

## **Efficacy of Problem-Based Learning Strategy to Enhance EFL Learners' Paragraph Writing and Grammar Skills**

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### **Abstract**

Generally, this study investigates the impact of problem-based learning strategies in enhancing and improving English as a Foreign Language students' paragraph writing skills. It explores the impact of Problem-Based Learning on EFL learners' paragraph development and grammar abilities. The participants were 38 male students between the ages of 15 and 18. They were all in level ten in secondary school and attended a public learning institution in Al-Baha Saudi Arabia. Data was collected using both qualitative and quantitative approaches. The data collections were post-test and pre-test for the two age-based groups. Qualitative data was collected through video recordings of the participants. The findings from the study revealed that learners perform better in their post-tests compared with the pre-tests regarding grammar skills and paragraph writing. Thus, PBL success affects students' motivation for improving their paragraph development and grammar skills. This is the reason for the better performances in the post-tests than in the pre-tests. Additionally, the results reveal that EFL students in the control group did not write together as would have expected. The group dynamics that would have been observed through their cooperation with one another were missing during the paragraph-writing activities. Resultantly, they did not share many of their ideas about the activities. A contrast was observed under Problem Based Learning because the students interacted and freely shared their ideas. The learning and progress of each learner were more conspicuous under problem-based learning than in the control group settings.

*Keywords:* Applied linguistics, grammar skills, problem-based learning, Teaching English as Foreign Language, writing skills

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## Introduction

Problem-Based Learning (PBL) refers to a method of learning that relies on the principle of applying real-world problems as the beginning of acquiring and integrating new knowledge. It is a suitable alternative or approach to use in the classroom of the English language for the enhancement of learning and teaching English (Legg, 2007). The PBL method assists in the creation of meaningful English as a Second Language (ESL) activities. When students explore situations or cases relating to solving problems, the activities involved trigger engagement and motivation (Bosuwen & Woodrow, 2009). According to Lapuz and Fulgencio (2020), PBL enhances the improvement of critical thinking skills levels among students, and it also ensures the improvement of the process of teaching and learning. The PBL model guides the students in thinking, analyzing, researching, and investigating; these activities are conducted either in groups or independently, and it remains the core of the PBL model. In addition, PBL requires students to identify materials and link what they are reading with what they are doing with the information (Torp & Sage, 2002). This enables the students to enhance the integration of the content knowledge with their English knowledge based on the difficulties in the teaching and learning of writing a paragraph in ESL classrooms. Therefore, it is significant to ensure the examination of the approaches to learning and teaching skill. Writing through PBL, which encourages influences on the ESL writing of the learners, can be a workable approach to writing skills teaching (Wigglesworth & Storch, 2012). However, a limited number of studies have been conducted on the use of writing approaches in writing paragraphs, specifically within the context of English as a Foreign Language (EFL).

The purpose of this study involves exploring the effect of PBL on the paragraph writing skills of EFL learners and their grammar skills. In addition, the study unveils the methods used by the learners to acquire writing skills through PBL. Limited information is available concerning what the students do in the PBL classroom milieu and how such actions affect academics and other activities. Minimal research has explored the procedures and the methods of PBL settings of the strategy. In the study, the aim involved the investigation of a novel methodology to allow the students to enrich their skills in writing a paragraph while expediting their interactive skills with various individuals among their peers. In addition, a PBL strategy was able to serve as a means of enhancing interactive skills because the learners have the possibility and prospects of significant interaction with colleagues and of conversing with their peers in the process. The current research addressed the following questions:

- What is the impact of problem-based learning to enhance EFL learners' paragraph writing skills?
- What is the impact of problem-based learning to enhance EFL learners' grammar skills?
- How do EFL learners gain paragraph writing skills via problem-based learning?

## Literature Review

PBL was initially applied in the year 1970 at the Medical Faculty of McMaster University in Canada (Amir, 2009). The process of implementing PBL at the university was focused on human beings, and it was community-based via an interdisciplinary approach to problem-based learning and learning. According to Markham et al. (2003), the Buck Institute for Education (BIE), an American organization exploring research and development, identified PBL as "an organized teaching method that engages learners in learning knowledge and skills through an extended inquiry process established around complicated, authentic questions and attentively designed products and tasks" (p.10). On the other hand, Moss and Van Duzer (1998) also referred to PBL as an instrumental approach to contextualizing learning

by giving the learners products to develop or problems to solve. Fried-Booth (2002) also defined PBL as a student-centered approach driven by the desire of establishing an end product.

In learning, the process that applies to solving problems requires analysis, thinking, evaluation, and the generation of ideas. Learners become informed by designing their process of learning and choosing the information and the places in which it can be gathered. They explore the analysis and synthesis of the information, after which they utilize and deliver the newly obtained knowledge. Throughout the learning process, teachers act as advisors and managers (Sadeghi et al., 2016).

It remains evident that PBL is a potential means for allowing students to improve their language, communication, and content skills. They can utilize and incorporate factual knowledge and language into their real lives as they perform and create the project (Sadeghi, Biniiaz & Soleimani (2016). Various researchers also indicate that PBL has a positive effect on particular groups of students. For instance, students with average to low verbal ability and students with limited previous content knowledge experienced significant learning in PBL classes more than in traditional classes (Mioduser & Betzer, 2008). In summary, students in PBL classes were more useful and had more real-world content knowledge, which they applied to different tasks than students who were not in PBL classes (Boaler, 1997).

Several studies were obtained relating to PBL in the classroom of language, as reported by Sari, Sumarmi, Utomo, and Astina(2021). The outcome of the study indicated that the PBL model has an important impact on the students' skills in solving a problem and scientific writing skills. Together, PBL and problem-solving skills had a valuable effect on scientific writing skills (Wood & Head, 2003). The latter conducted a case study of the application of the PBL approach in the Biomedical English Course. In relation to their findings, the researcher proposed a programmatic description of the adoption of the PBL approach in the classroom in the English language. Sadeghi et al. (2016) revealed that students who went through PBL performed better than the students whose education was based on the instructions in the textbooks. The findings lend credence to the positive impact of PBL on students' writing performance. Last, Norzaini and Shin (2012) found that PBL can be applied successfully on small scale and that PBL is simple for students. The outcome indicates the need for students to be perfectly trained in the practices and theory of PBL for the success of the implementation. According to Lapuz and Fulgencio (2020), PBL improves student critical thinking as well as the learning and teaching process.

Vygotsky (1980), a renowned theorist, discovered the significance of social interaction in the development of cognition. Vygotsky indicated that socialization is fundamental to cognitive development. He was convinced that, in the beginning, learning occurs at the social level; it takes place through interactions between people. Thereafter, it moves to the individual level, which enhances the internalization of knowledge and starts with the interpersonal process.

Several researchers of the theories of the second language, including Roebuck and Wagner (2004) and Lantolf (2000), applied Vygotsky's ideas to second-language learning. Sociocultural theory refers to a theory of human learning describing the social communication function in cognitive development. The sociocultural theory is composed of various standards that can be classified systematically into three themes. The themes include internalization, social interaction, and the Zone of Proximal Development (ZPD). Vygotsky's sociocultural theory focuses on the importance of societal communications and human nature behavior, like the internalization procedure (Robbins, 2003).

While learning a second language, the aspect that has proven most challenging is writing, among other aspects of learning such as speaking, reading, and listening. The latter applies not only to learners but also to teachers (Kustati & Yuhardi, 2014). Writing a paragraph is the most important skill because writing

incorporates thinking capacity, trained memory, and language proficiency; generally, it tests the writer's various cognitive levels (Kellogg, 2001). Students experience challenges in the fulfillment of writing requirements when their language proficiency is low. Meanwhile, a lack of English vocabulary, spelling, grammar, and punctuation tends to contribute to a lack of interest among students (Karim, 2012). Important skills that students should master in the 21<sup>st</sup> century include problem-solving, critical thinking, communication, collaboration, innovation, and creativity (Redhana, 2019). Lectures must be selective in choosing models of learning that can fit the demand of the skills in the 21<sup>st</sup> century in the process of learning.

Writing is the most challenging skill for students learning a language because of a variety of intrinsic attributes and extrinsic factors. The challenge is experienced both as a first or second language compared with other skills such as reading, listening, and speaking (Keller et al., 2020). The concepts of awareness related to writing, such as details, supporting sentences, concluding sentences, linking words, punctuation, topic sentences, cohesion, and grammatical aspects, result in writing perfect paragraphs. Moreover, a writer should review and edit multiple times what he or she has written, which tends to make writing appear challenging (Chatt & Haque, 2020). Several types of research, particularly regarding the challenges of writing in the EFL context, show that students are still dreading compositional and writing tasks (Alkodimi & Al-Ahdal, 2021). In the following figure, a Conceptual Framework of PBL in Language classrooms is presented.

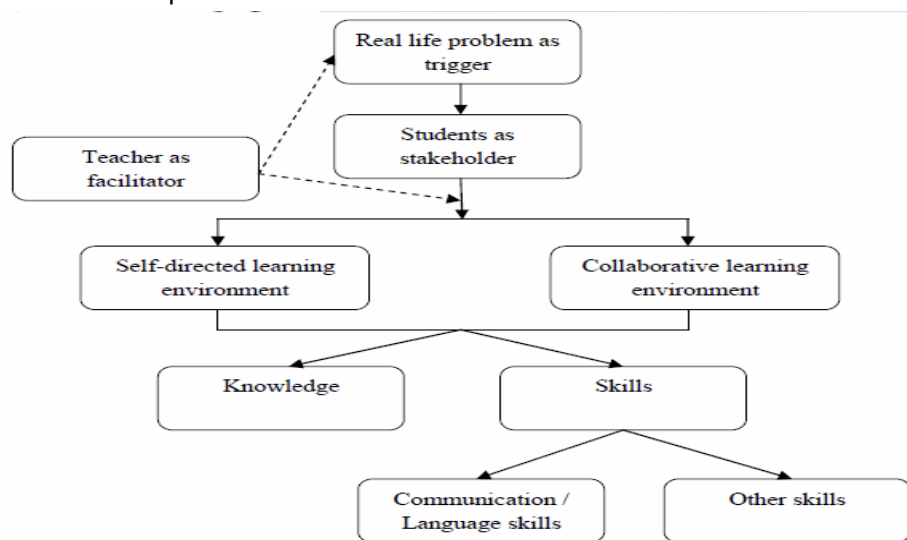


Figure 1. A Conceptual Framework of PBL in Language Classroom (Norzaini & Shin, 2012, p. 113)

## Method

The study is composed of 38 male participants between the ages of 15 and 18 years. The participants are in level ten at Al-Baha, a government secondary school, in semester one of 2022. The participants underwent random alienation based on two groups: the PBL strategy group, with 20 participants, and the control group, with 18 participants. The study involved two male educators who were members of the same institution as the participants. Moreover, all the English language educators had pertinent qualifications that, in this case, involved the possession of a bachelor's degree in English and other equivalent experiences in teaching English.

### ***Research Procedures***

The study investigated the impact of the use of PBL in the improvement of grammar and writing skills among ninth-grade students at a high school located in the city of Al-Baha. The study design was mixed-method, involving the collection of both qualitative and quantitative data. The researcher also enhanced the organization of a separate workshop for the experimental group teacher trained in PBL skills.

The instruments of research applied in the study were initially the post-test and pre-test English test of achievement with the inclusion of grammar and writing skills, comprising twenty multiple-choice questions and the task of writing a paragraph. The tests were intended to measure the students' writing skills according to the ninth-grade syllabus and were arranged by the Saudi Arabian Ministry of Education. In addition, the test questions corresponded to the syllabus of the ninth grade according to the approval of the Ministry of Education. They were mainly concerned with topics that the students had studied in the ninth grade. The test's reliability tended to have a high Cronbach's alpha, at 89%. An achievement test was presented after the study had ended to inform of a post-test, which was mainly concerned with evaluating the achievements of the participants in the skills of English.

As a pre-test, the students were required to write a paragraph. After the completion of the PBL lessons, which took weeks, the students had their post-test based on the same topic. Eventually, analytical scoring was explored for the evaluation of the students' post-test and pre-test. In the scoring, every component of writing underwent assessment with the total score relating to the components' totality. Two of the English teachers, who never took part in the study, ensured the correction of all the English test papers, including the test papers at the start and the end of the study.

Next, the participant's performance was video recorded at a single government secondary school. One of the two groups remained the control group, with the other being an experimental group, which continued directly with the strategy of PBL for up to three weeks. The two groups were subdivided into four smaller groups, and every subgroup was recorded on a video; each video was recorded three times for 20 minutes. The experimental group had their recording as they experienced the strategy of PBL. In the same way, the researcher requested the control group's teacher to develop sub-groups of four members each, and their activities were video recorded for 20 minutes for every sub-groups activity.

The experimental group's English teacher committed to activities, such as a workshop meant for fostering knowledge acquisition for the implementation of the strategy of PBL in their classrooms. For that reason, the researcher has set aside some time for the introduction of different books relating to teaching English as a second language in Saudi Arabia. Contrarily, the control group's English teacher never took part in any workshop or training. As a course requirement, those taking part from either of the groups went through the study of analogous English lessons within their groups for about one hour, almost four times each week. Coding the video clips was

conducted by the two research assistants who underwent training for the coding of the participants' dialogue.

## Findings

### *Quantitative Data Findings*

The study involved 38 student participants sampled from two classes at a public elementary school. The participants experienced either control or experimental environments. The mean, standard deviation, and t-test for two independent samples were calculated to reveal the presence of statistically significant differences between the average scores of the experimental group and the control group on the pre-test (writing skills, grammar skills, and total score). Table one shows these results.

Table 1. *The mean, standard deviation, and t-test (writing skills, grammar skills, and total score) in the pre-measurement*

test	Group	N	Mean	Std. Deviation	T. test	P-Value
pre-test writing skills	experimental group	18	10.06	1.924	0.43	0.672
	control group	20	9.80	1.765		
pre-test grammar skills	experimental group	18	11.17	1.757	-0.24	0.811
	control group	20	11.30	1.658		
pre-test total score	experimental group	18	21.22	2.691	0.14	0.890
	control group	20	21.10	2.713		

*Note 1.* Table one of the results of the t-test reveals the presence of differences between the average scores of the members of the two groups on the pre-test test (writing skills, grammar skills, and total score).

Table one highlights that the value of (T) to test skills (writing skills, grammar skills, and total score) is not statistically significant, as the significant value associated with it is higher than the level of statistical significance ( $\alpha = 0.05$ ). Therefore, the decision is to accept the hypothesis: there is no statistically significant difference between the average scores of the members of the experimental and control groups on the pre-test test (writing skills, grammar skills, and total score). This indicates that the scores of the experimental group and the control group are equal.

Moreover, the mean, standard deviation, and t-test for two independent samples were calculated to reveal the presence of statistically significant differences between the mean scores of



the experimental group and the control group on the post-test (writing skills, grammar skills, and total score) in the post-measurement, and Table two reveals these results.

Table 2. *The mean, standard deviation, and t-test (writing skills, grammar skills, and total score) in the post-measurement*

test	group	N	Mean	Std. Deviation	T. test	P-Value	eta square
post-test writing skills	experimental group	18	14.89	2.398	7.80	.000	0.628
	control group	20	10.05	1.146			
post-test grammar skills	experimental group	18	17.78	2.579	8.46	.000	0.665
	control group	20	11.80	1.735			
post-test Total score	experimental group	18	32.67	4.459	9.25	.000	0.704
	control group	20	21.35	2.796			

Note 2. Table two of the results of the t-test reveals the presence of differences between the average scores of the two experimental groups in the control group on the ---- test (writing skills, grammar skills, and total score) in the post-measurement.

It appears from Table two that there are statistically significant differences at the level of significance ( $\alpha = 0.01$ ) between the mean scores of the experimental and control groups in the following comparisons:

- Writing skills tests and the difference was in favor of the experimental group compared with the control group, where the mean of their writing skills test (14.89) was higher than that of the control group (10.05) and statistically significant ( $T = 7.80$ , significance  $> 0.01$ ), which indicates the statistical significance of the effectiveness of problem-based learning on writing skill. The effect size (eta square  $\eta^2$ ) for using problem-based learning in increasing writing skills was 0.628; this means that 62.8% of the variance in writing skill is due to the use of problem-based learning, has a high effect size as indicated by Cohen, and indicates the practical significance of the effectiveness of problem-based learning in increasing writing skills.
- Grammar skills tests and the difference were in favor of the experimental group compared with the control group, where the mean of their grammar skills test (17.78) was less than that of the control group (11.80) with statistical significance ( $T = 8.46$ , significance  $> 0.01$ ), which indicates the statistical significance of the effectiveness of problem-based learning on grammar skill. The effect size (eta square  $\eta^2$ ) for using problem-based learning to increase grammar skills was 0.665, which means that 66.5% of the variance in grammar

skill is due to the use of problem-based learning, has a high effect size as indicated by Cohen, and indicates the practical significance of the effectiveness of problem-based learning in increasing grammar skills.

- The total score for the skills test and the difference were in favor of the experimental group compared to the control group, where the average total score for the skills test (32.67) was less than the control group (21.35), with statistical significance ( $T = 9.25$ , significance  $> 0.01$ ), which indicates the statistical significance of the effectiveness of problem-based learning on the total score of the skills test. The effect size (eta square  $\eta^2$ ) for using problem-based learning to increase the total score of skills test was 0.704, which means that 70.4% of the variance in the overall skill test score is due to the use of problem-based learning, is a high effect size as indicated by Cohen, and indicates the practical significance of the effectiveness of problem-based learning in increasing the overall skill test score. The mean, standard deviation, and t-test for two related samples were calculated. Table three shows these results.

Table 3. *The mean, standard deviation, and t-test to detect the differences between the mean scores of the pre and post measurements*

Test	N	Mean	Std. Deviation	T. test	P-Value	eta square
post-test writing skills	38	12.34	3.052	5.13	.000	0.416
pre-test writing skills	38	9.92	1.822			
post-test grammar skills	38	14.63	3.708	5.80	.000	0.477
pre-test grammar skills	38	11.24	1.684			
post-test total score	38	26.71	6.778	5.36	.000	0.437
pre-test total score	38	21.16	2.666			

Note 3. Table three results of the t-test are used to detect the presence of differences between the mean scores of the pre and post measurements for the experimental group on the tests (writing skills, grammar skills, and total skills).

Table three indicates that there are statistically significant differences between the mean scores of the pre-test and post-test for the experimental group on the following tests (writing skills, grammar skills, and total skills).

- The writing skills test and the difference were in favor of the post-measurement compared with the pre-test measurement, where the average writing skills score in the post-test



(12.34) was higher than the pre-test measurement (9.92), with statistical significance ( $T = 5.13$ , significance  $> 0.01$ ), indicating the statistical significance of the effectiveness of problem-based learning on writing skill. The effect size (eta square  $\eta^2$ ) for using problem-based learning on writing skill was 0.416, which means that 41.6% of the variance in writing skill is due to the use of problem-based learning, has a high effect size as indicated by Cohen, and indicates the practical significance of the effectiveness of problem-based learning on writing skill.

- The grammar skills test and the difference were in favor of the post-measurement compared with the pre-test measurement, where the average degree of grammar skills in the post-measurement (14.63) was higher than the pre-test measurement (11.24), with statistical significance ( $T = 5.80$ , significance  $> 0.01$ ), indicating the statistical significance of the effectiveness of problem-based learning on the skill of grammar. The size of the effect (eta square  $\eta^2$ ) for using problem-based learning on the skill of grammar was 0.477; this means that 47.7% of the variance in the skill of grammar is due to the use of problem-based learning, has a high effect size as indicated by Cohen, and indicates the practical significance of the effectiveness of problem-based learning on grammar skill.
- The total score of the skills test and the difference were in favor of the post-measurement compared with the pre-test measurement, where the average total score of the skills test in the post-measurement (26.71) was higher than the pre-test measurement (21.16) with statistical significance ( $T = 5.36$ , significance  $> 0.01$ ), which indicates the statistical significance of the effectiveness of problem-based learning on the total skills test score. The effect size (eta square  $\eta^2$ ) for using problem-based learning on the total skills test score was 0.437, which means that 43.7% of the variance in the total score of the skills test is due to the use of problem-based learning, is a high effect size as indicated by Cohen, and refers to the practical significance of the effectiveness of problem-based learning on the total score of the skills test.

### ***Qualitative Data Findings***

#### *Qualitative Analysis of the Observation Data*

Two examples are given in this case. The first example is from the experimental condition together with another from the control condition. One example had been presented by the researcher originating from the experimental condition, with the other one coming from the control condition for the indication of the variations existing between both conditions. Because the examples were selected from the EFL classes, with the students speaking Arabic and English, the researcher translated Arabic expressions into English, later presented in italics, with the normal font indicating the original words in English. The two examples originating from the two conditions underwent presentation and discussion within the following vignettes.

*Problem-Based Learning (Paragraph Writing Task)*

The vignette below gives a few minutes for the learners of EFL to dialogue and interact after working on the task of writing for approximately 20 minutes in the EFL classroom. The names of the students in the vignette are Faris, Omar, Saleh, and Majed. The previous week, they wrote a small paragraph concerning Saudi Arabian winter to practice writing short paragraphs using the simple past tense in problem-based learning. The example shows that the students were involved in the discussion on the best way of writing simple past tense correctly. They endured some difficulty regarding the arrangement of certain ideas and the selection of the best ideas for several points of view. Moreover, they also experienced difficulties in grammar and spelling while they were learning English. It remains vital to note that they developed a concerted effort to help one another and rely on one another; they could convey messages verbally and communicate with one another, though they were not good at writing the ideas. Generally, improvements were evident in their performances and achievements, though they had minimal success with the task of writing paragraphs.

1. Majed: The topic is the winter in Saudi Arabia last week. We must *talk about all parts of Saudi Arabia*.
2. Omar: Absolutely, we are going to talk about all cities in Saudi Arabia. For example, the winter in Riyadh, Jeddah, Abha, and Dammam. These cities are *from different directions, from north, south, west, and east*.
3. Faris: It is a good idea *to write down* the ideas, and then we have to discuss them.
4. Saleh: OK, let's start.
5. Majed: *We need someone to write down the ideas* then we will *discuss them and properly link them*.
6. Saleh: Ok, that is great. I will do it. Could you please state the ideas that I have to write down?
7. Omar: Let's start with this small sentence, "Winter last week in Saudi Arabia was different from city to another one."
8. Faris: *Would you please add this sentence*, "In Jeddah, the weather was good; it reached 24 degrees."
9. Majed: Abha was very cold and *windy*. This *city located in* the south of Saudi Arabia.
10. Saleh: Please let me talk about Dammam *which located in the east* of Saudi Arabia. "Dammam was a very cold city last week."

From the above vignette, it remains evident that the learners of EFL taking part in the discussion helped one another. There were dynamic interactions that occurred between them with their language being very rich based on the categories of verbal actions: explanations with examples, giving other support in the groups, questions, providing suitable examples, and developing basic assessment during the discussion.

It remains clear that the learners of EFL within the vignette above tended to practice the principle of PBL, which enabled them to communicate with one another in a suitable PBL

environment. For instance, Majed made use of the inclusive pronoun “we” in turn one while asking his classmates for help with writing concerning various parts of Saudi Arabia. The topic that was chosen concerned winter in Saudi Arabia last week. It remains vital to talk about every part of Saudi Arabia. The incorporation of the phrase “we should” in the statement shows that he sought assistance from his colleagues and that he was convinced about them working together.

The next example occurred in turns three, four, and five. Saleh, Faris, and Majed made statements indicating their willingness to work together. For instance, Farsi proposed that he needed to work together with his classmates; he stated that it remained a perfect idea to note down the ideas followed by discussing them. Saleh confirmed his willingness to cooperate and work together while encouraging the groups to begin writing the paragraph. He used the verb phrase “Let’s start,” which is collective and imperative. This signals that he desired to start working together in writing the paragraph. In the fifth turn, Majed makes use of the collective pronoun “we” to emphasize that they were to discuss various ideas together. He stated that there was a need for someone who could write down these ideas for a future discussion and link them together.

The examples indicate that the EFL learners in the vignette tended to practice the strategy of PBL. That is, the students helped one another in learning. When the students followed the features of problem-based strategy, they were likely to gain academically based on the overall grades and completion of more tasks. EFL learners rely on one another for the achievement of their goals, as indicated in the vignette, in which it remains clear that the students learned from one another and tended to contribute various ideas to the group effort to write a correct paragraph. During the writing task, the EFL learners tended to communicate with one another perfectly but experienced a challenge in translating their verbal success into the final written product. There were several grammar and spelling mistakes in the excerpt from the last paragraph.

The students proposed various ideas, conducted a discussion, and noted these ideas down. However, the last paragraph had several mistakes that led to low performance in the group task. The errors involved mistakes such as repetitions and wrong words capitalized, together with various misspellings. PBL allowed the students to interact and exchange various ideas, though they went through challenges while writing the ideas. Generally, EFL learners can learn and progress through PBL despite spelling and grammar errors.

#### *Traditional Learning (Paragraph Writing Task)*

The vignette below depicts a few minutes of the dialogue of the EFL learners after working on the task of writing for 20 minutes in the traditional EFL classroom. In the vignette, the students are Aseel, Sami, Anas, and Sultan. They were writing short paragraphs concerning the previous weekend to practice using the simple past tense via the traditional environment of learning. In the following vignette, the EFL learners communicated concerning the best way of writing ideas in the simple past tense. Initially, EFL learners experienced challenges in developing ideas and writing them down. A vital challenge was that the students were not able to coordinate their ideas and experienced challenges in their interaction with one another because they failed to

receive training on the implementation of PBL. In the long run, they were able to help one another without consideration of any structure. They offered varied ideas minus any specific structure to the group discussion.

1. Sami: Hi. Where did you go last weekend? The teacher asked us to write about this topic.  
*In fact, I went to Makkah to visit my relatives there.*
2. Aseel: Wow, *that is interesting*, I went to Taif and it was very nice.
3. Sami: Could we *start discussing* the ideas and writing the paragraph?
4. Sultan: Ok, but everyone has *his style in writing*. *Why do not we write individually rather than together?*
5. Anas: I am totally agree with you, Sultan. It's time-consuming and I have different stories and events that I am willing to write them down.
6. Aseel: *We can share different stories and then we can write them in few sentences*. I think this will be fine for all members.
7. Sami Mohammed: That is fine, let's work. For example, *I visited my friends last weekend*.
8. Sultan: I am going to write my work alone. *I do not like to work with others, particularly in writing*.
9. Anas: I cannot write to anyone, too.
10. Aseel: It is up to you. I just *want to clarify that we can discuss the ideas together and then someone will write the ideas to come up with a share paragraph*.

The vignette above depicts how EFL learners in the control groups never intended to write in the environment of PBL. They also failed to change ideas, and many students indicated that they preferred working separately. In addition, no dynamic interaction existed between the students while they worked separately, more so in the tasks of writing than in the other tasks. For instance, in the third turn, Sultan observed that each person has a style of writing and stated that he preferred writing alone. This is evident in the statement he made: "Ok, but everyone has his style in writing, why do not we write individually rather than together?" In the fourth turn, Anas agreed with Sultan's remarks: "I am totally agreed with you, Sultan. It's time-consuming, and I have different stories and events that I am willing to write them down."

The EFL learners in the vignette never practiced the principles of PBL. The latter is evident in the seventh turn, in which Sultan used "I" as the singular pronoun and shows how he preferred working alone. He indicated that he would work alone in writing his paragraph and never liked working with his colleagues on writing. The learners of EFL in the control condition gave examples and outline clarifications, but to a minimal degree in comparison with their peers in the experimental condition. For example, in the sixth turn, Sami gave an explanation based on an idea to his peers and gave some examples while commenting that it was fine and talking about visiting his friend the previous week. In the ninth turn, Aseel clarified the peers when he indicated that they were able to interact and converse in writing a shared paragraph. Aseel remarked that it was

the responsibility of the peers as he believes the group members could discuss the ideas together; thereafter, one of the members wrote the ideas down and developed a shared paragraph.

## Discussion

The study's findings revealed significant statistical variances,  $p = .000$  ( $p < .05$ ), between the mean scores of the two groups of students. Those teaching English in the PBL environment and those taught in typical classes show a significantly high variance in statistical means. The results show that the outcomes are better in the group taught in a PBL environment. However, the findings also showed no significant variance in the students' English achievements in the pre-test scores. There are two possible explanations in response to such an observation relating to the better achievement of the learners in the PBL environment. The first is that acquiring English skills through PBL provides an environment that encourages the learners to work in groups and collaborate during most tasks. Thus, they can share their experiences and knowledge. The second explanation is that PBL creates an environment where weaker students can learn from the stronger ones. As a result, the gap between the best and the least advanced learners is lessened through such a learning system.

Findings from previous research have revealed various advantages associated with the PBL learning environment. A common argument is that the PBL environment creates a more conducive learning environment than the traditional environment. A primary concern associated with the traditional education environment is that it propagates individualism. Thus, learners might miss out on the benefits associated with collaboration. For instance, a study by Sari et al. (2021) concluded that PBL significantly affects students' problem-solving abilities. The study also stated that PBL was a major determinant of students' scientific writing skills. Another study by Sadeghi et al. (2016) determined that students learning in the PBL environment posted better performances than their counterparts in traditional learning settings when instructions from the same textbooks were used. The findings from this study are among the sea of data supporting the notion that PBL enhances students' writing skills. The PBL model has also been associated with an improvement in students' thinking and ability to deduce meaning from instructions (Lapuz & Fulgencio, 2020). According to Fried-Booth (2002), PBL can be a student-centered approach to education motivated by meeting the intended purposes.

According to Özdemir (2006), the PBL model provides a challenging, authentic, and multidisciplinary learning environment where learners can acquire skills associated with designing, performing, and evaluating projects that need them to show sustained effort over time. Eryilmaz (2004) asserted that PBL enhances academic outcomes by facilitating interactions between students by providing a social context in which attitudes are likely to remain positive. Scientific writing skills are enhanced under PBL because of the resultant problem-solving skills. According to Azman and Shin (2012), PBL is applicable in small-scale educational settings and is simple enough to be implemented at various educational levels. Thus, PBL has a better outcome for the theoretical and practical goals of the education system.

### Recommendations

Given the research findings, the first recommendation is for further research to support the findings obtained. Secondly, the supervisors of English teachers should introduce the method of PBL to all the teachers. They need to work hard to encourage the teachers to apply the method. In addition, the teachers of the English language should be updated and informed concerning the new methods of teaching that assist them in the improvement of their careers. Lastly, the rest of the studies emphasizing language skills such as reading, speaking, and listening via other methods of PBL should be used to highlight PBLs' potential to facilitate the development of other language skills.

### Study Limitations

Despite the study's significant positive outcomes, two notable limitations should be considered in applying its findings. The first is that it involved small sample sizes. Thus, applying its findings to the general population might not be easy. The second shortcoming is that the sample was from a government public secondary school for boys. Thus, it does not reflect findings for girls and learners in private institutions.

### Conclusion

In conclusion, a mixed method was applied in the collection of the qualitative and quantitative data. The study examined the impact of problem-based learning strategy in the improvement and enhancement of the skills of writing a paragraph and grammar skills among EFL learners. The main purpose of the study relates to the exploration of the impact of PBL based on the skills of writing a paragraph among EFL learners, in addition to their grammar skills. The study outcome indicates that the students performed better post-test compared with the pre-test in relating grammar skills and paragraph writing after the implementation of the PBL method in the class. The utilization of PBL was successful in encouraging students to work hard in refining their paragraph writing in addition to their grammar skills, reflected in the rise of the scores in writing within the post-test. PBL gives the student an opportunity for interaction and exchange of ideas. However, they experience challenges while writing down their ideas.

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