

**THE IMPORTANCE OF UTILIZING SUPPLEMENTARY VOCABULARY MATERIAL IN
FORMATIVE AND SUMMATIVE ASSESSMENT OF READING COMPREHENSION: A
STUDY ON IRANIAN UPPER INTERMEDIATE EFL LEARNERS**

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Abstract

Vocabulary knowledge and its role in reading comprehension is one of the main areas of focus in language research for the recent years. Knowledge of vocabularies as the building blocks of language has a very essential role. Without recognizing the meaning of words it would be impossible to produce and comprehend language. The aim of this study was to examine the impact of utilizing supplementary vocabulary material on improving the scores of reading comprehension course among Iranian upper intermediate EFL learners. To fulfill this objective, 80 males and female upper intermediate EFL learners were selected based on availability sampling. The level of students was determined through administering an Oxford Quick Placement Test (OQPT). The participants were divided into experimental and control groups. Both groups were pretested through a TOEFL reading comprehension test. In contrary to the experimental group that received supplementary vocabulary, the students in control group did not receive any supplementary materials. Then, during 21 sessions of treatment, three formative tests were used and in the last session the posttest (summative one) was administered to both groups. Descriptive statistics, covariance analysis, Kolmogorov-Smirnov test, and Levene's test of equality of error variances were run to analyze the data. The findings revealed that utilizing supplementary vocabulary material had significant effect on reading comprehension scores. Also, the experimental group significantly outperformed the control group ($p < .05$) more on the summative assessments than the formative ones. Furthermore, the results indicated that female students had better scores compared to male students and they benefited more by utilizing supplementary vocabulary material in EFL upper intermediate reading comprehension classroom.

Keywords: Formative Assessment, Reading Comprehension, Summative Assessment, Supplementary Vocabulary Material

1. INTRODUCTION

Reading comprehension is a complex process between identifying printed symbols and interpreting the meaning behind the symbols. Some factors affect reading comprehension skill such as complexity of the reading text, environmental influences, anxiety during reading comprehension, interest and motivation, decoding or word recognition speed. (Pourhosein & Sabouri, 2016). Vocabulary, as one of the knowledge areas in language, plays a great role for learners in acquiring a language (Cameron, 2001). Linse and Nunan (2005) state that learners' vocabulary development is an important aspect of their language development. According to Meara (1980), although the role of vocabularies has been neglected for a long time, researchers have increasingly been turning their attention to them. For example, Carter and McCarthy (1988), Arnaud and Bejoint (1992), Huckin and Coady (1999), Coady and Huckin (1997), Schmitt (2000), and Read (1997) investigated this issue more in depth.

Vocabulary knowledge is often viewed as a critical tool for second language learners because a limited vocabulary in a second language impedes successful reading comprehension. Vocabulary knowledge supports the reader's text processing and interaction with the author, which in turn promote the formation and validation of concepts and learning. According to Rupley, Logan, and Nichols (1999) the author's and the reader's vocabulary and experiences are woven together to form the fabric of learning, confirming, reasoning, experiencing, enjoying, and imagining. Vocabulary instruction is an integral component of teaching how to read both narrative and informational texts. Teaching vocabulary in a balanced reading program should be rounded in teacher directed instruction and varied opportunities should be prepared for students on practice and apply their word knowledge. Furthermore, they should be exposed to wide reading and writing activities in both narrative and informational texts. Students ought to be engaged in learning new words and expanding their understanding of words through instruction that is based on active processing. That is, students are not just memorizing definitions but are entering information and integrating word meanings with their existing knowledge to build conceptual representations of vocabulary in multiple contextual situations.

It is important that vocabulary instructional practices immerse students in language-rich activities that teach words in meaningful reading experiences. Vocabulary emphases include

teacher-directed instruction and appropriate practice in specific skills along with broad reading and writing opportunities. Vocabulary instruction is often criticized when it is taught in isolation of text and becomes a dictionary activity in which students copy definitions of words and then write sentences using these words. Instruction such as this, which avoids active student engagement in vocabulary and concept development, does not connect to students' previous knowledge. (Rupley, Logan & Nichols, 1999).

Snow (2002) stated that the strength of the relationship between vocabulary knowledge and reading comprehension increased substantially as the children advanced in grade level. In another study, Stæhr (2008) conducted a study on 88 EFL learners and found that learners' receptive vocabulary size is strongly associated with their reading and writing skills, suggesting that 2000 vocabulary level is a crucial goal for low-level EFL learners. Another support for the results of this study comes from the study of Li and Kirby (2014) suggesting that breadth of vocabulary had strong effect on reading performance. Seeing those results, it may be possible to draw the implication that EFL teachers should expose students to as many vocabulary items as possible so that their comprehension level will develop. Other studies (Baker, 1995; Nagy, 1988; Nelson-Herber, 1986) have also assumed that knowledge in vocabulary and reading comprehension are interdependent and there is strong correlation between the two in order to successfully process reading text in any language.

Also, Maher Salah (2008) investigated the relationship between vocabulary knowledge and reading comprehension of authentic Arabic texts. Data was collected from twenty-three learners at Brigham Young University, who ranged from Intermediate Low to Intermediate Mid in both productive and receptive skills. Two reading comprehension tests, circling the unknown words in texts and a lexical coverage test for each passage texts were given to the subjects. Linear regression analysis of the data showed that there is a correlation coefficient of 0.7 and 0.6 between the percentage of known words and students' comprehension of the two reading texts. The results indicated that the subjects needed to know approximately 90% of running words to adequately comprehend the first passage and around 86% to comprehend the second passage.

Furthermore, Mehrpour, Razmjoo and Kian (2011) examined the relationship between vocabulary knowledge and reading comprehension on ELF learner from among five language teaching institutes in Shiraz. The participants of the study were sixty (30 males and 30 females). The results obtained from the analysis of the data indicated that while both depth and breadth of

vocabulary knowledge play an important role in EFL learners' reading comprehension performance, depth of vocabulary knowledge makes a more important contribution. The findings further indicated that depth and breadth of vocabulary knowledge are positively correlated, that is, those learners who had large vocabulary size had a deeper knowledge of the words, too.

The terms “formative” and “summative” do not have to be difficult, yet the definitions have become confusing in the past few years. This is especially true for formative assessment. In a balanced assessment system, both summative and formative assessments are an integral part of information gathering. Depend too much on one or the other and the reality of student achievement in your classroom becomes unclear.

Formative Assessment is part of the instructional process. When incorporated into classroom practice, it provides the information needed to adjust teaching and learning while they are happening. In this sense, formative assessment informs both teachers and students about student understanding at a point when timely adjustments can be made. These adjustments help to ensure students achieve targeted standards-based learning goals within a set time frame.

Previous studies indicate that there is a need for further research to look closely at the relationship between vocabulary knowledge and reading comprehension. A few studies have been conducted on the role of supplementary vocabularies on reading comprehension summative and formative assessments among EFL students. Therefore, there is a need for further research in this area. So, this research is conducted to investigate this issue among Iranian upper intermediate EFL learners.

1.1. Research Questions and Hypotheses

This study is an attempt to answer the following research question:

RQ1. Does utilizing supplementary vocabulary material in reading comprehension classroom have any significant effect on upper intermediate EFL students' assessment?

RQ2. Does utilizing supplementary vocabulary material in reading comprehension classroom have more influence on upper intermediate EFL students' summative assessment than formative ones?

RQ3. Does vocabulary-instructed reading comprehension classroom impact gender roles of the upper intermediate EFL students?

The following hypotheses are developed in order to test the research questions:

H0 1: Utilizing supplementary vocabulary material in reading comprehension classroom does not have any significant effect on upper intermediate EFL students' assessment.

H0 2: Utilizing supplementary vocabulary material in reading comprehension classroom does not have more influence on upper intermediate EFL students' summative assessment than formative ones.

H0 3: Vocabulary-instructed reading comprehension classroom does not impact gender roles of the upper intermediate EFL students.

2. METHOD

2.1. Participants

The participants of this study were 80 language learners who were studying EFL in Institute of Higher Education, Mashhad, Iran. They were selected based on availability sampling. The participants' age range was from 19 to 30. Upper intermediate students were chosen by employing a proficiency test known as Oxford Quick Placement Test (OQPT). The participants were randomly divided into experimental and control groups. The control and experimental groups were consisted of 37 and 43 upper intermediate males and females EFL students respectively.

3.2. Instrumentation

The first instrument which was employed in the present study to homogenize the participants was the OQPT. It helped the researcher to have an understanding of what level his participants were at. According to this test, the learners whose scores were between 45 and 50 were considered as upper intermediate. The main textbook which is taught in reading comprehension classroom was "Active Skills for Reading (3)", and the book which was considered as the supplementary vocabulary material was "English Vocabulary Organizer". For every chapter taught from their main textbook, two units from the supplementary book were utilized. Every unit of the main text book (Active Skills for Reading 3) consists of two chapters. During the time of this study 9 units (18 chapters) of the main textbook were covered along with 36 units of the supplementary book.

During 21 sessions of treatment (twice a week), three classroom reading comprehension examinations were administered to students every seven sessions to investigate students' formative assessment scores.

The next instrument which was used in the current study was a post-test of reading comprehension. After the treatment finished, a modified version of the pre-test was used as the post-test. All characteristics of the post-test were similar to the pre-test in terms of time and the number of items. The only difference is that the order of questions and alternatives were changed to wipe out the probable recall of pretest answers. It was given to the participants to assess their reading comprehension after the treatment period.

3. RESULTS

Descriptive statistics related to control and experimental groups is shown in Table one.

Table1: *Descriptive Statistics*

Group	Assessment		N	Minimum	Maximum	Mean	Std. Deviation
Control	Average of formative scores	pre	37	10.00	19.00	14.62	1.76
		post	37	11.00	20.00	14.96	2.09
	Summative score	pre	37	10.00	19.00	14.62	1.76
		post	37	12.00	19.00	15.14	2.02
Experimental	Average of formative scores	pre	43	11.50	20.00	15.86	2.10
		post	43	14.00	19.50	17.09	1.60
	Summative score	pre	43	11.50	20.00	15.86	2.10
		post	43	14.50	19.50	17.69	1.19

Table 2: *One-Sample Kolmogorov-Smirnov Test*

Group	Assessment		Pre	Post
Control	Average of formative scores	N	37	37
		Kolmogorov-Smirnov Z	.885	.587
		Asymp. Sig. (2-tailed)	.413	.882
	Summative score	N	37	37
		Kolmogorov-Smirnov Z	.885	.833
		Asymp. Sig. (2-tailed)	.413	.492
Experimental	Average of formative scores	N	43	43
		Kolmogorov-Smirnov Z	.708	1.175
		Asymp. Sig. (2-tailed)	.698	.126

	N	43	43
Summative score	Kolmogorov-Smirnov Z	.708	1.063
	Asymp. Sig. (2-tailed)	.698	.208

To investigate if the data are distributed normally or not, one-sample Kolmogorov-Smirnov Test was utilized. The results of Table 2 indicate that the significance level of the test is more than 0.05. Thus, it can be concluded that the data are normally distributed.

Since the data are normally distributed, for moderating the effect of pre-test ANCOVA was used to compare the mean of scores in post- test.

3.1. The first hypothesis analysis

First to check the homogeneity of the error variances between groups, the following test was used and the results showed that since $\text{sig} > 0.05$ the obtained variances can be considered as homogeneous.

Table 3: *Levene's Test of Equality of Error Variances - Dependent Variable: post test*

Assessment	F	df1	df2	Sig.
Average of formative score	4.011	1	78	.059
Average of Summative score	2.749	1	78	.126

Since the variances are homogenous, the use of ANCOVA here is justified for testing the first hypothesis of the study.

Table 4: *Tests of Between-Subjects Effects - Dependent Variable: post test*

Assessment	Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Average of formative scores	Corrected Model	103.122	2	51.561	21.203	.000
	Intercept	95.377	1	95.377	39.220	.000
	Pre	77.567	1	77.567	31.897	.000
	Group	4.493	1	4.493	1.848	.049
	Error	187.250	77	2.432		
	Total	22252.250	80			
	Corrected Total	290.372	79			
Summative score	Corrected Model	111.646	2	55.823	24.102	.000
	Intercept	179.694	1	179.694	77.584	.000
	Pre	27.994	1	27.994	12.087	.001
	Group	50.268	1	50.268	21.704	.000
	Error	178.342	77	2.316		
	Total	22701.500	80			
	Corrected Total	289.988	79			

In Table 4, for formative assessment scores there is significant difference between control and experimental group scores. The average scores of control and experimental groups as is shown in Table one are 15.14 and 14.96 respectively and this indicates that the average scores of formative assessments in experimental groups have significant increase compared to the control group. In fact, utilizing supplementary vocabulary material in reading comprehension class has significant effect on the EFL students reading comprehension formative assessments.

As a result, it can be said that utilizing the supplementary vocabulary material has significant effect on EFL upper intermediate students reading comprehension scores (both formative and summative) and the first null hypothesis of the study would be rejected.

3.2. Second hypothesis analysis

To investigate the second hypothesis of the research, Covariance analysis is utilized. In the same way, for summative assessment scores, $\text{sig}=0.00<0.05$ and it is inferred that there is significant difference between control and experimental groups. The averages of summative scores in

control and experimental groups as is evident in Table one are 17.09 and 17.69 respectively and this indicates that the post test scores in experimental group have had significant increase compared to the control group. So it can be concluded that utilizing supplementary vocabulary material has significant effect on reading comprehension summative scores.

Table 5: *Descriptive Statistics*

Assessment	Mean	Std Deviation	N
Average of formative scores	16.07	1.01	80
Average of Summative scores	16.74	1.03	80

Table 6: *Levene's Test of Equality of Error Variances - Dependent Variable: post test*

F	df1	df2	Sig.
.116	1	158	.733

As is evident from the above table, since the significance level is 0.733 ($\text{sig} > 0.05$), the variances are considered homogeneous and the use of ANCOVA is justified. The following data shows the results of covariance analysis for summative and formative assessment in the post test.

Table 7: *Tests of Between-Subjects Effects - Dependent Variable: post test*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	158.947	2	79.473	29.529	.000
Intercept	229.161	1	229.161	85.145	.000
pre	157.808	1	157.808	58.634	.000
Assessment	10.139	1	10.139	3.767	.016
Error	422.552	157	2.691		
Total	44953.750	160			
Corrected Total	581.498	159			

As depicted, the significance level of time is 0.016 which is less than 0.05 and this proves that the type of assessment (formative and summative) has significant effect and there is a significant difference between the formative and summative scores as well. The average scores

of formative and summative scores are estimated 16.07 and 16.74 respectively and it can be concluded that the summative scores have had significant increase compared to formative ones.

3.3. Third hypothesis analysis

For the analysis of the third hypothesis of the study, covariance analysis is used and the descriptive statistics is shown in the following table.

Table 8: *Descriptive Statistics*

Gender	Mean	Std. Deviation	N
Female	16.81	1.84	57
Male	16.13	2.09	23

With regard to the next table, the significance level is more than 0.05 and it indicates that the time variances are homogeneous.

Table 9: *Levene's Test of Equality of Error Variances - Dependent Variable: post test*

F	df1	df2	Sig.
.837	1	78	.362

Table 10: *Tests of Between-Subjects Effects - Dependent Variable: post test*

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	157.991	2	78.995	29.285	.000
Intercept	227.988	1	227.988	84.518	.000
pre	157.053	1	157.053	58.222	.000
gender	12.183	1	12.183	4.515	.025
Error	423.508	157	2.698		
Total	44953.750	160			
Corrected Total	581.498	159			

In Table 10, the covariance analysis results for both genders (male and female) are shown. For investigating the third hypothesis, the variable of gender should be analyzed to see which gender outperformed utilizing supplementary vocabulary material.

Since the significance level is .025 (less than 0.05), it can be concluded that the variable of gender in the results of post-test has significant effect. There is significant difference between male and female scores. The average scores of male and female students are 16.13 and 16.81 respectively and it can be inferred that the average score of female students is increased significantly compared to that of the male students. Thus, the third null hypothesis of the study is rejected and it can be said that utilizing supplementary materials in the reading comprehension classroom improves the score of female students more compared to the male ones.

5. DISCUSSION AND CONCLUSION

As can be seen from the results, a strongly significant relationship was found between vocabulary knowledge and reading comprehension. This result is in accordance with the results of the previous studies in related literature. Findings of this study supports earlier studies done by Snow (2002), Maher Salah (2008), Mehrpour et al. (2011), and Li and Kirby (2014) that found significant relationships between vocabulary knowledge and reading comprehension.

The role of vocabulary is regarded very important in reading comprehension classrooms and teachers should not ignore this important role. In this study, the effect of utilizing supplementary vocabulary material was investigated to consider whether using such materials in reading comprehension classrooms can have any significant effect on EFL upper intermediate students' formative and summative assessments. The findings showed that using supplementary vocabularies has significant effect on EFL upper intermediate students' formative and summative assessment results and the scores of students revealed that instructing supplementary vocabularies along with the main textbook in reading comprehension classroom increased the scores of summative assessments more than the formative ones.

Comparing the results of male and female assessments showed that EFL upper intermediate female students outperformed the male students and they benefited more by instructing supplementary vocabulary material in the reading comprehension classroom along with their main textbook.

Further studies could be conducted on the role of supplementary vocabularies in reading performance. Longitudinal studies are needed to determine to what extent utilizing extra vocabularies contribute to and predict reading performance in EFL contexts. These longitudinal studies could obtain data from students from lower level to higher level, measuring their size of

vocabulary, depth of vocabulary and reading performance in each level of English learning and coming up with findings regarding how much vocabulary helps students achieve higher performance in reading comprehension.

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