# THE EFFICIENCY OF PROJECT BASED LEARNING FOR DEVELOPING STUDENTS' DIGITAL LITERACY

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**Abstract**

A project-based learning is one of strategies that integrates theory with practice; the students are challenged to work in teams in order to develop a project. This study aimed to determine the efficiency of project-based learning for developing students' digital literacy of reading at English Education Study Program of Universitas Muhammadiyah Palembang. This research was done through qualitative descriptive study without test hypotheses and the data was taken from the students' perspectives. The sample was 24 students and the class was second semester students. Collecting the research data, it was used by using instruments and those were observation and questionnaire. From the students' perspectives in questionnaire, it indicated that the project-based learning strategy has positive impacts on students' learning, motivation and performance in digital literacy of reading, so it showed that the efficiency of project-based learning for developing students' digital literacy was declared good and effective.

**Keywords:** efficiency, project-based learning, digital literacy



## Introduction

Technological developments are increasing in line with the industrial revolution 4.0. There is a development of the ability (performance) of computers, especially with the addition of a network internet on various platforms such as mobile and websites. Teachers' beliefs, according to Ertmer (2005), are the biggest impediment to digital integrating technologies. According to studies, providing the essential digital technology framework for students has a favourable influence. Students who have more accessible technologies both at home and in the classroom, according to Wastiau, Blamire, Kearney, Quittre, Gaer, & Monseur (2013), are more confidence in their technological skills than students who have limited exposure. Students' ability to thrive, cohabit, engage, and interact in digital settings is referred to as digital literacy.

Education is offered online in the Covid-19 pandemic era by emphasizing on 3 forms of learning, which are collaborative asynchronous, independent asynchronous, and virtual synchronous. Its delivery necessitates teaching creativity and innovation in a way that is as engaging as face-to-face class learning. This implies that students should be able to obtain and share knowledge, communicate with others, grow personally and professionally, participate in self-supporting environments, and establish their digital and intrapersonal identities. Digital literacy, according to Faucher (2008), encompasses a wide range of topics, including informational and mass communication, cooperation, self-development, digital and continuous learning, connection, digital identity, well-being, self-actualization, digital footprint, and confidentiality. Teachers are increasingly exploring with how to

incorporate digital resources into their curriculum by employing social media platforms and YouTube videos to boost teaching and learning.

Students of English Language Education Study Program at Universitas Muhammadiyah Palembang are the representatives of potential resources human. One of ways to increase the ability of students is read or dig up information more that related to their field especially in learning reading. Currently, more students rely on mobile or computer devices connected to the internet to search for information various information when they literate. Lecturers have biggest role in the implementation of the curriculum (Nation & Macalister, 2010) and the area to which they apply it in their teaching is to a degree decided by their competence. Moreover, Abu maid., Mohammad (2020) states that instructors and learners are becoming more acquainted with online platform and tools, and are actively using them into their education and learning. In order to take the use of what digital technologies have to provide, technology enhanced teaching approaches such as online learning, hybrid learning, and flipped learning are becoming more popular.

Project-based learning is one of the study strategies that can make the delivery of collaborative learning more exciting and engaging. To support this process of learning reading in class, project-based learning is used, with lecturers guiding, assisting, and monitoring students' progress and performance during the projects. As a result, project-based learning may be hampered by the lecturers' position and the learning environment, which is no longer the class, so the learning activity can be effective, it is supported by Graaff & Kolmos (2006) that the goal of PBL is to emphasize on problem-management instead of finding an answer. The entire learning occurs online in a virtual learning model, with no face-to-face encounters with the instructor. Projects in PBL need the students to focus on inquiry, solution building, and collaboration to help solving the real-world issues or challenges. The lecturer's role in project is a facilitator, students are motivated to decide how best they do their work. Integrating the project-based learning strategy for the students, it will constantly demonstrate the use of discussion forums and task work alone, cooperatively, and digitally.

Learners could translate their ideas into real concepts that can be turned into creative and innovative product production through interactive deliberation. Project-based learning promises students engaging learning activities, beginning with the development of basic issues associated to problem concerns, the gathering of knowledge and related studies to answer critical questions, and the construction of problem-solving approaches. Finally, how is the actual work of the implemented system portrayed in the project discussion. Project-based learning emphasizes constructivism's belief that education is a process of finding useful insights as students generate their personal comprehension from the learning opportunity depending on what they have been known (Roessingh & Chambers, 2011). According to Stanley (2012), projects are complex assignments focused on difficult problems or challenges that require learners to create, solve problems, and make decisions while working on projects. The method also allows learners to perform relatively independently for long durations, and it culminates in finished goods or demonstrations.

According to Chiang & Lee (2016), research on the influence of project-based curricular on students' learning motivation found that project-based education can boost students' ambition and help them solve issues. Students gain the skills and knowledges by studying and reacting to complicated problems, issues, and difficulties in this strategy, which revolves around a topic that lasts for a long time. Projects are difficult assignments depending on difficult topics or challenges that require learners to create, solve problems, and make decisions while learning and working on this issue. According to Stanley (2012), the method also encourages students to learn reasonably freely for long periods of time, resulting in genuine goods or presentations and the research study was supported by Ngereja., Hussein & Andersen (2020) that the results indicated that the incorporation of project-based assignments has a positive impact on student learning, motivation, and performance both in the short and long term. It finally revealed that the incorporation of project-based assignments enables the creation of real-life experiences, which further stimulates the creation and development of real-life competencies.

Overall, incorporating PBL into the class provides students to achieve significant goals and manage some learning challenges. Despite the reality that digital training can assist professors in dealing efficiently with huge cohorts of learners in relation of administrative, pedagogical, and curriculum concerns (Blin & Munro, 2008; Sanagavarapu, 2018). So, this research tries to describe the efficiency of project-based learning for developing students' digital literacy of reading from the Indonesian students' perspectives. By the implementation of project-based learning as an interesting learning method for students, it is hoped that the students are easier to understand the learning context and create an optimal learning experience for them. So, they can develop their digital literacy in the process of learning reading.

**Method of the Research**

The research approach taken in this study was a qualitative approach. According to Sugiyono (2013), qualitative research, because the data collected and the analysis are more qualitative. (p.14). This study aimed to determine the efficiency of project-based learning for developing students' digital literacy of reading at English Education Study Program of Universitas Muhammadiyah Palembang. The sample of study was 24 students and the class was second semester students in academic 2021-2022 years.

In instruments of research, there were two instruments and those were observation was used to know the students' situation as long as the process of learning reading and a questionnaire was designed to collect the data from respondents in attempt to address the study questions.

To guarantee the questionnaire's validity and reliability, it was consulted with the lecturer of reading class. The questionnaire was changed based on the lecturers' input and feedback, which mostly involved phrasing and writing. Students were required to respond on a 5 Likert scale: 5= very good, 4= good, 3= good enough, and 2= bad, 1= very bad. In doing research, a total of 24 students received the questionnaires

All questionnaire items used in this study were valid items. As for the reliability technique of this research instrument, it was calculated by using Cronbach's alpha statistical test. The results of the Cronbach's alpha value of the instrument used in this study are 0.90 (reliable). Meanwhile, the results of the

questionnaire from the respondents were analysed and calculated by using percentages and descriptive analysis. The score value of the participants' answers used Likert scale namely scale 5-1 that can be interpreted descriptively. By using a Likert Scale, the variables to be measured are translated into variable indicators.

Then, these indicators are used as a starting point for compiling the instrument items in the form of statements that need to be answered by the respondents. In this instrument, each answer is associated with a form of statement for students' perception which is expressed by the following statement. It was stated in the table 1 below.

**Table 1.** The Distribution Score of Interpretation

| Scores | Categories |
|---|---|
| 5.00 > | Very good |
| 4.00-4.90 | Good |
| 3.00-3.90 | Good Enough |
| 2.00-2.90 | Bad |
| 1.00-1.90 | Very Bad |

## Findings and Discussions

This study aimed at finding the students' perceptions of the efficiency of project-based learning for developing students' digital literacy of reading. This section presents findings from the data collected to answer the two research questions, they were (1) What are the procedures of project-based learning for developing students' digital literacy of reading? and (2) How students' perceptions of the efficiency of project-based learning for developing students' digital literacy of reading?

1. **The Procedures of project-based learning for developing students' digital literacy of reading.**

a. **Group Presentation in Project Based Learning**

Due to global outbreaks of the Coronavirus (COVID-19), a large variety of school institutions and countries have started digital learning a mission in order to restrict the virus's transmission, so the learners study from homes. As a result, lecturers were expected to implement an online teaching paradigm in order to fully adjust to the disturbance. While conventional teaching focuses mainly on face-to-face contacts among tutors and learners, online learning depends on students interacting with online instructional materials and communicating with the teacher in an indirect manner. Conventional learning focuses learners as only receivers of knowledge imparted by the instructor, but effective and interactive teaching stresses students as active participants in the learning process.

The current study examines the efficiency of project-based learning for developing students' digital literacy of reading. As online teaching is gaining more ground in teaching practices worldwide and focusing on the efficiency of project-based learning for developing students' digital literacy of reading is needed. This can be seen from Lakovos's study (2011), it showed that PBL (Project-based learning) establishes a network where learners may interact, cooperate, and use problem-solving abilities

For this case, students delivered group presentations for each of their projects. Each group looked for reading text from website, then they discussed together about the reading text that related the lesson of reading. After that they prepared 15-minutes for the oral presentations by using the Microsoft PowerPoint in their slideshows. The audience consisted of classmates by using the application of zoom meeting. Topics included (a) scanning, (b) skimming, (c) previewing and

predicting, (d) main idea, and (e) summarizing.

In learning reading process, the lecturer shared the topics for students, then they were working in small groups, so they would develop a presentation of a chosen topics to be delivered to the class. The lecturer asked the students to work in their groups and developed their final products in reading materials based on the topics given. The students would work on the end products for one 90-minute class session each week. At the end of each class, they would post their works in learning reading process indicating the progress they have made and a description of what they have recently learned. For example, if a community elder came in to talk to the group, they might post their work based on the topics given, along with a few key ideas that the elder shared. If the students were able to complete their tasks, they can post it as the part of their final product. During this process, the lecturer provided class time for the project-work and time-sharing posts about it in google classroom, including time for students to read and respond to others' posts. At the end of learning reading process, each group can post a link to their final product.

## 2. Students' perceptions of the efficiency of project-based learning for developing students' digital literacy of reading

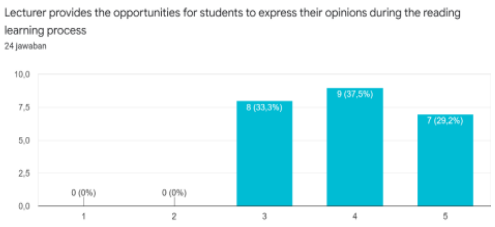
There were 24 students who participated in this research. A questionnaire was distributed to the students. There were 12 questions based on the Likert scale (5-1) to know the the students' perceptions of the efficiency of project-based learning for developing students' digital literacy in learning reading, it was focused on five indicators, they were 1) the students' activeness in learning process, 2) the students' experiences in the learning process, 3) skills and teamwork in the learning process, 4) the students' self-assessment, and 5) the students' learning motivation.

### a. The Students' Activeness in Learning Process

In this case, to know the students' activeness in learning process by implementing project-based learning at the online class, it was consisted on two questions from the students' perceptions and they were 1) lecturer provides the opportunities for students to express their opinions during the reading learning process and 2) I am looking for information about reading learning materials through searches browsers. They were stated below.

*1) Lecturer provides the opportunities for students to express their opinions during the reading learning process*

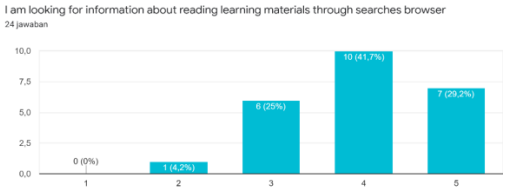
From the results of the twenty-four students' responses on the questionnaire given, it showed that 33,3% of the students said that lecturer provides the opportunities for students to express their opinions during the reading learning process was good enough, 37,5% of students said it was good and 29,2% of students said it was very good. The graphic 1 showed that lecturer provides the opportunities for students to express their opinions during the reading learning process is clearly stated good was in good category. It can be seen in graphic 1.




**Graphic 1**
Lecturer provides the opportunities for students to express their opinions during the reading learning process

*2) I am looking for information about reading learning materials through searches browsers*

From the results of the twenty-four students' responses on the questionnaire given, it showed that 4,2% of the students said that I am looking for information about reading learning materials through searches browsers was bad, 25% of students said it was good enough, 41,7% of students said it was good, and 29,2% of students said it was very good. The graphic 2 showed that I am looking for information about reading learning materials through searches browsers is clearly stated good was in good category. It can be seen in graphic 2.



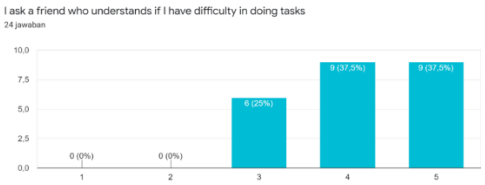

**Graphic 2**
I am looking for information about reading learning materials through searches browsers

**b. The Students' Experiences in Learning Process**

In this phase, to know the students' experience in reading learning process by implementing project-based learning, it was consisted on three questions from the students' perceptions and they were 1) I ask a friend who understands if I have difficulty in doing tasks, 2) I get learning experience from the assignment given by the lecturer, and 3) My group is responsible for the work given by the lecturer. They were stated below.

*1) I ask a friend who understands if I have difficulty in doing tasks*

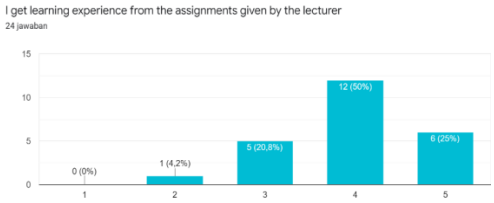
From the results of the twenty-four students' responses on the questionnaire given, it showed that 25% of the students said that I ask a friend who understands if I have difficulty in doing tasks was good enough, 37,5% of students said it was good, and 37,5% of students said it was very good. The graphic 3 showed that I ask a friend who understands if I have difficulty in doing tasks is clearly stated good was in good category. It can be seen in graphic 3.




**Graphic 3**
I ask a friend who understands if I have difficulty in doing tasks

*2) I get learning experience from the assignments given by the lecturer*

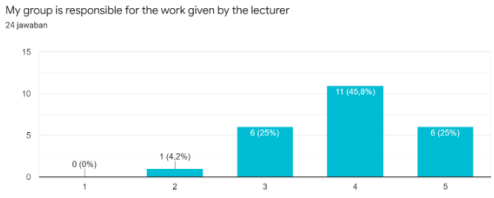
From the results of the twenty-four students' responses on the questionnaire given, it showed that 4,2% of the students said that I get learning experience from the assignments given by the lecturer was bad, 20,8% of students said it was good enough, and 50% of students said it was good, and 25% of students said it was very good. The graphic 4 showed that I get learning experience from the assignments given by the lecturer is clearly stated good was in good category. It can be seen in graphic 4.




**Graphic 4**
I get learning experience from the assignments given by the lecturer

*3) My group is responsible for the work given by the lecturer*

From the results of the twenty-four students' responses on the questionnaire given, it showed that 4,2% of the students said that my group is responsible for the work given by the lecturer was bad, 25% of students said it was good enough, and 45,8% of students said it was good, and 25% of students said it was very good. The graphic 5 showed that my group is responsible for the work given by the lecturer is clearly stated good was in good category. It can be seen in graphic 5.



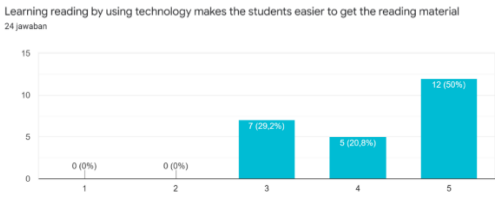

**Graphic 5**
My group is responsible for the work given by the lecturer

**c. Skills and Teamwork in the Learning Process**

In this case, to know the students' skills and teamwork by implementing project-based learning for developing the students' digital literacy of reading, it was consisted on three questions from the students' perceptions and they were 1) Learning reading by using technology makes the students easier to get the reading material, 2) The given tasks are useful for my daily life later (both the world of work and further studies), and 3) My group can build good teamwork when we do our assignments. They were stated below.

*1) Learning reading by using technology makes the students easier to get the reading material*

From the results of the twenty-four students' responses on the questionnaire given, it showed that 29,2% of the students said that learning reading by using technology makes the students easier to get the reading material was good enough, 20,8% of students said it was good, and 50% of students said it was very good. The graphic 6 showed that learning reading by using technology makes the students easier to get the reading material is clearly stated good was in good category. It can be seen in graphic 6.




**Graphic 6**
learning reading by using technology makes the students easier to get the reading material

*2) The given tasks are useful for my daily life later (both the world of work and further studies)*

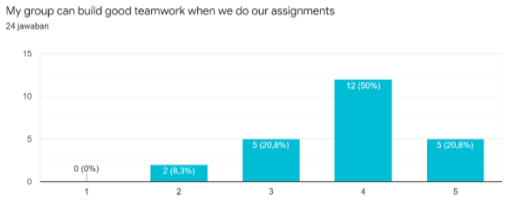
From the results of the twenty-four students' responses on the questionnaire given, it showed that 8,3% of the students said that the given tasks are useful for my daily life later (both the world of work and further studies) was bad, 16,7% of students said it was good enough, 50% of students said it was good, and 25% of students said it was very good. The graphic 7 showed that the given tasks are useful for my daily life later (both the world of work

and further studies) is clearly stated good was in good category. It can be seen in graphic 7.


**Graphic 7**
The given tasks are useful for my daily life later (both the world of work and further studies)

*3) My group can build good teamwork when we do our assignments*

From the results of the twenty-four students' responses on the questionnaire given, it showed that 8,3% of the students said that my group can build good teamwork when we do our assignments was bad, 20,8% of students said it was good enough, 50% of students said it was good, and 20,8% of students said it was very good. The graphic 8 showed that my group can build good teamwork when we do our assignments is clearly stated good was in good category. It can be seen in graphic 8.



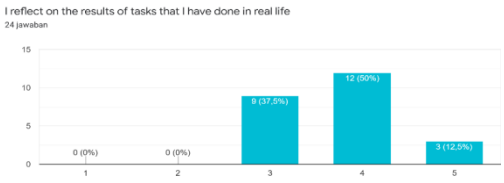

**Graphic 8**
My group can build good teamwork when we do our assignments

### d. The Students' Self-Assessment

In this case, to know the students' self-assessment by implementing project-based learning in reading learning process, it was consisted on two questions from the students' perceptions and they were 1) I reflect on the results of tasks that I have done in real life and 2) I am satisfied with the results of tasks that I complete with my group friends. They were stated below.

*1) I reflect on the results of tasks that I have done in real life*

From the results of the twenty-four students' responses on the questionnaire given, it showed that 37,5% of the students said that I reflect on the results of tasks that I have done in real life was good enough, 50% of students said it was good, and 12,5% of students said it was very good. The graphic 9 showed that I reflect on the results of tasks that I have done in real life is clearly stated good was in good category. It can be seen in graphic 9.




**Graphic 9**
I reflect on the results of tasks that I have done in real life

*2) I am satisfied with the results of tasks that I complete with my group friends*

From the results of the twenty-four students' responses on the questionnaire given, it showed that 8,3% of the students said that I am satisfied with the results of tasks that I complete with my group friends was bad, 29,2% of students said it was good enough, 45,8% of students said it was good, and 16,7% of students said it was very good. The graphic 10 showed that I am satisfied with the results of tasks that I complete with my group friends is clearly stated good was in good category. It can be seen in graphic 10.

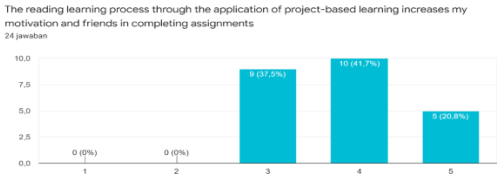

**Graphic 10**
I am satisfied with the results of tasks that I complete with my group friends

e. **The Students' Learning Motivation**

In this case, to know the students' learning motivation by implementing project-based learning, it was consisted on two questions from the students' perceptions and they were 1) the use of project-based learning increases our motivation in completing assignments and 2) project-based learning can help my group to develop our performance work of digital literacy in learning reading. They were stated below.

1) *The use of project-based learning increases our motivation in completing assignments*

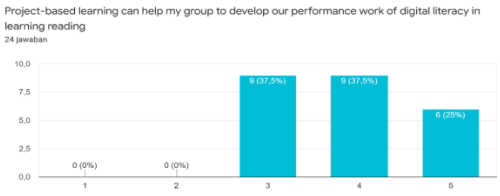
From the results of the twenty-four students' responses on the questionnaire given, it showed that 37,5% of the students said that the use of project-based learning increases our motivation in completing assignment was good enough, 41,7% of students said it was good, and 20,8% of students said it was very good. The graphic 11 showed that the use of project-based learning increases our motivation in completing assignments is clearly stated good was in good category. It can be seen in graphic 11.




**Graphic 11**
The use of project-based learning increases our motivation in completing assignments

2) *Project-based learning can help my group to develop our performance work of digital literacy in learning reading*

From the results of the twenty-four students' responses on the questionnaire given, it showed that 37,5% of the students said that project-based learning can help my group to develop our performance of digital literacy in learning reading was good enough, 37,5% of students said it was good, and 25% of students said it was very good. The graphic 12 showed that project-based learning can help my group to develop our performance work of digital literacy in learning reading is clearly stated good was in good category. It can be seen in graphic 12.




**Graphic 12**
Project-based learning can help my group to develop our performance of digital literacy in learning reading

## Conclusion

Project-based education is growing rapidly due to its promise to develop the students' technological literacy by providing them more control over their learning and allowing them to actively engage in it. Furthermore, project-based learning gives learners meaning of their learning because they

are forced to provide "products" that demonstrate their understanding and work. It is inclined to implement new technology and instructional methods; nevertheless, this must be taken into account for each effort. Online learning has immense opportunities for students, lecturer, as well as an educational-institutions, to overcome certain limitations in conventional learning. Projects-based learning was viewed well by students both in-class and online.

Even so, the efficiency of integrating teaching strategies in the term of complete change is genuine, as the expansion of digitalization and interruption to conventional teaching are growingly trying to push for more implementation of digital learning, and they seek reading materials from the searcher browsers or web pages, so they can do their tasks effectively and efficiently. As a result, research frequently suggests combining educational styles and strategies to address each one's shortcomings. In this instance, it may be preferable to combine both in-class and online learning strategies in the manner of well-established teaching modes like collaborative learning.

From the calculation of result descriptively based on the questionnaire given for twenty-four students of English Language Education Study Program at Universitas Muhammadiyah Palembang about the efficiency of project-based learning for developing their digital literacy of reading, it can be stated that their perceptions showed the learning process of digital literacy in reading class can motivate them to be active, well collaborate and have experiences to stimulate their creation and development of real-life competencies by using the project-based learning.

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