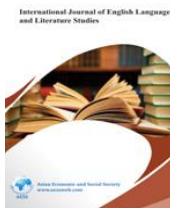




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PROJECT-BASED LEARNING AND ITS POSITIVE EFFECTS ON IRANIAN INTERMEDIATE EFL LEARNERS' READING ABILITY AND VOCABULARY ACHIEVEMENT

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ABSTRACT

New challenges are coming in the present globalized world of 21st century that consequently has required deep changes in educational process, since the 21st century requires more creativity, critical thinking, problem solving as well as communicative skills. English, as the main international language, is playing an important role in the globalized world's people's life, so the scholars try to use more sophisticated learning methods in EFL scope. The present study was an attempt to investigate the effect of project-based language learning, which is supposed by its proponents as a creativity developer, commonly used method in general science instruction, on some Iranian female intermediate EFL learners' reading ability as well as their vocabulary size improvement in short term, and long term vocabulary recall. The analysis of the collected data through out of this study confirms that, the PBL group's progress in all measured scopes were statistically significant. The researchers believe that using project-based language learning in Iranian EFL courses positively affects the learners' reading ability and accelerates their vocabulary achievement.

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Keywords: Project-based learning, Reading ability, Vocabulary achievement, Vocabulary recall, EFL learning.

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Contribution/ Originality

The paper's primary contribution is examining the possible effects of using project-based learning method in EFL classes and its effects on the learners' vocabulary size development and reading performance in proficiency tests. The results can be utilized by language researchers and practitioners.

1. INTRODUCTION

PBL is an approach to instruction that shifts from traditional teaching practices characterized by short, isolated, and teacher-centered lessons. Instead, it emphasizes learning that can be derived from long-term activities, which are interdisciplinary, student-centered, and integrated with real world issues and practices (Solomon, 2003; Staff, 2001; Willie, 2001, as cited in [Tiangco \(2013\)](#)). PBL allows teachers to provide students with a more engaging and genuine form of learning that is based on learning tasks.

1.1. Essential Characteristics of PBL

Some essential characteristics of PBL can be discussed as follow:

Diversity and flexibility in PBL: Project-based learning enables the expression of diversity in learners, such as interests, abilities and learning styles.

Learning by doing in PBL: Through the construction of a personally-meaningful artifact, which may be a poem, a play or a multimedia presentation, learners represent what they have learned (Harel, Papert, 1991; Kafai & Resnick, 1996, as in [Grant \(2002\)](#)).

Collaborative and cooperative learning in PBL: Students set goals in small groups, plan to achieve them, monitor and adjust performance seeking assistance as needed. They brainstorm ideas about the skills necessary to complete a collaborative project. A collaborative teaching approach in guiding students through their inquiry projects could be beneficial to students ([Chu et al., 2012](#)).

Problem solving in PBL: Project-based learning can be considered as a kind of inquiry-based problem-solving teaching which involves a complex task and some form of student presentation, and creating a final product. Contextualization in PBL: Contextualization is one of the ways in which the material and content are presented in the PBL method.

1.2. Essential Elements of Project-Based Learning

[Thomas \(2000\)](#) asserts five essential criteria in dealing with project-based learning as; centrality, driving question, constructive investigation, autonomy and realism, which each one is considerable.

1.3. Project-Based Learning Phases

[Simpson \(2011\)](#) as cited in [Chavez \(2013\)](#), states four steps for PBL, that can be summarized as:

- 1- Starting a project
- 2- Developing the project
- 3- Reporting the project
- 4- Assessing the project

1.4. PBL and Language Learning (PBL)

Recently (EFL/ESL) researchers have focused their attention on such methods as task-based, project-based, and content-based teaching approaches and believe that such approaches involve the ability to analyze, criticize and advocate ideas. [Renandya and Richards \(2002\)](#) states that, project work is a different way of creating opportunities for language learning through problem solving, negotiation of meaning, collaboration and cooperative learning. PBL is a mean of using language to learn, rather than learning language. However, when learners listen, speak, read, and write the target language in finding information, discussing, consulting experts or reference and presenting findings, they learn language in real-world context. As [Abdulah \(1998\)](#) believes while learners using language in real contexts, consequently they develop vocabulary, learn rules of grammar and conventions of social language use, and integrate the use of different sign systems.

1.5. Principles of Project-Based Language Learning

According to [Moss and Duzer \(1998\)](#) project-based language learning is characterized by the following principles:

- Builds on previous work;
- Integrates speaking, listening, reading, and writing skills;
- Incorporates collaborative team work, problem solving, negotiating and other interpersonal skills;
- Requires learners to engage in independent work;
- Challenges learners to use English in new and different contexts outside the class;
- Involves learners in choosing the focus of the project and in the planning process;
- Engages learners in acquiring new information that is important to them;
- Leads to clear outcomes; and
- Incorporates self-evaluation, peer evaluation, and teacher evaluation.

1.6. Reported Empirical Studies on PBL Effectiveness

[Tiangco \(2013\)](#) in a study explored the Philippine Experience of using PBL in educational curriculum, and declares that PBL has always been an integral component of the curriculum among educational institutions in the Philippines. As Tiangco asserts interestingly, some would take notice of a Filipino's peculiar English accent and even doubt the person's English language ability given the penchant for gauging English proficiency through the use of standardized language tests. As far as English learning is concerned, projects have always had a significant role in the development of English as a second language among the Filipinos ([Tiangco, 2013](#)).

Cha'vez (2013) in a study examined the application of project-based learning (PBL) to motivate English learning of ninth year students of Unidad Educativa particular Eloy Alfaro from Machala City, during the first term of 2012- 2013 academic year. The innovative project based-learning really invited students to communicate in English language through the basic skills. It was proved that the PBL method allows teachers and students interact with each other as they develop their entire creativeness causing an appropriate environment full of motivation for learning English Cha'vez (2013).

Shafaei (2011) in a case study on the effect of project-based learning on vocabulary recall and retention reviewed the key features of PBL and discusses them in the context of vocabulary teaching. This research includes an empirical case study of a PBL project conducted for vocabulary learning of elementary EFL learners in Iran, Gilun. According to the analysis and discussion of the outcomes of her study, there was a significant relationship between using project-based teaching techniques in foreign language teaching and the learners' performance on standard vocabulary tests, even in delayed post tests. She concluded that using PBL accelerates vocabulary learning and improves vocabulary recall

2. STATEMENT OF THE PROBLEM

Everything around us is changing madly, every day we are encountering so many new inventions and new needs. In the world of changes and age of globalization, education must train students in a way that they can manage the newly fast coming events and this just happens in the shade of thinking, discovering, solving problems and not just memorizing limited previously written text books. One of the recently developed methods in the scope of general science learning, which is highly consistent with the principles of education in 21st century, is using projects, the so called project-based learning. In project-based method, learners trying cooperatively, with their teacher's comments, to do some course related projects by gathering information, selecting the best, discussing, analyzing them and finally presenting in their class and receiving feedback on their product, from both teacher and classmates. In a sense, the need for education to adapt to a changing world is the primary reason that PBL is increasingly popular. As Chu *et al.* (2012) discuss, 21st century students need to learn their current century's skills. The global trend of learning in schools is moving from the traditional didactic approach towards inquiry learning, which requires students to be active constructors of knowledge. The great majority of researches on PBL effectiveness has been conducted in the last few years and is very recent. Learning a foreign language, such as English, needs not only focus on syntax accuracy and communicative performance, but also higher cognitive processing is important. Developing the aforementioned skills can be undertaken through the integration of project-based learning with (EFL/ESL) instruction. And since reading ability as well as vocabulary size plays an important role in language learning, the possible effects of project-based method in these learning scopes were under consideration.

3. SIGNIFICANT OF THE STUDY

The present study aimed at investigating whether there is any statistically significant difference between the reading performance and vocabulary achievement of the participants learning English through project-based learning method and those participants receiving instruction through traditional textbook oriented methods. As a field, PBL is still in the developmental stage, and there is not sufficient research or empirical data to state that PBL is a proven alternative to other forms of instruction. More studies on the PBL effectiveness, more evidence in its rejection or acceptance will be available to educators. The outcomes of the current study can be used as evidence in evaluating PBL effectiveness.

4. RESEARCH HYPOTHESES

This study had as its main aim the examining the following null hypotheses:

H01-Project-based language learning does not have any significant effect on Iranian EFL learners' reading comprehension performance.

H02- Project-based language learning does not have any significant effect on Iranian EFL learners' short term vocabulary achievement.

H03 - Project-based language learning does not have any significant effect on Iranian EFL learners' long term vocabulary retention.

5. RESEARCH METHODOLOGY

5.1. Participants

The participants of this study were selected through some non-random sampling techniques from among 80 Iranian EFL learners studying English as a foreign language on intermediate level. These learners subsequently took a language proficiency test, the English Solution Test, to screen the participants, and 60 learners whose test scores were nearly one standard deviation below or above the mean score of the whole sample were assigned to either group of the study.

5.2. Procedure

5.2.1. Experimental Group

Step1- In the first session, the teacher gave a full explanation on the major characteristics of the PBL teaching and learning method and its expected process.

Step 2 – A pre-test before any instruction was carried to collect data on the participants' reading proficiency and vocabulary size. As mentioned previously in the method section this pre-test was a set of Junior Standard TOEFL Test and consisted of different items to collect information on the subjects' current reading ability as well as vocabulary size.

Step 3-The 30 learners were divided into 10 small groups. Grouping process was conducted according to the learners' self selection and interest.

Step 4- During the course, per group per week did a project cooperatively and to do so the members of each group themselves must select an item, brain storm on it, use their instructor's

guidance on procedure, content, and language, consult with their parents, and use any possible source on that project. The projects were some how related to reading English texts. The groups presented their completed projects as essays, oral representations, plays, games, newsletters, newspapers, and charts. All the classmates reflected on their projects and discussion was managed by the teacher. The study was continued for 3 months and at this period of time 13 projects were completed by each group.

Step 5- After the course, a post-test, another set of TEOFL Junior Standard test, was carried on them to collect data on their performance on reading comprehension and short term vocabulary achievement.

Step 6- To examine the learners' long term vocabulary recall a delayed post test, three weeks after the course, was carried and its results were compared with their post-test results. The testing environment and condition were made uniform and were as similar as possible in all carried tests.

5.2.2. Control Group

The conducted research procedure on the control group can be sequenced as follow:

Step 1-A pre-test, as same as the experimental group's, was carried.

Step 2- In the course of the study, the participants received the instruction, using the course textbook, through the previously used traditional methods.

Step 3- A post-test again, as same as the experimental group's, was carried on these learners at the end of the instruction. The testing condition was as similar as the pre-test and as same as the experimental group's.

6. RESULTS AND DISCUSSION

6.1. Normality of Data

To examine if the collected data in each test were normal or not and if the parametric or non-parametric statistics must be used to statistically analyze them, descriptive statistics as well as normality test were carried on all the collected necessary data. To make decision about the normality condition of these scores the best tool is normality test and its Kolmogorov-Smirnov result. Considering the results of normality test of all sets of scores, the all sets can be considered to be normal; consequently parametric statistics were used in data analysis.

6.2. Testing Hypotheses

The results were analyzed to examine the related hypotheses. To examine the null hypothesis one, taking into consideration the mean scores of the PBL group on the pre- and post-tests and the corresponding standard deviations, and to determine whether this difference was statistically significant, nevertheless, a paired samples *t-test* was utilized.

Table-1. Paired-Samples T-test to Compare Pre- and Post-tests of PBL on Reading

Paired Differences	Mean	6.12150
T		-2.861
Df		29
Sig. (2-tailed)		.008

Table 1.1 indicates the T_{observed} absolute value, at 1 and 29 degrees of freedom, was 2.861. The increase of mean scores in post-test was 6.12. Since the Sig. (2-tailed) was less than 0.05, this statistical test confirmed that the difference in mean scores of the pre-test and post-test was statistically significant. This finding was not in conformity with the claim of null hypothesis one. This hypothesis was, consequently, statistically rejected.

Table-2. Paired-samples T-test on PBL Group's Pre-test and Post-test on Vocabulary

Paired Differences	Mean	6.42505
T		2.156
Df		29
Sig. (2-tailed)		.040

As Table 1.2 indicates, the T_{observed} absolute value, at 1 and 29 degrees of freedom, was 2.156. The increase of mean scores in post-test was 6.42 and with 95% CI the lower cases was 0.329 while in upper cases was 12.52. Since the Sig. (2-tailed) was less than 0.05, this statistical test confirmed that the difference in mean scores of the pre-test and post-test was statistically significant. This finding was not in conformity with the claim of null hypothesis two. This hypothesis was, consequently, statistically rejected.

To examine the third null hypothesis, regarding the mean scores of post and delayed post tests, a paired sample *t-test* was run.

Table-3. Paired Samples Test Comparing Post-test and Delayed Post-test of PBL

Paired Differences	Mean	-.26103
T		-.165
Df		29
Sig. (2-tailed)		.870

Regarding the T_{observed} absolute value which, at 1 and 29 degrees of freedom, was computed to be-.165, and taking the value of Sig. (2-tailed) in to account, .870, it was proved that the PBL group's performance on delayed post-test was not so significantly different. To examine the experimental group's condition and performance on vocabulary proficiency tests before, after, and three weeks later a repeated measures analysis was carried on the data.

Table-4. Pairwise Comparisons among Pre-, Post-, and Delayed Post-tests of PBL

					Lower Bound	Upper Bound
1	2	-6.425	2.980	.041	-13.997	1.147
	3	-6.164	2.995	.049	-13.775	1.447
2	1	6.425	2.980	.041	-1.147	13.997
	3	.261	1.581	.872	-3.755	4.278
3	1	6.164	2.995	.049	-1.447	13.775
	2	-.261	1.581	.872	-4.278	3.755

According to Table 1.4 the Sig. of comparison between pre-test and post-test was .041, pre-test and delayed post-test was .049, and post-test and delayed post-test was .872. So it can be inferred that there was a significant difference between pre-test and both post- and delayed post-tests but between post-test and delayed post-test there was not a great difference, So the related null hypothesis was rejected.

7. CONCLUSION

The findings of this study can be further interpreted that doing projects needs students' cooperation, teachers' collaboration, making use of the learners' informal out of school knowledge, active student-centered learning, using different literacy strategies and reflective assessment. Well-designed and well-implemented PBL can improve students' retention of knowledge over time (PBL in the elementary grades, introduction). These findings were consistent with that of [Shafaei \(2011\)](#) that, using PBL accelerates vocabulary achievement. The outcomes of this analysis indicated that not only there was a significant difference between two sets of scores but also the PBL group performed better than the control one. So the related proposed hypotheses were admitted by this analysis results.

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