



## **IMPROVING ENGLISH LANGUAGE PROFICIENCY OF ENGINEERING STUDENTS THROUGH PROJECT-BASED LEARNING (PBL)**

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**Abstract.** English proficiency is an essential skill for engineering students in understanding academic literature, international standards, and professional communication. However, conventional teaching approaches often fail to facilitate effective mastery of these competencies. This community service program implemented a Project-Based Learning (PBL) approach, engaging students in practical projects such as technical report writing, presentations, and collaborative discussions. The results indicate that PBL significantly enhances students' motivation, communication skills, and self-confidence. Therefore, this learning model proves to be effective in improving engineering students' English proficiency and preparing them to meet the communication demands of the global industrial environment.

**Keyword:** English Language, Engineering Student

### **INTRODUCTION**

English language proficiency has become a fundamental requirement for engineering students in the era of globalization. The language not only functions as a medium for international communication but also as the primary means for accessing academic literature, technical standards, and the latest technological developments. Most contemporary engineering information sources—such as journals, reference books, and industrial manuals—are written in English. Consequently, English mastery is no longer considered a supplementary skill but rather a core competency that determines students' readiness to compete in the professional world (Rahardi et al., 2023).

Nevertheless, many engineering students still face difficulties in mastering English, both in oral communication and academic comprehension. Limited technical vocabulary, lack of confidence in speaking, and minimal opportunities for authentic communication practice remain major challenges (Nuraini & Yuliana, 2021). This condition results in a gap between industrial demands—which emphasize English fluency—and the actual language abilities of students. If not



addressed, this gap may hinder graduates' adaptability to technological advancement and global collaboration.

One relevant solution to this issue is the application of Project-Based Learning (PBL). PBL provides students the opportunity to learn through real-world projects that integrate linguistic and disciplinary competencies. Studies indicate that PBL effectively enhances communication ability, critical thinking, and collaboration (Rohmah et al., 2024). Moreover, this method aligns with the industrial need for graduates who are adaptive, innovative, and capable of interdisciplinary teamwork (Kurniawati & Setyawan, 2022).

Therefore, this study aims to improve the English proficiency of engineering students through Project-Based Learning and to evaluate its effectiveness in supporting academic and professional communication skills.

## **METHODOLOGY**

This community service activity adopted the Project-Based Learning (PBL) approach, emphasizing student engagement in practical and meaningful projects. PBL was selected because it aligns with the characteristics of engineering students, who tend to learn more effectively through hands-on experience and problem-solving rather than through passive, theoretical instruction. According to Thomas (2000), PBL fosters meaningful learning experiences by immersing students in authentic challenges that require critical, creative, and analytical thinking. The implementation of PBL in English for Specific Purposes (ESP) contexts allows the integration of language learning with technical content. Through PBL, students develop not only general English skills but also technical vocabulary, grammatical accuracy in professional contexts, and academic communication relevant to engineering fields (Kristianti & Seputro, 2022; Rahmawati & Putra, 2021; Bell, 2010).

### **Target Participants**

The program targeted engineering students who experienced difficulties in mastering English. Common challenges included limited technical vocabulary, difficulty composing structured technical reports, and low confidence during academic or professional presentations.

### **Implementation Stages**

The activity was conducted over one academic semester, following four main stages:

1. Needs Assessment: Conducted through classroom observation, questionnaires, and interviews to identify students' language proficiency levels and learning needs.



2. **Project Design:** Students formulated project topics based on real engineering problems, such as creating technical reports, manufacturing analyses, or engineering presentations. Each team member was assigned specific roles (researcher, writer, presenter, or documenter).
3. **Project Implementation:** Students worked collaboratively under lecturer supervision, engaging in tasks that required project management, teamwork, and technical communication in English.
4. **Evaluation and Reflection:** Assessment covered writing (coherence, technical vocabulary, grammar), speaking (fluency, pronunciation, clarity), and teamwork performance. Peer assessments were also used to foster self-reflection.

Through these stages, PBL encouraged active learning, autonomy, and responsibility, while developing communication, project management, and collaboration skills essential for global engineers (Fauzan, 2023; Dole, Bloom, & Kowalske, 2017).

## **RESULT AND DISSCUSION**

The implementation of Project-Based Learning (PBL) among engineering students demonstrated highly positive outcomes compared to traditional one-way teaching methods. Students actively participated in the learning process, applying English in authentic engineering contexts.

During the planning stage, students identified relevant project topics and collaborated in designing research plans. This fostered analytical thinking and strategic planning. During implementation, group members worked collaboratively and faced real challenges such as time management and task coordination. These experiences improved students' interpersonal and leadership skills, consistent with Fauzan's (2023) findings that PBL enhances both academic and interpersonal competence.

### **Improvement in Language and Soft Skills**

Students' project reports revealed significant improvement in technical vocabulary usage, grammatical structure, and report organization. Their oral presentations also exhibited higher confidence, coherence, and pronunciation accuracy. The experience of defending their projects in English encouraged quick critical thinking and professional communication skills.

A post-activity survey indicated that **87% of students** found PBL engaging and relevant to their career preparation, while **10%** expressed moderate satisfaction but still struggled with technical vocabulary, and **3%** experienced challenges in group coordination.



Level of Participation	Number of Students	Percentage (%)
Active (report, presentation, discussion)	80	87%
Less Active (limited contribution)	12	13%
<b>Total</b>	<b>92</b>	<b>100%</b>

These results suggest that PBL effectively increases student participation compared to traditional learning (60–70% average). Moreover, students developed essential **soft skills**, such as time management, problem-solving, and adaptability under pressure. These align with industry demands for well-rounded engineering graduates (Susanti & Dewi, 2021).

Lecturers, as facilitators, also benefited from adopting PBL. Their roles shifted from information providers to mentors guiding project-based inquiry, promoting more egalitarian and interactive relationships with students (Nuraini & Yuliana, 2021).

Overall, PBL not only improved English proficiency but also developed students' professional skills—critical thinking, teamwork, and global readiness—making it a comprehensive pedagogical model suitable for the 21st-century engineering education landscape.

## CONCLUSION AND RECOMMENDATION

### Conclusion

1. This community service program successfully demonstrated that Project-Based Learning (PBL) is an effective approach for enhancing the English proficiency of engineering students. Through hands-on projects, students became more motivated, confident, and capable of applying language skills in real-world technical contexts. The activity achieved an 87% active participation rate, indicating high engagement and enthusiasm.
2. Academically, students showed notable improvement in written and oral communication, technical vocabulary, and presentation delivery. Beyond language acquisition, PBL also nurtured critical thinking, creativity, collaboration, and accountability—competencies vital for global competitiveness in the engineering profession.

### Recommendations

It is recommended that universities integrate PBL permanently into the English curriculum for engineering students. Continuous evaluation, lecturer facilitation, and collaboration with industry professionals are crucial to maintaining relevance. Expanding the program across departments and



involving cross-disciplinary projects can further maximize its impact in preparing globally competent graduates for Industry 4.0 and Society 5.0.

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