

Research Article

The effect of project-based learning on English writing skill for EFL learners

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Many EFL learners believe writing is a hard skill to master. Project-based learning is argued to be an effective solution to the problem. This study is aimed to look at the effect of Project-based learning (PjBl) on English writing skill for Indonesian EFL learners and their perceptions of PjBl. A mixed-method approach was implemented in this study. A pair sample T-test was used in analyzing the quantitative data of the written test while the descriptive-qualitative technique was applied in analyzing the data of the interview. Participants are thirty-nine tertiary students from Universitas Tidar. From the study, Indonesian EFL learners believe project-based learning influenced their writing skill in many ways. The result of this study is that there was a significant difference in project-based learning on English writing skill in pre and post-test for EFL learners which favor the improvement in grammar, vocabulary, organization, and content writing of the text. Project-based learning enhances the learners in linguistics aspects such as vocabulary knowledge, grammatical conventions, and punctuation. Besides, it also enhanced the learners' critical and creative thinking in the process of writing. In addition, project-based learning also motivated the learners to write as they were habituated to the independent learning situations that demand them to follow through all the processes accordingly: not to be left behind. Further studies are suggested to gain a deeper and broader comprehension of project-based learning's effect on student's writing skill.

Keywords: Project-based learning; Writing skill; Tertiary; EFL students; Perceptions

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1. Introduction

At the tertiary level, EFL learners are currently required to practice their productive skills of writing. Writing plays a great role as a process where students mediate and communicate their knowledge through complex language production within their brains (Fareed et al., 2016). Writing is an authentic and unique assessment of the student's language competence where they apply each understanding and language style. It carries the writers' ideas, thoughts, and opinions

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through the construction of words and writing to deliver meaning to the readers. Since it involves two-way communication, writing demands a logical, comprehensive, and clear delivery so it does not mislead understanding (Hedge, 2005). Writing constructs a rational thinking process while allowing students to explore themselves through self-evaluation for improvement (Klimova, 2012). Thus, writing is highly perceived as a standard of the argument as an indicator of the effective learning process in the academic context and their future (Sulisworo et al., 2016).

In the professional field, writing is a high-demand skill. Such report writing, emails, resumes, and written business communication are essential in the process of business field and cannot be ignored. Students need to be able to practice such needs with the proper skills and competence to enhance their careers (Vaghari & Shuib, 2013). This matter emphasizes how important writing skill is in the current digital and modern world, and the process of the professional field is advancing more and more. Students need to be relevant to meet the requirements in the working context to shelter and prepare for their future (Singh et al., 2021). Educational institutions must spare time and opportunity to improve students' writing skill following the current demands.

A prior study was conducted in 2019 evaluating the ability and competence of Indonesian EFLs in writing comparison and contrast essays. The study evaluated the writing products based on the five writing aspects: content, organization, vocabulary, grammar, and mechanics. Eventually, the study argued that Indonesian EFL students' writing ability could be classified in a good category with the overall score of the 52 participants calculated resulting in the mean score between 70 - 85; or specifically, it reaches the rate of 77.83 from the maximum grade of one hundred (Toba et al., 2019). On the other side, many EFL learners, either students or pre-service teachers, agree that writing skill is complicated to master (Arochman et al., 2023; Tanyer & Susoy, 2019). Numerous factors influence the learners' writing ability, as argued by (Rahmatunisa, 2014). The study mentioned three major factors experienced by Indonesian EFL learners in writing: linguistics, cognitive, and psychological aspects. Another study also identified three main perceived writing difficulties based on the sources. It identifies the problem based on the students themselves, a problem caused by the educational practices and tendencies, and lastly, the problems arising from the lecturer in the classroom context (Tanyer & Susoy, 2019). However, considering how essential writing skill is in an academic and professional context, EFL learners need to improve their competency to suit the current necessity and requirements.

In a new learning environment, the learning process and management system also need to be transformed, including in the EFL materials development (Delimasari et al., 2023; Sundari & Leonard, 2021). The language learning process should provide the students with many activities and opportunities to practice their skills while maintaining a continuous learning process. Project-based learning is proposed as an effective strategy in an educational context to enhance the students' writing skill considering the various challenges faced by the students in developing the skill. Project work allows students to explore their authentic knowledge and skills (Mali, 2016; Wahyuningsih et al., 2023). Project-based learning could improve the students' communicative, cooperative, and creative skills (Supe & Kaupuzs, 2015).

Prior studies have been conducted regarding implementing project-based learning to improve students' writing skill. For example, the investigation on online collaborative project-based learning in 2015 by Al-Rawahi and Al-Mekhlafi. The study reported a clear improvement in students' writing skill after implementing online collaborative project-based learning, as project-based learning in a team allows the students to construct their knowledge together by sharing ideas and giving feedback. In particular, project-based learning enhances knowledge, provides a safe learning space, affects students' wider range of vocabulary use, and exchanges writing ideas (Al-Rawahi & Al-Mekhlafi, 2015). Another study revealed that project-based learning influences students' English Academic Writing (Li, 2017). Li mentioned that the habituation of project-based learning environment can create a space where students build mutual communication through teamwork in solving authentic problems. This factor helps to build students' collaborative and professional writing skill through providing advice, opinions, and suggestions for each other,

decreasing the level of writing mistakes, and diversifying the writing products by working together (Li, 2017). In line with the previous study, Alotaibi (2020) explored the influences of project-based learning model implementation on EFL students' writing skill in Saudi Arabia. The study mentioned that there was a significant difference in the participants' writing ability, especially in their writing motivation and engagement levels before and after the application of the project-based learning model (Alotaibi, 2020).

On behalf of the topic discussed above, this research aimed to investigate whether project-based learning has influenced EFL learners' writing skill based on the student's perceptions. Further, the researchers attempt to present the benefits of implementing project-based learning in students' writing skill according to the students themselves. This study answered the following research questions:

RQ 1) Is there any significant difference between EFL learners' writing skill before and after being taught using project-based learning?

RQ 2) How do EFL learners perceive project-based learning and its applications?

RQ 3) What impact does project-based learning have on EFL learners' writing skill?

2. Literature Review

2.1. Writing Skill

Writing is a complex integration process of knowledge, creativity, competence, and cognitive or critical thinking (Kroll, 2018). Writing as a process of actualization means expressing the writer's desire. It is an active and demanding skill, especially for EFL learners. EFL learners should be able to accumulate their desires and meanings within their brain and transferr the ideas into another language before they are concerned with linguistics and grammatical convention. In addition, EFL learners also need to be concerned about coherence, organization, and cohesiveness in their writing to aim for an exact understanding of the opposite party or the readers in their writing process. Writing is an active involvement of cognitive competence and recall of memory. One cannot perform good writing without adequate knowledge, proper writing convention and punctuation, and qualified content to be shared or read.

Linguistic aspects concern how communication is kept open through the effort of sentence structure, diction, and grammatical rules, whichlead to the proper interpretation. In linguistics difficulties, a study in 2020 investigated the difficulties in writing faced by students. The study indicated five major difficulties, with the highest percentage being the difficulty in grammar or language use as high as 56,67%. The second one was related to rules and mechanism with a percentage of 43.33%. It was then followed by the difficulty in content, writing, organization, and vocabulary (Utami & Apsari, 2020). Writing requires strict application of rules and conventions in the English language, which are significantly different from Indonesian. The learners need to be observant of articles, diction, and orthographical aspects. Moreover, certain definitive challenges, such as articles, tenses, pronouns, prepositions, and negative and interrogative constructions also need to be addressed to improve performance (Mohammed, 2021).

Besides, EFL learners even find difficulty in the organization of texts (Alzahrani et al., 2020). Organization of text in writing will influence the students' coherence and cohesiveness. The organization builds the prior study, which bridges the readers' knowledge of logical thinking toward what is written by the students. Organizing paragraphs and the generic structure of texts are some of the factors leading to the students' mistakes in writing (Rahmatunisa, 2014). One of the causes is that students are likely to have many ideas to write, resulting in difficulty in organizing their thoughts. The students reported such aspects as the most challenging in the writing process (Derakhshan & Shirejini, 2020).

In writing, vocabulary is argued to be a key factor in determining students' final products (Kiliç, 2019). Vocabulary is their bridge in expressing their ideas and thoughts using the target language. Limited vocabulary or inappropriate use of vocabulary can impact writing. Vocabulary is necessary for writing since writers should avoid misunderstandings in their writing (Mansoor et al 2023). Wu and Garza (2014) explained that there are more mistakes made by EFL learners

related to interlingual/transfer aspects than intralingual/developmental errors. This may be due to the influence of the learners' first language (Octaviani et al., 2024). It can be implied that vocabulary as an essential factor in writing is still a big challenge for students. The teaching and learning process needs to be concerned with improving vocabulary competence to enhance writing skill. Related to this issue, a study argues that students' structural and linguistic aspects of writing performance were related with their reading comprehension abilities, vocabulary competence, and English proficiency (Moon et al., 2019). Further, the development of the EFL learning process can enhance vocabulary competence by providing reading classes.

Aside from the linguistics aspects, psychological factors also influence the students' writing. EFL learners experience psychological problems such as laziness, egoism, and difficulty to start writing (Rahmatunisa, 2014). They revealed that it was related to their personal reasons and motivation. Students practice fewer writing activities than the other major skills simply because writing is a time and energy-consuming activity. Writing is assumed to be exhausting; therefore, students are not highly motivated to write. Its process requires a high involvement of thinking for particular topics. Sometimes, the topics given are not quite in students' interest or knowledge (Toba et al., 2019). It is proposed that teachers should provide and trigger learners with relevant topics. Some other reasons related to writing anxiety are academic self-concept [ASC] and academic achievement (Tajmirriahi & Rezvani, 2021). Academic self-concept and academic achievement from the learners affect their motivation in writing. Psychological challenges are not easy to overcome through the work of one party only.

Lastly, cognitive factors can also contribute to learners' writing. Cognitive aspects are related to the student's knowledge of issues and topics. This factor is urgent for learners, considering writing is a skill that requires a complex thinking process. Students need to be able to produce ideas for their writing whether it is about the topics provided in the classroom contexts or the authentic ones. Learners' knowledge plays a substantial role in writing since the content of their writing relies heavily on it. Thus, each student's writing product is unique in style and quality. Accordingly, generating ideas is a tough process for students in the cognitive aspect (Ibnian, 2017). This is related to cognitive anxiety, which is perceived as the most common anxiety in writing compared to somatic anxiety or avoidance behaviour (Syarifudin, 2020). Numerous reasons are causing writing anxiety for EFL learners. One of the reasons is the fear of writing under time constraints (Wern & Rahmat, 2021). While students normally need a calm and conducive situation to put their thoughts and knowledge in order, time limitations may pose as pressures for their cognitive load in their writing process.

2.2. Project-based Learning

Project-based learning is suggested to be implemented in the process of language learning since project-based learning assists in improving English learners' proficiency (Poonpon, 2017). It engages the students in an essential activity to build problem-solving ability, collaborative learning, and decision-making based on the task given (Mujiono et al., 2023). It also involves learners in the process of critical investigation of an issue (Grant, 2002). The learners are initiated to construct and apply their knowledge while gaining new information and understanding. It connects the prior information stored in the brain to a new one, creating a stronger memory bond by exploring authentic materials. Authentic materials are believed to encourage students' language input through real-world necessity. Project-based learning provides learners with numerous opportunities to demonstrate their language competence in a meaningful and authentic context.

There are various benefits to implementing project-based learning in building the learners' skills. Bailey and Barley mentioned some benefits, including building communication, creative and critical thinking, problem-solving, and a cooperative and responsible community (Bailey & Barley, 2020). In the classroom and language learning context, such abilities are promoted to enhance the learning process. Multidisciplinary project-based learning integrated into the teaching and learning process contributes to the learners' critical thinking and collaboration skills (Trisdiono et al., 2019). Language learning is a complex thinking process of investigating, exploring, and

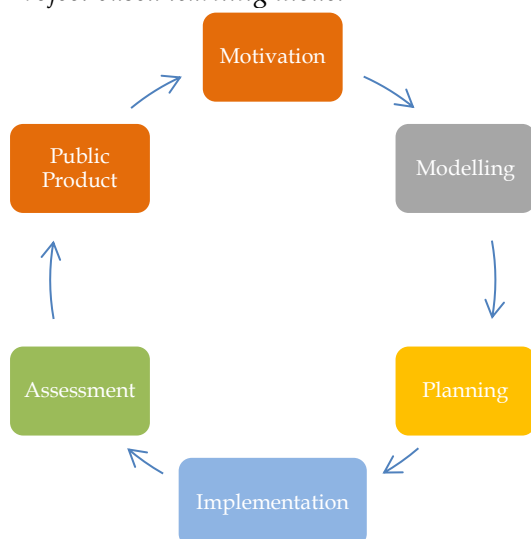
gaining. It requires a high rate of thinking and formulating so that it can lead to a good language's translation, comprehension, or production (Astuti et al., 2021). Engaging in project-based learning impacts students' learning level and promotes comprehensive understanding through a student-centred approach. Project-based learning benefits students' independence in learning (Al-Busaidi & Al-Seyabi, 2021). Thus, project-based learning is said to construct independent learners. They are actively learning and being involved in fulfilling their learning needs by formulating solutions independently.

Another advantage of implementing Project-based learning for students' activity is creativity. Project-based learning can improve the learners' writing ability and creativity (Nurcahya & Sugesti, 2020). Creativity is certainly necessary for students in the process of writing. Project-based learning assists the development of students' ability through the comprehension of the topic, structural knowledge, and language features in writing products (Syarifah & Emiliasari, 2019). Students will necessarily learn the topic to solve the project. It will habituate them to do research in formulating their knowledge, while creativity will help them to construct their writing. Besides, project-based learning also promotes students' collaborative skills (Andriyani & Anam, 2022; Lubis et al., 2018). It contributes to enhancing learners' motivation, teamwork, communication, and creativity. Collaborative learning allows students to experience different and various perspectives from other people. It gives a broader perception while working on the project. Therefore, project-based learning is highly encouraged in higher education as an alternative strategy which promotes many practical skills in focused project work.

Project-based learning is a beneficial teaching approach to improve the learners' writing ability (Aghayani & Hajmohammadi, 2019). Project-based learning engages the students in real-world practice for skill development (Sathappan & Gurusamy, 2021). Writing is a high-demand skill for language learners. In an academic context, students are encouraged to write academic-related writing projects, for example, articles or reports. The authenticity of materials will influence the learners' ability to write their projects. It provides an opportunity for a proper, suitable, and clear depiction of what the learners should write on their assignments. Furthermore, recognizing the professional context that will shape learners' futures, it is essential to provide authentic materials to help students become adept at writing formal emails and business communications. The teaching of writing skill through project-based learning are highly promoted as it develops the learners' ability in terms of content and quality of their writing. It also introduces the learners to writing conventions, grammar rules, vocabulary, and template sentences. Project-based learning is a complete approach for EFL learners to enhance their writing skill from linguistic, cognitive, and psychological aspects. The model of project-based learning of writing is presented in Figure 1.

Figure 1

Project based learning model



3. Method

This study aims to look at the effect of Project-based learning [PJBL] on English writing skill for Indonesian EFL learners and their perceptions about PJBL. The design used in this study was a mixed method. To analyze the students' competence before and after the implementation of project-based learning, a writing test was conducted and analyzed later using a pair sample T-test. A descriptive-qualitative research technique was also implemented to find out the effect of project-based learning on the EFL learners' writing skill in this study. The primary data gained from the study were in the form of numerical data and words. While the data were derived from a specific numerical value, the research results, including those based on a t-test and other findings, would incorporate the researcher's interpretation regarding the effects and perceptions of students concerning the implementation of project-based learning in the writing class. This was aimed to achieve a comprehensive understanding and precise interpretation from qualitative data accordingly. Thus, a mixed-method approach was implemented (Leavy, 2023).

The participants of the study were thirty-nine tertiary students majoring in English Education from Universitas Tidar. The tests were given to measure students' writing skill in argumentative writing. The writing test was reviewed by two experts in the writing field to ensure its validity. The participants were asked to write an argumentative writing from two optional topics. They had to finish their work in 90 minutes. The researchers implemented the PJBL approach by motivating the students and providing them with a sample argumentative text as a model. The participants were free to choose a topic that they were interested in. Once they had their choice, they proceed to write. In some meetings, a collaborative work was done to check the partner's draft. The drafts were then assessed by the researchers, and feedback would be provided in the class. By the end of the writing process, they shared their feelings about the the writing practice and the learning process using PJBL. Lastly, the participants were interviewed as a means to understand their thoughts comprehensively as well as to serve as a data triangulation. The interview guide questions were tabulated in Table 1.

Table 1

Interview guides questions on the impact of PJBL on students' writing skill

Context and Detail questions

General knowledge of Project-based learning method

1. Have you heard or are you familiar with the term Project-Based Learning?
2. What do you know about Project-Based Learning?
3. What is your opinion on the course's Project-Based Learning implementation?
4. Have you ever had the experience of Project-Based Learning in your course? What course is it?

Specific perception of Project-based learning impact on writing skill

5. What is your opinion on Project-Based Learning to improve writing skill?
6. How do you agree or disagree with Project-Based Learning to improve writing skill?
7. How do you think Project-Based Learning will benefit writing skill development?
8. What are some of the benefits of Project-based learning to the student's writing skill?

To analyse the writing tests, researchers did a normality test to make sure that the data was in a normal distribution. The researchers needed to test the score using the normality test of Kolmogorov-Smirnov. The results of the normality test of the pre and post-test can be seen in Table 2.

Table 2

The results of normality test of pre- and post-test

	Statistic	Kolmogorov-Smirnov	
		df	Sig.
Pre-test	.114	39	.200
Post-test	.094	39	.200

Table 2 presents the results of the normality test. Based on the result of the test, it can be seen that the student's Sig. of pre-test was 0.200 and it was greater than the 0.05 significance level. As result, the distribution of pre-test was deemed normal. In addition, the student's post-test was 0.200 and it was also greater than the 0.05 significance level. Thus, the distribution of post-test score was also regarded as normal. Since it was discovered that both sets of data were normal, the test continued using hypothesis testing.

The hypothesis testing was conducted by utilising a paired sample T-test. The test is used to know whether the project based learning given has significant impact on students' writing results. Meanwhile, the interview data were presented following the descriptive-qualitative technique. The data in the form of words were further analysed using content analysis to draw a deep and exact interpretation of the answers given by the participants (Bengtsson, 2016). The results were divided into three main points represented by the sub-headings to determine the effect of Project-based Learning and to ease readers' comprehension regarding the issue. The data obtained through writing tests and interviews were tabulated in the following section.

4. Results

In this section, the results and findings from the study were tabulated. This section was divided into three main sub-sections to ease the readers' understanding and to provide clear data interpretation gathered from the instruments. The first sub-heading explained the significant difference resulting from the project-based learning on English writing skill in pre and post-tests for EFL learners. The second sub-heading explained students' perception of project-based learning and its applications in a general context. Subsequently, the next sub-heading explored the impact of Project-based learning which was integrated into the course on the EFL students' writing skill.

4.1. Effect of Project-based Learning on English Writing Skill for EFL Learners

This study has an aim to investigate the significant difference posed by project-based learning on English writing skill in pre and post-test for EFL learners. Between pre and post-test, the participants were given intervention in the form of project-based learning. The result of pre and post-test scores can be seen in Table 3.

Table 3

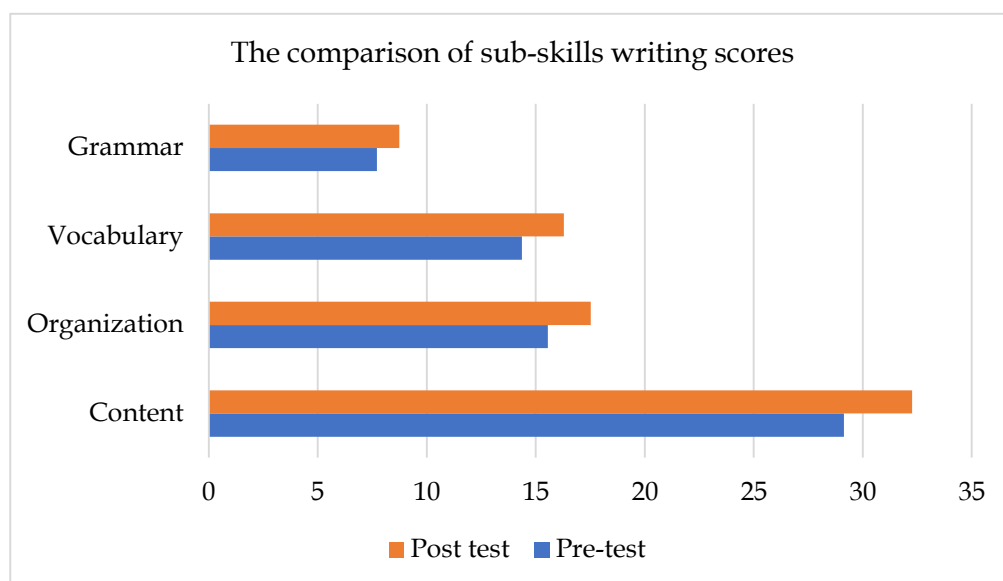
The scores of pre and post-test

	<i>N</i>	<i>Mean</i>	<i>SD</i>	<i>Highest</i>	<i>Lowest</i>
Pre-test	39	66.76	6.12	84	56
Post-test	39	74.82	5.91	87	62

Table 3 presents the students' scores on pre and post-test. It can be found that the mean score of pre-test was 66.76, while in the post-test, the mean was 74.82. It means that after being taught using project-based learning, the student's skill improved by 8.06 points. In addition, the highest score also improved from 84 to 87 and lowest score improved from 56 to 62. Meanwhile, the standard deviation in pre-test was 6.12 and in post-test was 5.91. The increasing mean point of each sub skills of writing can be seen in the comparison of sub-skills writing scores of pre and post-test in Figure 2.

Based on the data of Figure 2, it can be seen that there was an increasing score of content sub-skill, in which in the pre-test it was 29.14 and in the post-test it was 32.27. There was an increase of 3.13 points. In organization, it can be seen that the score was 15.55 in the pre-test while in the post-test, it was 17.52. It means that there was an increase of 1.97 points. In addition, there was an increase of 1.93 points on the vocabulary sub skill. In the pre-test, the mean score of vocabulary was 14.36 while in the post-test it was 16.29. Moreover, in grammar, the mean score was 7.71 in the pre-test while it was 8.74 in the post-test. It means that there was an increase of 1.03 points. In other words, from those four aforementioned sub-skills, all of them increased after the implementation of Project-based Learning.

Figure 2
Comparison of sub-skills writing scores of pre and post-test



This test was implemented to see if the data is viable. There are two kinds of hypothesis: null hypothesis (H_0) and alternative hypothesis (H_a). The H_0 : there is no significance difference of project-based learning on English writing skill in pre and post-test for EFL learners. Meanwhile, the H_a : there is significance difference of project-based learning on English writing skill in pre and post-test for EFL learners. The researchers used paired sample t -test formula to evaluate the level of significant difference. The result of the paired sample t -test can be seen in Table 4.

Table 4
Paired sample t -test

	Paired Differences						
	Mean	SD	SE Mean	$t_{counted}$	t_{table}	df	p
Pair Pre & Post-test	69.29	6.96	0.78	87.97	1.884	77	.000

The t -test result shows that null hypothesis (H_0) is accepted if $t_{counted}$ is lower than t_{table} and p -value is greater than .05. However, if $t_{counted}$ is greater than t_{table} , alternative hypothesis (H_a) is accepted. H_a is also accepted if the p -value is less than .05. From the result of the test, it is revealed that the counted value was 87.97 and t_{table} value was 1.884. Thus, $t_{counted}$ was greater than t_{table} , or it can be said that H_a was accepted. Meanwhile the t -test result showed that p -value was .000, therefore, H_a was accepted. This shows that there was a significance difference of project-based learning on English writing skill in pre and post-test for EFL learners.

4.2. EFL Learners' Perception and Knowledge of Project-Based Learning

The data from the interview showed that the participants of the study at the tertiary level had a good knowledge of Project-based Learning. It was reasonable since, in the current teaching and learning process at the university level, Project-based learning was mostly implemented to support language learning. The participants revealed their familiarity with project-based learning since their early college years. They stated that many courses in the college had integrated Project-based learning into their teaching and learning process. They argued that 60 percent of the courses they were taking in college integrated Project-based learning in their teaching and learning process. This finding indicated the high rate of integration of Project-based learning in the university environment for EFL learners. Project-based learning was encouraged in language learning for the learners to apply their competence in solving problems through projects. Furthermore, Project-based learning was introduced in students' early years to build a habit of critical learning through

student-centred approach. It habituated the students to independent learning situations in a limited classroom time. The following are excerpts of interviews conducted with participants.

I've been very familiar with this learning method since my first year of undergraduate. As far as I know, project-based learning is a learning method where the students are encouraged to learn/acquire deeper particular knowledge through exploration in some real-world problems in the form of project. (Participant 1).

We do some projects such as writing and projects of videos. sometimes also books. I think it's good even though we need more time to solve the project, to do the project. (Participant 2).

There was a positive attitude performed by the participants regarding the implementation of Project-Based Learning in the courses considering that this approach was integrated in substantial numbers of courses. Most of the participants agreed on the topic for various reasons. They revealed that there were many benefits gained through project-based learning. Integrating project-based learning in courses allowed the students to investigate a particular topic deeply. Project work allowed the students to be aware of themselves and their knowledge. They were able to actualize their authenticity and uniqueness of language competence through project-based learning. Although project-based learning was challenging for most students, the participants agreed it had positive impacts on their language learning. It was claimed to enhance the major skills in language learning through various and numerous activities that were interesting yet demanding for a high standard of language competence. It motivated the learners to always be starving for more knowledge and to improve their skills. Besides, project-based learning is integrated as an alternative to the final-term project. Project-based was proposed as a strategy to overcome many problems with a solution. Another excerpt of interviews conducted with participants were as follows.

Project based learning is quite good. Project based learning provide opportunities to the students to explore or to solve problems that directly related with what they are going to learn. It is also a kind of students' responsibility to apply what they've learnt/what their lecturer gave to them. (Participant 3)

Many, plenty, numerous. probably most of the courses in university already apply PJBL. The latest example of PJBL is sociolinguistics course, where we had to conduct a research concerned a particular issue in sociolinguistics and then wrote an article. Other course is creative writing project where we should do a kind of mini theatre show, and don't forget the stressful collaborative project, etc. (Participant 4).

According to the participants, project-based learning took a different form. There was speaking project where the focus on speaking skill development was enhanced through presentation or debate projects. While in writing classes, there were a number of written projects such as academic articles, reports, or essays. In an academic context, such projects were utilised by many courses. Academic articles and publications in some universities have become an obligation and requirement. At the same time, reports and essays were applicable to various majors and purposes. Reports and essay writing for EFL learners were inseparable from writing classes. There were also projects which took the form of visual, audio, and audio-visual projects. Students were making use of cameras and printing tools for documentation, tape recorders to make English podcasts, and video recording in a digital presentation. This was related to the advanced technology and its utilization in a classroom environment and learning context. Project-based learning combines the learners' skills to make a learning product. It was an effective approach where students completed their project work by considering plenty of factors of learning input and output. Project learning highly demands students' critical thinking ability.

4.3. Students' Perception of The Impact of Project-Based Learning on Writing skill

Project-based learning was promoted as a beneficial strategy in the language learning process, particularly in enhancing EFL learners' writing skill. From the interview, this study reported students' positive perception of Project-based learning on their writing skill. It had a significant impact on improving the writing ability of the students. The students positively stated that the Project-based learning approach used in the courses would influence their writing skill in many ways. They revealed that by implementing Project-based Learning, they could improve various aspects related to writing skill, particularly in linguistics competence. The students mentioned that Project-based learning could enhance their vocabulary knowledge and grammatical competence. It was also mentioned that project-based learning influenced their process of thinking, criticizing, and formulating information while also motivated them to improve their writing skill.

Project-based implementation by the teachers obligated the students to solve the project. It forced them to start writing by their start line of writing competency. This way, students could measure their competency in writing and predict how far they need to improve. Students recognized mistakes and errors they made and found a strategy to overcome their problems. Moreover, Project-based learning habituated the students to write and get used to the environment of writing. Writing as a complex process has different features and styles for each purpose, for instance, in the academic writing context of scientific articles. It employed a different style of language and a different grammatical structure than personal writing. Therefore, students should recognize the writing requirements for each project. They needed to understand the purposes and functions of the texts or products they were writing. Through Project-based learning, students were habituated to many types of writing. It allowed them to understand how these writings differ from each other. Furthermore, the students urgently needed to be introduced to writing development in professional need. The following are excerpts of interviews conducted with participants.

Project-Based Learning is good, but it will take more time. It improves our skill in writing since we are trying to write, of course it will enhance our ability. (Participant 5)

If I see the PJBL in my university, most of the project of the courses that I took are usually encouraged me to write academic writing a lot. And fortunately, I suppose my writing skill have been improved a lot as well. Thx to PJBL. (Participant 6)

The positive attitudes in the implementation of Project-based learning offered various benefits to students' writing skill. The participants revealed that Project-based learning enhanced their vocabulary competence. Project-based learning is an activity where students investigate a topic using various resources. The investigation forced them to read and rewrite their knowledge input into a writing product. It gave exposure to students' vocabulary acquisition. This issue was very substantial for structural writing since writing was a wording and diction process. It turned meaningless words into meaningful ones through the process of writing. Project-based work requires students' ability to transform their ideas through the exact and proper vocabulary. In writing, vocabulary was seen as a key influence on the writing skill and writing products. Besides, by the application of project-based learning, students experience vocabulary recall, which will maintain their vocabulary memory retention.

The participants of the study also mentioned one of the benefits of Project-based learning for the cognitive aspect. Project-based learning was a big concept of reasoning and formulating information. It was a process where a student could not simply choose an answer for a problem from the limited choices provided. It was not a type of work where students could write anything in any way they wanted to. Project-based learning covers multiple aspects of learning, so the content of their writing is qualified. Students were provided with an unlimited number of materials and resources. It depended on how they reproduced those resources in their own way of writing. Therefore, it was argued that Project-based learning enhanced the student's critical thinking. EFL learners urgently needed critical thinking in relation to their writing skill. In writing,

such as in academic articles, students were required to present valid and reliable information. In writing reports or essays, students also needed to transform their knowledge into written form. This was a challenging process since the writing products should represent the writers' meaning while also requiring them to deliver information in a certain way to reach the readers' interpretation. Students should be concerned about the coherence and cohesiveness in their paragraphs to avoid misunderstanding. Another excerpt of interviews conducted with participants were as follows.

Anyway, it depends on the project. Not all courses that applied PBJL always encouraged the students to write. If yes, of course yes, it is. It will benefit to writing skill development as I've been experiencing since it is given to us. (Participant 7)

Concerning most the project in my university, where I should write many kinds of writing (Essay, article, drama script, case study, etc.). I think it will improve our wording, vocab, and generating or developing ideas. (Participant 8)

The participants also believed in the influence of Project-based learning on their writing skill. They agreed that Project-based learning greatly influenced their linguistics knowledge and thinking ability. Project-based learning encouraged the students' comprehension of writing conventions. They were able to recognize and differentiate many aspects of writing. Project-based learning also exposed the students to orthographical issues in their writing since some English words were written and pronounced differently. Project-based learning covered many factors determining students' competencies in writing skill. Project-based learning trained the students to organize their ideas for writing in response to students' active thinking process. Project-based learning taught the students on logical arrangement of their thoughts to ease their transforming activity from the brain to reach the comprehensive writing product.

5. Discussion

The results from the study indicated that Project-based learning is a common strategy to assist the learning process in the current educational situation. Project-based learning has been implemented in numerous courses at the university. One of the reasons particularly is the goal of tertiary level education to build critical, independent, yet qualified students for various academic and professional purposes (Issa & Khataibeh, 2021; Kizkapan & Bektas, 2017; Vani et al., 2021). This goal supports the revised curriculum focus on constructing high-value human resources. Project-based learning in university permits students to the exploration of language learning through project-work. The learning probably will focus on the project, but the project is an investment of authentic materials. It will lead to a revolution of the thinking process for students and enhance their writing skill. This finding is supported by a prior study conducted in 2019, which argued that authentic materials enhance the learners' writing skill (Chamba et al., 2019). The integration of Project-based learning in students' activities demands them to be responsive to the given topic or issue. They are able to be involved in the process of embedding ideas and thoughts through these projects. Moreover, project-based learning is agreed to be an effective way to promote major language skills for EFL learners. This finding was supported by a prior study in 2017. A study by Hasani et al. (2017) reported that the implementation of project-based learning maintains the improvement of students' writing skill, which can further foster student learning in the professional field.

Project-based learning highly requires the student's participation in the process of writing. Project-based learning provides an opportunity for an in-depth investigation of studied topics (Rahmat et al., 2024) Students present as the first narrator, the first author, and the first researchers in their writing products. They write based on their competence. Therefore, each student has a unique writing style, although they are trained in the same classroom (Givens, 2020). Writing is a productive skill, enfolding the learners' competence in understanding various writing aspects and conventions. Students should be able to apply their knowledge of linguistics, such as grammatical knowledge, vocabulary competence, and punctuation. Grammar and vocabulary certainly are

essential assets for EFL learners to master writing skill (Yıldırım & Topkaya, 2020). Grammar and vocabulary competence are key for comprehensive and qualified writing products (Yıldırım & Topkaya, 2020)). It facilitates the writers to deliver their meanings. Besides, writing does not neglect even the smallest feature in writing, particularly punctuation. Punctuation commands the readers on stops, breaks, and generalization or specialization (Wati, 2021). This finding supported the previous investigation on the implementation of project-based learning for vocabulary improvement for language learners. There has been a significant improvement in students' vocabulary recall and retention rate, even in higher difficulty levels of new vocabulary retention, since the application of Project-based learning (Shafaei & Rahim, 2015).

Project-based learning is believed to be an effective activity to improve writing skill for EFL learners. This implication is supported the prior study investigating Project-based learning implementation to students' writing skill. The study agrees that project-based learning significantly improved the students writing ability in organization, content, vocabulary, and grammar (Hidayati & Widiati, 2019). Project-based learning habituates the learners to a writing environment. Students experience the learning by doing the process while unconsciously recognizing the grammatical patterns, gaining new vocabulary, and observing where or how punctuations are placed. At the tertiary level, the classroom is not a place where the learning process is conducted and completed. Instead, learning is a continuous process beyond place or schedule. Project-based learning is a solution for the limited time in the classroom. It proposes an alternative to maintaining EFL learners' self-studying strategy, without the constraints of synchronous schedule. Project-based learning is an integration of effectivity, creativity, and critical comprehension, as supported by Praba' et al. (2018).

6. Conclusion

The results of this study revealed that, according to EFL students, Project-based Learning is an effective strategy for improving the writing skill of EFL learners. Project-based learning allows the students to explore and implement their competence in writing. Students will be able to know their grammatical mistakes, limited vocabulary and insufficient content development in their writing process. Project-based learning is perceived beneficial for EFL learners, particularly for tertiary level students in higher education, who are now demanded to be able to master the productive skills of writing. The students agree on the positive influence of project-based learning on their writing skill.

Students experienced various benefits of Project-based learning, such as in linguistic and cognitive development. Aside from writing conventions and rules, project-based learning initiates the students' thinking ability. The students are required to formulate, assume, or criticize a particular issue. This will affect the learners' critical thinking and creative thinking ability. Through the process of exploration and comprehension, students unconsciously advance their knowledge and gain information within their memory. Thus, it will enhance their writing skill and the quality of their writing products. This current research can be considered as insight for the next studies. With respect, this study suggested a deeper and more thorough investigation regarding the effect of Project-based learning on EFL students' writing skill in the near future.

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