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Enhancing Language and Linguistic Proficiency Through Project-Based Learning: A Study from South India

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ABSTRACT

Mastering language and linguistics, the foundations of human expression and understanding, is being revolutionized through project-based learning, enabling individuals to unlock their full potential in communication, cultural insight, and global connection. Although the significance of project-based learning (PBL) is increasing in the contemporary scenario, the prominence given to this mode of study is comparatively negligible. Many universities have failed to update their curriculum according to the ever-changing needs of the industry. Researches exploring the necessity of incorporating project-based learning in the field of language and linguistics are scarce. Interdisciplinary approach is the need of the time and incorporating project-based learning in language and linguistics can transform and revamp the talents of EFL students. This research helps to comprehend these perspectives in a wide manner and fills the existing gap. The responses were collected from 50 EFL faculty members and 165 EFL students. In order to collect the data, a structured survey questionnaire is prepared and distributed in higher education institutions in two south Indian states, namely, Tamil Nadu and Kerala. Purposive sampling technique was employed at this stage. A five-point Likert scale, graphical analysis, percentage analysis, descriptive analysis and flowchart method were used to analyze, interpret and represent the collected data. This study explicates the necessity to have a curriculum that focuses on PBL from the early stage of higher education and its role in

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developing excellent research and critical thinking skills. The study finds that PBL increases the language acquisition skills and employability skills of the students.

Keywords: Language; Linguistics; Writing; Reading; Project-Based Learning; English Language Teaching; Higher Education

1. Introduction

Project-based learning (PBL) is an innovative teaching method where students tackle authentic, real-world challenges that demand innovative thinking, resourcefulness, and effective problem-solving. It plays a crucial role in supporting the technical and professional higher education. Moreover, it has an excellent practical impact on enhancing the innovative skills of students as they work on real-life projects^[1, 2]. PBL significantly enhances student learning outcomes, including motivation, academic achievement, and higher-order thinking abilities^[3]. Through PBL, students become active learners, immersed in a holistic learning experience that combines multiple disciplines and essential skills like research, teamwork and presentation. Alemneh and Gebrie's study reveals that project-based learning develops students' writing abilities, both overall and in specific sub-skills. PBL can facilitate democratic ideals in language learning^[4]. This approach teaches students to resolve problems, collaborate, and present ideas effectively, preparing them for real-world applications^[5]. In PBL, students learn by actively engaging in a project that integrates multiple subjects and skills, such as collaboration, research and communication. This study explicates the multi-faceted benefits of incorporating PBL in language teaching.

2. Literature Review

PBL has the potential to promote equitable education by developing cross-subject competencies, creating authentic learning environments, and emphasizing real-world skills^[6-11]. The constraints of conventional instruction, where the teacher dominates the learning process, can be surpassed by PBL approach. It has been observed that learner-centered approaches like PBL are pivotal in order for students to enhance crucial skills needed in the 21st century, like communication skills, cooperation, collaboration, independent thinking, and negotiation^[12]. It focuses on projects that require investigation. It prompts students to ask questions

and triggers several ideas. PBL helps in the development of teaching methodology, educational resources, evaluation procedures and curriculum improvement^[13, 14]. Within the PBL framework, students are encouraged to exercise autonomy and agency, selecting their own pathways to explore and address real-world questions and problems with teachers providing scaffolding, mentorship and strategic interventions to foster deep learning, creativity and innovation^[15, 16]. Studies have found a positive correlation between PBL and increased mastery of academic content^[17, 18]. This is likely due to the positive influence that PBL can have on student motivation and attitudes toward learning^[17]. PBL is characterized by a rigorous and immersive learning experience that features an inquiry-based driving question, peer-to-peer collaboration, strategic use of digital resources, a keen focus on honing critical thinking and communication competencies, and an interdisciplinary framework that contextualizes learning. This integrated approach empowers students to construct a deep and nuanced understanding of subject matter, while also developing actionable knowledge and skills that can be applied in practical contexts^[19]. The effectiveness of PBL approaches suggests the necessity of its implementation in classes and schools^[20]. However, despite its growing popularity, many teachers lack the necessary resources and knowledge to implement rigorous PBL^[6]. Furthermore, evidences indicate that PBL plays an important role in cultivating students' inner strengths and interpersonal capabilities, including self-reflection, self-regulation, and social skills, ultimately enabling them to navigate complex personal and professional relationships with greater ease and confidence^[21]. For language classes, especially EFL classes, PBL is considered a highly effective learning method as it incorporates real-world tasks that reflect authentic scenarios^[22]. In project-based learning, students should participate in authentic research in which they use and construct their knowledge like scientists would do^[23]. Research highlights the need for extensive professional learning support for teachers to successfully shift to PBL, even when student

outcomes are positive and engaging^[24]. According to EFL teachers, the most challenging aspects of implementing PBL are technical issues related to project organization, resources, collaboration, and student-related challenges^[25–27].

Teachers have reported numerous successes in implementing project-based learning (PBL), including enhanced student engagement and academic growth in various subjects such as social studies, writing, and reading^[20]. This underscores the significance of PBL in developing proficiency in language and linguistics. PBL's focus on in-depth, scientific inquiry necessitates a longer timeframe for students to explore, investigate, and draw conclusions about real-world phenomena, distinguishing it from the typically more concise nature of traditional learning approaches^[23]. A two-year randomized control trial study with 74 teachers and their high-achieving students enrolled in advanced placement courses found that PBL led to improved academic outcomes, confirming its effectiveness in enhancing student learning^[24].

Through PBL, students can apply writing skills in a practical manner, foster problem-solving skills, effective communication, and critical thinking, leading to improved academic performance and lifelong learning skills^[28]. Research by Imbaquingo and Cárdenas also explore the significant impact of PBL on students' writing abilities, highlighting its effectiveness^[29]. A study conducted by Fitria and Abidin involving 28 high school students revealed that PBL yields positive outcomes, notably enhancing students' writing skills and promoting academic growth^[5]. Still, there is a limited body of research on PBL in linguistic contexts, with few studies examining PBL or PBL-like models in language studies^[30–32].

This study fills the research gap by analyzing the relevance of PBL in enhancing the linguistic capability of EFL students in higher education institutions. It also explores the role of PBL in developing critical thinking and research skills of foreign language learners. Moreover, the study also examines the effectiveness of PBL in enhancing various skills of EFL students, its advantages, drawbacks and the challenges which teachers and students encounter at the time of its implementation. **Figure 1** presents PBL in a brief manner.

2.1. Research Questions

This study focuses on three questions: (RQ1) Does PBL enhance the linguistic abilities (reading and writing)

of EFL students? (RQ2) Does it develop critical thinking and research skills of EFL students? (RQ3) What are the various constraints in implementing PBL in higher education institutions?

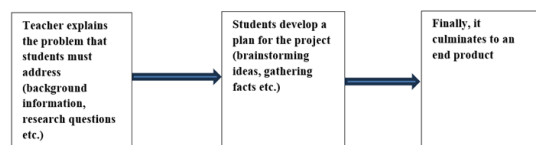


Figure 1. Flowchart detailing project-based learning.

3. Methodology

3.1. Ethics and Consent

The respondents of the study voluntarily filled the questionnaire and gave their consent to publish the result. The survey questionnaire was designed and validated by strictly adhering to the established research protocols.

3.2. Participants and Research Context

This research is conducted among EFL teachers and students in various higher education institutions in two south Indian states. A pilot study was conducted among 8 faculty members and 10 students to test the questionnaire. It was observed that a few students found it difficult to comprehend the meaning and usage of certain terms and such terms were modified or removed from the questionnaire. Moreover, the entire questionnaire set and the technical terms were discussed with the students to make sure that they have a complete understanding of the questions used. Data were collected from two prominent states of India namely, Kerala and Tamil Nadu. The total sample size was 215 (50 responses from EFL teachers and 165 responses from EFL students). 57% of the samples were collected from Tamil Nadu state and 43% of the responses were from Kerala state.

3.3. Research Instrument

A structured questionnaire is formulated with the support of the theories of prominent researchers in these fields^[33–36]. It provides accurate and precise information which is necessary for statistical analysis of the collected data. Moreover, the details of the respondents were anonymous in the distributed questionnaire and it guarantees honest

responses. Purposive sampling technique was employed to select the participants. Two survey questionnaires were prepared in five-point Likert scale format and was distributed among 165 EFL students and 50 EFL faculty members. Cronbach’s Alpha was used to check the reliability of the questionnaire. The first questionnaire, which was distributed among the students, had questions related to their demographic data such as their gender, age, educational qualification and place of their educational institution whereas the second questionnaire ensured that the people who filled the questionnaire are educators. The questionnaire was formulated in such a way that it analyses the role of PBL in enhancing the linguistic abilities (reading and writing) of EFL students. The questionnaire was also capable of examining whether PBL is capable of developing critical thinking and research skills of EFL students. It also studied various constraints in implementing PBL in higher education institutions, and the hindrances the educators and students face in implementing PBL in classroom settings.

3.4. Data Analysis

Respondents’ answers were assessed using a five-point Likert scale, providing a quantitative measure of their perspectives and enabling a detailed examination of the data.

Range (4) and interval (0.80) were calculated and the mean interval scale (1.00–1.80, 1.81–2.60, 2.61–3.40, 3.41–4.20, 4.21–5.00) was prepared to analyze the data (highly positive to highly negative). Graphical analysis and descriptive statistics were also used to arrive at a proper conclusion. Windows applications supported all these analyses.

4. Results

This research has two sections. The first part of the study focused on the opinions and perceptions of EFL faculty members whereas the second section of the study dealt with the point of view and opinions of EFL students. Several questions were asked to the faculty members and the students to analyze various features of PBL and its capacity to develop writing, reading and critical thinking capabilities (Questionnaire distributed among EFL faculty members and students are attached as **Appendix A**). The questions also focused on the advantages of PBL in higher education sector and examined the challenges in implementing PBL in a full-fledged form in classroom settings. The values obtained for the questions and the explanation of the results in a nutshell form is presented in **Table 1**. It is graphically portrayed in **Figure 2**.

Table 1. Results obtained after distributing the questionnaire among EFL faculty members in higher education institutions.

Questions	Value Obtained	Explanation of the Results in a Nutshell
Q1	1.86	PBL highly enhances the reading skills of EFL students.
Q2	1.90	PBL fosters the critical thinking and research skills of EFL students.
Q3	2.38	PBL improves the ability to communicate complex linguistic ideas.
Q4	2.18	There is a significant level of constraints in implementing PBL in EFL classes.
Q5	1.78	PBL promotes systematic approach to language learning and the students are trained for PBL approaches.
Q6	1.83	PBL has prepared the students to address linguistic and cultural diversity in real-world contexts.
Q7	1.92	PBL promotes the ability to think creatively about language related problems.
Q8	2.12	PBL helps to provide innovative solutions to linguistic challenges.
Q9	1.98	PBL develops reflective approach to language use and learning.
Q10	1.82	PBL improves writing skills for academic and professional purposes.



Figure 2. Graphical representation of responses received from EFL teachers.

Meanwhile, 12 questions were asked to EFL students to understand the capability of PBL in enhancing reading and writing skills. The questions also analyzed the advantages and problems which the students and teachers face while implementing PBL in classroom scenario and its ability to foster research and critical thinking skills of EFL students. The values obtained and the explanation of the result in a nutshell are given in **Table 2**. It is graphically represented in **Figure 3**.

Table 2. Results obtained after distributing the questionnaire among EFL students in higher education institutions.

Questions	Value Obtained	Explanation of the Results in a Nutshell
Q1	1.86	Project-based teaching is highly effective in enhancing the writing skills of EFL students
Q2	1.93	The implementation of project-based teaching methods has a profound impact on the cultivation of critical thinking abilities in EFL students.
Q3	1.98	PBL significantly increases the reading skills of EFL students
Q4	1.90	PBL contributes significantly in increasing the subject interest of the students
Q5	2.04	PBL fosters creativity and innovation to a great extent
Q6	1.93	PBL promotes and values interdisciplinary approach in higher education
Q7	2.10	Implementation of PBL in traditional classroom settings poses several challenges
Q8	2.06	PBL substantially increases the research skills of EFL students
Q9	2.04	Lack of time acts as a major constraint in implementing project-based teaching effectively.
Q10	2.13	The students are highly interested in project-based teaching approaches in language classes and they require more training in PBL
Q11	2.01	EFL students find that PBL helps them to develop English language skills in a practical and meaningful manner
Q12	1.90	EFL students feel very confident and motivated in using English to communicate complex ideas and collaborate with peers during PBL activities

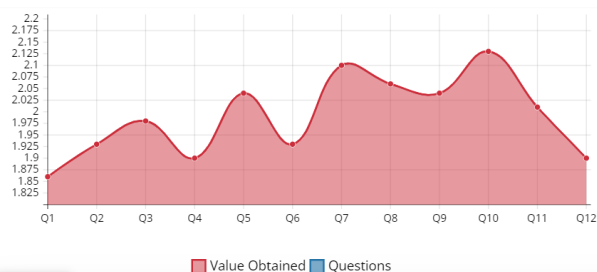


Figure 3. Graphical representation of responses received from EFL students in higher education institutions.

5. Discussion

5.1. Study Conducted Among EFL Faculty Members

This study paved the way for understanding the multiple advantages of incorporating PBL in EFL classes. Most of the educators (84.1%) stated that project-based learning enhances the reading skills of EFL students and develops better learning outcomes. This finding aligns with the study of Guo et al.^[14]. According to the study, PBL emerges as a highly effective and promising strategy for enhancing student learning outcomes in higher education settings. Apart from improving the practical skills of the students, PBL also improves their content knowledge^[37-41]. The study also made it clear that PBL develops the critical thinking skills and the research skills of the students. 81 percentage of the faculty members seconded this opinion. Recent researches also revealed this

fact and state that PBL helps students to develop communication skills, problem-solving skills, teamwork, and critical thinking skills, which ultimately help them to mould a better career^[42]. Research has shown that PBL can be a valuable tool for teachers to enhance their classroom management skills and foster critical thinking and problem-solving abilities in their students^[4]. It is also observed that PBL improves the capacity to communicate complex linguistic ideas. Another crucial factor revealed in the study was about the depth of training given to the students for the effective engagement in PBL. Faculty members (68.2%) stated that sufficient training is provided to the students to effectively engage in project-based learning. But, on the other hand, 36.5% educators stressed the necessity of improving the level of training given to the students. When 15.9% of the teachers stated that the level of training is given only to a limited extent, 1.6% of the educators stated that no training is imparted to the students. This is an alarming issue. Although PBL is the need of the time, most of the educational institutions are not aware of its importance in the higher education sector. It is also observed that the teachers (68.3%) are facing several constraints in implementing PBL in EFL classes. Studies show that various aspects like lack of time, overloaded syllabus, unsupportive nature of management and higher authority etc. can act as an impediment in effectively implementing it in the higher education system. It is found that PBL enables the students to address and face the real-world issues. It pro-

motes reflective approach to language learning and improves the writing skills of the students. It can be inferred from the results that PBL is a highly effective approach in boosting students' writing performance, leading to substantial gains in both overall writing ability and specific writing skills. These findings go hand in hand with the observations of previous studies. Incorporating PBL activities into writing instruction has a positive impact on students' writing skills, leading to enhancements in both general writing ability and specific writing competencies^[4]. This outcome is further validated by other previous researches^[5, 28, 43–49].

5.2. Study Conducted Among EFL Students

The research conducted among EFL students gave several insights. It lucidly portrayed the significance of PBL in the linguistic, academic and research growth of EFL students. It also shed light on the impediments in effectively implementing PBL in EFL classes. The students stated that PBL is highly effective in improving their writing skills. 73.2% of the respondents supported this perspective. Research suggests that PBL is an innovative approach that alleviates the challenges and monotony associated with traditional writing instruction, fostering a more conducive environment for developing writing skills^[5, 43, 50]. 69.8% of EFL students stated that PBL contributes significantly in developing critical thinking skills. These observations go in line with recent researches. According to Ariyani et al., PBL equips students with the essential knowledge and skills required to thrive in a particular industry or profession^[51]. The studies of Chen and Yang revealed that PBL yielded more favorable outcomes on students' academic performance compared to traditional direct instruction methods^[9]. It helps them to grasp things in a fruitful and easy manner without much deliberation. It is also found that project-based learning develops research and reading skills of EFL students and 69.3% seconded this point of view. It is also understood that the interdisciplinary nature of PBL increases students' interest and engagement in academic subjects. It is highly commendable in this modern globalized world. Moreover, it also fosters creativity and innovation of the student community. On the other hand, many students find the implementation of PBL in traditional classroom settings challenging.

Although the educators stated that the students are provided with sufficient training to engage effectively in PBL, the students opined that the given training is not sufficient

for them. Only 5.6% stated that they are being provided with necessary training for effective engagement in PBL. Higher education institutions have been attempting to provide students with a dual focus on hard skills, including cognitive knowledge and professional competencies, and PBL can be used as an effective tool to garner these skills^[52]. Even though the students (70.9%) are highly interested in PBL, 69.8% pointed that time acts as a crucial barrier in its effective implementation. Apart from fostering innovation and creativity, PBL activities also make the students confident and motivated in using English to communicate complex ideas and collaborate with peers. Several studies underscore these findings. It is noticed that PBL facilitates a student-centered and cooperative learning environment, where learners take an active role in their educational journey^[53].

6. Conclusions

The primary objective of the study was to answer RQ1, RQ2 and RQ3. It is observed that PBL significantly enhances the linguistic abilities, especially reading and writing skills, of EFL students. It also increases the learning outcomes and develops critical thinking and research skills of the students. Both the educators and the students have same perception about this notion. It also promotes systematic approach to language learning. But, to the contrary, it was shocking to observe that the point of view of the educators about imparting necessary training to engage effectively in PBL and perception of the students about the given training are entirely different. The educators think that the given training is sufficient to enhance PBL knowledge of the students but the students state that they lack sufficient training in PBL and the given training is not sufficient to improve their knowledge in this field. Research forums and societies can play a crucial role in these circumstances. They can act as a bridge between the students and educators to enhance their skills. It was also observed that several factors like conventional teaching approaches, outdated syllabus, lack of sufficient training for educators and students, insufficient time, and unsupportive nature of management and higher authority act as a constraint in implementing PBL effectively in the classroom scenario. Therefore, it would be better to incorporate PBL in the academic syllabus and start PBL orientation from the initial stages of the higher education program.

Although this study has several significant contributions, the results may be viewed in the light of certain drawbacks. The sample for the study was collected from 50 educators and 165 students in various higher education institutions in Tamil Nadu and Kerala. The point of views of the educators and the students may vary in different states or countries according to the training imparted to them and the curriculum they follow. Researchers may consider other prominent states in India or abroad and conduct the same study to analyze the similarities and differences. More objective evaluators can be used for in depth analysis and to conduct the study. Studies related to the advantages of PBL on students' diverse learning outcomes, and development of listening and speaking skills are rare. Researchers can explore this area in further studies.

Author Contributions

A.J.: Conceptualization, Methodology, Validation, Formal analysis, Investigation, Resources, Data curation, Writing—original draft, Writing—review & editing, Visualization, Supervision, Project administration. A.D.

L.,—Resources, Validation, Project Administration, Review.

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Institutional Review Board Statement

Not applicable.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The research data for this study will be accessible from the corresponding author upon a reasonable request.

Conflicts of Interest

The authors declare no conflict of interest.

Appendix A

Questionnaire distributed among EFL faculty members in higher education institutions

Si No	Questions
1.	Does PBL enhance the reading skills of EFL students?
2.	Does PBL foster the critical thinking and research skills of EFL students?
3.	Does PBL improve the ability to communicate complex linguistic ideas?
4.	Does time act as a constraint in implementing PBL in EFL classes?
5.	Have you provided sufficient training to the students for PBL approaches?
6.	Does PBL prepare the students to address linguistic and cultural diversity in real-world contexts?
7.	Does PBL promote the ability to think creatively about language related problems?
8.	Does PBL help to provide innovative solutions to linguistic challenges?
9.	Does PBL help to develop reflective approach to language use and learning?
10.	Does PBL help to enhance the writing skills for academic and professional purposes?

Questionnaire distributed among EFL students in higher education institutions

Si No	Questions
1.	How effective is project-based teaching in enhancing the writing skills of EFL students?
2.	To what extent does project-based teaching contribute to the development of critical thinking skills of EFL students?
3.	Does PBL significantly contribute to the development of reading skills of EFL students?
4.	Does project-based teaching enhance EFL students' engagement and interest in learning foreign language?
5.	To what extent does project-based teaching foster creativity and innovation in EFL education?
6.	How valuable is the interdisciplinary approach promoted by project-based teaching in higher education?
7.	How challenging is the implementation of project-based teaching in traditional classroom settings?
8.	To what extent does PBL enhance the research skills of EFL students?
9.	How much of a constraint is the lack of time for implementing project-based teaching methods in EFL education?
10.	Do you require more training in PBL?
11.	Do you find that PBL helps you to develop English language skills in a practical and meaningful manner?
12.	Do you feel confident and motivated in using English to communicate complex ideas and collaborate with peers during PBL activities?

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