treatment was finished, the post-test was administered. By an apparent comparison of the values of means of the control group in the Post-test and Pre-Test, we can recognize that the score of the control group have also raised. But this improvement is not as much as the improvement of the scores of experimental group in Post-Test.

Table3. Values of the Mean and Standard Deviation of Both Groups in Post-test

Groups	N	ΣX	ΣX^2	X	S.D.
Experimental	35	1095	35976	31.31	6.87
Control	35	922	25452	26.34	5.76

The difference between the two means cannot be considered great enough to allow the researcher to cite the evidence as support for the effective use of critical readings. He cannot simply look at the mean scores of two groups and conclude that critical readings are effective on improvement of reading comprehension ability. So after obtaining the above values, they were compared through T-Test to reject or confirm the null hypothesis. First, the standard error of differences between the means was obtained. It gives the researcher a ruler for the difference in means if he repeated this experiment over and over with different 35-member classes.

$$S(X_e - X_c) = 1.5$$

Now that we have the standard error of difference between the means, he can find the T-value. The result of the comparison has been delineated in the following table: the means, he can find the t-value. The result of the comparison has been delineated in the following table:

Table4. Values of T-observed in the Post-test

T-Critical	Two-tailed Hypothesis	D.F.	T-observed
2	0.05	68	3.31

The two groups have scored differently on the post-test. The difference is statistically significant. Also the obtained value of T-observed in the Post-Test is enough above the value of T-Critical that the researcher is quite safe in rejecting the null hypothesis. Rejecting the null hypothesis at the (.05)level indicates that a difference in means as large as that found between experimental and control group means would not likely have resulted from sampling error in more than 5 out of 100 replications of the experiment. This suggests a 95 percent probability that the difference was due to the experimental treatment rather than to sampling error. Therefore, the researcher can come to the conclusion that the critical reading will be effective on the improvement of reading comprehension

5. Conclusions

As it was mentioned, the null hypothesis was rejected and it was proved that the critical reading exert a positive impact on the improvement of reading comprehension ability. Therefore, it seems likely to state that the teacher can improve the learning of students for reading comprehensions through using the critical readings. The finding of this study suggested that students, in critical reading, mostly resorted to their experience and knowledge of the world, to express their own attitudes and beliefs about the passage they had just read. So it can be concluded that critical reading, which was here a post-reading activity, activated the students' background knowledge which, in turn, affected the comprehension of the passage. Nevertheless, the exact relationship between the critical reading and reading comprehension is not yet quite clear. One of the most difficult parts in finding the relationship between the two is the fact that determining the amount of one's background knowledge is as difficult as drawing an exact map of the process of comprehension. This is due to the fact that the background knowledge of every person is under constant change.

6. References

- [1] Creswell, J. W. (2008). Educational research: planning, conducting, and evaluating quantitative and qualitative research: Pearson/Merrill Prentice Hall.
- [2] Flynn, L. L. (1989). Developing critical reading skills through cooperative problem solving. *The Reading Teacher*, 42(9), 664-668.
- [3] Gillet , J. W., Temple , C., & Crawford, A. (2008). *Understanding Reading Problems -Assessment and Introduction* (7 ed.). USA: Pearson Education,Inc.
- [4] Hickey, M. G. (1988). Developing Critical Reading Readiness in Primary Grades. *Reading Teacher*, 42(3), 192-193.
- [5] Hillman, L. H. (1990). *Reading at the university*: Wadsworth.
- [6] Mousavi, S. A. (2009). *Encyclopedic dictionary of language testing*: Rahnama Publications.
- [7] Paul, R., Binker, A., Thinking, S. S. U. C. f. C., & Critique, M. (1993). *Critical thinking: What every person needs to survive in a rapidly changing world*: Foundation for Critical Thinking.
- [8] Wilson, K., Devereux, L., Macken-Horarik, M., & Trimmingham-Jack, C. (2004). *Reading readings: How students learn to (dis) engage with critical reading*.