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## Effectiveness of Project-Based Learning on Students' Achievement and Motivation towards English in an EFL Environment

Riham Sahib Tamimi  
*Hebron University, r.journal@hebron.edu*

Ahmad Salamin  
*Hebron University, ahmads@hebron.edu*

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## **Effectiveness of Project-Based Learning on Students' Achievement and Motivation towards English in an EFL Environment**

**Riham Izzeldeen Sahib Tamimi, Dr. Ahmad Mohammad Abed Salamin**

**English Department, Hebron University**

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### **Abstract:**

This study aims to detect the effectiveness of Project-Based Learning (PBL) on students' academic achievement and motivation towards English in EFL environment. Identify the year in which the Ministry of Education adopted PBL to be used at schools. The Ministry of Education in Palestine has asked teachers to implement this new method of teaching and learning in their classrooms. Moreover, Educational supervisors claim that PBL has the power to improve students' achievement, attitude, motivation, critical thinking, self-confidence, and active learning as students investigate real-world issues in a collaborative environment. This is a mixed research study utilizing both qualitative and quantitative instruments to collect data. 69 ninth graders from two different classes in Ibrahim Abu-Dabat Secondary Girls' School participated in the study. In the quantitative phase, a pre-and post-test was used to find the effect of PBL on the students' achievement. In the qualitative phase, two semi-structured interviews were used to assess students' motivation towards English lessons and to investigate the challenges that teachers and students face while implementing PBL. Results showed that there is no statistically significant difference between the achievement scores of the experimental group and the control group. However, the results indicated that the experimental group students

outperformed the control group students in reading and writing skills. In addition, the interview results revealed that the use of PBL affects students' engagement in a positive way and improves their motivation towards learning English. Furthermore, few challenges were also reported to provide sufficient information about the difficulties that teachers and students may encounter while using PBL. The study concluded that PBL could be an effective means of teaching English as a foreign language.

**Key Words:** Project-based learning, motivation, attitude, achievement, EFL environment.

### المُلخَص:

تهدف هذه الدراسة إلى استكشاف مدى تأثير التعلّم بالمشاريع على المستوى الأكاديمي للطلّبة ودافعيتهم لتعلّم اللغة الإنجليزية في البلاد غير الناطقة بها، وقد جاءت هذه الدراسة بعد أن أصدرت وزارة التربية والتعلّم الفلسطينية قراراً بإلزام المعلمين جميعهم تطبيق هذه الطّريقة التعلّميّة الحديثة ، وبعد مزاعم كثيرة من المشرفين التربويين أن التعلّم عن طريق المشاريع يرفع المستوى الأكاديمي للطلّبة، ويعزّز دافعيتهم تجاه العمليّة التعلّميّة، كما يعزّز التّفكير الناقد، والثّقة بالنّفس، والتعلّم الفاعل؛ عن طريق دمج الطّلبة في مواقف واقعيّة أقرب للحقيقة في جوّ تعاونيّ ضمن مجموعات؛ لذلك هدفت هذه الدراسة إلى قياس تأثير التعلّم بالمشاريع على المستوى الأكاديمي للطلّبة، ومدى دافعيتهم لتعلّم اللغة الإنجليزية في البلاد غير الناطقة بها. وشملت عينة الدراسة تسعاً وستين طالبةً من الصّفّ التاسع المكوّن من شعبيّتي "أ" و "ب" في مدرسة (إبراهيم أبو الضّبعات الثّانويّة للبنات)، وقد استُخدم أسلوبان مختلفان لجمع المعلومات وهما: الأسلوب الكميّ، والأسلوب النوعيّ؛ ففي مرحلة الدّرس الكميّ تمّ تطبيق امتحان قبليّ وآخر بعديّ على المجموعتين التجريبيّة والضّابطة؛ لقياس مدى تأثير استخدام التعلّم بالمشاريع على مستوى التّحصيل الأكاديمي للطلّاب، أمّا في مرحلة الدّرس النوعيّ، فقد أُجريت مقابلات مع عدد من المعلمين ومعظم طّلاب المجموعة التجريبيّة لقياس مدى تأثير التعلّم بالمشاريع على مستوى الدّافعيّة لدى الطّلبة لتعلّم اللغة الإنجليزية، ولتحديد التّحدّيات التي تواجه المعلمين والطلّبة خلال استخدام التعلّم بالمشاريع، وعلى عكس التّوقّعات لم تثبت نتائج هذه الدراسة وجود تحسّن واضح على المستوى الأكاديمي العام للطلّبة من النّاحية الإحصائيّة، لكنّها أكّدت وجود تحسّن ملحوظ على مستواهم الأكاديمي في مهارتي القراءة والكتابة وزيادة الدافعية لديهم نحو التعلّم.

من ناحية أخرى عرضت الدراسة لعددٍ من التّحدّيات والصّعوبات التي تواجه معلّمي اللغة الإنجليزية

والطلاب خلال تطبيق تعلم الإنجليزية بالمشاريع، وقد خلصت الدراسة إلى أن التعلم بالمشاريع يُعد طريقة فعالة و ناجحة في تعليم اللغة الإنجليزية في البلاد غير الناطقة بها.  
الكلمات المفتاحية: التعلم بالمشاريع، الدافعية، موقف، تحصيل أو إنجاز، بيئة غير ناطقة بالإنجليزية.

## Introduction:

PBL is a complex concept which means much more than the simple inclusion of projects into the curriculum (Stoller, 2006). As PBL has been implemented in various disciplines in the classroom, it has various definitions (Welsh, 2006).

In short, PBL is a teaching method which aims at solving problems in a collaborative environment over an extended period of time. It is a hands-on experience which starts with driving questions or problems that create activities and lead to the meaningful products at the end (Simpson, 2011). Furthermore, "the details of project work are largely dependent on contextual factors, language program objectives, and available resources" (Alan & Stoller, 2005, p. 13).

Foreign language teaching methodology has been changing over the years; however, there is no single best method to use. The best language teaching method depends on several factors such as: learner's styles, contexts, learning processes, teacher competencies and the goals of learning (Brown, 2000).

Using the suitable curriculum and methodology is essential to improve the educational process. According to Nunan (1991, p. 2) "With the development of communicative approaches in language teaching, the traditional distinction between syllabus design and methodology has become difficult to sustain." Therefore, The Ministry of Education in Palestine has taken many significant steps to reform both syllabus and methodology at the same time. Project-Based Learning (PBL) is viewed by many researchers as the suitable solution for most of the learning obstacles. It is seen as "a method which is based on scientific principles, encourages students to *discovery learning and enhances metacognitive* strategies about the quality of life, results in realistic products following the authentic questions and topics" (Ilter, 2014, p. 488). Educators look at PBL as a teaching method that can be used with almost all students

despite their levels of proficiency, classes and abilities (Stoller, 1997). Several previous studies (Gultekin, 2005; Simpson, 2011; and Bas, 2011) presented the important role of PBL in improving students' academic achievement and motivation. For example, Gultekin (2005) investigated the effects of PBL on fifth grade students' learning outcomes. In addition to students' happiness during the learning process, he found that PBL also improves their academic success. Similarly, Bas (2011) investigated the effects of PBL on students' academic achievement and attitudes towards English lessons. It was found out that the use of PBL has a positive effect on students' academic achievement and attitudes. Furthermore, Simpson (2011) examined whether PBL can enhance Thai university students' English language proficiency, their learning skills and self-confidence. The study showed that PBL can be an effective means of teaching English as a foreign language.

Therefore, this experimental study investigates whether PBL affects the Palestinian students' achievement and motivation positively or not. It also aims at finding out the challenges that teachers and students encounter while implementing PBL.

### **Statement of the Problem**

The same as foreign language learners in non-English speaking countries, Palestinian students face several problems in learning English (needs wording). It has been generally well-known that there are several reasons that influence their poor English performance such as crowded classes, insufficient time, unqualified teachers, students' lack of confidence and motivation, the use of inappropriate curriculum and methodology and the absence of practicing English outside the classroom. Therefore, the Palestinian Ministry of Education has required teachers to implement PBL as a new method of teaching and learning which supposedly may solve most of the problems encountered by students. Unfortunately, the Ministry of Education has not provided teachers with sufficient training to enable them implement this method successfully. As a result, detecting the effect of PBL on the learning process and widening teachers' awareness of how to implement it and what challenges may encounter

both teachers and students have become urgent.

### **Objectives of the Study**

This study aims to:

1. investigate the extent to which the use of PBL improves students English achievement,
2. provide teachers with sufficient information about using PBL and identifying the challenges that encounter students and teachers while implementing PBL,
3. find out the effects of using such a method on students' motivation.

### **Research Questions**

The study aims at finding answers to the following questions:

1. Is there a significant difference in students'achievement between the experimental group and the control group due to the usage of Project-Based Learning?
2. What is the effect of Project-Based Learning on students' motivation?
3. What are the challenges that may face both teachers and students while implementing Project-Based Learning method?

### **Significance of the Study**

There are several studies that explain the advantages of using Project-Based Learning in educational settings (Meyer, 1997; Ilter, 2014; Eskrootchi and Oskrochi, 2010; Bagheri et al., 2013; Yam & Rossini, 2010; Gultekin, 2005; and Abdul-Rahman et al, 2009). However, only a few of them have focused on PBL in English language teaching (Bas, 2011; Simpson, 2011; Bas and Beyhan, 2010; & Nassir, 2014). Therefore, this study is expected to investigate the effectiveness of PBL on students' academic achievement and motivation in EFL contexts as there are few studies tackling this issue. Moreover, it will provide teachers with guidelines for implementing PBL and increase their awareness about the challenges that teachers and students may face while using PBL in teaching English. Furthermore, it will lead to practical recommendations for the Ministry of Education and teachers to improve the educational setting.

### **Limitations of the study**

This study is limited by place and sample. The study has been conducted at just one Government Palestinian School at Hebron (Ibrahim Abu Al-Dabat) and only Ninth Grade students are involved in the sample of this study. Another thing, time was one of the main limitations of this study as the practical section of this study lasts for just one semester. Finally, this study is restricted to investigate the effects of PBL on students' achievement and motivation neglecting other variables such as critical thinking, self- confidence, and attitude.

### **Definitions of key terms**

**Project-Based Learning:** "It is a student-centered instructional approach used to promote active and deep learning by involving students in investigating real-world issues in a collaborative environment" (Yam & Rossini, 2010, p. 1).

**Motivation:** "It refers to reasons that underlie behavior that is characterized by willingness and volition. Intrinsic motivation is animated by personal enjoyment, interest, or pleasure, whereas extrinsic motivation is governed by reinforcement contingencies. According to Lai(2011, p. 2) motivation involves a constellation of closely related beliefs, perceptions, values, interests, and actions".

**Academic achievement:** "It refers to a student's performance in academic areas such as reading, language arts, math, science and history as measured by achievement tests... academic achievement also depends on a child's circumstances and situations, the quality of schools and teachers, and many other factors"(Cunningham, 2012, p. 1).

**English as a Foreign Language (EFL) environments:** "It refers to English learning in schools, colleges and universities around the world in non-English speaking countries" (Mitchell, 2016, para.12).

**Constructivism:** "It refers to the idea that learners construct knowledge for themselves- each learner individually and socially constructs meaning as he or she learns. Constructing meaning is learning; there is no other kind." (Hein, 1991, para. 2).

### **Literature Review**

## **Theoretical background**

Several modern approaches and theories of learning and teaching which contradict with the traditional way have appeared to improve the educational situation. Most of them are closely related to each other and share some features and principles. The theoretical foundation of PBL is strongly connected to constructivist approach. Railsback (2002) stated that "project- based instruction strategies have their roots in the constructivist approach" (p. 6).

Constructivism is seen as a huge umbrella that encompasses several new popular theories which share its assumptions about learning and instruction such as: Case-Based Learning, Discovery Learning, Inquiry-Based Learning, Task-Based Learning and Problem-Based Learning. The idea of Problem-Based Learning depends on providing students with complex, authentic problems to solve. This requires students to search, analyze, and communicate to collect the needed information which helps them to develop their problem solving, self-assessment and critical thinking skills (The Center for Teaching and Learning, 2001).

According to Larmer (2014), both Problem-Based Learning and Project-Based Learning have the same acronym "PBL" and share many features such as: focusing on open-ended questions, emphasizing student independence, and building 21<sup>st</sup> century success skills such as collaboration, lifelong learning, creativity, critical thinking, problem solving, communication, and social and cultural awareness. However, they still have some differences which make them two distinct approaches. For example, Project-Based Learning includes the creation of a product or performance while in Problem-Based Learning the product may be tangible or just a

proposed solution. In addition, Project-Based Learning is often multidisciplinary and longer, whereas Problem-Based Learning is more likely to be a single subject and shorter.

In their research, Bas and Beyhan (2010) aim at investigating the effects of multiple intelligences supported PBL and traditional foreign language-teaching



environment on students' achievement and their attitude towards English lesson.

The study revealed that the students who are taught by multiple intelligences supported PBL method are more successful and have a higher motivation level than the students who are taught by using the traditional instructional methods. Similarly, Bas (2011) has investigated the effects of PBL on students' academic achievement and attitudes towards English lessons and found out that the use of PBL has a positive effect on the academic achievement and attitudes towards English.

### **History of problem based learning**

PBL is not a new method in language teaching and learning (Blumenfeld et al, 1991). In the 5<sup>th</sup> century BC, The Chinese philosopher Confucius presented the idea of learning by doing. He stressed the importance of involving students and making them responsible for their learning. Later, Socrates launched a new way of learning that encourages students to learn through questioning, inquiry, and critical thinking. Jean Piaget, who is a philosopher from Switzerland, expressed the idea that students learn better through asking questions, investigating, interacting with others, and reflecting on these experiences. His thoughts set the basis for the constructivist approach to education which is seen as the foundation of PBL theory (Boss, 2011).

In the early 1900s, the American educator and philosopher John Dewey commented on the benefits of collaboration, hands-on, and student-centered learning. He promoted teaching strategies that engage students in learning about topics relevant to their lives (Clark, 2006). He expressed that schools should prepare students for the real life.

PBL is developed by William Heard Kilpatrick, who focuses on the need to have a purposeful activity for learners (Beckett, 2006). Kilpatrick stated that learners should use language in meaningful contexts to build their background knowledge and achieve their personal growth. He recommended that projects be interdisciplinary and topics come from students' interests and need to provide learners with better and deeper understanding to the world (Wrigley, 1998).

Kilpatrick expressed that education should reflect students' real life as the best way to prepare them for future life. Moreover, he emphasized that teachers should look at students as the center of the learning process and to provide them with purposeful activities that have immediate value (Beyer, 1997).

Knoll (1997) summarized the long history of the project method into five phases. First of all, in 1590 project work began in Europe. Later, projects became a regular teaching method and transmitted to America in 1765. Subsequently, projects were used in manual training and in general public schools. After that, the project method was redefined and transmitted from America back to Europe in 1915. Finally, the project idea was rediscovered and became an international method of teaching and learning in 1965.

### **Features of problem based learning**

The features of PBL are exhibited in a similar way by many authors. For example, Hedge (1993) introduced the features of Project-Based Learning as follows: the use of authentic materials, an emphasis on student group-centered experience and de-emphasis of teacher-directed work, the encouragement of autonomous learners, the sequence of activities over a period of time, the use of a range of skills, and activity outside the classroom in the students own time. Moreover, Dunn (2014), Harmer (2014) and other educators stated similar features of Project-Based Learning.

### **Steps of project-based learning**

The process of PBL is an ongoing process undertaken by students with support from teachers. Fragoulis and Tsiplakides (2009) and Simpson (2011) expressed that in order to implement PBL successfully in the classroom, the learner should follow these general steps: starting the project, developing the project, reporting to the class, and assessing the project. Alan & Stroller (2005) expanded these four major stages to more detailed steps and clarify the role of teachers and students through following these steps.

## **Evaluation in PBL**

PBL assessment has a wider definition as it expresses the ability to assess open-ended learning that involves 21<sup>st</sup> century skills such as critical thinking and collaboration, as well as content mastery. Even if several schools are shifting their instructional model to PBL, most of them remain using the traditional way of assessment (Boss, 2012). Several educators argued about what the new, authentic assessment for PBL should be like, but they don't agree on a one, simple, direct way of assessment. "It seems very difficult to create a complete assessment procedure in which both [instructors and students] assessment expectations are being met. This is due to crucial contradictions in opinions about assessment in project based education" (Bergh et al., 2006, p. 346).

Educators have to think carefully about three questions before starting the assessment process. First, what to assess: in PBL it is important to give a huge attention in assessment to the final product. However, it is necessary to give an equal attention to the learning process, content mastery, participation, and presentation. Second, when to assess: evaluating students should not be delayed until the final stage of the project. Feedback should happen frequently to give students the chance to improve their work and to reach mastery learning. Third, how to assess: the way of evaluating students' progress in PBL can be formal or informal as needed. Students can get their feedback from peers, teachers, and audience. In addition, self- evaluation plays a major role in PBL assessment as it makes students think about their strengths, weaknesses, and goals for the next time (Hernandez, 2016).

The ways in which projects are assessed varied hugely across the literature. According to Boss (2012), performance-based assessments that ask students to demonstrate, apply and reflect on what they have learned is seen as the best way to assess what students can produce rather than what they can recall for a test. Barnes (2014) presented a new way of assessment which is called SE2R "summary, explanation, redirection and resubmission". There is no room for numbers, percentages or letter grades in SE2R. Instead, it provides students with

narrative feedback in order to give them the opportunity for mastery learning.

Harmer (2014) expressed several ways for assessing students' performance through PBL as follows: the research project, the construction project, and the real-world project.

### **Benefits of PBL in language learning**

Project-Based Learning offers a wide range of benefits to the learning process as the traditional textbook-driven approach does not engage students in the learning process in ways that PBL does (Maltese, 2012). Researches have shown that there are many benefits for implementing PBL in a variety of educational contexts. The benefits are: enhancing academic achievement and content knowledge relevant to the course, increasing autonomous learning, gaining important life skills, developing higher order thinking skills, and increasing motivation (Simpson, 2011). Moreover, projects can adapt to different types of learners and learning situations, increase students' interest, enhance deep understanding, and improve competence in thinking (Blumenfeld et al, 1991). Furthermore, PBL encourages creativity, self-discipline, cooperation, research and study skill, and cross-curricular work (Hedge, 1993).

Harmer and Stokes (2014) divided the benefits that students gain through using PBL to three major points: PBL develops skills related to professional practice, PBL improves academic achievement, and PBL fosters less tangible qualities such as motivation and self-discipline among students.

Project-Based Learning benefits are not restricted to students as it is good for teachers, too. PBL enhances professionalism and collaboration among educators and improves the relationship between students and teachers (Hosler, 2013). According to the Project Foundry organization in the USA (2016), PBL has several benefits for teachers as it allows for greater dialogue with each individual student, gives teachers crucial information about the learning habits of their class, gives teachers a chance to go beyond the classroom, and the assessment process in a Project-Based Learning gives teachers sufficient and beneficial feedback in assessing their students.

### **Challenges in implementing PBL**

Despite the numerous benefits of PBL approach, it presents several challenges for teachers and students. Careful planning to avoid or reduce the negative effect of these challenges is crucial to reach the optimal results. There are various challenges that may encounter students while using PBL. Mapes (2009) stated that students may have problems with: generating meaningful questions, managing complexity and time, transforming data, and developing logical rational to support decisions" (p. 22).

Harmer and Stokes (2014) summarized the challenges that face teachers while implementing PBL in two major important points. The first challenge is the new role of the teacher. Many teachers resist their new role in the learning process. They struggle with the shift from being an information provider to a facilitator. Moreover, some teachers look at PBL as a mere change in the learning style rather than a new approach and philosophy. Therefore, teachers need intensive training and clear guidelines on how to implement this new approach effectively, how to choose the appropriate methods of assessment, and how much scaffolding to provide. Second, time and resources needed is another significant challenge that faces teachers while using PBL. PBL can demand significant amounts of time from teachers in terms of identifying and developing appropriate projects, designing and supporting activities, observing the students' work, and using a combination of assessment. Furthermore, teachers suffer from the lack of available resources as it is essential to have sufficient materials and equipment to learn through projects.

Many previous studies (Gultekin, 2005; Simpson, 2011; Bas and Beyhan, 2010; Nassir, 2014; and Bas, 2011) are carried out by comparing Project-Based Learning with traditional methods. However, this study focuses on the effects of Project-Based Learning with comparison to students' textbook activities and instructions in the Palestinian new curriculum "English for Palestine" which is seen as a mixture of communicative activities and skill work. The literature review section should be shortened since many repeated ideas appeared throughout it.

## Methodology

In this paper, both qualitative and quantitative research methods were used. This section describes the sample, the instruments, data collection, validity and reliability of the tests, the procedures of the study and data analysis.

## Participants

The sample of the study consists of 69 EFL ninth grade students whose native language is Arabic. They are all about 15 years old who have started studying English in their first grade. Two classes, 9-A and 9-B, from Ibrahim Abu Dab'at Secondary School for Girls are selected as participants in this study.. The students' academic achievement level was nearly the same according to their scores in English in the previous year. Randomly, one group (9-B class) is assigned to be the experimental group, while the other (9-A class) forms the control group of the study. Table 1 shows the distribution of the participants according to their group and grade.

**Table 1: The Sample's Distribution**

<b>Grade</b>	<b>Group</b>	<b>Count</b>
<b>Ninth Grade A</b>	<b>Control group</b>	<b>34</b>
<b>Ninth Grade B</b>	<b>Experimental group</b>	<b>35</b>
<b>TOTAL</b>		<b>69</b>

Table 2 shows the distribution of the teachers according to the years of experience, gender, specific area of specialization, and qualification.

**Table 2: The Teachers' Distribution**

Specific area of specialization			Gender		Years of experience			Qualification	
English literature	English teaching Methods	English minor French	Male	Female	Five to nine	Ten to fifteen	More than sixteen	BA	MA
5	4	1	3	7	3	6	1	8	2
Total	10		10		10			10	

### Data Collection

The data were collected through using two instruments. Pre-and post-test was used to collect data about the students' achievement level. Then two semi-structured interviews were used to collect data about students' motivation towards English and the challenges that encounter teachers and students while using PBL.

### Test validity

The validity of the tests is checked through presenting them to three professors in Hebron University who presented several fruitful comments and suggestions. Moreover, they reported that the tests were valid and appropriate to achieve the purpose of the study. The test items have been modified according to their recommendations.

### Test reliability

The reliability of the tests was calculated by test internal consistency which calculates the extraction reliability coefficient (Cronbach's alpha) for the study. The reliability coefficient in this study is (0.80) which proved to be a good reliability coefficient.

### Interview

A semi-structured interview was used to identify the effect of Project-Based Learning on the participants' motivation and to find out the challenges that

teachers and students face while using PBL. The interview questions were evaluated by three professors at Hebron University who have stated that these questions are suitable to achieve the goals.

Ten teachers, seven females and three males, from different Hebron public schools and 25 students from the experimental group are chosen randomly to be interviewed. Five of the teachers are specialized in English Literature, four of them are specialized in English teaching methods, and another one is specialized in English minor French. Most of them have more than 10 years of teaching experience. Moreover, two of them have obtained a master degree in applied linguistics and teaching English.

Both the teachers' interview and the student's interview consisted of four questions each. The questions are designed to obtain information about the possibility of implementing PBL in teaching English as a foreign language Palestinian EFL learners and the effectiveness of using this method compared to other teaching methods. Moreover, the questions are directed to inquire about the benefits of using such method as well as the challenges that may be encountered by both teachers and students as a result of implementing this teaching method.

### **Procedures:**

In this study, two groups were taught the same units at the same time duration but in a totally different way. The empirical part of the study started on the 7<sup>th</sup> of September 2015 and ended on the 3<sup>rd</sup> of January 2016. The control group depended only on English for Palestine students' textbooks.

There are two Pupil's Books for Grade 9, covering 14 units in the course of a year.

Pupil's Book 9A contains units 1–7, and Pupil's Book 9B contains units 8–14. Each unit is based on a theme, allowing the new language to be taught in context. The themes meet the needs and interests of pupils of this age.

Students in the experimental and control groups have studied five units each of which has its own theme and grammatical rule. In the control group, the teacher's book which includes adequate instructions for carrying out the activities



in the class was used.

### **Pre-Test**

In order to make sure that the control and experimental groups are equivalent, a pre- test is conducted on both the experimental and the control group before applying the Project-Based Learning method. This test includes six sections that cover the four language skills (reading, writing, listening and speaking) and the two content areas (language and vocabulary). The whole test is designed by the researchers except the language section which is adopted from Oxford university press diagnostic test needed to design the next steps.

The total number of the test items is (80). Except the reading aloud, speaking orally and the final item in the writing section. The test items are given a score of half a mark, one mark or two marks. This makes the total mark given to the test (100). The researcher follows the Ministry of Education distribution for the percentage that each skill should have in the achievement assessment. These percentages are divided as follows: 10% listening, 10% speaking, 20% vocabulary, 20% reading, 20% language, and 20% writing.

The scores of the achievement pre-test of students in the experimental and control groups were compared. The average pre-test scores were found as Mean= 26,68 for students in the experimental group and Mean= 26,11 for students in the control group. The difference between students of these two groups was analyzed through independent samples T-test. The result indicated that there is no statistical significant difference in the mean scores of students in the pre-test between the experimental and control groups, in which p- value is 0.872, which is larger than the significance level ( $p \leq 0.05$ ). The pre-test results are presented clearly in table 3 below:

**Table 3: The Results of T-test for Pre- test**

Group	N	Mean	Std. Deviation	Df	t-value	Sig. (2-tailed)
Control Group	34	26.1176	15.9007	67	160	.874
Experimental Group	35	26.6857	13.6074			

According to this result, both groups' pre-learning level in English is equal to one another which makes conducting this study on them acceptable.

### Post-Test

To examine the effects of the using PBL on the students' achievement, an academic achievement test was developed by the researchers in relation to the new English for Palestine curriculum for the 9<sup>th</sup> grade. The total number of the test items is (98) most of which are given a score of one mark; others are given a half mark. Table 4 shows the number of post-test items and the marks distribution for each skill.

**Table 4: The Post-Test Items and Marks Distribution**

Skills		Items	Marks
Reading	Comprehension	21	20
	Aloud	1	5
Language		20	20
Writing		17	20
Speaking	Written	8	5
	Oral	1	5
Vocabulary		20	20
Listening		10	10
Total		98	100

**Post Test Results**

The post test was designed to answer the first research question:

Is there a significant difference between the achievement levels of students in the experimental group and those in the control group in terms of the usage of Project-Based Learning?

Mean and T-test were used to confirm the above question. (The average post-test score of students in the experimental group was found as Mean= 56.12, and the average post-test score of students in the control group was found as Mean= 50.75). The mean score of students in the experimental group is higher than that of the control group which indicates the positive effect of using PBL on students' achievement. However, this difference in the mean scores is not necessary to be sufficient to make a statistical significant difference. Therefore, the difference between students of these two groups was analyzed through independent samples T-test. The results showed that there is no statistical significant difference in the achievement level between students in the control and experimental groups due to the use of Project-Based Learning method in which the p-value is (0.438), which is larger than the significance level ( $p \leq 0.05$ ). This is obvious in Table 5.

**Table 5: The Results of T-test for Post-examination**

Group	N	Mean	Std. Deviation	Df	t-value	Sig. (2-tailed)
Control Group	34	50.7500	29.67533	67	.780	.438
Experimental Group	35	56.1286	27.58099			

According to the post-test general results, no statistical significant difference in the achievement level between the two groups in terms of the speaking and listening skills, but a statistical difference is shown in the writing and reading skills. This indicates that the use of this method may achieve better results if it is

implemented for a longer period. Therefore, the mean scores for each skill were compared and a paired sample T-test was conducted to find if the use of PBL affects one skill more than the others or not.

The mean score results showed that the writing and reading skills have a clear difference with 8.45 for the control group versus 11.95 for the experimental group in the writing skill, and 10.67 for the control group versus 14.52 for the experimental group in the reading skill. A paired sample T-test was conducted to find if these differences in the mean score are sufficient to make a significant difference or not. These results are presented clearly in the following tables (table 6 & 7).

**Table 6: The Results of T-test for the Writing Skill**

Group	Minimum	Maximum	Mean	Std.D.	Df	t- value	Sig. (2-tailed)
Control	.0	19.0	8.456	6.7390	33	2.280	.029
Experimental	.0	19.0	11.957	5.3253			

**Table 7: The Results of T-test for the Reading Skill**

Group	Minimum	Maximum	Mean	Std.deviation	Df	t- value	Sig. (2-tailed)
Control	1.0	20.0	10.676	6.2896	33	2.684	.011
Experimental	6.0	20.0	14.529	4.7973			

The results showed that there are statistical significant differences of achievement levels between students in the control group and the students in the experimental group in reading and writing skills favoring the experimental group, with p-values (0.011) for reading and (0.029) for writing.

In short, students in the experimental group outperformed those in the control group according to the post-test mean score. Nevertheless, according to the T-test results, this difference in the mean score between the experimental and control groups was not enough to indicate statistical significant difference between them.

After all, a paired sample T-test was conducted to find if there are significant differences between the two groups in any of the four skills or the two content areas. The results showed that there are statistical significant differences between them in the reading and writing skills.

### **Discussion of the Post-Test Results**

According to the quantitative data, the result of this study does not only conflict with the previous studies which present the effectiveness of using PBL to enhance students' level in subjects other than English such as Bagheri et al, 2013; Yam & Rossini, 2010; Abdul- Rahman et al, 2009; and Eskrootchi & Oskrochi, 2010, and Gultekin, 2005, but it is inconsistent or disagrees with most of the previous studies which suggest the important role of PBL in improving students' English academic achievement such as Bas and Beyhan, 2010; Simpson, 2011; Bas, 2011; and Nassir, 2014.

After a careful reading of the related literature and a deep analysis of the way of implementing PBL in this study, the researchers have come up with possible reasons for this difference. The following are some of these reasons:

*First*, implementing the same method on students in the same way does not mean that the same results should appear.

*Second*, having a general statistical significant improvement in the students' achievement does not mean that this improvement includes all skills. This is in agreement with Simpson (2011).

*Third*, it is not fair-minded to say that the students' academic achievement level in this study does not improve at all. A statistical significant difference is found in two skills when comparing the two groups' results for each skill. Moreover, a clear enhancement is seen when comparing the differences between the pre-and post-test mean scores results.

*Fourth*, Improving students' academic level and reaching the desired outcomes require using a suitable method, exerting huge efforts and spending adequate time. Therefore, paying attention to all the critical components for successful implementation of PBL without providing students with sufficient time to be totally engaged in this new method makes reaching the desired results hard to

achieve.

### **The interview results:**

The qualitative part of this research provides the researcher with sufficient information to answer the second and the third research questions: What is the effect of project-based learning on students' motivation? And what are the challenges that may face both teachers and students while implementing the PBL method? In general, the interview results indicated that learning through the PBL method is enjoyable and increases students' motivation level towards learning English. In other words, the interview results in this study prove the correctness of the second hypothesis. Moreover, the results showed that there are seven challenges that face teachers while implementing PBL and four challenges that encounter students while using it. Justifying the general results can best be done through detailed analysis of the teachers and students' responses to the interview questions.

**Teachers' responses to the first question** " Do you find the use of PBL beneficial or not? Why?" show that about 80% of the teachers responded positively for several reasons. First of all, they believe that PBL motivates students, makes them more active and engages all students in the learning process regardless of their proficiency level. Moreover, they look at PBL as a great way to direct students towards autonomous learning and increase their self-confidence. Furthermore, some of the teachers state that the use of this new method helps them in discovering their students' abilities away from tests and grades, especially low achieving and shy ones. An adequate number of teachers were surprised when they saw what their students are capable of and how some of the low achieving students did a great job on their projects. Some of the teachers stress the point that PBL will be a beneficial way of teaching English when it is implemented appropriately. On the other hand, about 20% of the interviewed teachers look at PBL as a completely helpless way of teaching. They believe that our students do not have the ability to take responsibility for their own learning at this early age and that this method could be suitable for university students only. Moreover, they think that it would be better for students

to dedicate all class time for doing activities, practicing the grammatical rules explicitly and listening to their teacher's explanation than wasting their time searching for information as they do not have the ability to distinguish between what is right and what is wrong.

**Teachers' response to the second question** "What are the challenges that you faced while implementing PBL on your students?" provides four major challenges that most of the teachers encounter while implementing PBL.

First of all, PBL is time consuming. Teachers are committed to finish the curriculum which means that most of the time is spent to cover the proposed material for each lesson, and there will be no sufficient time to implement PBL appropriately and; therefore, students will not be given the time to discuss their project development or present them.

In addition, the insufficient resources in school libraries are also seen as a very important challenge by most of the teachers. Teachers find out that some students have creative ideas, but they cannot work on their innovative projects because of lack of financial support to cover the expenses of the projects.

Moreover, students' unwillingness to work in pairs or groups is another challenge. Most of the teachers reveal that dividing students into groups is one of the serious challenges that they encounter while using PBL. Teachers prefer to have mixed-ability groups while students with high achievement level insist on working together and refuse to work with students with a low achievement level. Moreover, students are unable to meet together after school to work on their projects for family and social considerations.

Furthermore, Assessment in PBL is very challenging. The absence of ready-made rubrics which help both teachers and students in assessing the project makes the assessment process a little bit subjective.

The teachers reveal a wide range of ideas in response to the **third question** in the teachers' interview "**What are your recommendations as a teacher for the use of PBL in the Palestinian schools?**" This can be summarized in the following points:

1. Most of the teachers agree that a well-planned professional training regarding

PBL is needed for both teachers and students.

2. Neglecting all the problems that exist in our schools such as: crowded classes, heavy curriculum, insufficient resources and teachers' heavy loads may hinder the education system improvement and reduce the efficiency of using any creative method.

3. Projects should be simple and interesting. Asking for complicated and fancy projects makes students feel that this method of learning is totally beyond their level.

4. Awards and prizes for students who made great projects is the best way to motivate and encourage them to do their best.

Projects should be planned to have more impact on students' achievement. The Ministry of Education requires students to do one project in the whole semester which is insufficient. Therefore requiring students to do more projects is crucial to guarantee better results.

### **Students' Interview Results**

Similar to the teachers' interview results, students' interview results are discussed through analyzing the students' responses for each question.

The students' responses to the first question "How do you feel towards using project based learning method in learning English?", are clearly in favor of using PBL. 88% of the students express their high admiration for the use of this method in learning English. They state that PBL changes their negative feeling towards English lesson and motivates them to be better language learners. Furthermore, they clarify that seeing their final project which reflects their efforts and excellence is the most important but not the only source of their cheerfulness while implementing PBL.

The students' responses to the second question "**How do you feel towards using project based learning method in learning English?**", are clearly in favor of using PBL. 88% of the students their negative feeling towards English lesson and motivates them to be better language express their high admiration for the use of this method in learning English. They state that PBL changes learners. Furthermore, they clarify that seeing their final project which reflects their efforts



and excellence is the most important but not the only source of their cheerfulness while implementing PBL. Searching for information with other students, discussing ideas and supporting their point of view with evidence, standing in front of the whole class to present their work and having a role in the assessment process are also seen as sources of happiness for them. Moreover, the sense of achievement that they feel when they find a solution for their problems motivates them and increases their self-confidence. A few of them present their incredible satisfaction when the teacher and other students show their admiration for the work of their groups. Furthermore, some of the students indicate that they used to hate English and looked at it as the most difficult subject, and being good at it was something impossible. However, this short experience makes them think in a different way and believe more in themselves. One of them emphasizes that "even though I do not have the ability to participate in English like other students and that I always have very bad scores in my English tests, I feel, for the first time in my life, that I have a role in English lessons and that other members in my group respect and support me".

On the other hand, the rest of the students (12%) mention that the use of PBL is not as enjoyable as the introductory presentation and the video indicate. Moreover, they do not find that participation in this new method of learning for the whole semester improves their level in English in any way. In general, it is obvious according to their responses that their hatred to this method is strong because they do not accept changes, and that is partly because PBL puts more responsibility on them. They state that "learning through a conventional class is satisfying, so why we should change our way of learning". Moreover, they hate working in groups as they have to fight with their group members several times.

Based on students' responses to the third interview question "**What are the challenges that you faced while implementing PBL?**", the challenges can be summarized in the following four points:

1. As PBL is time consuming, having insufficient time for making projects is seen as the most important challenge that encounters students while implementing PBL. Searching for information, collecting material, evaluating it,

solving problems, and making the project take most of the students' free time.

2. Some students have difficulty in accepting the new role of the teacher as a facilitator and not as a source of knowledge and solutions provider.

Unfortunately, the students are used to be receptive only.

3. Group work is also seen as a challenging issue that encounters students while implementing PBL.

4. Students' notable weakness is also seen as a challenging issue that hinders students from doing their projects in the desired way. Most of the students indicate that they do not have the confidence and the ability to interact and express themselves in English.

### **Conclusion and recommendations**

This study investigates the effects of Project Based Learning on students' academic achievement and motivation towards English.

The pre-test findings show that there is no statistical significant difference between the experimental and control groups which indicates the equality of the two groups. Although the findings of the post-test indicate that there is no statistical significant difference between the two groups due to the use of Project-Based Learning method, it is worth saying that the mean score of students in the experimental group is higher than that of the control group which indicates the positive effect of using PBL on students' achievement. In addition, the experimental group students outperform the control group students in reading and writing skills. The results of the T-test show that there are statistical significant differences of achievement levels between students in the control group and those in the experimental group in reading and writing skills.

In terms of motivation towards English lessons, the teachers and students' interview findings show that the use of PBL motivates students towards learning English, improves their self-confidence, engage them in the learning process and change learning to an enjoyable activity. Eventually, the challenges that encounter teachers and students while implementing PBL are presented according to their responses to the interview questions.

Several challenges are stated by students such as: inadequate resources, students'

weakness, the refusal of team work, the lack of seriousness, the new way of assessment, the unqualified students, the insufficient time and the new roles for both teachers and students. Finding solutions to these challenges or even preparing well to reduce their negative effects is the reason for investigating them in this study.

To sum up, there are two points that the researchers want to. First of all, The Ministry of Education in Palestine has taken several steps towards altering the traditional direction of teaching and starts implementing PBL. According to the related literature and the results of this study the researchers can say that choosing PBL as a new method of teaching and learning is entirely a right decision. Knowing that PBL has the ability to improve students' achievement, provide students with the opportunities for collaborative learning, direct students towards practicing creative and critical thinking, develop autonomous learning and lifelong learning skills and increase students' motivation towards the learning process are sufficient reasons to motivate instructors to implement it. I believe that rejecting change is the first step towards education collapse. Therefore, teachers should be open minded towards all the new method and accept only what proves to be beneficial and suitable for their students.

### **Recommendations**

In the light of the study results, the researcher presents several recommendations for teachers, the Ministry of Education and researchers.

First of all, for teachers:

- Training your students before implementing any new teaching method is essential.
- Taking into consideration students' individual differences and different learning styles, thinking carefully before selecting the projects and choosing what is suitable to their abilities, interests and needs.
- Be a great model for your students by taking the first step towards making the required change. Do not just stay passive where you can be creative and able to destroy all barriers.

Secondly, for the Ministry of Education:

- Enriching the Palestinian curriculum with different educational projects without neglecting that the current curriculum is too heavy, therefore, deleting some parts will be beneficial.
- Providing teachers with intensive training is the most important thing to do before implementing any new method. It is never too late, train teachers to use PBL correctly.
- Not to overload teachers with unneeded burden as using such method is time consuming and needs a lot of effort.

Finally, for researchers:

- As there are only few studies on the application of project based learning in English lessons, especially in Palestine, there is a need to conduct more studies on this issue.
- As this study focuses on using PBL on 9<sup>th</sup> grade, it is essential to assess the effect of using it on elementary stages and high school.
- This study investigates the effect of PBL on students' achievement and motivation only. Therefore, examining its effect on other variables such as metacognitive skills and attitude is needed.
- Designing a longitudinal study to assess the effectiveness of PBL is needed to gain valid results.

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