



Pedagogical challenges and classroom decision-making in implementing project-based learning in Indonesian efl education

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Article Information	Abstract
Submitted: Marc 10, 2026 Revised: Apr 18, 2026 Accepted: May 25, 2026	Purpose: This study aimed to investigate the implementation of Project-Based Learning (PBL) and examine the pedagogical challenges and classroom decision-making processes in Indonesian EFL education.
Keywords Project Based Learning; EFL Education; Classroom Decision Making; Pedagogical Challenges; Student Centered Learning.	Method: A descriptive qualitative case study design was employed in a public senior high school in Indonesia. The participants consisted of one English teacher and 33 eleventh-grade students. Data were collected through classroom observations, semi-structured interviews, and document analysis. The data were analyzed through data reduction, data display, and conclusion drawing to identify emerging themes related to PBL practices and instructional challenges. Findings: The findings revealed that PBL implementation involved several stages, including classroom conditioning, brainstorming, collaborative project work, presentation activities, and evaluation. However, the implementation process was constrained by limited instructional time, inadequate technological integration, insufficient learning facilities, unequal student participation, and students' low confidence during presentations. The study also found that teachers continuously adjusted instructional decisions to accommodate classroom conditions and institutional limitations. Significance: This study contributes to the understanding of PBL implementation in Indonesian EFL classrooms by highlighting the practical challenges and pedagogical considerations faced by teachers. The findings provide valuable insights for educators and curriculum developers in improving student-centered learning practices and instructional decision-making in secondary education contexts.

INTRODUCTION

The rapid transformation of twenty-first century education has encouraged substantial changes in teaching and learning practices across various educational contexts. Modern education increasingly emphasizes student-centered learning approaches that actively engage students in constructing knowledge and developing essential competencies (Bhardwaj et al., 2025; Kerimbayev et al., 2023; Wang, 2023). Critical thinking, communication, collaboration, and creativity are considered fundamental skills that students need to develop in order to face global educational and professional challenges (Thornhill-Miller et al., 2023). In English as a Foreign Language (EFL) education, these competencies are highly important because language learning requires active interaction, problem-solving abilities, and meaningful communication (Huh & Lee, 2020; Šliogerienė et al., 2025). Consequently, teachers are expected to adopt innovative instructional approaches that encourage students' participation and autonomy during classroom activities. One instructional approach that has gained considerable attention in recent years is Project-Based Learning (PBL). PBL is widely recognized as a student-centered pedagogical approach that promotes authentic learning experiences through collaborative projects and inquiry-based activities. Through project-oriented learning tasks, students

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are encouraged to explore real-world problems, develop communication skills, and apply language knowledge in meaningful situations (Afzal & Tumpa, 2025; Chang et al., 2022; Crespi, Queiruga-Dios, et al., 2022). In Indonesian education, the implementation of student-centered learning has become increasingly emphasized through curriculum reforms that encourage active learning and collaborative classroom practices. Therefore, the integration of PBL into EFL classrooms is considered relevant to support the development of students' language proficiency and twenty-first century competencies simultaneously.

Project-Based Learning has been widely implemented in various educational disciplines because it is believed to enhance students' engagement, creativity, collaboration, and independent learning abilities. In EFL classrooms, PBL provides opportunities for students to actively use English through presentations, discussions, problem-solving activities, and collaborative projects (Šliogerienė et al., 2025). Previous findings indicated that PBL contributes positively to students' writing performance, communication skills, motivation, and classroom participation. Furthermore, PBL supports the implementation of student-centered learning environments in which students play more active roles during the instructional process. Collaborative learning activities in PBL also help students improve social interaction, teamwork abilities, and self-confidence during language learning (Hysen & Mirvan, 2023; Wahbeh et al., 2021). In addition, the implementation of PBL has been associated with improved critical thinking and problem-solving skills because students are required to analyze information and complete authentic learning tasks. Despite these advantages, the practical implementation of PBL often presents various pedagogical and institutional challenges for teachers and students (Chen et al., 2021; Doulougeri et al., 2024; Smith et al., 2022). Teachers frequently encounter difficulties related to classroom management, limited instructional time, unequal student participation, inadequate learning facilities, and students' low confidence during collaborative activities. Moreover, implementing student-centered learning approaches requires teachers to continuously adapt instructional strategies according to classroom conditions and students' learning needs. Therefore, the success of PBL implementation is strongly influenced by teachers' pedagogical competence, classroom management skills, and instructional decision-making processes.

Recent studies have increasingly explored implementation challenges, adaptive instructional strategies, and teacher decision-making practices in educational settings. Several researchers investigated challenges related to collaboration, assessment, technology integration, and pedagogical adaptation during the implementation of PBL and student-centered learning environments (Liu et al., 2021; Otto et al., 2024; Soubra et al., 2022). Other studies also emphasized the importance of teacher decision-making in EFL classrooms, particularly regarding instructional adaptation, assessment practices, and data-driven teaching strategies. In addition, research on student-centered instructional practices identified that institutional conditions, teacher readiness, and classroom factors significantly influence the successful implementation of innovative learning approaches (Emery et al., 2021; Ginting et al., 2024; Kim, 2025; Zhang et al., 2021). Although previous studies have provided valuable insights into PBL implementation and student-centered pedagogy, most of them primarily focused on learning outcomes, technological platforms,

or general implementation factors. Limited research has specifically examined how English teachers make pedagogical decisions while implementing PBL in Indonesian secondary EFL classrooms under practical classroom constraints and institutional limitations. Furthermore, many previous studies employed quantitative or mixed-method approaches, while fewer studies explored the instructional realities experienced by teachers in real classroom settings. As a result, the relationship between pedagogical challenges, classroom management strategies, and instructional decision-making during PBL implementation remains underexplored in Indonesian EFL education. Understanding these aspects is important because teachers' instructional decisions directly influence students' engagement, collaborative participation, and learning experiences during project-based activities. Therefore, further qualitative investigation is necessary to provide a deeper understanding of the implementation of PBL, pedagogical challenges, and classroom decision-making processes in Indonesian secondary EFL classrooms.

Previous studies have extensively examined the implementation of Project-Based Learning (PBL) and student-centered instructional practices in various educational contexts, particularly in relation to students' perceptions, writing performance, collaboration, and learning outcomes in EFL classrooms (Andargie et al., 2025; Yamada, 2021). Several studies also focused on implementation challenges, pedagogical practices, and collaborative barriers in PBL environments, including issues related to technology integration, assessment, and interdisciplinary learning (Alarfaj et al., 2024; Hussein, 2021; Meng et al., 2023; Warr & West, 2020). In addition, recent research has highlighted the growing importance of teacher decision-making and adaptive instructional practices in EFL education, particularly regarding assessment, data-driven instruction, and student-centered learning implementation (Aburizaizah, 2021; Jafari & Ahmadi Safa, 2023; Najjarpour & Salimi, 2024; Tajeddin & Bolouri, 2023). Furthermore, studies on student-centered instructional practices have investigated institutional and teacher-level factors influencing classroom implementation and adaptive learning environments (Ginting et al., 2024; Martin-Alguacil et al., 2024; Zhang et al., 2021). However, despite the increasing body of literature on PBL and student-centered pedagogy, limited studies have specifically explored how English teachers make pedagogical decisions while implementing Project-Based Learning in Indonesian secondary EFL classrooms under practical classroom constraints and institutional limitations. Moreover, most previous studies predominantly emphasized learning outcomes, technological platforms, or general implementation factors rather than examining teachers' instructional adaptations and classroom decision-making processes during real PBL practices. Therefore, further qualitative investigation is necessary to provide a deeper understanding of the relationship between pedagogical challenges, classroom decision-making, and the implementation of PBL in Indonesian EFL secondary education contexts.

This study aimed to investigate the implementation of Project-Based Learning in Indonesian EFL secondary education and examine the pedagogical challenges and classroom decision-making processes experienced by teachers during the implementation of PBL. Specifically, this study explored how Project-Based Learning was conducted in classroom activities, how teachers adapted instructional strategies to classroom conditions, and what challenges emerged during the learning process. The study also

focused on identifying the institutional and pedagogical factors influencing the implementation of student-centered learning practices in EFL classrooms. By employing a descriptive qualitative approach, this study sought to provide a comprehensive understanding of real classroom practices and instructional realities experienced by teachers and students during PBL activities. In addition, the study intended to contribute to the growing body of literature on Project-Based Learning and student-centered pedagogy in EFL education. The findings of this study are expected to provide practical insights for teachers, curriculum developers, and educational institutions regarding effective strategies for implementing PBL in secondary education contexts. Furthermore, the study may assist teachers in improving classroom management practices, collaborative learning activities, and instructional decision-making during project-oriented instruction. The research also contributes to discussions regarding the implementation of student-centered learning in developing educational contexts, particularly in Indonesian secondary education. Moreover, the findings may serve as a reference for future researchers investigating pedagogical adaptation and classroom implementation of innovative learning approaches in EFL settings. Therefore, this study is expected to provide both theoretical and practical contributions to the development of Project-Based Learning implementation in Indonesian EFL education.

LITERATURE REVIEW

Project-Based Learning (PBL) has become one of the most widely discussed instructional approaches in contemporary education because of its emphasis on student-centered learning and authentic learning experiences. The approach encourages students to construct knowledge through inquiry, collaboration, and real-world problem-solving activities. Unlike traditional teacher-centered instruction, PBL positions students as active participants who are responsible for exploring ideas, completing projects, and presenting learning outcomes. In language education, particularly in English as a Foreign Language (EFL) classrooms, PBL is considered effective in creating meaningful communication opportunities during the learning process (Šliogerienė et al., 2025). Through project-oriented activities, students are encouraged to use English in authentic contexts rather than merely memorizing vocabulary and grammatical structures. PBL also provides students with opportunities to improve interpersonal communication, teamwork, and presentation skills through collaborative learning experiences (Aifan, 2022; Crespi, García-Ramos, et al., 2022; Hussein, 2021; Ningsih et al., 2025; Owens & Hite, 2022). The implementation of PBL generally involves several instructional stages, including problem identification, project planning, collaborative investigation, product development, and project presentation (Hussein, 2021; Meng et al., 2023; Sánchez-García & Reyes-de-Cózar, 2025). These learning stages support active engagement and encourage students to become more independent learners. Furthermore, PBL promotes experiential learning because students are required to apply theoretical knowledge into practical learning situations. Therefore, Project-Based Learning is widely regarded as a pedagogical approach that supports the development of both academic competencies and twenty-first century learning skills.

The concept of student-centered learning has become increasingly important in modern educational systems because it emphasizes learners' active participation and autonomy during the instructional process. Student-centered learning shifts the focus of education from teacher domination toward collaborative knowledge construction and active engagement (Alam, 2023; Awacorach et al., 2021). In this learning environment, students are encouraged to participate in discussions, solve problems, share ideas, and reflect on their own learning experiences. Teachers function as facilitators who guide students throughout the learning process rather than serving solely as providers of information. In EFL classrooms, student-centered learning is considered beneficial because language acquisition requires active communication and meaningful interaction. Learning activities such as discussions, collaborative projects, presentations, and peer evaluations are commonly associated with student-centered instructional practices (Bhardwaj et al., 2025; Martin-Alguacil et al., 2024; Zhang et al., 2021). In addition, student-centered learning allows students to develop critical thinking and problem-solving abilities through active participation in classroom activities. The implementation of this approach also supports learners' confidence and motivation because students are given opportunities to express their opinions and creativity. However, implementing student-centered learning often requires substantial pedagogical adaptation because classroom conditions, institutional support, and students' readiness may vary significantly. Consequently, the successful implementation of student-centered learning depends heavily on teachers' instructional competence and classroom management abilities.

In EFL education, Project-Based Learning is often associated with improvements in language proficiency, communication skills, collaborative learning, and learning motivation. Students participating in project-oriented learning activities are generally exposed to more authentic language use because they are required to communicate actively during discussions and presentations. PBL also encourages students to integrate listening, speaking, reading, and writing skills simultaneously during project completion processes (Imbaquingo & Cárdenas, 2023; Song et al., 2025). Through collaborative learning activities, students may develop greater confidence in expressing ideas and interacting with peers in English. Furthermore, PBL promotes independent learning because students are expected to search for information, evaluate sources, and organize project findings autonomously. In many classroom contexts, project-based activities have also been linked to improved classroom engagement and students' learning participation. Despite these educational benefits, the implementation of PBL in EFL classrooms frequently encounters practical and pedagogical challenges (Guo et al., 2024). Teachers often experience difficulties related to time management, classroom organization, unequal student participation, and limited learning facilities. Students may also struggle with communication anxiety, low confidence, or limited language proficiency during collaborative activities and presentations. Therefore, although PBL offers significant educational advantages, its implementation requires careful instructional planning and effective pedagogical adaptation to classroom realities.

Teacher decision-making plays an essential role in determining the success of instructional implementation in classroom environments. In student-centered learning contexts, teachers are continuously required to make instructional decisions regarding

classroom management, learning activities, assessment methods, and collaborative learning strategies. Decision-making processes become even more important during the implementation of Project-Based Learning because teachers must adapt learning activities according to students' needs, institutional conditions, and classroom situations (Miller et al., 2021). Teachers are often required to modify instructional approaches when facing challenges such as limited time allocation, inadequate technological resources, or students' varying participation levels. In EFL classrooms, pedagogical decision-making also involves selecting appropriate communication activities, collaborative tasks, and assessment strategies that support students' language development (Najjarpour & Salimi, 2024; Saeedian & Ghaderi, 2023; Tajeddin & Bolouri, 2023). Effective instructional decisions can positively influence students' engagement, participation, and learning experiences during project-oriented instruction. Conversely, ineffective classroom management and instructional adaptation may reduce the effectiveness of PBL implementation. Teachers' professional experience, pedagogical knowledge, and classroom management competence significantly influence how instructional decisions are made during the learning process. Furthermore, institutional support and curriculum policies also contribute to shaping teachers' instructional practices and classroom adaptation strategies. Therefore, understanding teachers' classroom decision-making processes is important for identifying factors influencing the implementation of Project-Based Learning in EFL education.

Recent educational studies have increasingly emphasized the importance of examining pedagogical challenges and classroom implementation practices within student-centered learning environments. Many studies have explored the effectiveness of Project-Based Learning in improving students' academic achievement, collaborative abilities, and communication skills. However, fewer studies have specifically investigated how teachers experience and manage the practical realities of implementing PBL in secondary EFL classrooms. Most previous studies focused primarily on learning outcomes and technological integration rather than instructional adaptation and classroom decision-making processes. As a result, the relationship between pedagogical challenges, institutional limitations, and instructional practices remains insufficiently explored in many educational contexts. In Indonesian secondary education, implementing student-centered learning approaches often involves complex classroom conditions that require continuous pedagogical adjustment. Teachers frequently face challenges associated with classroom participation, learning resources, students' readiness, and instructional management during collaborative learning activities. Understanding these practical challenges is essential because successful PBL implementation depends not only on curriculum policies but also on teachers' ability to adapt instructional strategies effectively [need citation]. Furthermore, exploring teachers' classroom experiences may provide valuable insights into improving instructional practices and student-centered learning implementation in EFL education. Therefore, investigating the pedagogical challenges and classroom decision-making processes involved in Project-Based Learning implementation remains an important area of educational research.

METHOD

Research Design

This study employed a descriptive qualitative research design to investigate the implementation of Project-Based Learning (PBL) and examine the pedagogical challenges and classroom decision-making processes in Indonesian EFL classrooms. A qualitative approach was considered appropriate because the study aimed to explore classroom practices, instructional experiences, and contextual realities experienced by teachers and students during the implementation of PBL. The study specifically adopted a case study approach to obtain an in-depth understanding of teaching and learning activities within a natural classroom setting. The research focused on understanding how Project-Based Learning was implemented in English language teaching activities and how teachers adapted instructional practices to classroom conditions. The study was conducted in a public senior high school located in Indonesia where Project-Based Learning had been implemented as part of classroom instruction. The research emphasized the exploration of real classroom practices rather than measuring students' academic achievement quantitatively. Therefore, the qualitative research design enabled the researcher to capture detailed descriptions of classroom implementation and pedagogical adaptation during project-oriented learning activities. In addition, the design allowed the researcher to identify challenges emerging during collaborative learning processes and instructional management. The study also explored how teachers managed classroom interaction and student participation during project-based activities. Consequently, the descriptive qualitative design was considered suitable for examining the complexities of PBL implementation in Indonesian EFL secondary education contexts.

Participants

The participants of this study consisted of one English teacher and 33 eleventh-grade students from a public senior high school in Indonesia. The participants were selected purposively because the classroom had implemented Project-Based Learning as part of English language instruction. The English teacher involved in this study had experience teaching English using student-centered instructional approaches and collaborative learning activities. Meanwhile, the students participated in various project-oriented learning activities during the classroom learning process. The eleventh-grade classroom was chosen because students at this educational level were considered capable of participating actively in collaborative projects, classroom discussions, and presentation activities. The participants represented a classroom context in which Project-Based Learning had been implemented within regular English instructional practices. During the study, the teacher functioned as the primary participant for exploring pedagogical decision-making and instructional adaptation during PBL implementation. The students also contributed valuable information regarding classroom participation, collaborative learning experiences, and project-oriented learning activities. The involvement of both teacher and students enabled the researcher to obtain comprehensive insights into the instructional process and classroom realities during the implementation of Project-Based Learning. Therefore, the selected participants provided relevant information for understanding pedagogical challenges and classroom decision-making in Indonesian EFL education contexts.

Instruments

The instruments used in this study included classroom observation guidelines, semi-structured interview protocols, and document analysis checklists. Classroom observations were conducted to identify how Project-Based Learning was implemented during English teaching and learning activities. The observations focused on instructional stages, classroom interactions, collaborative activities, students' participation, and teachers' classroom management practices. During the observation process, the researcher recorded classroom situations, instructional procedures, and students' engagement throughout project-oriented learning activities. In addition, semi-structured interviews were conducted with the English teacher to explore pedagogical challenges, instructional adaptation, and classroom decision-making during PBL implementation. The interview process enabled the researcher to obtain detailed information regarding teachers' experiences, perceptions, and instructional strategies during classroom activities. Document analysis was also employed to support observational and interview findings through the examination of lesson plans, assessment rubrics, and classroom instructional documents. The collected documents provided additional information regarding instructional planning, learning objectives, and assessment practices used during Project-Based Learning activities. Data collection was conducted over several classroom meetings to ensure comprehensive understanding of classroom implementation and learning processes. Therefore, the combination of observations, interviews, and document analysis allowed the researcher to obtain rich and detailed qualitative data regarding the implementation of Project-Based Learning in EFL classrooms.

Data Analysis

The collected data were analyzed using qualitative data analysis techniques consisting of data reduction, data display, and conclusion drawing. Data reduction involved selecting, organizing, and simplifying the collected information obtained from classroom observations, interviews, and document analysis. During this stage, the researcher identified important themes and categorized relevant information related to PBL implementation, pedagogical challenges, and classroom decision-making processes. After the data reduction process, the researcher organized the findings into descriptive categories to facilitate interpretation and analysis. Data display was conducted through narrative descriptions and thematic organization to present classroom implementation patterns and instructional practices systematically. Thematic analysis enabled the researcher to identify recurring instructional issues, collaborative learning patterns, and classroom management strategies during project-oriented learning activities. Furthermore, the analysis focused on understanding how teachers adapted instructional decisions according to classroom conditions and students' participation. The researcher also compared information obtained from different data sources to ensure data consistency and strengthen research credibility. Finally, conclusions were drawn based on the identified themes and interpreted according to the research objectives and classroom findings. Therefore, the qualitative data analysis process enabled the researcher to provide comprehensive explanations regarding Project-Based Learning implementation and pedagogical challenges in Indonesian EFL classrooms.

Procedure

The research procedure was conducted through several systematic stages to ensure the credibility and organization of the study. The first stage involved obtaining permission from the school and coordinating with the English teacher regarding classroom observations and interview schedules. After receiving approval, the researcher conducted preliminary observations to understand the classroom environment and instructional practices implemented during English learning activities. The researcher then observed several classroom meetings during the implementation of Project-Based Learning activities. During the classroom observations, the researcher documented instructional stages, students' participation, collaborative activities, and classroom interactions throughout the learning process. Following the observation sessions, semi-structured interviews were conducted with the English teacher to explore pedagogical challenges, instructional decisions, and experiences during PBL implementation. In addition, relevant classroom documents such as lesson plans, project instructions, and assessment rubrics were collected to support the observational findings. After all data had been collected, the researcher organized and analyzed the information using qualitative thematic analysis procedures. The findings obtained from observations, interviews, and document analysis were then interpreted to identify implementation patterns, pedagogical challenges, and classroom decision-making processes. Finally, the researcher formulated conclusions based on the overall findings to provide comprehensive insights into the implementation of Project-Based Learning in Indonesian EFL secondary education contexts.

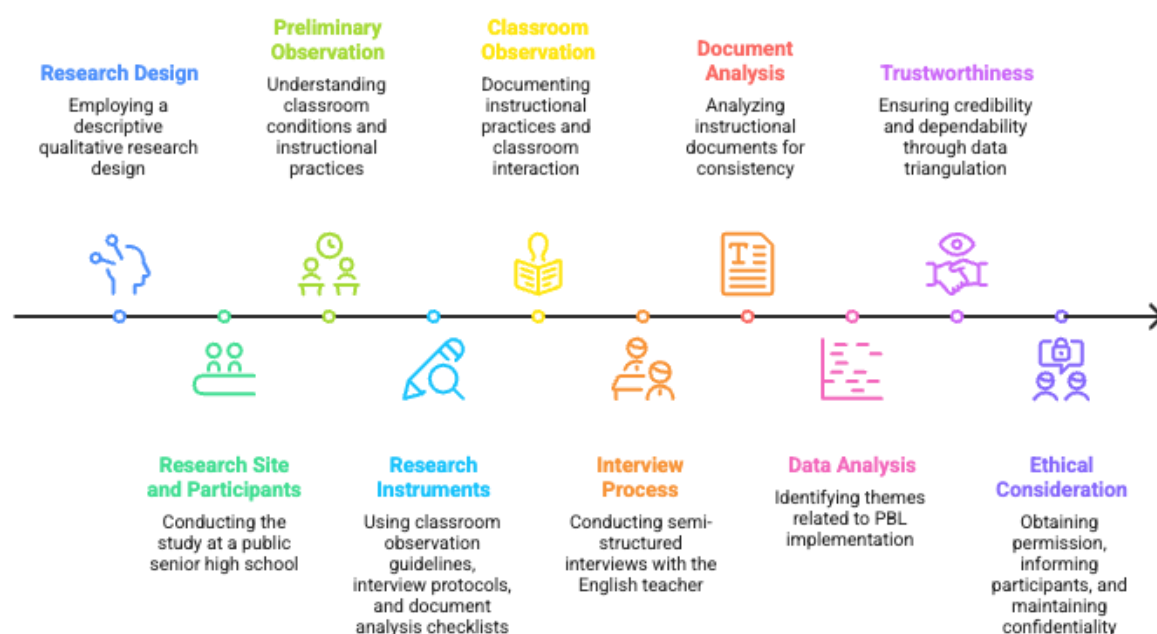


Figure 1. Research Procedure Flowchart

RESULTS AND DISCUSSION

Result

Implementation of Project Based Learning in the EFL Classroom

The findings revealed that Project-Based Learning (PBL) was implemented through several interconnected instructional stages during English language teaching activities.

The implementation process began with classroom conditioning, in which the teacher prepared students for collaborative learning activities and introduced the objectives of the project-based tasks. During this stage, the teacher attempted to create a supportive learning environment by organizing students into groups and explaining the learning procedures. The classroom atmosphere showed that students initially required substantial guidance before beginning collaborative project activities. Several students appeared hesitant to participate actively during the early stage of the learning process, particularly when discussing project themes and classroom instructions. The teacher also provided motivational support to encourage students' participation and engagement during the project activities. This preliminary instructional stage functioned as an important foundation for facilitating collaborative learning and classroom interaction. In addition, classroom conditioning helped students understand their responsibilities during the implementation of project-oriented learning activities. The observation findings indicated that the teacher played a dominant role during this stage to ensure that students understood the instructional procedures clearly. Therefore, classroom conditioning became an essential component in supporting the implementation of Project-Based Learning in the EFL classroom.

Table 1. Stages of Project-Based Learning Implementation

Stage of Implementation	Description of Activities
Classroom Conditioning	Organizing students, explaining project objectives, forming groups
Brainstorming Activity	Discussing project ideas and determining project topics
Collaborative Project Work	Conducting discussions, preparing projects, sharing responsibilities
Presentation Session	Presenting project results and classroom discussion
Evaluation Activity	Assessing students' performance and project outcomes

The second stage involved brainstorming activities in which students discussed project themes and exchanged ideas related to the assigned learning topics. During this stage, students were encouraged to communicate their opinions, negotiate project ideas, and collaborate with group members. The brainstorming activities enabled students to participate more actively in classroom discussions compared to conventional teacher-centered learning situations. However, observational findings showed that some students still demonstrated limited participation during group discussions. Several students relied heavily on more active group members during idea-sharing activities and project planning discussions. The teacher continuously monitored each group and provided instructional guidance when students experienced difficulties during collaborative discussions. In addition, brainstorming activities promoted students' communication skills because they were required to express opinions and negotiate project decisions using English. Classroom interaction during this stage reflected the implementation of student-centered learning practices in which students became more actively involved in the learning process. Nevertheless, differences in students' confidence and language proficiency influenced the level of participation among group members. Consequently, brainstorming activities represented both an opportunity for collaborative learning and a challenge related to unequal classroom participation.

The implementation of collaborative project work constituted the core activity of the learning process. Students worked together in groups to prepare project outputs, organize learning materials, and complete assigned tasks collaboratively. During this stage, students

demonstrated varying levels of engagement and responsibility in completing project activities. Some groups showed active collaboration and effective communication, while others experienced difficulties related to task distribution and group coordination. The teacher functioned primarily as a facilitator by supervising project progress, answering students' questions, and providing instructional feedback during classroom activities. In several situations, the teacher adapted instructional decisions to manage classroom conditions and maintain students' participation during collaborative learning. The findings also indicated that students frequently depended on teacher guidance when encountering difficulties in organizing project activities. Furthermore, limited classroom facilities and technological resources influenced the effectiveness of project development and collaborative interaction. Despite these challenges, project-oriented activities encouraged students to participate more actively in communication and group interaction compared to conventional classroom instruction. Therefore, collaborative project work played a significant role in supporting student-centered learning implementation within the EFL classroom context.

Pedagogical Challenges and Classroom Decision Making

The findings identified several pedagogical challenges experienced by the teacher during the implementation of Project-Based Learning in the EFL classroom. One of the primary challenges involved limited instructional time for managing collaborative project activities and completing learning objectives within scheduled classroom meetings. The teacher reported difficulties balancing project-oriented activities with curriculum requirements and assessment responsibilities. In addition, unequal student participation became a significant issue during collaborative learning activities because some students contributed actively while others depended heavily on their group members. Students' low confidence during presentations and communication activities also influenced classroom participation and collaborative interaction. Furthermore, limited technological resources and classroom facilities restricted the effectiveness of project development and instructional implementation. The teacher also experienced challenges in monitoring students' participation and ensuring accountability during group activities. These conditions required the teacher to continuously adapt instructional decisions and classroom management strategies throughout the learning process. Classroom decision-making became essential for managing collaborative interaction, motivating students, and maintaining classroom engagement during project activities. The findings demonstrated that successful implementation of Project-Based Learning depended not only on instructional planning but also on teachers' ability to respond adaptively to classroom realities and institutional limitations.

Discussion

The findings of this study demonstrated that Project-Based Learning (PBL) was implemented through several interconnected instructional stages, including classroom conditioning, brainstorming activities, collaborative project work, presentation sessions, and evaluation activities. These findings indicate that the implementation of PBL in the observed classroom generally reflected the characteristics of student-centered learning because students were actively involved in collaborative activities and project completion

processes (Farrow et al., 2024; Tholibon et al., 2022; Ukobizaba et al., 2025). The implementation pattern observed in this study is consistent with previous studies reporting that PBL encourages active participation, collaborative interaction, and authentic learning experiences in EFL classrooms. Similar findings have been identified in previous educational studies showing that project-oriented learning promotes students' communication skills and classroom engagement during English language learning activities (Imbaquingo & Cárdenas, 2023; Zhang & Ma, 2023). The brainstorming and collaborative discussion stages observed in this study also supported the development of students' interactional competence because students were encouraged to exchange ideas and negotiate project-related decisions collaboratively. Furthermore, the presentation sessions provided opportunities for students to practice speaking and presentation skills in meaningful classroom situations. These findings strengthen the argument that PBL creates learning environments that facilitate authentic language use and active student participation. However, the implementation process observed in this study also revealed that teachers still maintained substantial control over classroom activities, particularly during classroom conditioning and instructional guidance. This condition suggests that the transition from teacher-centered instruction toward fully student-centered learning remains gradual in Indonesian secondary EFL classrooms. Therefore, the findings indicate that although PBL supports collaborative and active learning practices, instructional adaptation remains necessary to balance teacher guidance and students' learning autonomy effectively.

The collaborative learning activities identified in this study demonstrated that PBL contributed positively to students' participation and classroom interaction during English learning activities. Students were encouraged to work collaboratively, discuss project ideas, and share responsibilities during project completion processes. These findings align with previous studies reporting that collaborative learning within PBL environments improves students' teamwork abilities, communication skills, and social interaction (Ningsih et al., 2025; Owens & Hite, 2022). In many classroom situations, students actively exchanged opinions and negotiated project-related decisions while completing collaborative assignments. This collaborative process reflects the fundamental principle of student-centered learning, which emphasizes active participation and peer interaction during the instructional process. Similar findings have also been reported in previous EFL studies showing that collaborative learning activities increase students' motivation and classroom engagement (Alzubi et al., 2024; Azkarai & Kopinska, 2020; Hysen & Mirvan, 2023; Vega-Abarzúa et al., 2022). In addition, the findings indicate that project-oriented learning creates more interactive classroom environments compared to conventional teacher-centered instruction. However, despite the positive effects of collaborative learning, unequal participation among students remained a significant challenge during group activities. Several students contributed actively during discussions and presentations, while others participated minimally and relied heavily on more active group members. This finding is consistent with previous research reporting that collaborative imbalance frequently emerges during PBL implementation because students possess different levels of confidence, motivation, and language proficiency. Therefore, effective classroom management and continuous instructional monitoring are essential to ensure

balanced participation and equitable collaborative learning experiences during Project-Based Learning implementation.

The findings also revealed that pedagogical challenges significantly influenced the implementation of Project-Based Learning in the observed EFL classroom. One of the primary challenges involved limited instructional time for managing collaborative projects while simultaneously achieving curriculum objectives. Similar findings have been identified in previous educational studies reporting that time management is one of the most common difficulties encountered during project-oriented learning implementation (Chen et al., 2021; Crespí, Queiruga-Dios, et al., 2022; de Groot et al., 2021). The teacher in this study experienced difficulties balancing classroom discussion, collaborative activities, project development, and assessment processes within limited classroom schedules. In addition, inadequate technological resources and limited classroom facilities affected the effectiveness of project development and instructional implementation. These findings support previous studies indicating that institutional limitations and insufficient learning resources frequently hinder the successful implementation of student-centered learning approaches. Another important challenge observed in this study was students' low confidence during presentation activities and communication tasks. Several students appeared hesitant to speak publicly and demonstrated communication anxiety during project presentations. This condition corresponds with previous EFL studies suggesting that language anxiety and low self-confidence remain common issues in English language learning environments, particularly during oral communication activities. Consequently, the implementation of PBL in EFL classrooms requires not only instructional preparation but also emotional and motivational support to help students participate confidently during collaborative and presentation activities.

Teacher decision-making emerged as a crucial factor influencing the implementation of Project-Based Learning in this study. Throughout the instructional process, the teacher continuously adapted classroom strategies according to students' participation levels, classroom conditions, and institutional limitations. These findings support previous educational research emphasizing that instructional adaptation and classroom decision-making play significant roles in student-centered learning implementation. During collaborative activities, the teacher frequently intervened to manage group interaction, clarify project instructions, and encourage students' participation. In several situations, the teacher modified instructional procedures to maintain classroom engagement and ensure the continuity of project activities. Such instructional adaptation reflects the dynamic nature of pedagogical decision-making within student-centered learning environments. Previous studies similarly reported that teachers implementing PBL often function not only as facilitators but also as classroom managers who continuously adjust learning activities according to contextual classroom realities. Furthermore, the findings indicate that teachers' pedagogical competence and classroom management abilities strongly influence the effectiveness of collaborative learning implementation. The teacher's ability to respond adaptively to students' needs and classroom challenges contributed significantly to maintaining classroom interaction and instructional continuity during project-oriented activities. Therefore, the findings demonstrate that successful

implementation of PBL depends substantially on teachers' instructional flexibility, classroom management strategies, and pedagogical decision-making processes.

The overall findings of this study suggest that Project-Based Learning has considerable potential to support student-centered learning practices in Indonesian EFL secondary education contexts. The implementation of PBL encouraged collaborative learning, active classroom interaction, authentic communication, and greater student engagement during English learning activities. These findings reinforce previous educational studies reporting that project-oriented instruction contributes positively to students' language development and collaborative learning experiences. Nevertheless, the study also highlights that successful implementation of PBL requires substantial instructional preparation, institutional support, and continuous pedagogical adaptation. The presence of pedagogical challenges such as limited instructional time, unequal participation, communication anxiety, and inadequate learning facilities demonstrates that implementing student-centered learning approaches remains complex in many classroom contexts. Similar conditions have also been identified in previous studies discussing the practical realities of PBL implementation in developing educational environments. In addition, the findings indicate that teachers require strong classroom management competence and adaptive instructional strategies to address emerging classroom challenges effectively. These results also imply that institutional support, technological resources, and professional development opportunities are necessary to improve the quality of PBL implementation in EFL education. Furthermore, the findings contribute to broader discussions regarding the practical implementation of student-centered learning in secondary education and the importance of teacher decision-making during instructional adaptation processes. Therefore, this study provides valuable insights into the relationship between pedagogical challenges, classroom realities, and instructional decision-making during the implementation of Project-Based Learning in Indonesian EFL classrooms.

Implication

The findings of this study provide several important implications for the implementation of Project-Based Learning (PBL) in Indonesian EFL secondary education contexts. The study indicates that PBL has significant potential to promote student-centered learning by encouraging collaborative interaction, classroom participation, and authentic communication activities during English learning processes. The implementation of project-oriented instruction also demonstrates that students can develop communication skills, teamwork abilities, and learning autonomy through meaningful classroom engagement. However, the findings further imply that successful implementation of PBL requires substantial instructional preparation and adaptive classroom management strategies from teachers. Teachers need to possess adequate pedagogical competence to manage collaborative learning activities, monitor students' participation, and maintain classroom engagement effectively during project implementation. The study also highlights the importance of teacher decision-making in responding to classroom realities, institutional limitations, and students' diverse learning characteristics. In addition, the findings suggest that educational institutions should provide stronger institutional support, technological facilities, and professional development opportunities to facilitate

effective implementation of student-centered learning approaches. Classroom challenges such as limited instructional time, unequal participation, and students' low confidence indicate that implementing PBL requires continuous instructional adaptation and supportive learning environments. Furthermore, the findings imply that collaborative learning activities should be accompanied by structured monitoring systems to ensure balanced student participation and accountability during group projects. The study also contributes to broader discussions regarding the practical implementation of student-centered pedagogy in developing educational contexts, particularly within Indonesian EFL classrooms. For curriculum developers, the findings suggest that curriculum implementation should consider classroom realities and teachers' instructional capacities when promoting innovative learning approaches. Therefore, this study emphasizes that the effectiveness of Project-Based Learning depends not only on instructional design but also on teachers' pedagogical flexibility, institutional readiness, and contextual adaptation during classroom implementation.

Limitation and Suggestion for Further Research

This study has several limitations that should be considered when interpreting the findings and drawing broader conclusions regarding the implementation of Project-Based Learning (PBL) in Indonesian EFL classrooms. First, the study was conducted in a single classroom within one public senior high school, which limits the generalizability of the findings to broader educational contexts. The participants of the study consisted of only one English teacher and one class of eleventh-grade students, which may not fully represent the diverse implementation practices of PBL in other schools or educational environments. In addition, the study employed a qualitative case study approach that focused primarily on descriptive exploration rather than comparative or quantitative measurement of instructional effectiveness. The research also concentrated mainly on classroom implementation and pedagogical challenges without examining students' academic achievement or long-term language development outcomes resulting from Project-Based Learning activities. Furthermore, the duration of classroom observation was limited to several instructional meetings, which may not comprehensively capture all instructional dynamics and classroom adaptation processes during extended PBL implementation. The findings were also influenced by contextual classroom conditions, institutional limitations, and participants' characteristics during the research process. Another limitation concerns the reliance on observational and interview data, which may involve subjective interpretation during data analysis and thematic categorization. Therefore, future studies are recommended to involve larger participant groups and multiple educational institutions to obtain more comprehensive and representative findings regarding PBL implementation in EFL education. Further research may also employ mixed-method or quantitative approaches to investigate the relationship between Project-Based Learning and students' language achievement, motivation, and communication performance. In addition, future researchers are encouraged to explore teachers' professional development, technological integration, and institutional readiness in supporting student-centered learning implementation. Finally, longitudinal studies examining long-term instructional adaptation and classroom decision-making processes during Project-Based

Learning implementation would provide deeper insights into the sustainability and effectiveness of PBL practices in Indonesian secondary education contexts.

CONCLUSION

This study investigated the implementation of Project-Based Learning (PBL) in an Indonesian EFL secondary classroom and examined the pedagogical challenges and classroom decision-making processes experienced during its implementation. The findings revealed that Project-Based Learning was implemented through several instructional stages, including classroom conditioning, brainstorming activities, collaborative project work, presentation sessions, and evaluation activities. The implementation of PBL encouraged students to participate actively in collaborative learning, classroom interaction, and communication activities during English learning processes. The findings also demonstrated that Project-Based Learning supported the development of student-centered learning environments by providing opportunities for students to engage in authentic and meaningful learning experiences. However, the implementation process was influenced by several pedagogical and institutional challenges, including limited instructional time, unequal student participation, inadequate learning facilities, technological limitations, and students' low confidence during presentation activities. These challenges required teachers to continuously adapt instructional strategies and classroom management practices throughout the learning process. Furthermore, the findings indicated that teacher decision-making played a significant role in maintaining classroom engagement, managing collaborative interaction, and adapting learning activities to classroom conditions. The study also highlighted that teachers functioned not only as facilitators but also as instructional managers who actively responded to contextual classroom realities during project-oriented instruction. In addition, the implementation of PBL reflected the gradual transition from conventional teacher-centered instruction toward more collaborative and student-centered learning practices in Indonesian EFL education. The findings suggest that successful implementation of Project-Based Learning requires adequate pedagogical competence, instructional flexibility, and institutional support to facilitate effective collaborative learning activities. The study further emphasizes the importance of classroom management strategies and adaptive instructional decision-making in supporting meaningful student participation during project-based instruction. Therefore, this study concludes that Project-Based Learning has substantial potential to enhance student-centered learning in Indonesian EFL classrooms, although its successful implementation depends significantly on teachers' pedagogical adaptation, classroom management competence, and contextual instructional support.

AUTHOR CONTRIBUTIONS STATEMENT

FFA : Conceptualization, research design, instrument development, data collection, data analysis, and drafting the original manuscript.

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