

Effectiveness of Problem-Based Learning in Developing ESL Proficiency among Tertiary- Level Students in Bangladesh

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Abstract

English education in Bangladesh generally focuses on grammatical and written knowledge and usually undervalues practical language application. This paper explores the effectiveness of problem-based learning in developing ESL proficiency among tertiary-level students in Bangladesh. The number of participants in this study was 164. The participants were randomly selected from one public and one private university in Bangladesh. To collect the data, a questionnaire with twenty-six items was used. The findings show that students showed their confidence towards incorporating the problem-based learning strategy into their way of learning English.

Keywords: Constructivism, Problem-Based Learning, Tertiary Education, Learner's Motivation

Introduction

For decades, there has always been some difference between theory and practical application (Shaharabani & Yarden, 2019). Research has indicated that University programs tend to promote necessary skills needed for classroom and are usually offered with an unrealistic view of classroom conduction (Yin, 2019, p. 1). Furthermore, the perceptual difference between teachers and students shows how the notion of an ideal language

classroom reflects the mismatch between classroom instructions and their contextual communicative demands (Brown, 2009). Addressing the hollowness are becoming a well-known contemporary efforts. Problem-based learning is a learner oriented pedagogy that advocates learning through investigation of realistic situation and problem solving (Thomas, 2000). Allen et al. (2011) shows many current findings which points out the usefulness of PBL are visible though insufficient and need holistic research on this topic. Therefore, many challenges are being taken which results in providing credible reports for the empirical outcomes of this field (Ansarian & Lin, 2018; Jaleniauskien, 2016). However, incorporation of PBL in ESL setting remains scarce, particularly when compared to other subject matters, which confirms notable gaps in systematic and qualified research within this context (Azer, 2004; Babae & Borji, 2017). The pedagogical strength of PBL shows how it benefits the learner's through creative thinking (Maulidia, et al., 2020), collaboration skills (Mook et al., 2007), confidence (Fernandes, 2021), analytical skills (Dolmans, et al., 2002), and social interaction skills (Campos, 2017). Therefore, Problem-based learning is an optimistic approach that supports acquisition via authentic context to stimulate engagement with the help of involvement in intercultural context (Probert, 2024).

However, a notable gap exists on its effectiveness among Bangladeshi ESL learners, with existing studies focusing on criticizing classroom culture and indicating challenges between theory and practice. This research was carried out to assess the outcome of how problem-based learning develops English communication skills of tertiary-level learners and their way of using it beyond the classroom. Through a mixed-methods framework, this research statistically examined the effectiveness of PBL in developing ESL competence among students in higher education. Additionally, this study also adopted a qualitative method to investigate students' perspectives regarding the usage of this approach in developing their expertise in English language learning. Through the integration of

descriptive data findings and interpretative analytical perspectives, the study offered an in depth exploration of the contribution of problem-based learning in the area of English language learning during an ESL setting, promoting a systematic overview of its performance. However, some issues need to be addressed, including time constraints, the teacher's role, and contextual connection between the created circumstances and the authentic implication of the learning materials (Chen & Fu, 2009).

Literature Review

English language proficiency conveys a significant function in academic development and professional skill advancement within the university level education in Bangladesh, while continuing to serve as a sustained primary means of education for higher education and global communication. This literature review synthesizes the coordination of problem-based learning into the ESL context in Bangladeshi tertiary education. Despite 12 years of English studies before entering university, a large number of Bangladeshi students show self -efficacy in natural conversation. Therefore, the predominance of rote memorization and teacher-centered instruction has led to the adaptation of constructivist approaches like PBL in Bangladeshi higher education to better align theoretical knowledge with communicative outcomes (Dutta, 2024).

Problem-Based Learning is found in constructivist theory, proposed by Jean Piaget and Lev Vygotsky. This theory believes that knowledge is cognitively constructed, developed internally, encouraged by socio cultural context, and subjective (Crotty, 1998; Fosnot & Perry, 1996; Hendryet al., 1999). A systematic synthesis of prior studies shows that the effect of PBL positively affects students' academic attainment, critical thinking, behavioral, and cognitive outcomes through the facilitation of vocabulary acquisition and oral fluency (Guo et al., 2024). Moreover, research has also revealed that PBL determines student's exposure to learning goals encompassing emotional attitudes (understanding results

and effectiveness of PBL), intellectual outcomes (learning acquisition & metacognitive abilities), attitudinal response (learning connectivity & classroom interaction), and materialistic output (Guo et al., 2020). Another comprehensive literature synthesis reports that through the combination of meaningful self-learning and practical use fostered by PBL, learners can enhance their communicative competence (Sideburn & Nurhayati, 2023). Empirical evidence from the PBL context further supports the benefits of language skills. Evidence from PBL-focused studies demonstrates that students' engagement in project work significantly enhanced motivation, confidence, and speaking proficiency by using English in authentic communicative contexts (Šliogerienė et al., 2025). Correspondingly, studies in diverse instructional contexts report a positive association between PBL-based tasks and improvements in speaking fluency, vocabulary retention, and overall communicative competence at the tertiary level (Shi et al., 2024). Beyond the ESL context, Gumisirizah et al. (2022) reviewed 376 records from Scopus and Web of Science, where 36 studies were analyzed using the term "PBL in physics education". The findings revealed that 33 of 36 articles reported a strong consensus about PBL on improving academic outcomes, analytical reasoning, and analytical capability. This efficacy is further evident in senior secondary students' algebra achievement in Nigeria, as Ojaleye and Awful (2018) demonstrated that the integration of PBL with Blended Learning (BL) outperformed traditional lecture methods. Collectively, these findings promote technology-enhanced heuristics and student-centered classrooms to foster autonomous learning for the reformation of STEM curricula and teacher preparation. A qualitative study of Biology stream, Lukitasari et al. (2019) indicated a significant improvement in processing and articulating complex biological concepts through the incorporation of PBL in the classroom. Existing studies in Bangladesh, though limited, showed positive support for PBL's potential. A quasi-experimental study examining the collaboration of PBL intervention with Google Classroom showed significant improvements

in students' writing skills, indicating the effectiveness of active, interactive, and problem-solving skills in fostering productive language learning skills (Karim & Si Na, 2025). Another study highlights PBL's significance in autonomous development by encouraging learners to take responsibility for communicative proficiency, which is often overlooked in traditional assessment (Mahmud & Islam, 2025).

Notwithstanding the positive outcomes, existing studies identified some practical challenges in implementing PBL in an ESL context, including oversized classrooms, lack of teacher training, and a mismatch between project outcomes and language objectives (Tien, 2021). Moreover, research by Yu and Zin (2023) suggests that the ongoing effects of the Grammar-Translation Method (GTM) in secondary education make it quite difficult for university students to adapt to the autonomous learning required for PBL. Additionally, the Wash back Effect, which focuses on summative and accuracy-based assessment in the Bangladeshi curriculum, may not support the heuristic nature of PBL, where both process and product are equally valued (Rahman, 2025).

In summary, the literature review suggests that problem-Based Learning has appeared as a creative experience for promoting ESL proficiency through substantive interaction, individual learning, and collaborative decision making skills, with a very strong international evidence supporting its effectiveness on communication and language development. However, Bangladeshi studies on tertiary ESL learners remain limited, addressing the need for further empirical investigation of PBL's effect across multiple domains in this context. Hence, this paper asks the questions:

1. Does Problem-Based Learning (PBL) enhance undergraduate students' communicative English proficiency in Bangladesh compared to traditional lecture-based instruction?

2. What perceptions ESL learners have in combining the PBL strategies for enhancing their communicative competence?

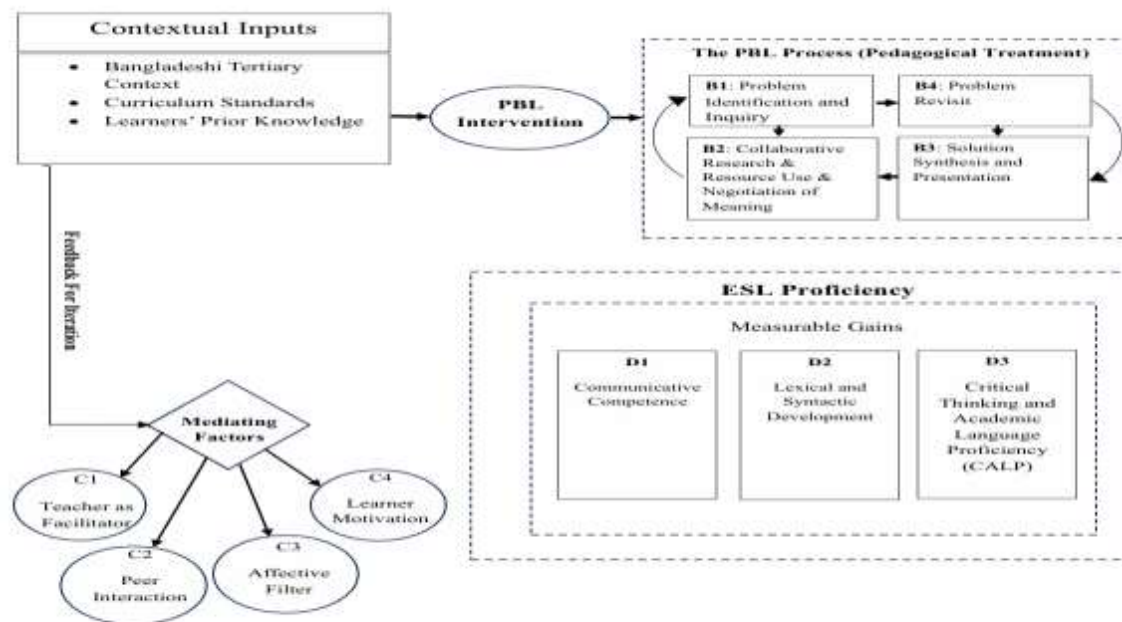
Conceptual Framework

The theoretical model suggests that the study was conducted to analyze the advancement of ESL proficiency through the implementation of constructivist theory, Socio-cultural practice, in a problem-based learning structure. Experimenting the connection between the theories and their practical application, problem-based learning shows the pathways through which the existing practices results in exploring and solving real-world problems. Figure 1 visually illustrates the integration, intervention, and expected outcomes.

Constructivism, formulated by Piaget (1970) and developed by Vygotsky (1986), conceptualizes learners as knowledge developer through participation and evaluation (Fosnot, 2013). The experience demands three sectors: identification, implementation, and learning outcome of a problem (as cited by Boss & Krauss, 2022). Yang et al. (2024) found that during formulation, learners think about the way through their existing idea, context, curriculum standards, and exposures. These Contextual inputs lead to PBL intervention, treated as a central pedagogical theory for facilitating learner-centered education, comprising three interconnected phases:(I) problem identification,(ii) collaborative research,(iii) solution synthesis and presentation. The model further develops key mediating factors, including teachers' roles as facilitators, peer interaction, and affective filters such as motivation and anxiety, in enhancing the effectiveness of PBL intervention (Wu & Cai, 2025). The outcome was represented through measurable ESL proficiency gains. Petrofina et al., (2024) expected that active participation in this process can develop Communicative expertise, lexical-syntactic development, and cognitive academic language proficiency (CALP) through repetitive ideas, implementation and display, thereby enhances academic literacy skills. This

approach encouraged an integrated way of learning to educate learners with real-life skills for a complex, interconnected world (Cheung et al., 2021).

Fig 1: Conceptual Framework for PBL-Integrated ESL



Methodology

Participants

This study was done on the university students in the department of English of two Bangladeshi Universities including one private university and one public university. One hundred and sixty-four participants responded to the questionnaire. Participants were selected from among first-year to fourth-year students based on their interest and convenience. They are taken as subjects because, although students from the first year in a university start to get acquainted with PBL, they do not know mostly how to implement it properly. Only from the second year, students get started to gradually understand what PBL means and how to respond to it. The third-year students have a good command of the utilization of PBL effectively. The fourth-year students are also included because, by that time, they fully understand the meaning and the use of PBL in their real-life work.

Instrument

This is quantitative survey research. A survey study was developed to identify the Effectiveness of PBL in ESL classrooms from a learner's perspective. Each item included likert scale (1932) which shows responses from strongly disagree to strongly agree. Each responses were categorized with a scoring system for example 5 for strongly agree and 1 for strongly disagree. This study also includes an open-ended questionnaire which helped the respondents to expand their perspective without being restricted to fixed choices. Through the administration of both open-ended questions and closed-ended questions, students were able to assess their self-assessment skills. Through the self-assurance practices PBL is considered as a right method by the (Dolman, Wolhagen & van der Vleuten, 1998).

This questionnaire has closed-ended items under 5 sections and open-ended items sections:

Section 1: Instruction

Section 2: PBL Activities and Student Engagement

Section 3: PBL and English Skills

Section 4: Collaboration and Communication in PBL

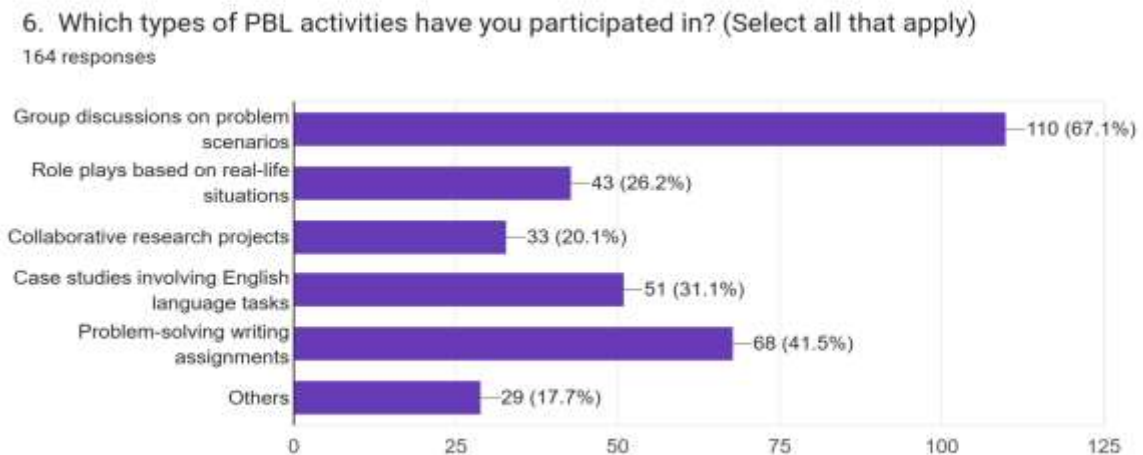
Section 5: Challenges of PBL in ESL Learning

Findings and Discussion

The results of the questionnaire are presented in the tables and figure below:

PBL Activities and Student Engagement

In this section, students were asked how they were initially made aware of PBL. Statistics show that 63.8% of students were introduced to this in university classes. 9.4% of students grasped it from their peers/friends and 18.8% of students learned it from different sources. Students were also asked about the types of PBL activities they have participated in.



The figure indicates that the majority of students reported participating in Group discussion (67.1%), followed by problem-solving writing assignments (43.5%), while Collaborative research projects had the lowest participation rate (20.1%). This indicates that students are more engaged in activities that involve group discussion, role play and problem solving assignments.

Students' Perceptions of PBL and English Skills

Table 1: Students attitudes toward PBL and self-evaluation of English skills

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
PBL activities help to speak English	6.01%	2.73%	10.38%	55.19%	25.68%
PBL encourages me in group works	5.85%	2.34%	8.77%	60.82%	22.22%
I enjoy solving real-life problems in	4.60%	2.30%	13.22%	56.90%	22.99%
PBL improves my vocabulary.	5.85%	1.17%	7.02%	59.65%	26.32%
I get more chances to speak English	5.29%	2.35%	7.06%	64.12%	21.18%
PBL increases confidence in using	4.17%	0.60%	11.90%	55.95%	27.38%
Learning grammar through PBL is	6.98%	1.74%	14.53%	54.07%	22.67%
PBL is more interesting than regular	4.09%	1.17%	12.28%	60.23%	22.22%

Table 1 illustrates students' attitudes toward PBL and their self-evaluation of English skills. The findings show that 80.87% of the students (55.19% agree, 25.68% strongly agree) believe that PBL activities help them speak English more confidently, thereby evidencing the approach's capacity in communicative competence. Concerning collaborative learning, the responses reveal that 83.04% of respondents stated that PBL encourages them to work with others in English, highlighting the effective use of launching cooperative learning in pedagogical practices.

PBL was further perceived as effective in promoting learners' engagement with authentic, real-life problem-solving tasks (79.89%) while simultaneously contributing to vocabulary development and speaking practices, with 85.97% of students acknowledging improvements in both areas. Moreover, 83.33% of respondents acknowledged feeling more assured in real-world communication. Additionally, a high percentage of agreement regarding grammar learning (76.74%) and overall interest (82.45%) underscores the impact of PBL in promoting contextualized and engaging student-centered learning experiences over traditional methods.

Overall, strong agreement across all items demonstrates that PBL positively supports English learning by fostering interaction, enhancing vocabulary and speaking opportunities, through meaningful and authentic problem-solving tasks.

Collaboration and Communication in PBL

Table 2: Communication

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Group task helps to improve communication skills in English.	4.14%	2.37%	4.73%	61.54%	27.22%
I enjoy working with peers to solve problems in English	4.19%	4.19%	8.98%	60.48%	22.16%
Peer feedback during PBL tasks helps me understand my strengths and weaknesses.	4.19%	1.80%	7.19%	62.28%	24.55%

Table 2 lists the effectiveness of collaboration and communication in the PBL process. The analysis shows that 61.54% of the students are being benefited by group work in terms of developing communication skills, whereas 60.48% of the students enjoy peer interaction to solve problems. Furthermore, with regard to peer feedback, 62.28% of the students noted improvement in understanding their condition during tasks.

Challenges of PBL in ESL Learning

Table 3: Challenges

Statements	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Sometimes, the problems is felt so difficult for solving in English.	4.29%	3.68%	15.95%	60.12%	15.95%
Lack of vocabulary limits my participation in PBL tasks.	4.22%	4.82%	14.46%	59.04%	17.47%
Time constraints make PBL tasks challenging.	3.64%	4.24%	13.94%	62.42%	15.76%
I need more training or support to fully benefit from PBL activities	5.45%	1.82%	8.48%	61.82%	22.42%
Sometimes, group members don't participate equally in PBL tasks.	4.27%	4.27%	14.63%	57.93%	18.90%

Table 3 and its results measure the challenges that the students face in performing tasks in the classroom. It demonstrates that 60.12% of the students find problems in solving activities in English, while 59.04% of the students reported that they have limited lexical knowledge. Another challenge is that, due to time constraints, 62.42% of the students feel PBL tasks are challenging. Additionally, 57.93% of the students complained about the inequality of participating in the group activities. Moreover, the need for proper training and knowledge for implementing PBL is supported by 61.82% of the students.

Discussion

The data analysis from the above table shows that, in the Bangladeshi tertiary educational context, the implementation of PBL can have a positive impact on developing ESL proficiency. These findings can help us to figure out a response to our first research question of this paper. This study reveals that most of the students feel more engaged and self-assured in real- world projects through iterative practice and feedback. We can align the outcomes with the previous study in terms of education. Prior studies indicate that PBL is able enough to improve language learning and interaction through realistic language involvement (Nguyen, 2021; Owens & Hite, 2022). Moreover, the study conducted by Petrosino et al. (2024) shows that students can be boosted up for self-reliance and articulation of clear ideas with the help of PBL method. The results of these studies suggest how PBL can ensure both language learning and using affective filters like reinforcement. However, many existing researches have pointed out the possible challenges for PBL as it requires exquisite teacher's training and students' hesitation to accept it through a derivation from traditional learning (Meng et al., 2023; Yang et al., 2021). Although the present study didn't focus much on these difficulties, as they surely can be mitigated with effective implementation.

Limitations

This study only focused on students' perception of PBL. However, it didn't take

into account the external and internal factors that can affect teachers' roles and students' performance. Hence, further study on the effects of the factors can be conducted to bring out authentic outcomes. Additionally, a questionnaire was designed only to find out the students' perceptions, and no interviews were included. Moreover, according to Wenden (1991), open or semi-structured interviews, along with a questionnaire to examine responses is more appropriate for a survey design. As the research was conducted on only 164 participants from two institutions, those instruments could not be implemented within the given timeframe. Furthermore, the perception of teachers couldn't be collected either.

Conclusion

This research tried to focus more on students' view about problem-based learning in enhancing practical language skills. The study confirmed problem-based learning appears as a promising strategy as a viable for improving language proficiency as positively supported by majority of respondents. However, small sample size, large classrooms, marks-oriented culture, and lack of teacher training should be addressed for a better understanding of PBL in tertiary education. Hence, cooperation between the teachers and students is required to implement this learning strategy. In addition, educators and policymakers are encouraged to incorporate PBL into the national curriculum to prepare the learners for worldwide acceptance.

Conflict of Interest: The corresponding author confirms that there are no conflicts of interest to disclose.

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