The implementation of Project-based Learning in higher education: Students and lecturers' perspectives

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ABSTRACT

Project-based learning, which has been widely claimed to be helping students build skills needed in the 21st century, has been implemented in various teaching and learning contexts, including in higher education settings. This research was intended to explore how Project-based Learning (PBL) was implemented in a university setting from both students' and lecturers' perspectives in an Indonesian University. This qualitative research involved 17 students who participated in various projects while taking university courses and two lecturers who taught using PBL. The data were gathered from students' written reflections and lecturers' interviews. Teachers' semester plans were analyzed to triangulate the data. The obtained data were analyzed thematically based on emerging themes. The findings show that both students and lecturers consider PBL to be beneficial in strengthening the development of 21st century skills. In particular, the students consider PBL to offer them some benefits, such as improving their critical thinking skills, promoting creativity, fostering collaboration, and expanding their knowledge. Despite its usefulness, PBL has some constraints that are time-consuming and provoke tensions among group members as they have different ideas to work on the project. In contrast to the students' perspectives, the lecturers have slightly different views on PBL. The lecturers consider PBL as a good teaching approach, yet monitoring students' progress and assessing the product were two challenges, especially during the pandemic time.

1. Introduction

Project Based Learning (PBL) as a learning approach has been claimed to help build students' capability to develop various skills needed in students' lives (Shpeizer, 2019). As an instructional approach, PBL strives to combine interpersonal interactions with imaginative thinking, foster peer cooperation, strengthen students' problem-solving and critical-thinking abilities, and stimulate affective and cognitive capabilities that contribute to intellectual and creative growth (Greenier, 2020). It has also been considered to be one of the appropriate teaching approaches that can develop skills needed in the 21st century (Baghoussi & Zoubida El Ouchdi, 2019; Ghobrini, 2020; Giri, 2016; Mohammed, 2017). This is because PBL helps learners develop their capability in affective and cognitive domains (Guo et al., 2020).

The development of various learners' skills is possible through the utilization of PBL since the purpose of this strategy is to increase students' engagement in learning processes while highlighting the practical dimension of learning and its relevance to student's lives and the society in which they live (Ghobrini, 2020; Shpeizer, 2019). Additionally, the unique features of PBL, such as in-depth

inquiry, authenticity, active learning, freedom and autonomy, challenging problems, collaborative learning, product, and presentation, as mentioned by Shpeizer (2019), expose learners to possess various skills that cannot be developed through traditional teaching, which places teachers to be the center of teaching and learning.

Furthermore, PBL is claimed to offer benefits that traditional teaching approaches fail to address. According to Shpeizer (2019), there are at least five benefits of the PBL. The first benefit is that PBL enhances students' motivation. This is because PBL allows learners to choose the topics and working methods the students prefer and the authenticity of work that is associated with PBL. Another benefit that PBL offers is the in-depth inquiry that requires students to work and develop various learning skills, such as working independently, collaborating in teamwork, and communicating to produce a tangible outcome. The next benefit is that PBL prepares learners for professional careers. This is possible because, in PBL, learners are exposed to authentic situations where they have to think creatively, solve problems, and produce products, just like in a professional workplace. The other benefit of PBL is that it accommodates students' various learning styles. Autonomy, as one of the features of PBL, allows learners to work using the method they prefer. The final benefit of PBL is that it is suitable for the age of information, where learners have access to technology and explore available sources on their own.

Considering the benefits of PBL, this teaching approach has been implemented worldwide. Many studies show that PBL has been implemented in many countries such as the United Arab Emirates (Mohammed, 2017), Nepal (Bastola, 2021), Iraq (Kavlu, 2020), Morocco (Akharraz, 2021), Algeria (Baghoussi & Zoubida El Ouchdi, 2019), Switzerland (Terrón-López et al., 2020), Colombia (Alejandra & Pérez, 2018), Malaysia (Hussin et al., 2019), Thailand (Kettanun, 2015), and Indonesia (Mali & Timotius, 2018; Paristiowati et al., 2022; Pradanti & Muqtada, 2023; Widyaningrum et al., 2022; Yusuf & Ali, 2023). The abundant research related to PBL indicates that it has gained popularity as a teaching approach. Besides, it can be because of the benefits that PBL offers.

Within the context of higher education, there has also been much research addressing PBL in various fields, such as Biology (Abishova et al., 2020), Engineering (Fernandes et al., 2021), and English language teaching (Bastola, 2021; Gai Mali, 2016; Kartika, 2020; Kavlu, 2020; Kettanun, 2015; Sirisrimangkorn, 2021). The abundant studies concerned with PBL in higher education mainly highlight PBL as a teaching approach that is useful for developing university students' skills that prepare them to work in the 21st century.

Within the English language teaching field, research related to PBL has various research foci, such as an alternative tool for enhancing pedagogical content knowledge, creativity, and critical thinking in the Nepalese context from teachers' perspectives (Bastola, 2021), students' perspective in learning CALL in Indonesian context (Mali & Timotius, 2018), students' perspective in Critical reading in Indonesia (Kartika, 2020), the effect of PBL in teaching English for Specific Purposes in Iraq (Kavlu, 2020), the effect of PBL in an EFL classroom in Thailand (Kettanun, 2015), the effect of PBL in speaking skill (Sirisrimangkorn, 2021). The findings of previous studies on PBL related to students' perspectives were mostly positive and supported the development of 21st century skills. While there have been few studies related to how students perceive PBL in Indonesian context, there is still little information related to how both students and instructors in higher education in Indonesian context. Thus, the current study addresses the research gap and possibly adding the insights on how PBL is perceived, which is essential to contribute to existing literature on implementing PBL in higher education. In particular, the current research focuses on investigating How PBL is perceived by lecturers and students.

2. Method

This research design is a qualitative study in which the researcher is interested in gaining in-depth information related to how the research participants perceive PBL. The participants involved in this research were seventeen undergraduate students majoring in English Education who participated in Project-based Learning in the same semester in the academic year 2021-2022, ranging from semester two until semester six, and two lecturers who taught using PBL in a similar semester. Purposive sampling was used in selecting the participants in the current research. Among the criteria for recruiting the student participants were that they were involved in doing at least a project when taking university courses in the previous semester and were willing to participate in the research project. In

a similar vein, the participants from the lecturers were selected purposively, in which they assigned projects for their classes and that they were willing to participate in the current research. The demographic information related to student and lecturer participants is shown in Tables 1 and Table 2.

Table 1. Demographic Information of Student Participants

Participants	Semester	Names of courses students worked on projects
Rina	6	Research Paper, Statistics, and Drama
Clara	6	Statistics for Educational Research, Research Paper, Drama, and Literary Work
Ema	6	Statistics in Educational Research, Research Paper, Seminar Research Design, Drama, and Literary Work.
Endah	6	Research paper, ESP program development, statistics
Susi	6	Drama
Ita	6	Research Paper, Drama and Literary Work courses
Kevin	6	Research Paper
Mia	6	Research Paper, Statistic in Educational Research, Drama, and Literary Work.
Dins	4	ELT for instructional development
Tia	4	ELT Instructional Development, Poetry in ELT, English for Tourism
Akbar	4	ELT Instructional Development
Vira	4	ELT Instructional Development
Rita	4	ELT Instructional Development
Nia	4	ELT Multimedia, ELT Curriculum, and ELT Instructional Development.
Rio	2	ICT for EFL, Listening Comprehension, Writing Skill Development
Marta	8	Seminar Research Design
Toni	6	Research Paper, Statistic in Educational Research, Drama, and Literary Work

Table 2. Demographic Information of Lecturer Participants

Pseudonym	Years of teaching experience	Names of courses taught using PBL
Putri	4	Literary Work, Statistics, and Poetry in ELT
Melani	16	Speaking for Transactional Functions

One of the main research tools used to gather information related to student's experiences and perceptions was students' written reflections on the projects they have been involved in the semesters that just ended at the time of data collection. The students were given prompts in the form of questions. The questions were related to what students learned from doing the projects and what they liked and disliked when doing the projects. The prompts were in Google form and were distributed to the participants through WhatsApp Group. Seventeen undergraduate students filled in the Google form and wrote their reflections.

On the other hand, an unstructured interview was conducted face to-face with each lecturer to obtain data from the lecturer participants. In doing so, the researcher approached the lecturers in person and conversed with each lecturer's participants about their experience in implementing PBL in her classes. To ensure the rigor of the study, the researcher triangulated the data. The triangulation is done by obtaining data from multiple data sources. In the current study, the interview data was triangulated with data from the lecturers' semester plans.

The obtained data was analyzed qualitatively. The data from the students' reflections was first read carefully and then coded and put into similar categories. For example, information related to their positive view on PBL was put into categories of benefits. On the other hand, information related to the students' complaints while doing their projects was put into categories of challenges. While interviews were also coded and categorized, they were first transcribed. The data from lecturers'

semester plans were used to triangulate the information obtained from the interviews. The semester plans were scrutinized to crosscheck whether the lecturers' perspectives on PBL were manifested in their semester plans.

3. Findings and Discussion

3.1. Students' Views on Project-based Learning

Sun From the open-ended questionnaire, it is found that students' experiences are varied. From the analysis, their experiences can be categorized into the merits and the constraints of PBL. The following are the details of each category.

1) The benefits of PBL

Regarding the benefits of participating in the projects, the student respondents consider that PBL allows them to improve their skills needed in the 21st century. One of the benefits is that working on the projects they are involved in help them improve their critical thinking skills, which is part of soft skill, as indicated in the following excerpt:

> *From the projects, I could improve my personality, including my soft skills such as critical thinking, problem-solving, teamwork, leadership, and professional attitude. In addition, I could also improve my sense of responsibility and discipline (Toni, written reflection).*

The next benefit students gain from their involvement in projects while taking several courses in the university context is that they become more creative in designing and creating projects, as one of the respondents mentioned. Tia, for example, claims that "for each of the courses I took with the project in them, I learned how to create them accordingly and understood their meaning/usage" (Tia, written reflection). Another benefit that students claim to be part of the projects is that PBL fosters collaboration skills. As indicated in the data from the written reflection, the students also develop their skill to collaborate with others through joining PBL as indicated in the following excerpts:

> *I learned collaboration skills and the way to do a project in a group. I got to know more about what it was like to do a project together with a group of people. Therefore, after experiencing these projects, I knew how to share, how to discuss, how to combine, how to collaborate on our ideas, and how to work together more seriously for a project that was larger than the common group presentation projects we usually had (Toni, written reflection).*

As the excerpt above indicates, the respondents consider participating in the PBL to foster their collaborative skills. This is because, in the group project, the students have to cooperate with other team members. Another respondent, Marta, states, "I like collaborative projects because I can share my idea with other people and discuss it to create or get good results." In a similar vein, students benefit from being involved in projects, either individually or in group projects. One of the respondents claims:

> *From individual projects, I have learned to focus more on achieving targets and making the best use of the available time. Also, from the group project, I learned how to adapt while studying and working on the project with friends who have unique characteristics and different opinions and how to understand the intentions and plans that will be carried out (Ita, written reflection).*

Ita, as illustrated in the excerpt, considers that working on the projects helps her focus on achieving the target, which indicates that she learns better and also learns how to deal with other students who are different from her.

Another important view from the student respondents is that being involved in projects while taking courses at the university level expands their knowledge. Data from the written reflection indicates that the project makes students aware of their strengths and weaknesses. For some students,

the projects give them the opportunity to develop themselves, expand their knowledge, and recognize their strengths and weaknesses, as indicated in the following excerpts.

> *What I like about the project given is that it gives me the opportunity to be able to develop myself, expand my knowledge, and know where my weak and strong points are in working on a project (Ita, written reflection).*
> *What I like about projects is that I can improve my knowledge and skills by working on projects, and the projects are practically not too difficult (Nia, questionnaire).*

From the two excerpts above, it can be concluded that both participants consider that being involved in projects while taking courses is beneficial for helping them learn beyond the expectations of the courses they were taking, as indicated in the following excerpts:

> *From the project that I was involved in, I learned many things. In doing the projects, I became more aware of the material in the class we were studying at that time. I also learned about how to build good cooperation between classmates in working on projects in groups (Mia, written reflection).*
> *From doing the projects, there were several lessons/things that I learned. Firstly, I could increase my knowledge, especially related to the projects I did, which can be useful for me in doing future projects, and I also learned to be a more responsible and disciplined person (Toni, written reflection).*

Overall, students view project-based learning positively. Most students consider project-based learning as one of the effective ways to make them understand more about the materials being taught in the class. In addition, the students' participation in the projects also contributes to building students' twenty-first-century skills, such as critical thinking, communication, collaboration, and creativity (4C) from the 4C highlighted in the 21st-century skills, particularly critical thinking, creativity, and collaboration. Even though communication as another 21st-century skill is not explicitly mentioned in the questionnaire, it implies that students also build communication skills as they collaborate with their friends on projects.

2) Constraint

Despite its benefits, the students view that PBL has some constraints. Based on the students' reflection results, the constraints can be categorized into two. One of them is time-consuming. Most of the research participants claim that projects they were involved in the courses they took required much time to finish. For example, one of the respondents, Nia, mentions that "sometimes it (the project) takes a long time to complete it." Meanwhile, another student, IB, claimed that the long time they spent on the project was mostly triggered by different arguments that the students in the group project had, as stated by one of the students, Rina. She explains that "it (the project) takes a long time because we have different opinions."

In addition to the time, respondents also consider argument differences among group members in doing a project as a weakness of PBL, as indicated in the following excerpts:

> *What I dislike about the project is the argument difference. I remember about the time we did the project. I read one member gave instructions to make a part of RPP like this. But after making RPP like her instructions, he even changed everything to be different. It was different from her instructions in the first. It made us confused and want to give up on continuing the project because we were always stuck on one part of it. (Rio, written reflection).*
> *What I dislike about the project, sometimes, when I work on a project in a group, I find friends who are not cooperative in the group, which makes me have more of the work assigned to me. Sometimes, working on projects in groups, in my opinion, is not effective if you get group friends who are too lazy to work together (Mia, written reflection).*

As the two excerpts indicate, project teamwork is only sometimes successful. Different opinions and work paces among group members are one of the causes of tension when doing the group project.

3.2. Lecturers' Views

From the interview data analysis, the findings indicate that lecturers, especially in English study programs, consider project-based learning a good teaching approach. One reason for this is that PBL promotes learning. As in the projects, students need to apply what they learn to practice. Lecturers can identify whether students understand the learning materials and whether students need any help, as indicated in the following interview excerpt:

> *Project-based learning is a good approach for both the lecturer and the students.*
> *For the lecturer, project-based learning is good for seeing the students what do*
> *we call students' progress from one material to another material because in*
> *doing a project, students need to include most of the materials into one project.*
> *So, we can see if they (students) really understand the material, and also, because*
> *we teach language, we can see the progress of the language (Putri, interview).*

The excerpt above shows that for Putri, PBL allows lecturers to see the students' progress in understanding the materials and applying the target language students learn through their involvement in the project. One reason for this is that in doing a project, the students need to communicate among group members. In an ideal situation, this can be the time for the students to practice using the language they are learning.

In addition to being a good teaching approach, lecturers also consider PBL as a teaching method that is suitable for improving 21st-century skills, as explained by one of the lecturers in the English study program in the following excerpt:

> *Project-based learning is one of the teaching methods that can improve the*
> *students' 21st-century skills, which is known as 4C: communication,*
> *collaboration, creativity, and critical thinking. When the students work together,*
> *they communicate to complete the project and then analyze the work. They*
> *question each other about the project they are working on, and they synthesize*
> *all the things they do to become the complete project (Melani, Interview).*

While the previous excerpt from Putri, indicates that PBL enables lecturers to see the student's progress in language learning and learning materials, the excerpt from Melani explains in more detail how PBL addresses 21st-century skills, which cover communication, critical thinking, collaboration, and creativity. Thus, lecturers have a positive view on PBL to be implemented in courses in university contexts. Another evidence that lecturers have a positive view on the implementation of PBL was in the lecturers' semester plan, in which both Putri and Melani explicitly mentioned that PBL is part of the teaching approach that they planned to implement in the courses they taught during the semester. Melani, for example, outlined the plan for the students' projects starting from week three. Meanwhile, Putri assigned students to group project assignments in week two.

Even though PBL is considered a good approach that helps students develop 21st-century skills, the lecturers admit that PPL is challenging. One of the challenges lecturers faced in implementing PBL was checking students' work progress. This happened because it was still in the pandemic time, as indicated in the following excerpt:

> *I know it was difficult, so I did not check for the offline version. That is why I*
> *conducted an offline meeting to check their progress and whether they really*
> *worked together or not. I found those problems because I knew the students*
> *would not really work together. If they were online, they wouldn't work. Honestly,*
> *I didn't trust the students if they did the work together, and I am sure one of them*
> *only did the work whole work, so that is the question that is hard for me to answer*
> *because, yeah, you know, online cannot be checked (Putri, interview)*

The challenge of monitoring students' work progress, as mentioned by Putri is because, at the time of data collection, the pandemic was not over. Thus, the class meetings were a combination of online and offline meetings. A similar challenge of monitoring students' work progress due to the lack of offline meetings, another lecturer also considers that not being able to meet face to face offline makes

it difficult for the lecturer to monitor the students' progress and to provide students examples directly as indicated in the following excerpt:

> *Another challenge is that it is difficult to control their work. I ask them about the progress of all the projects they have that they are working on. Having problems maybe before they didn't have any experience in making the video in editing the video maybe it just makes an ordinary video taking the video maybe they will not face any problems but because this one is yah we can say that they should have reasonably good ability in technology in editing the video for example in inserting the background in the video in making the caption for example in the video and some (Melani, interview)*

3.3. Discussion

In terms of the students' views on their involvement in projects, while taking courses in a higher education context, the findings of the current study resonate with previous research (Aifan, 2022; Astawa et al., 2017; Baghoussi & Zoubida El Ouchdi, 2019; Bastola, 2021; Dincă et al., 2023; Ghobrini, 2020; Ginusti, 2023; Giri, 2016; Mohammed, 2017; Paristiowati et al., 2022; Sirisrimangkorn, 2021; Tran & Tran, 2020; Yuliansyah & Ayu, 2021) in which PBL supports building 21st-century skills such as collaboration, communication, critical thinking, and creativity. In addition, the findings are also in line with the studies by Mali and Timotius (2018) and Turcotte et al. (2022), in which students have positive attitudes toward implementing PBL. While Mali's and Timotius' study focuses on the attitude, confidence, and anxiety level in a particular course, the current findings focus on various courses where students are involved in doing projects. Nevertheless, the result is similar. Thus, it can be concluded that students' perspectives on PBL are generally positive. The current finding also supports previous research by Allison and Do (2018) in which participants develop soft skills while participating in PBL.

Similar to students' perspective, the current study's findings reveal that lecturers also have positive views on implementing PBL in their classes. The current study resonates with previous studies (Almulhem & Almulhem, 2022; Hsieh, 2013), in which both students and facilitators at the university level generally have positive views toward implementing PBL. The current study's finding is also in line with a previous study (Aifan, 2022) in which PBL improves students' 21st century skills.

In terms of the challenges, students face in completing their projects, the current research findings provide new insights into the constraints of doing the projects. For the students in the current study, the major problems they encountered in participating in the projects are related to the time spent on the relatively long project and the tension among the group members due to different ideas. This finding is in line with a previous study (de la Torre-Neches et al., 2020) in which intragroup conflicts are unavoidable in PBL.

The lecturers' challenges, however, are different from the participants from the students. The current study found that the lecturers faced challenges implementing PBL, especially checking students' work progress and assessing students' products. These findings align with the study by Shpeizer (2019), in which assessing students' projects is challenging for teachers. In the current study, however, the challenges of monitoring students' project progress are also due to pandemic times when face-to-face meetings were restricted.

4. Conclusion

Project-based learning is an important teaching method that fosters students' 21st-century skills. The current study's findings show that both the students and the lecturers have positive views on implementing PBL in higher education, especially in English study programs. While the lecturers' positive views on PBL emphasize the use of PBL as a promising approach that promotes 21st-century skills, the students' positive views on PBL provide evidence that PBL enhances the students' 21st-century skills. With the coverage of the implementation of PBL, understanding both students' and teachers' views on PBL is also essential. From the data analysis, it can be concluded from the current research that students and lecturers have positive views on implementing PBL in higher education. PBL has been found to offer many benefits for the students to develop their 21st-century skills. The

main challenges in doing the projects for the students are related to the time for accomplishing the projects and the tensions among group members as they were working on the project.

Considering students' positive views concerning their involvement in the projects while taking university courses, lecturers may use PBL as one of the teaching approaches in the teaching and learning process. In line with the findings that time consumption and tensions during completing the projects were the major constraints, it is recommended that lecturers and students communicate well. That way, lecturers may mediate the students and provide better instructions in facilitating students to work on the projects. In addition to the lecturers, future researchers should also consider the current study's findings. As the current study is narrow in scope and only involves one study program in a higher education institution, further research involving more participants and a more extensive study is important to be conducted to better understand how students view project-based learning.

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Declarations

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