

The Effectiveness of Project Based Learning (PBL) in Enhancing Students' Speaking Skills in EFL Classrooms

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Abstract *Developing speaking skills in English as a Foreign Language (EFL) is a persistent challenge in many classrooms due to traditional instruction methods that often lack real world engagement and student centered learning. Recent approaches, such as Project Based Learning (PBL), offer promising alternatives by encouraging communicative, collaborative, and contextualized language use. This study examines the effectiveness of PBL in enhancing the speaking skills of EFL students, with a focus on fluency, pronunciation, accuracy, and interaction. It also explores student perceptions and the pedagogical implications of integrating PBL into language instruction. Employing a quasi-experimental design with a pre-test and post-test control group, the study was conducted on two intact classes of Indonesian senior high school students. The experimental group underwent a four week PBL intervention, while the control group received traditional instruction. Data were collected through speaking assessments, classroom observations, and student interviews, and analyzed using t-tests and thematic analysis. Findings revealed a significant improvement in the experimental group's speaking performance, with a mean gain of 15.5 points and a large effect size (Cohen's $d = 0.85$). Qualitative data indicated that students involved in PBL tasks experienced enhanced confidence, engagement, and motivation. The integration of digital tools further supported learning and speaking practice. PBL enhances EFL learners' speaking proficiency by promoting meaningful communication, collaborative problem solving, and learner autonomy. This approach holds promise for broader implementation in diverse EFL contexts. Applying PBL in EFL learning effectively enhances speaking skills when supported by appropriate scaffolding and ongoing teacher guidance, ensuring active student participation.*

Keywords: *project based learning, EFL speaking skills, fluency, language learning, student centered instruction, digital tools*

1. Introduction

Mastering speaking skills in English as a Foreign Language (EFL) remains a significant challenge for learners across various educational contexts. Many students face persistent difficulties in fluency, accuracy, and confidence due to the limited exposure to authentic speaking opportunities and communicative tasks in traditional classroom settings (Gutiérrez & Larson, 2020; Hsu & Wang, 2020; McDonough & Neumann, 2019). Rote learning and grammar focused instruction continue to dominate EFL pedagogy in many parts of the world, limiting students' opportunities to engage in authentic life communication (Habok & Nagy, 2021; Korkmaz & Kaptan, 2019). Consequently, learners often demonstrate low motivation, weak oral performance, and a lack of communicative competence, which impedes their ability

to function effectively in globalized environments (Pham, 2021; Fatimah & Permatasari, 2023).

In response to this issue, educators and researchers have turned to Project Based Learning (PBL) as a pedagogical intervention to create more dynamic, student centered, and communicative learning environments (Lee & Kim, 2020; Lu & Lin, 2022). Problem Based Learning (PBL) is particularly suitable for overcoming difficulties in speaking because it encourages students to be actively involved in the problem-solving process, which requires communication and cooperation. This approach creates a dynamic and contextual learning environment, allowing students to hone their speaking and listening skills more naturally and relevantly, rather than relying solely on memorization. In addition, PBL develops critical thinking skills and problem solving strategies that are useful in various communication situations in educational environments and everyday life. PBL emphasizes collaborative inquiry, real world tasks, and extended projects that culminate in meaningful outcomes, thereby providing learners with opportunities to develop both language and 21st century skills (Zhang & Wang, 2023; Suwandi & Arifin, 2020). In the EFL context, PBL has been shown to increase learners' speaking fluency, promote confidence, and enhance vocabulary acquisition by situating language use in practical and socially relevant contexts (Alawiyah & Hermagustiana, 2022; Maulidya & Zuhriyah, 2021).

Despite a growing body of literature on PBL, several research gaps persist. First, many studies have focused on writing or reading outcomes rather than oral communication (Sidik & Kurniawan, 2023; Riyanti & Sari, 2022). Second, much of the research has been conducted in higher education, with limited studies focusing on secondary school or diverse English as a Foreign Language (EFL) learner populations (Mubarak & Ma'arif, 2022). Furthermore, studies rarely investigate the long term effects of PBL on sustained speaking performance or the role of digital tools integrated into the PBL framework (Lu & Lin, 2022; Rahmawati, 2020). These limitations suggest a need for more comprehensive research to explore the impact of PBL on speaking skills, particularly in diverse cultural and educational contexts.

The novelty of this study lies in its investigation of how PBL can systematically enhance speaking skills in EFL classrooms by integrating collaborative digital projects and measuring fluency, confidence, coherence, and interaction. This approach bridges the methodological gap by combining qualitative observations with quantitative performance assessments.

Accordingly, this study aims to examine the effectiveness of Project Based Learning (PBL) in enhancing the speaking skills of EFL learners. It aims to explore how PBL influences fluency, pronunciation, confidence, and interactive competence in classroom settings. The findings are expected to provide practical insights for educators, curriculum designers, and policymakers seeking to enhance speaking outcomes in EFL education through innovative pedagogical approaches.

2. Method

Research Design

This study employs a mixed methods approach. Mixed methods were chosen because they combine the strengths of quantitative and qualitative methods to provide a more comprehensive and in depth understanding of a phenomenon. This enables the study to balance the limitations of each method and obtain more substantial evidence, thereby increasing confidence in the research findings. This study employs a quasi experimental research design with a pre-test and post test, using a

nonequivalent control group. The design enables the researcher to examine the effectiveness of Project Based Learning (PBL) on students' speaking skills by comparing the performance of a treatment group exposed to PBL with that of a control group receiving conventional instruction. The design is suitable for classroom based interventions where random assignment is impractical (Creswell, 2014). Additionally, this study utilizes observation and interviews as supplementary data collection methods. This is done to enrich the data and strengthen its validation.

Sources of Data

The primary data sources are the EFL students' speaking performance scores collected before and after the intervention. Additional data include observational checklists, student reflections, and teacher field notes to provide qualitative insights into learners' engagement, participation, and confidence development during the PBL activities.

Population and Sample

The population consists of senior high school students enrolled in an English as a Foreign Language (EFL) program at a public school in Indonesia. The sample consists of two intact classes, each with 30–35 students, selected through purposive sampling. One class is the experimental group, which receives PBL instruction, and the other is the control group, which receives traditional speaking instruction.

Table 1. Group Composition and Instructional Approach

This table presents the number of participants in each group and the instructional method used in the experimental and control groups.

Group	Number of Participants	Instructional Approach
Experimental	32	Project Based Learning (PBL)
Control	31	Traditional Teaching

Research Instrument

For speaking skills, this study employed a rubric adapted from the CEFR (Common European Framework of Reference for Languages), which comprises four

main domains: fluency, grammatical accuracy, pronunciation, and interactive communication. The adaptation process was carried out by adjusting the CEFR descriptors at level B1–B2 to be relevant to the context of high school EFL learners in Indonesia. The rubric was first tested on 10 students outside the research sample to ensure the understandability of the indicators and consistency of the assessment.

To ensure inter rater reliability, two independent raters received specialized training over two sessions, which included case studies of assessments and intensive discussions about the standards for each level. Following the training, an inter rater reliability test was conducted using the Intraclass Correlation Coefficient (ICC), yielding a value of 0.87, indicating a high level of agreement.

In addition to the rubric instrument, this study employed a closed questionnaire to measure students' perceptions and confidence in speaking, and a semi structured interview guide to explore learning experiences in depth. The third instrument was used for data triangulation.

Data Collection Techniques

1. Pre Post Test:

A speaking test was administered before and after the intervention to measure the development of students' speaking skills. Both tests were designed with similar difficulty levels, formats, and time requirements, utilizing similar topics and speaking tasks (e.g., describing a personal experience, expressing an opinion, or explaining a solution to a simple problem). Instructions were delivered orally and in writing in easy-to-understand English and were pre-tested to ensure clarity. Students were given 1–2 minutes to prepare before speaking for a maximum of 3 minutes.

2. Observation:

Conducted during each project based learning (PBL) session using a structured observation sheet. Observations focused on student engagement, quality of verbal interaction, use of English in group work, and initiative in communication.

3. Questionnaire and Interview:

After the intervention, students were given a questionnaire to explore their perceptions of the PBL activities, including their levels of confidence and comfort in speaking, and to assess the effectiveness of the method. The questionnaire employed a quantitative Likert scale, while the interviews were semi structured to explore the findings further.

4. Documentation:

Students' final products, such as posters, videos, group presentations, and written work, are collected and analyzed as evidence of speaking and collaboration performance. The analysis focuses on the clarity of ideas, delivery structure, and the functional use of English.

Research Procedure

In this project, students are given a fundamental problem: "How do I prepare for an international job interview conducted in English?" Students then research relevant job positions, create a curriculum vitae (CV), and compose answers to common interview questions. Next, they practice in pairs or groups, where one student acts as the interviewer and the other as the job applicant. This process requires students to speak actively, responsively, and confidently, thus encouraging the use of English in functional and contextual contexts. The project concludes with a simulated interview, which is either recorded and presented to the class for feedback or presented live. This project improves speaking skills and equips students with language skills for real professional situations.

Table 2. Project Implementation Phases and Research Procedure

This table outlines the phases of implementing the PBL treatment and collecting data throughout the research process.

Stage	Description
Preliminary Phase	Design instruments, obtain permissions, and prepare lesson plans.
Pre test	Administered to both experimental and control groups.
Treatment Phase	The experimental group follows a 4-week PBL module; the control group uses textbook-based instruction.
Observation	Conducted throughout the PBL implementation (2x per week).
Post test	A speaking test was administered to both groups.
Follow up	Conduct interviews and distribute student perception questionnaires.

Data Analysis Technique

1. Quantitative Analysis: Paired sample and independent sample t-tests are used to analyze the pre-test and post-test speaking scores between groups, with significance set at $p < 0.05$. Effect size is calculated using Cohen's d.

2. Qualitative Analysis: Thematic analysis is applied to open ended responses and observational notes to interpret students' experiences, challenges, and improvement trends.

Salah satu bentuk Project Based Learning (PBL) berbasis masalah yang efektif untuk meningkatkan keterampilan berbicara EFL adalah simulasi wawancara kerja dalam bahasa Inggris. Dalam proyek ini, siswa dihadapkan pada masalah nyata: "How to prepare for an international job interview conducted in English?" Students conduct research, compile their CVs, and prepare interview answers, then participate in a group interview simulation. To measure the project's effectiveness, a mixed-methods analysis approach is employed. Quantitatively, the improvement of speaking ability was analyzed through a paired sample t-test and an independent sample t-test on pre-test and post-test scores between groups, with a significance level set at $p < 0.05$. The effect measure of the difference in scores was also calculated using Cohen's d to determine the strength of the intervention. Meanwhile, qualitatively, thematic analysis was applied to students' open responses and teachers' observation notes during the project to explore students' experiences, challenges, and patterns of improvement in speaking skills. The integration of these two approaches provides a more comprehensive picture of the impact of PBL on the mastery of speaking skills in a real and meaningful context.

3. Result & Discussion

Overview of Speaking Skill Improvements: Quantitative Results (Pre-test and Post-test Data)

The pre-test and post-test results revealed significant improvements in the speaking skills of the experimental group (PBL) compared to the control group. The experimental group, which was exposed to Project Based Learning (PBL), showed an average improvement of 15.5 points on their speaking test scores, from a mean of 62.8 in the pre-test to 78.3 in the post-test. In contrast, the control group, which received traditional instruction, demonstrated a modest improvement of 6.3 points, from 61.9 in the pre-test to 68.2 in the post-test. Although these results reflect the effectiveness of the PBL approach in improving speaking skills, it is essential to consider the possible influence of external factors that may have affected the results. For example, differences in students' initial motivation in the two groups, teachers' experience or teaching approaches, and classroom dynamics such as group cohesion or individual engagement may contribute to the final results. Therefore, although the differences in scores reflect the positive impact of PBL, interpretation of the results needs to consider the context of implementation and noninstructional factors that may be at play.

Table 3. Comparison of pre-test and post-test Scores between Experimental and Control Groups

Group	Pre-test Mean	Post-test Mean	Improvement
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Experimental	62.8	78.3	+15.5
Control	61.9	68.2	+6.3

Statistical Analysis

An independent sample t-test was performed to compare the post-test scores of the two groups. The results showed a significant difference between the experimental and control groups ($t(61) = 3.92, p < 0.001$), indicating that Project Based Learning had a significantly greater effect on improving students' speaking skills compared to traditional methods. The effect size (Cohen's $d = 1.15$) further suggests that the intervention had a significant impact on the students' speaking performance.

The significant improvement in the experimental group can be attributed to the dynamic and interactive nature of PBL, which fosters engagement and provides students with ample opportunities to practice speaking in authentic contexts (Gutiérrez & Larson, 2020). The project based tasks, such as group presentations, video creation, and peer collaborations, contributed to the increased fluency, accuracy, and confidence observed in the experimental group (Maulidya & Zuhriyah, 2021).

Thematic Findings from Observations and Interviews: Student Engagement and Participation

Classroom observations revealed that the experimental group was significantly more engaged during speaking tasks. Students were observed initiating conversations, asking questions, and offering feedback to their peers during project work. In comparison, the control group primarily relied on teacher directed activities, such as rote reading and scripted dialogues, which limited their opportunities to engage in spontaneous speaking activities.

Student Feedback on Confidence and Anxiety

Interviews with students from the experimental group highlighted their increased confidence in speaking English. Many students reported feeling less anxious during presentations and interactions with peers. One student stated, "I feel more confident speaking English now because I had to explain my ideas to others during the project. It is not just about answering questions from the teacher anymore." This reflects the benefits of collaborative learning and real world task application in reducing anxiety and boosting confidence (Lee & Kim, 2020; Suwandi & Arifin, 2020).

The PBL approach's focus on authentic communication and peer collaboration is consistent with previous studies that argue these elements reduce speaking anxiety and improve speaking fluency (Korkmaz & Kaptan, 2019). By engaging in real life tasks, students practiced language skills and built confidence through continuous, low stakes practice in supportive environments.

These results align with Vygotsky's sociocultural theory, which emphasizes the importance of scaffolding and social interaction in the language learning process (Gutiérrez & Larson, 2020; Ríos Castaño & Méndez Coca, 2021). In the context of the PBL project, scaffolding occurred through various forms of support, including teacher guidance during planning interviews, group discussions that encouraged mutual feedback, and sample questions and answers that guided students in developing their responses. These collaborative interactions allowed learners to co construct meaning and gradually internalize speaking norms appropriate to the job interview context. However, it is important to note that the support provided was not always uniform; some students indicated a need for more intensive scaffolding, especially those who were less confident or had lower initial abilities. This suggests that the effectiveness of PBL is highly dependent on the willingness and persistence of support throughout the process. These findings support the constructivist perspective, which posits that knowledge is constructed through direct experience and social negotiation (Habok & Nagy, 2021). However, they emphasize that these experiences must be facilitated adaptively so that all students can optimally reach their zone of proximal development.

Comparative Effectiveness of PBL vs Traditional Instruction Engagement in Speaking Tasks

The experimental group showed higher engagement levels than the control group, particularly in tasks that required students to present ideas, negotiate meaning, and work collaboratively. For example, in the final project presentation, students in the PBL group confidently used new vocabulary, demonstrated improved pronunciation, and maintained longer, more fluid exchanges with peers. This observed behavior aligns with the quantitative data, where the interaction sub score of the speaking test increased by an average of 4.8 points in the experimental group, indicating enhanced responsiveness, turn taking, and spontaneous expression during communicative tasks. This improvement was further supported by observational notes and student interviews, which revealed that students became more comfortable providing peer feedback and initiating conversations in English. Conversely, the control group's students, whose interaction sub scores only rose by 1.2 points, often struggled to produce complex sentences and relied heavily on memorized textbook phrases, suggesting limited development in spontaneous oral communication.

Table 4. Comparison of Communicative Behaviors Between Experimental and Control Groups

Task Type	Experimental Group (PBL)	Control Group (Traditional)
Initiating Conversations	High	Low
Asking Clarifying Questions	High	Low
Peer Feedback	Active	Passive

This data suggests that the PBL approach fosters active learning and student autonomy, which traditional methods do not typically support. Previous studies (Zhang & Wang, 2023; Pham, 2021) emphasize the importance of task based language teaching in enhancing speaking fluency and communicative competence. The PBL tasks created an environment where students were encouraged to use language actively in meaningful contexts, developing greater speaking skills.

Challenges and Limitations in Implementation: Time Management and Student Commitment

Despite the positive outcomes, the implementation of PBL faced several challenges. Students unfamiliar with collaborative project work initially struggled with time management, and some hesitated to participate fully in group activities. One teacher noted, "Some students were initially reluctant to speak in front of the group, and it took time for them to warm up to the project work." This was a common observation, especially for students not accustomed to peer led or self directed learning environments.

These challenges underscore the importance of thorough preparation and scaffolding when implementing PBL in EFL classrooms. Teachers must provide clear instructions, guidance, and continuous support to ensure all students feel comfortable and confident participating. Other studies have reported similar challenges, emphasizing the importance of structured support in PBL (Suwandi & Arifin, 2020).

However, it is worth noting that this research method has several limitations. First, the qualitative data were obtained from subjective and uneven teacher observations and quotes across groups, which may have introduced bias in the interpretation. Second, because this research design did not strictly control for variables such as students' learning background, previous experience in group work, or teacher teaching style, it is difficult to isolate the effect of PBL on improving speaking skills purely. In addition, student engagement in the project could be influenced by external factors, such as personality, self confidence, and group dynamics, that were not fully measured in this design. Therefore, these findings should be interpreted with caution, and further research with more stringent control

of variables and longitudinal data is recommended to strengthen the generalizability of the results.

Integration with Digital Tools and Future Potential Digital Platforms for Enhanced Engagement

Using digital tools, such as video creation, online presentations, and collaborative digital platforms (e.g., Google Docs, Padlet), significantly enhanced student engagement. Students who used these tools during their projects expressed greater enthusiasm for the tasks and reported feeling more motivated to improve their speaking skills in a digital, collaborative environment.

Integrating digital tools into Project-Based Learning (PBL) enhances language learning and prepares students for the digital demands of modern communication. This finding is consistent with research suggesting that technology enhanced learning can promote higher order thinking and active participation (Lu & Lin, 2022; Sidik & Kurniawan, 2023). Using digital platforms allowed students to engage with the language in diverse and creative ways, further motivating them to practice speaking. Based on the findings, several pedagogical implications emerge: (1) EFL teachers are encouraged to adopt PBL to foster active speaking engagement and confidence among learners; (2) Training and professional development programs should be provided to equip teachers with strategies for designing and managing PBL activities; (3) Digital tools should be integrated into PBL tasks to increase learner autonomy, creativity, and access to multimodal learning environments; (4) Curriculum planners should consider embedding PBL as a core methodology in EFL programs to promote communicative competence.

4. Conclusion

This study aimed to evaluate the effectiveness of Project Based Learning (PBL) in enhancing the speaking skills of English as a Foreign Language (EFL) students. The findings indicate that PBL significantly improves learners' fluency, pronunciation, interaction, and speaking performance compared to traditional teaching methods. Statistical analysis revealed a substantial increase in the experimental group's post-test scores, with a large effect size. At the same time, qualitative feedback further confirmed higher levels of student motivation, confidence, and engagement.

The integration of real world, collaborative tasks and digital tools created meaningful contexts for language use, allowing students to practice authentic communication. These outcomes support the application of PBL as a learner centered and communicative instructional strategy in EFL classrooms.

The implications of these findings suggest that the application of PBL in EFL

learning can effectively improve speaking skills if supported by appropriate scaffolding and a structured collaborative environment. Therefore, teachers need to design project activities with clear guidelines and provide ongoing support to ensure the active participation of all students.

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