

# The Effect of Project-Based Learning on Undergraduate EFL Students' Reading Comprehension Ability

Aziza KAVLU \*

## Abstract

Globalization in the 21<sup>st</sup> century and rapid strides in technology have increased the need for communication in English as it has become a lingua franca. English is also needed as a tool to assist academic advancement, career promotion and information-seeking in general. Hence, good English reading comprehension ability and a sufficient vocabulary range are both vital for university students for these purposes. Therefore, educators have to take into consideration these improvements and attempt to apply various innovative approaches during the education process. Project-Based Learning (PBL) is an approved method that equips learners not only with the 21<sup>st</sup> century skills (critical-thinking, problem-solving, life-long learning skills, creativity, innovation, collaboration, real-life-setting communication skills), but also has remarkable effects on enhancing learners' English language skills. The main purpose of this paper is to explore the relationship between the implementation of PBL and elementary level EFL learners' reading comprehension ability. The present study investigates whether learners' reading comprehension ability and vocabulary skills improve with the application of PBL. Forty-five first year Faculty of Education students at Ishik University (Iraq, Erbil) participated in the study, in which the experimental group was taught reading comprehension using PBL methods, while the control group – without PBL. The results confirm that the measured variables (reading and vocabulary skills) showed a significant positive progress in the experimental group. The researcher indicates that reading and acquiring required vocabulary become more efficient and enjoyable for students, when PBL is implemented.

**Keywords:** English as a foreign language, project-Based Learning, reading comprehension, vocabulary

## Introduction

Nowadays, due to the rapid development of technology, young people have become the “visual generation” preferring pictures to reading, so students' reading habits have decreased. In 2004, the National Endowment for the Arts (2007, p. 7), for example, published Reading at Risk: A Survey of Literary Reading in America. The study showed that “Americans in almost every demographic group were reading fiction, poetry, and drama - and books in general - at significantly lower rates than 10 or 20 years earlier. The declines were steepest among young adults”.

However, getting accomplishment in university academic life is directly and closely connected with students' reading habits and reading comprehension level. The problem becomes more serious, when education requires reading in a foreign language. In our case the foreign language is English. Students' education at Ishik University (Iraq, Erbil) is completely in English. Hence, to be able to read and understand English written material is significant for students not only academically, but also for personal advancements. Therefore,

various teaching approaches are being used to enhance students' reading comprehension level. Project-Based Learning is one of teaching approaches that enables to integrate the 21<sup>st</sup> technological age skills with improvement of learners' reading comprehension and vocabulary knowledge in English as a Foreign Language context (EFL). It helps to create an interactive student/s – student/s and teacher – student/s atmosphere.

## Theoretical background

### *PBL (Project-Based Learning) in Language Learning*

Literature review reveals that the application of PBL in foreign / second language teaching is a fruition of CLT (Communicative language Teaching), which gives students opportunities to master the main principles of language learning and set an authentic language learning environment, where learners

\* MA, Ishik University, Erbil, Iraq.  
E-mail: asumankavlu@hotmail.com

are able to use the target language and have a purposeful communication with peers, teachers, and experts in order to accomplish the tasks (Eguchi & Eguchi, 2006).

For many years rote memorization was dominant in Iraqi educational system (Eldakak, 2010; Kavlu, 2015; Massialas & Jarrar, 1987), so PBL assists EFL learners to shift from some meaningless drilling, grammar rules memorization and individual work to more real-life-connected language learning in a more collaborative and cooperative atmosphere. According to Richards and Renandya (2002), PBL should be accepted as a multipronged approach for thoroughly integrated language, it enables language teachers to work in different language educational settings such as: GE – General English, EAP – English for Academic Purposes, ESP – English for Specific Purposes, EOP - English for Occupational Purposes, also viable for pre-service and teacher training programs. Haines (1989) advocated that PBL is an approach that is appropriate to be implemented with almost all language levels, abilities and ages of students.

The application of PBL in an EFL context started 3 decades ago as a vehicle of student-centered learning principles (Hedge, 1993). Eyring (2001) asserted that early researches' reports in Second Language Acquisition (SLA) field generally emphasized that PBL gives language learners opportunities to have a comprehensible input and to be able to generate a comprehensible output. Furthermore, PBL projects assist learner to develop analytical skills, time management and sense of responsibility. Moreover, PBL is based on group investigating, team working, peer assessment and feedback, which improve learners' interpersonal skills, sense of community and cooperation (Lou & Kim MacGregor, 2004; Railsback, 2002). All mentioned skills are crucial and indispensable in the rapidly progressing 21st century (Ananiadou & Claro, 2009; Saavedra & Opfer, 2012), because English solely is not enough for students to be competent in technological high competitive digital age. The other virtual sides of PBL in an EFL context are being process- and product-oriented (Stoller, 1997) in real-life settings. Therefore, learners improve their language skills in an authentic environment, implement their life and hands-on experiences and content knowledge as well as acquire problem-solving and higher-order thinking skills and creativity (Brunetti, Petrell, & Sawada, 2003; Poonpon, 2011; Solomon, 2003). Furthermore, projects enhance learners' public speaking, presenting, contemplation and information elaborating skills and assists learners to build up confidence and self-esteem

### **The importance of Reading for EFL students**

The importance of reading either in L1 or L2 and foreign language acquisition is incontrovertible. Reading is a source of information, clarifying vague points, solution of problems, and it is a target of language acquisition, vocabulary enrichment, culture awareness and academic success. Research has shown that students who read in English a lot get a better English proficiency than students who do not (Floris & Divina, 2015; Hayashi, 1999; Krashen, 1993; McQuillan, 1994).

People naturally start listening to speech around them, then it stimulates their speaking, but generally it is not easy to start reading without being taught. Undergraduate EFL students normally somehow can read, but their most vulnerable points are the comprehension of printed material and students' vocabulary knowledge. When students' education takes place in English, unless students can understand, synthesize, interpret, and paraphrase the texts encountered in

academic settings, unless their vocabulary is rich enough, they experience great problems in academic life (Chen, 2014) and further careers. Therefore, undergraduate students' ability to understand course books written in English influence students' course achievement.

The majority of EFL learners hardly ever have the opportunity to speak with native speakers (Rivers, 1981), on the other hand, they have an easy access and great exposure to material printed and written in English. Therefore, in an EFL situation, when foreign language input is limited, reading plays an active and vital role in foreign language acquisition (Gorsuch & Taguchi, 2008).

In language teaching reading is viewed as one of the four essential skills (Grabe & Stoller, 2002), at the same time reading integrates and combines many skills. Writing, vocabulary, speaking, grammar, and spelling can be taught through reading (Al-Mansour & Al-Shorman, 2011; Harmer, 2007; Pourkhalhor & Kohan, 2013).

The simple explanation of reading comprehension is being able to understand what we read. Proficiency in reading, effective learning and ability to conceptualize are acquired by reading comprehension skills. Richards (1976) noted, that reading comprehension is the only and substantial skill required in order to get access to professional data and information in different subject fields. The significance of good reading comprehension skills for university EFL and ESL students has been emphasized by scholars (Beasley, 1990; Rezaei, Rahimi, & Talepaskan, 2012). Johns and Dudley-Evans (1991), Jordan (1997) and Hudson (1991) even expressed an idea that because of the principal importance of reading in myriad EFL settings it is a single skill in ESP's practical purpose.

In spite of such prominence of reading comprehension, most EFL students suffer from incompetence's in comprehending printed material (Suknantapong, Karnchanathat, & Kannaovakun, 2002).

### **Aim of the Study**

The research aims to find effects of PBL on undergraduate students' reading comprehension.

### **Research Question**

Does PBL implementation enhance students' reading comprehension skills?

## **Methodology**

### **Participants**

The study participants were 42 – the first-year elementary level students of a private University in Erbil, Iraq. The study was held during January and February 2015. The age range of the study participants was from 18 to 24, including both females and males. The participants were voluntary and their selection and placement to groups was random. 21 student was assigned to the control group and 21 – to the experimental group.

The participants were native speakers of: 29 students –

Kurdish, 10 students – Arabic and 3 students – Turkish.

### Procedure

In the beginning of the academic year, in order to indicate learners' English level and to generate more or less homogeneous classes, the University implemented the high reliability "Cambridge Placement Test". The participants, according to placement test's results, were assigned in two elementary classes, the control one, where no PBL was applied, and the experimental one, where PBL was applied. Otherwise the teaching was in maximally equal conditions – same teacher, same materials, same time dedicating to learning in class, and same teaching methods. The Dean of Faculty and Head of Department were official informed and the researcher before conducting experiment obtained department's permission. It was an intensive course - 10 hours of English each week, out of which reading was taught for 2 hours.

### Instruments

Three types of tests were used in this study:

a. Cambridge Placement Test – which was administrated in order to assign the students to groups of proper level.

b. Reading pre-test from course Teacher's Book Unit tests. Tests are designed by Oxford publishing on a high professional level. Pre-test was implemented in the end of the first month of the first semester. The reading comprehension test included multiple-choice, true – false, and open-ended questions.

c. Reading post-test from course Teacher's Book Unit tests, it was implemented in the end of the second month of the first semeste

Both pre- and post-tests were administrated in order to check the changes in reading comprehension. Researcher's in-class observation was also applied.

### Materials

As a course book – Oxford Elementary level books (Hancock and McDonald, 2013) set were used. PBL projects were assigned correspondingly to books' topics. Projects were designed in order to enhance reading skills. One of the projects was making up a short video and another - a poster. PBL characteristics, project generation steps and procedures were explained in detail with prepared specimens.

### Data Collection and Analysis

Quantitative data collection was utilized in order to assess learners' reading comprehension achievement across control and experimental groups at the beginning and in the end of the study. Quantitative method of data analysis was employed for the evaluation of the gained pre and post-experimental data. Statistical Package for Social Sciences (SPSS) 17 was used to collect data, independent and paired sample t- tests were run to analyze the data.

## Findings and Discussions

**Table 1:** Paired Samples Statistics of Students' Reading Comprehension pre- and post-test results (experimental group)

	Mean	N	Std. Deviation	Std. Error Mean
Experimental Group Pre-test	77.524	21	13.1134	2.8616
Experimental Group Post-test	87.619	21	9.9523	2.1718

A paired samples t-test was utilized to summarize the mean and Standard Deviation of experimental group reading comprehension pre and posttests. The Experimental group pre-test mean result was 77.5 and post-test results -87.6. Table 1 reveals that PBL had a positive effect and Experimental group's reading comprehension results show an increase from 77.5 to 87.6.

**Table 2:** Paired Samples Statistics of Students' Reading Comprehension pre- and post-test results (control group)

	Mean	N	Std. Deviation	Std. Error Mean
Control Group Pre-Test	77.905	21	11.562	2.5231
Control Group Post-Test	69.762	21	12.7942	2.7919

Table 2, on the other hand, reveals that the results in the control group, where no PBL was applied, pre-test mean result was 77.9 and post-test mean result - 69.76. Traditional teaching of reading comprehension not only did not yield a positive effect, but also demonstrated a decrease in reading skills level.

**Table 3:** Control and Experimental groups' Reading comprehension post-test statistics

	N	Mean	Std. Deviation	Std. Error Mean
Control Group	21	69.76	12.794	2.792
Experimental Group	21	87.62	9.952	2.172

Table 3 shows the 2 groups' participants' results. The control group post-test result mean is 69.8, whereas experimental group is 87.6. Not only did the control group reveal

deterioration of test results, but also, having an almost identical with the experimental group pre-test results, its students received a worse result than in the experimental group.

To find out whether this trend is significant, the researcher worked out the data in Independent t-test.

Table 4 indicates experimental and control group reading comprehension pre-test results Sig. (2-tailed) are 0.921 - greater than 0.05. So this statistical test confirmed that experimental and control group pre-test mean differences were statistically non-significant, which shows that groups' initial level was quite equal. The purpose of pre-test was to obtain the data with which the post-test results could be compared.

Table 5 shows the experimental and control group Reading Comprehension post-test results, the value of Sig. (2-tailed) is .000 which is smaller than 0.05, so, it can be inferred that the difference between pre and post-tests of the PBL-implemented group and the control group was statically significant. It confirmed that PBL had a significant positive effect on learners' reading comprehension.

## Conclusion

The main purpose of the study was to explore the relationship between the PBL implementation and lack of such an approach, while teaching reading. The analyzed data revealed that there is a positive link between the application of PBL and students' level of reading comprehension skills. The results of paired sample T-test revealed that at the beginning the control and experimental groups' reading comprehension pre-test scores are close to each other (Table 3). On the other hand, the control group's post-test mean is 69,7 (Table 4), which presented a decline, as control group' pre-test mean was 77.9. The reason for this downtrend is the lack of motivation (without PBL students were quite bored with reading). The difficult level of the texts was increasing, but the students did not make an extra effort. The researcher's personal observation while implementing research was that students generally do not like reading, as they need to work hard, finding the meanings of unfamiliar words, memorizing them and also trying to keep in mind comprehension questions. The grammatical structure of the text is more important for them and students' general perception is that reading does not need any strategies or extra time to study. Moreover, Al-Shorman and Bataineh (2004) have remarked that Gulf students set reading aside and for them the developing of other language skills is much more important than reading. With respect to Grabe (2009), their sole concern is to form functional language skills - grammar and vocabulary. Most likely, the experimental group students had had the same consideration as the control group students before the experiment, but doing projects, which they were assigned, helped them to naturally improve their reading comprehension, because to fulfill the required projects, the students needed to read the same text more than 2-3 times, to gain a clear understanding. Besides, they discussed the topic, the unfamiliar words and general context of reading with their group members and also tried to work up a possible solution to the stated problem. On the other hand, in the control group, where conventional teaching was implemented, the students were supposed to read and answer the reading comprehension questions individually, orally or in written.

The findings of this study were consistent with resent

researches, such as Soleimani, Rahimi and Sadeghi (2015), who tested and proved statistically the positive effect of PBL not only on intermediate level EFL students' reading comprehension, but also ascertained that well-designed PBL projects foster learners' short and long-term vocabulary recall achievement. Shirazi and Larsari (2014) held a detailed study with two experimental and one control EFL learners' groups, which revealed that, irrespective of the type and nature of the PBL project (one of experimental group's projects was making up magazines, another dealt with wall newspapers), the experimental group's reading comprehension skills' level far outweighed that of the control group, although both groups were taught by the CLT approach.

## Suggestions

United Nations recent report (2008) (as cited in Khreisat & Sarjit, 2014, p. 18) indicated that American and British people read for leisure eleven and eight books a year, respectively, which is insufficient. However, Gulf region people (Arab World people) on average read for leisure only 4 pages a year, irrespective of the literacy level of over 90% in some countries, such as Kuwait and Jordan. Therefore, as educators, who not only assist learners to acquire language skills, but also cultivate learners' humanistic ethics, should have as one of their aims to make their learners avid readers, because reading is the passkey in each step of educational and personal life. Especially as language teachers we should seek for new educational approaches which will help our learners to construct good reading habits. Project-based learning is one of the possible effective solutions of the problem of enhancement of reading skills.

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**Table 4:** Reading Comprehension Pre-test significance - t-test result

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
.336	.565	.100	40	.921	.381	3.815	-7.33	8.092
		.100	39,383	.921	.381	3.815	-7.33	8.095

**Table 5:** Reading Comprehension Post-test Significance table of t-test result

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	
.416	.523	-	40	.000	-17.857	3.537	-25.006	-10.708	
		5.05	37.717	.000	-17.857	3.537	-25.019	-10.695	
		-							
		5.05							

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