Article

Project-Based Learning as a Methodology to Improve Reading and Comprehension Skills in the English Language

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Abstract: This study aimed to investigate the effectiveness of Project-Based Learning (PBL) in enhancing English language reading skills among ninth-grade students in a school located in Quito. The research employed a mixed-methods approach, combining a descriptive nature with a comprehensive literature review from reputable sources such as ScienceDirect, Scopus, MDPI, Web of Science, and Springer. The analytical-synthetic method was utilized, incorporating an observation guide to diagnose students' reading preferences and habits, along with questionnaires administered to 10 teachers and two institutional authorities to gather insights on their experiences with PBL. The main objective was increasing interest and competence in reading, reading, and comprehension. Following the implementation of PBL, the 20 participating students exhibited enhanced motivation and demonstrated advancements in their reading skills. They engaged in significant, relevant projects aligned with their social and educational environment. The results highlight the effectiveness of PBL as a teaching strategy for developing English language reading skills. The findings suggest that educators have a fundamental responsibility to stimulate and encourage the development of reading abilities, especially for students at the beginning of their schooling. PBL offers an active and innovative approach to foster student engagement and improve reading and comprehension skills. Therefore, this study demonstrates that implementing PBL can positively impact students' English language reading skills. These results support the recommendation for the widespread adoption of PBL in English language learning contexts to enhance reading proficiency among students.

Keywords: Project-Based Learning; active methodology; teaching strategies; reading comprehension; education innovation; English language

1. Introduction

Reading plays a vital role in the teaching-learning process, which is why promoting reading habits from the early years of schooling is necessary not only in the native language but also in learning English, which allows for a comprehensive education of the student [1,2] Educational institutions must provide instruction in English as a foreign language to ensure a complete and meaningful learning experience. Various strategies, such as educational projects, are encouraged for this purpose [3,4]. Additionally, appropriate techniques are being researched to develop English reading skills.

Generally, reading is not done for entertainment or personal improvement, which is a disadvantage in schools and colleges. Teachers find low reading attitudes and shared interest in reading, making it challenging to foster interest in reading and learning English in children and young people, especially texts in a different language. In addition, academic texts differ entirely from other types of literature.

Within the social framework, conducting research is relevant since it contributes to the student's education, fostering a culture of study where the student has a leading role in

their education, actively participating in the English learning process, both in reading and comprehension, as mentioned in [5,6].

Therefore, incorporating language skills in the teaching of English as a foreign language contributes to increasing students' interest and involvement in the course through the application of didactic activities, allowing students to take advantage and benefit from their education fully while also promoting their ability to acquire a foreign language [7].

From the perspective of [8,9], PBL allows student motivation, collaborative learning, research, problem-solving through different technological media, and spontaneous communication and expression. In this teaching and learning process, students take on the central role while teachers guide them through each proposed step to achieve effective project outcomes [10–12].

PBL, or Problem-Based Learning, is a pedagogical strategy that has cultivated an interest in reading and enhancing English language comprehension [13,14]. This approach is founded on the premise that students acquire knowledge and skills most effectively when engaged in meaningful and practical projects, as opposed to mere rote memorization [13,14]. In the context of PBL, students are responsible for planning, researching, developing, and presenting projects aligned with their areas of interest [15–17].

Therefore, PBL is a methodology that contributes significantly to the educational field, both for teaching work and for the comprehensive development of students. It proposes different active methods to motivate students to practice reading effectively, developing their cognitive skills and attitudinal and procedural capacities. Moreover, it encourages future professionals in their work [18–20].

Figure 1 shows that PBL as an innovative methodology enables an effective dynamic of teaching and learning English, where the student acquires an efficient level of knowledge that allows them to assimilate and put into practice what they have learned in any sphere of life, whether personal, social, or academic. It proposes interdisciplinary and integrative tasks to real situations so the student can successfully face any challenge and develop the necessary skills for compelling English reading. This methodology incorporates various elements, such as student participation in their learning, collaboration among peers, training in self-reflection strategies, generating new ideas, and motivation [21,22].
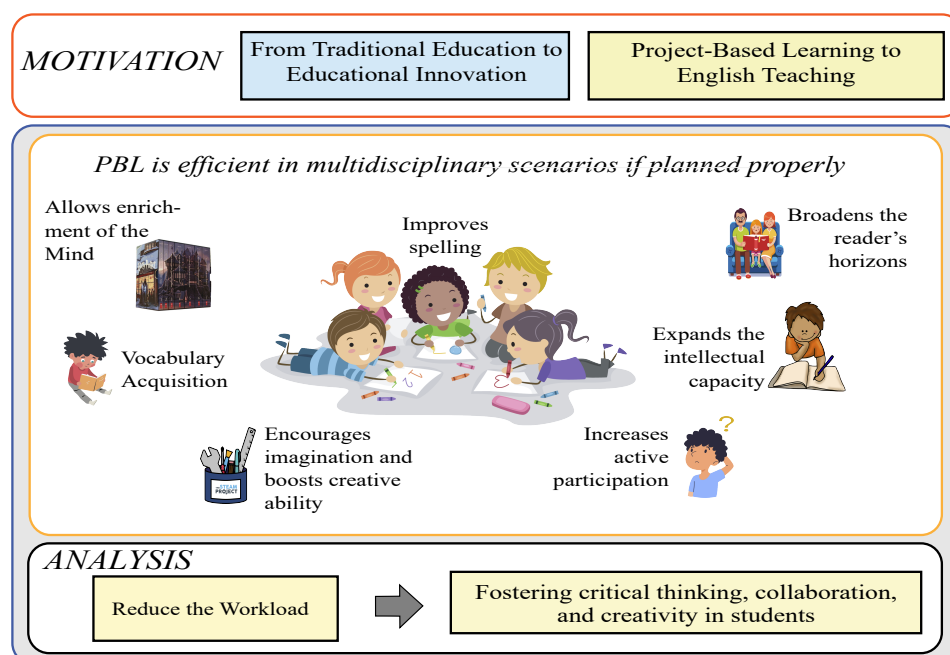

Figure 1. Project Based Learning Multidisciplinary Strategy. Source: Authors.

This document is structured as follows. Section 1 introduces the research problem and outlines the study's objectives. Section 2 comprehensively reviews the related literature

and existing research in the field. Section 3 presents the formulation of the problem and the methodology. Section 4 presents a detailed analysis of the research findings, and the results are discussed in light of the research objectives. Finally, in Section 5, the article provides some concluding remarks and suggests avenues for further field research.

2. Related Works

According to [23], reading should not be described simply as an activity but as a tool enabling academic formation. Through reading, individuals can promote intellectual abilities, understand and contrast information, actively participate, provide clear responses, facilitate expression, learn and use new vocabulary, provide solid opinions, and imagine and create [24].

Reading requires understanding the ideas presented in the text, relating them to what the reader already knows, drawing conclusions, and using this information according to the stated purpose of the text, whether it be to investigate, study, collect data, or entertain. Teaching this process is essential, as the lack of guidance may be one reason students obtain low scores on reading comprehension tests [25].

As stated by [26], it is essential to prioritize fundamental learning methods that can be enhanced through active approaches, such as project-based learning, problem-solving, and questioning, to improve students' competencies, such as the ability to create, imagine, and solve problems, as well as the development of skills in oral communication, reading comprehension, writing, and mathematical calculation. Ref. [27], also refers to the effectiveness of using diverse, active methodologies in the educational field.

According to [28], a study previously conducted by the National Institute of Statistics and Census (INEC) showed that 26.5% of Ecuadorians do not have the habit of reading, and the reasons mentioned include lack of interest, not necessary, lack of time, difficulties in concentration, among others. Regarding reading time, 50.3% read books for 1 to 2 h and 13.5% for 3 to 4 h per week. By age groups, young people aged 16 to 24 read more books at 83%, while those over 65 read less, which represents 62%. It should be noted that 33% of respondents mentioned that they must fulfill academic obligations, while a lower percentage do so to learn more about a specific topic.

Worldwide reading rates reveal that, in general, there are countries where reading ability is promoted since limited reading is an obstacle to the progress of society. Ecuador is no exception. The statistics are clearly below the indicators of other countries.

The habit of reading in English among primary school students is a critical factor for their academic and linguistic development. Reading in English allows them to develop their vocabulary, comprehension, and ability to communicate in this language, fundamental skills for their future academic and professional success, as stated by [29].

Technological media currently provide activities that can propose tasks [27,30,31] where students engage and enjoy being part of a reading community. However, many primary school students face difficulties in developing reading habits. Factors that may influence this include a lack of access to English books, a lack of interest or motivation, or problems understanding the language.

Ref. [32] argues that presenting texts in physical and digital formats using various virtual media and using the available technology for reading comprehension students is essential. It creates a meaningful learning environment, as students are more interested when texts are projected through virtual media public in the classroom [33].

In their work, Ref. [34] mentions that reading comprehension is a cognitive process in which the reader can read various texts with different levels of complexity using appropriate fluency, tone of voice, and intonation. It is more than just reading a certain number of words in a given time.

In addition, Ref. [35] argue in their study that reading ability is a procedure that involves relating, extracting, and constructing the reader's experiences and knowledge. From an educational perspective, these elements must be considered as they are beneficial for interpreting, evaluating, and managing information [36].

Therefore, it is essential to clearly understand the characteristics of texts to achieve quality comprehension as part of a cognitive process [37,38].

The bibliometric analysis uses the Vosviewer software tool, which made it possible to analyze the countries where research is being conducted on PBL and its relationships with other countries through scientific documents published in Web of Science and Scopus.

Looking at Figure 2a, the data from Scopus reveals that the United States is still the country with the most research publications on PBL, with 408 documents and 589 citations. Australia has a considerably high number of publications, with 60,124 papers, but a relatively low number of sources, with only 135. Spain follows the United States and has many publications with 198 documents and 393 citations. China has 153 compositions and 177 citations, while Indonesia has 182 papers and 173 medals. The United Kingdom has a moderate number of publications, with 63 documents and 111 sources. Germany, Portugal, and Taiwan have lower numbers of publications, with 49, 47, and 55 papers, but still have a significant number of citations, with 77, 123, and 180, respectively. Malaysia, Brazil, Norway, Hong Kong, and Sweden have even fewer publications and sources, with 53, 59, 25, 25, and 23 documents, respectively.

As shown in Figure 2b, the data from the Web of Science reveals that the United States has the most research publications on PBL, with 178 documents and 6277 citations. China follows this with 124 papers and 1491 citations, and Canada with 54 records and 1093 citations. Australia, Denmark, and England also have many publications on this topic, with 63, 55, and 55 documents, respectively.

The Netherlands has fewer publications, with 47 papers, but has many citations, with 2869. Germany and Sweden have lower numbers of publications, with 18 and 23 documents, respectively, but still have a significant number of sources, with 283 and 440, respectively. Qatar has minor publications and citations, with only 16 documents and 71 medals.
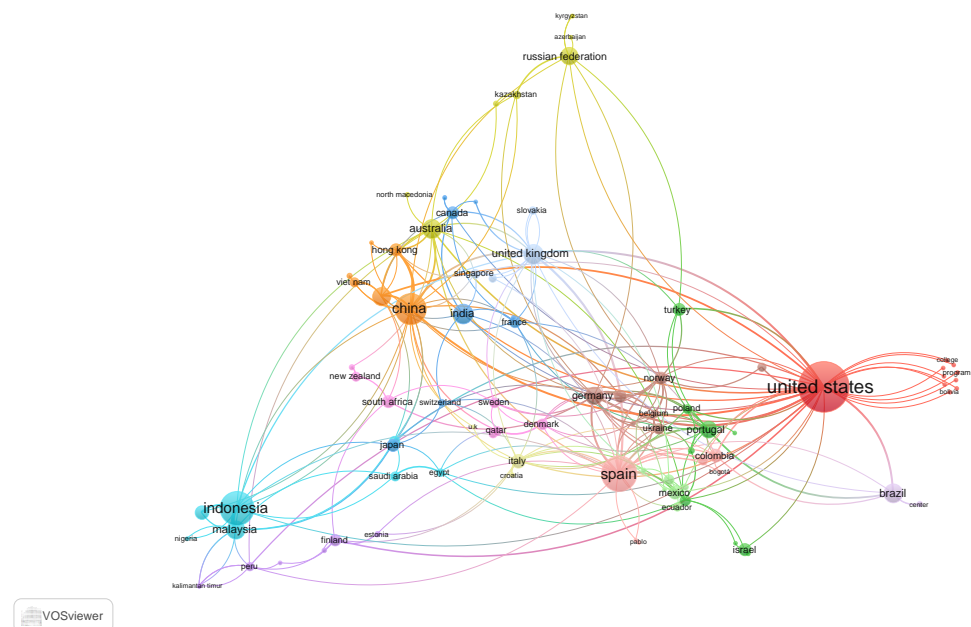
(**a**) Project-Based Learning Countries—SCOPUS data

Figure 2. *Cont.*
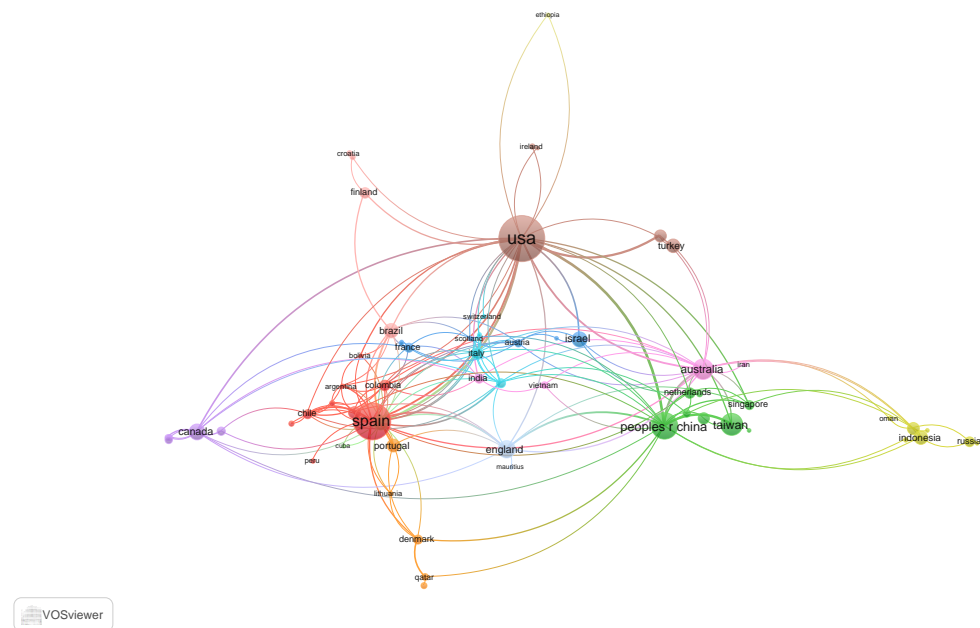
(**b**) Project-Based Learning Countries—Web Of Science Data

Figure 2. Bibliometric Analysis—(**a**) Scopus (**b**) Web of Science. Source: Authors.

The data from both databases indicate that PBL is a popular research topic in the United States, China, Canada, Australia, and Europe. The United States has the highest number of publications and citations in both databases, indicating its leading position in PBL research. Australia has an increased number of publications, but a relatively low number of sources, meaning their study may not be as impactful as those from the United States or Europe. China also has many publications, but its citations are lower than the United States and European countries.

Moreover, the data from Scopus reveals that Spain is a significant player in PBL research, with many publications and citations [39,40]. Indonesia also has many journals and sources, indicating that it is an emerging country in PBL research [41,42]. On the other hand, countries such as Brazil, Norway, Hong Kong, and Sweden have a small number of publications and citations, indicating their relatively minor role in PBL research.

The United States is the dominant country in PBL research, with the most publications and citations in both databases. Australia has an increased number of publications but a relatively low number of sources. In contrast, China has many magazines, but its citations are lower than in the United States and European countries. Europe, particularly Spain and Portugal, is significant in PBL research.

About Table 1, The list of universities researching the PBL is quite diverse, with some universities leading regarding the number of documents published and citations received. The University of California, Berkeley, and Stanford University stands out with 5 and 7 papers published and 1518 and 1454 citations, respectively. It indicates a high level of research activity and the impact of their research on the academic community.

Other notable universities include Michigan University, with 11 documents published and 574 citations; the Technion Israel Institute of Technology, with 12 papers published and 363 citations; and the National Taiwan University of Science, with 10 published and 350 sources. These universities have a significant research output and actively contribute to advancing knowledge in the PBL field.

Table 1. Most influential Universities Searching PBL Strategies.

Bibliometric Analysis Using VosViewer					
Web of Science			Scopus		
Universities	Documents	Citations	Universities	Documents	Citations
Univ Calif Berkeley	5	1518	Qatar University	3	94
Stanford Univ	7	1454	Michigan State University	8	50
Univ Michigan	11	574	Universitas Negeri Malang	3	12
Technion Israel Inst Technol	12	363	North Carolina State University	3	11
Natl Taiwan Univ Sci	10	350	Beijing Normal University	3	10
Univ Hong Kong	14	316	Georgia Institute of Technology	3	10
Arizona State Univ	9	213	National Taiwan University of Science and Technology	4	8
Michigan State Univ	16	167	Johannes Kepler University	4	7
Indiana Univ	5	156	Purdue University	6	13
Univ Autonoma Barcelona	6	140	Universitat de València	4	5

It is interesting to note that some universities with fewer documents published, such as Hong Kong University, with 14 papers published and 316 citations, have a similar or even more significant impact than other universities with more documents. The quality of research, rather than the quantity, plays a crucial role in the effects of research in the PBL field.

Additionally, it is essential to highlight that universities from different regions are researching PBL. For instance, universities from Spain, Indonesia, and Qatar are represented in the list. It indicates that the PBL approach is gaining popularity and recognition globally.

However, some universities in the list have a low number of documents published and citations, such as Universitas Negeri Malang, with only 3 and 12 sources, and National Taiwan University of Science and Technology, with four papers published and eight citations. It suggests that these universities have a lower research output and impact in the PBL field.

The analysis of the most influential universities researching PBL strategies is relevant to the study project because this study aims to improve reading and comprehension skills in the English language through PBL methodology. The universities named demonstrate a high level of research activity and impact on the academic community, indicating that PBL is a well-studied and practical approach. Additionally, the global representation of universities researching PBL highlights its growing popularity and recognition, emphasizing the need to explore its potential for further advancements in diverse educational contexts.

Table 2 presents the most relevant studies on the subject, which justifies the relevance of this research supported by authors whose works are related to peer instruction and PBL, which were investigated through scientific literature from various databases. The pieces were analyzed based on three critical aspects: problem, constraint, and proposal. The authors aimed to contrast the results obtained from each type of instruction based on the proposed aspects.

Of the ten works, eight identified the problem of traditional teaching methods, characterized by teachers' need for more motivation and interest in reading to develop students' soft skills. In contrast, PBL was proposed as a solution to address this problem. Additionally, the works identified various constraints, such as limited appropriate reading materials, commitment and accessibility to reading materials, and training on reading strategies, which may affect the implementation of PBL methodology.

The proposals presented in the works as solutions included training on PBL. Some results suggested that learning strategies should be adopted to ensure the success of PBL. Other works suggested implementing a motivation for project-based practices and student participation.

Furthermore, the works provide valuable insights for optimizing PBL methodology in different contexts. Therefore, analyzing jobs related to PBL and peer instruction suggests

that these strategies can improve student engagement, participation, and soft skills development. However, implementing PBL requires careful consideration of various constraints, including training on reading strategies.

Table 2. Summary of works related to Peer Instruction and Learning Engineering.

Work	Problem				Constraint			Proposal	
Author	Enthusiasm in Reading	Language Comprehension	Integrated projects	Restricted reading resources	Instruction in reading techniques	Availability of reading resources	Training on PBL	Application of learning strategies	Project-oriented approaches
Wu, 2023 [21]	✓	✓	✓	✓	✓			✓	✓
Yu, 2023 [29]		✓	✓	✓	✓				
Liao, 2023 [10]			✓	✓		✓	✓		✓
Mirza, 2023 [7]	✓		✓	✓	✓			✓	✓
Chigbu, 2023 [25]	✓	✓		✓	✓			✓	✓
Santos, 2023 [23]		✓	✓	✓	✓				
Rivadeneira, 2023 [27]		✓	✓		✓	✓	✓		✓
Velasco, 2023 [17]		✓	✓		✓				
Perez, 2023 [12]	✓	✓	✓	✓	✓			✓	✓
Castro, 2023 [18]	✓	✓	✓	✓		✓			
Lozano, 2023 [16]	✓	✓	✓			✓	✓	✓	✓
Proposal Authors	✓	✓	✓	✓	✓	✓	✓	✓	✓

3. Problem Formulation and Methodology

The problem to be addressed is the typical reading attitude and lack of interest in reading and learning English among children and young people, which hinders their comprehension and development of language skills in the foreign language. Reading and comprehending English is fundamental for success in various academic and professional settings. However, children in primary education often need more interest in reading and learning English, which can hinder their language development.

Additionally, the difference between academic texts and other types of literature increases the challenge of fostering interest in reading in English. Therefore, one possible solution to this problem is the implementation of PBL strategies. It is an instructional approach that focuses on developing students' knowledge and skills by engaging them in an extended and collaborative project. PBL has improved student motivation, engagement, and performance in various subjects, including language learning. Thus, It could effectively promote English language reading and comprehension skills among primary school children.

Despite the potential benefits of PBL, there needs to be more research on its effectiveness in English language learning among primary school children. Additionally, more is required to know how it can be adapted to suit the needs of younger learners with different learning styles and needs. Therefore, there is a need for research that investigates the effectiveness of PBL in promoting English language reading and comprehension skills

among primary school children and provides insight into how it can be tailored to meet the needs of younger learners.

The findings of this research could have significant implications for educators, curriculum designers, and policymakers involved in language education. By identifying effective PBL methodology for improving English language reading and comprehension skills among primary school children, this research could contribute to developing more effective language teaching methods and pedagogical approaches. Furthermore, it could create more engaging and motivating learning experiences for young learners, ultimately improving their academic performance and future opportunities.

Methodology

The following selection criteria supported the related works on Project-Based Learning:

- Thematic relevance: Sources directly related to project-based learning were selected. Scientific articles addressing the subject under study were sought in nationally and internationally recognized databases.
- Currency: Priority was given to the most recent sources from the last five years, from 2019 to 2023. Project-based learning is a methodological strategy that is constantly evolving, so it is essential to access recent research and publications that reflect current advancements and trends.
- Source quality: Priority was given to peer-reviewed scientific journals found in recognized databases such as Scopus and Web of Science, as well as online platforms and scientific journals such as ScienceDirect, MDPI, Redalyc, and ResearchGate, among others. It helped ensure the reliability and credibility of the obtained information.
- Variety of perspectives: Sources presenting a variety of perspectives on project-based learning were sought. The diversity of perspectives enriched the analysis and gave a more comprehensive understanding of the topic.
- Regional and cultural relevance: The regional and cultural relevance of the consulted sources was considered. Project-based learning can have variations and adaptations in different countries and cultural contexts.
- Finally, the keywords used were project-based learning, active methodology, teaching strategies, reading comprehension, educational innovation, and English language.

By applying these selection criteria, solid and comprehensive state of the art on project-based learning was achieved, which served as a theoretical basis and foundation for the study.

Figure 3 presents a comprehensive PBL plan prioritizing creativity, collaboration, and motivation. It starts with identifying a problem that needs to be addressed, but the solution is not predetermined.

The project is designed based on the student's interests, promoting intrinsic motivation and engagement. This approach encourages participants to think outside the box and generate unique solutions. It emphasizes the importance of the learning process rather than just the final product.

Furthermore, the plan recognizes the importance of management, specifically the integration of people, time, tools, and knowledge, and the critical role of the facilitator in guiding the process.

Overall, this PBL approach is highly effective in promoting deeper learning, as it prioritizes creativity, collaboration, motivation, and management. By encouraging participants to explore new ideas and perspectives and work in groups, they can learn from one another and develop their interpersonal skills.

The task becomes more engaging and promotes intrinsic motivation by linking the project to the student's interests and making the learning process meaningful and relevant. Finally, effective management ensures that the project is completed successfully, and the facilitator plays a crucial role in guiding the process and facilitating learning.
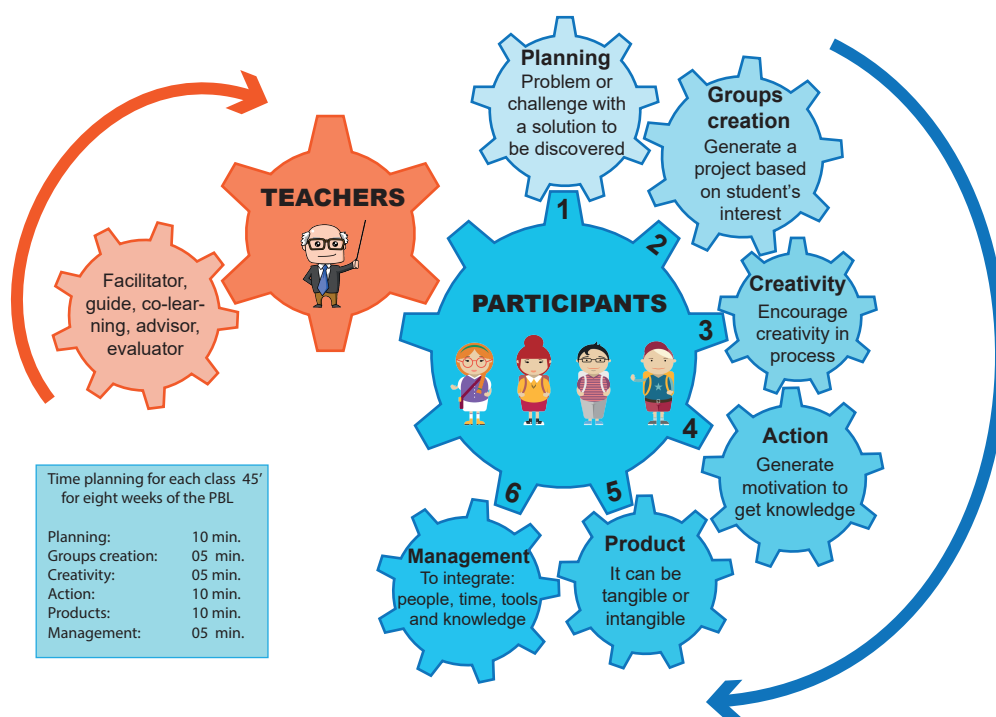
Figure 3. PBL Strategy in English Learning. Source: Authors.

The problem had to be relevant and meaningful to the students and could be approached from different angles. Forming project teams was also crucial as it fostered collaboration and cross-cultural exchange. The teams should include students from other disciplines, backgrounds, and English proficiency levels. It was also necessary to provide language support and scaffolding activities that enable students to practice and develop their English language skills in authentic contexts. Afterward, a project plan was designed to outline the project's timeline, milestones, resources, and assessment criteria.

Throughout the project, the teacher guided students through the work, providing feedback, coaching, and resources as needed to ensure progress and success. Monitoring and assessing student learning was also crucial. Using various assessment strategies, the teacher could measure progress and achievement. Encouraging students to reflect on their learning and the process of working collaboratively on a complex project was vital. Identifying areas for growth and improvement helped to enhance the learning experience. Finally, celebrating the success of the students and the project team was essential. Sharing the project's outcomes with the broader community showcased the learning and impact of the project.

The research had a descriptive character, as starting from the need to identify the scope of the PBL methodology to be applied in the area of English, a preliminary survey was carried out with the participants through classroom visits where an observation sheet was used to achieve the previously established objectives during a visit to the ninth-grade classroom of the San Patricio Salesian project Unit "UESPA" located in the south of the city of Quito, which is made up of a total of 20 students (11 boys and nine girls, with an average age of 12 to 15 years old) and is an educational project focused on the ninth year of primary general education that focuses on social assistance and involves different levels of learning for students. The observation form enables to register the student's reading and comprehension skills in English.

The study became an experimental approach because there were classroom visits, and we worked directly with students. Convenience or accessibility sampling was used because the research participants were selected based on their availability and accessibility during class hours. The criteria adopted for the items in Table 3 focused on students' behavior, attitudes, skills, and performance during English classes, especially concerning reading.

The selected items reflect participation, group work, use of digital tools, motivation, content appropriateness, and reading skills. The surveys were administered face-to-face to authorities (the Rector and area Coordinator), two internal English teachers and eight external English teachers, and students of the institution under study. The results were analyzed and scored according to the following categorization:

- Participation and attention: Items 1, 2, 3, 4, 5, and 6 pertain to behavior. They allowed evaluating students' participation and attitude toward learning and reading in English.
- Group work and collaboration: Items 7 and 8 allowed evaluating students' ability to work cooperatively and collaboratively during reading activities in class.
- Use of digital tools: Item 9 indicates that students use digital tools. It allowed evaluating their interest and motivation in using technology.
- Motivation and competency level: Items 10 and 11 allowed evaluating students' skills and performance when using English reading texts.
- Reading skills: Items 12, 13, 14, and 15 are related to reading skills, such as voluntary participation in reading and deficiencies shown while reading.

On the other hand, The school authorities have a fourth-level degree in teacher training and educational center administration, with a B1 proficiency level. The area coordinators, internal and external teachers, hold a bachelor's degree in languages and have a B2 certification as required by the Ministry of Education of Ecuador. The students have an A1 level of Breakthrough of English according to the Common European Framework of Reference (CEFR). The PBL project implemented with the students is called "Triple P" (Presentation, Practice, and Production). The project was adapted to the student's needs and characteristics based on their social and educational environment; the reading material used in this project was according to their culture and environment, such as short texts, motivational phrases, enriched videos, traditional legends, instructional texts, and worksheets according to their age and reading preferences. Additionally, it allowed for the progressive and systematic development of English reading skills.

The students are part of a Salesian social project as they come from low-income families with meager economic resources, as they did not have devices and internet in their homes; in some cases, the students have to work to help with the household economy, and they were absent from school. But despite this, the educational center provides the necessary resources for them to study and carry out their academic task in the institution.

For the systematization of the PBL methodology, the descriptive historical method was applied through the collection of scientific articles from internationally recognized databases, supporting the contributions of different authors in the investigative work; key terms such as PBL, reading impact, and teaching of the English language were used to delimit the thematic focus of the research.

The technique applied was analytical reading, which allowed highlighting and contrasting the information found. It should be noted that the reference management software Mendeley was used, which helped to generate state-of-the-art, as well as the use summaries, maps, and tables that allowed us to organize and detail the most relevant and reliable information practically, facilitating the writing of the most important theoretical foundation. The analytical-synthetic method was applied to determine the relevance of using the PBL methodology in promoting reading competence in English. The information obtained during the research was analyzed, and the most significant findings were synthesized.

Additionally, the observation technique was applied to determine whether the reading was being used, what activities were being carried out to promote reading habits, what capabilities the students had, what strategies they possessed, and how they developed their reading skills. Observation was one of the essential elements for a research article since it allowed for the maximum amount of data to be obtained in a clear, defined, and precise manner.

Table 3 refers to a classroom observation sheet used to evaluate PBL as a tool for developing reading skills. Classroom visits were made to collect the necessary information, and

an analytical approach was used to examine the various aspects related to the development of reading skills and language comprehension.

Table 3. Observation sheet.

Performance Characteristic
1. Students pay attention during English class.
2. They follow instructions for completing the proposed reading activities.
3. They show interest during the activities.
4. They express their doubts during class.
5. They actively participate in class, contributing ideas and comments.
6. They ask and research unknown terms or words.
7. They work in groups.
8. They work collaboratively.
9. Students use digital tools.
10. Students are motivated to learn and use texts and carry out reading activities in English.
11. The content is appropriate for the student's level.
12. Students participate in reading voluntarily.
13. Students show deficiencies when reading.
14. They do not use an appropriate tone of voice when reading.
15. Students possess reading strategies.

Furthermore, a survey was directed at the students to collect information. The instrument used was a questionnaire of 10 questions according to the reading skills that students must develop according to their educational level, such as reading level, fluency, teacher support in activities, text comprehension, recognition of ideas and characters, recognition of vocabulary, and new words, among others. The survey was conducted within the classroom to obtain different elements for assessing each of the aspects raised in the project, thus facilitating the obtaining of results for the respective analysis according to Table 4.

Table 4. Survey Question Students.

Performance Characteristic
1. Are texts of various genres such as stories, fables, emails, recipes, comics, and short stories read in the English class?
2. Do you consider your classroom a suitable place for reading practice?
3. Do you apply reading strategies such as searching for specific information and new vocabulary?
4. How often do you comprehend the meaning or message of the text you read?
5. Does your teacher use readings to develop speed, correct pronunciation, intonation, accent, body expression, and facial gestures to promote extensive reading?
6. Does your teacher offer you maximum support or guidance to read correctly?
7. During class, does your teacher propose exercises or activities to improve reading comprehension, such as comparing, contrasting, and giving an opinion?
8. Does your teacher provide you with readings to develop fluency and comprehension of the English language in class?
9. How often does your teacher use literal strategies such as summarizing, true or false, text analysis, or vocabulary exploration to achieve text comprehension?
10. Do you apply activities after reading to test if you understood the text read?

The methodology was developed by previously implementing the PBL strategy in the reading project, considering its elements and steps to follow to achieve the desired result. It fostered learning and cooperative work, research, suggesting different roles for the students, and working on the problem of disinterest in reading. The students were divided into groups of four and five, and each group was assigned an activity per week during the months requested by the institution, fulfilling the proposed objectives. Activities were selected with phrases, short paragraphs, instructional texts, legends, and enriched videos.

It was able to perceive clearly that the students showed a high degree of interest in carrying out the proposed activities, which was reflected in their broad participation

and collaboration, most of them participating enthusiastically and without fear of making mistakes when executing the different activities of the reading project to achieve each stage set out, such as planning, creating groups, developing creativity, action, achieving a product, and achieving management for the benefit of the students.

Therefore, each activity was planned in such a way as to capture their attention, integrating groups of students who could solve and execute the proposed work instructions, and each one assumed the role that was presented to them so that each one could contribute with their ideas and criteria. As a teacher, it is also guided in each of the activities within the classroom, emphasizing the importance of knowing how to read, understanding what was read, and adopting good reading habits.

Moreover, the importance of using diverse resources such as Play Posit, enriched videos, live worksheets, short fragments, stories, and legends from our environment, and instructional, narrative, and informative texts, among others, was highlighted. It was found that thanks to the previous knowledge acquired by the students, an environment of greater motivation and understanding was generated during the development of the activities, which positively impacted most of the participants, facilitating their work and comprehension of texts in a foreign language.

Then, to promote interest in reading among students in general primary education through implementing PBL methodology in the English area, a survey was conducted using a questionnaire directed at authorities and teachers in the corresponding region of the institution.

Table 5 shows that the survey results allowed organizing the opinions of those surveyed. It contrasted their views and experiences regarding the use of PBL. Access was also registered to the cognitive aspects presented by the participants or their perception of social or personal factors according to the reality of their environment.

Table 5. Survey Criteria Teachers.

Performance Characteristic
1. Do you believe that PBL is a methodology that allows you to obtain satisfactory results in English language teaching?
2. Can PBL be applied in all academic curriculum subjects? Can PBL be used in all matters of the educational curriculum?
3. Do you agree that the Project Based Learning (PBL) methodology motivates and improves reading learning in elementary school children?
4. Do you consider that PBL allows for integrating content and learning experiences at the individual and group levels in the classroom?
5. Is the decision to use the PBA methodology the right one?
6. Do you think that PBL-based reading is a strategy that motivates children in the English teaching-learning process?
7. Has the academic experience teaching English language reading using PBL been favorable for the teacher's personal and professional interest?
8. Do you think integrating PBL through reading activities involving the student's environment motivates vocabulary learning in English?
9. Has the PBL methodology developed students' motivation, collaboration, critical thinking, and problem-solving in their learning?
10. Have PBL projects been implemented to encourage or motivate reading habits in the institution?
11. Do you consider that integrating active methodologies such as PBL contributes positively to developing reading comprehension in English?

4. Analysis of Results

This study used an observation sheet and survey techniques to explore situations, attitudes, and skills developed by students, where individual and group contributions were evidenced. The opinions of authorities and English teachers from the institution in question were also collected, which provided an additional criterion for the research. Additionally, a consultation was conducted with English teachers from other educational institutions to contrast and enrich the information obtained in the study.

Figure 4 shows each of the aspects observed during the eight weeks of implementation of the reading project, according to how the students evolved in each of the competencies developed regarding reading ability and comprehension: interest, applied techniques, performance, attitude, participation, appropriate types of text, use of technological tools, collaborative work, and individual contributions. The most relevant items are considered, and each is rated on a percentage scale from 0% to 100%.
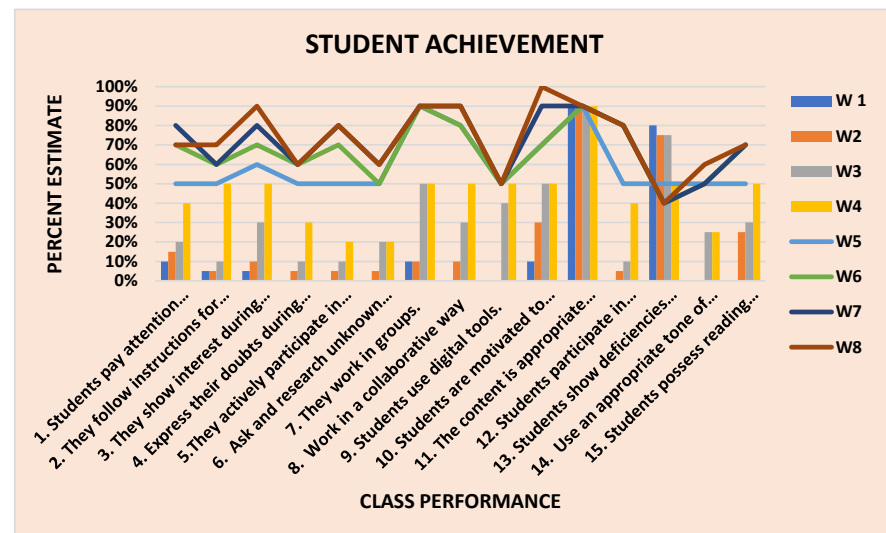

Figure 4. Evolving Reading Skills in an Eight-Week PBL. Source: Authors.

The degree of students' interest was evidenced through the results obtained and represented in Figure 4, which details the progress recorded by the students based on the increase in their participation, performance, and motivation throughout the activities from Week (W) W1 to W8 when the project was implemented.

In Table 6, the most crucial information obtained from the observation guide is identified, which allowed us to register the relevant aspects during the first visits to the classroom as an observer and to evidence the process of teaching and learning the English language in the students' class sessions. Each aspect was recorded during the execution of the activities planned by the English teacher to subsequently actively apply the activities previously planned as part of the proposed research project.

Table 6. Observation sheet based on 5-point Likert scale to Students.

Questions	A	AA	S	R	N
1. Q1	25%	40%	20%	15%	0%
2. Q2	35%	25%	30%	10%	0%
3. Q3	20%	30%	35%	15%	0%
4. Q4	10%	25%	40%	25%	0%
5. Q5	15%	25%	45%	15%	0%
6. Q6	30%	25%	3%	10%	0%
7. Q7	35%	30%	30%	5%	0%
8. Q8	30%	35%	25%	10%	0%
9. Q9	15%	10%	15%	70%	0%
10. Q10	20%	30%	35%	15%	0%
11. Q11	50%	25%	15%	10%	0%
12. Q12	30%	35%	20%	15%	0%
13. Q13	70%	20%	5%	5%	0%
14. Q14	25%	15%	50%	10%	0%
15. Q15	20%	25%	40%	15%	0%

Then, it is necessary to use a collaborative and systematic approach, such as the PBL methodology, to improve students' English language reading and comprehension skills. The results of the observation sheet provide valuable information for designing effective teaching strategies that address each student's needs and promote learning through the use of projects as a methodology.

On the other hand, to appreciate the discernment of the participating group that worked applying the PBL methodology, a survey was used, which focused on reading habits in the English class to improve students' reading comprehension. The survey consisted of 10 Likert scale questions ranging from Always to Never. Below is an analysis of the results obtained for each question, considering the rating of Always, as it refers to the frequency and allows us to establish the constant and regular practice of reading in English in the students under study.

Table 7 advertises the record of ninth-grade students in general primary education, carried out on April 6th, 2022; therefore, it shows ten performance characteristics designed to be applied to students. All of them use a 5-level Likert scale which is: Always (A), Almost always (AA), Sometimes (S), Rarely (R), and Never (N) to gather information and assess their perceptions.

Table 7. Student—Survey about Teaching criteria methodology.

Questions	A	AA	S	R	N
1. Q1	25%	50%	10%	10%	5%
2. Q2	75%	10%	15%	0%	0%
3. Q3	15%	50%	25%	10%	0%
4. Q4	20%	55%	15%	10%	0%
5. Q5	50%	30%	10%	10%	0%
6. Q6	40%	50%	05%	05%	0%
7. Q7	25%	60%	10%	05%	0%
8. Q8	30%	45%	25%	0%	0%
9. Q9	25%	55%	20%	0%	0%
10. Q10	25%	15%	50%	10%	0%

Therefore, the information display shows that many students need to improve in reading and use an appropriate tone of voice, fluency, and confidence, among other aspects. However, most consider the content relevant for their level, and a significant percentage have reading strategies. Additionally, a large group participates in reading voluntarily. On the other hand, the results indicate that it is possible to focus on improving students' reading ability, especially in areas such as fluency and intonation. However, there is a good starting point regarding content and reading strategies.

In general, the survey conducted with basic-level students reveals opportunities for improvement in teaching reading in the English class. Although most students consider their classroom adequate for reading practice, there must be more diversity in reading materials. Only some students apply reading strategies such as searching for specific information. Additionally, many students need help understanding the meaning or message of the text they read and need more support and resources to establish a consistent and regular reading practice in English.

On the other hand, it is relevant to mention that a survey was also applied to teachers both within the institution and externally from other English institutions to corroborate the criteria and effectiveness of the PBL methodology to promote the learning of reading skills and English comprehension, thus achieving evidence which has considerable acceptance.

Table 8 shows the collected information from the teacher that emphasizes that 60% agreed that PBL is a methodology that allows satisfactory results in practicing and learning English reading skills, while the remaining 40% decided. Secondly, it should be noted that 80% of respondents answered that PBL could be applied in all academic curriculum subjects, while the remaining 20% agreed.

Table 8. Teacher—Survey about Teaching criteria methodology

Questions	A	AA	S	R	N
1. Q1	60%	40%	0%	0%	0%
2. Q2	80%	20%	0%	0%	0%
3. Q3	40%	60%	0%	0%	0%
4. Q4	80%	20%	0%	0%	0%
5. Q5	20%	60%	20%	0%	0%
6. Q6	40%	60%	0%	0%	0%
7. Q7	20%	80%	0%	0%	0%
8. Q8	80%	20%	0%	0%	0%
9. Q9	40%	60%	0%	0%	0%
10. Q10	20%	20%	20%	40%	0%
11. Q11	40%	60%	0%	0%	0%

According to question 1, which focused on knowing if students read texts of various genres in the English class, it can see that 25% of the participants Always read texts of multiple genres, indicating a need for more diversity in reading materials.

On the other hand, in question 2. 75% of the respondents Always answered, showing that most students consider their classroom an appropriate place for reading practice, unlike a minority of students who do not always consider it a suitable place.

Based on question 3, it found that 15% of respondents Always answered, indicating that a minimum percentage of students apply reading strategies such as searching for specific information in the English class, expressing that most students have little experience using these strategies.

Similarly, in question 4. 20% responded Always, indicating that a small percentage of students always understand the meaning or message of the text. In contrast, most students need help understanding the meaning or transmission of the text they read.

Next, in question 5, it can see that 50% of respondents said their teacher Always uses readings to develop speed, correct pronunciation, intonation, accent, body expression, and facial gestures to promote extensive reading, indicating good teaching practices. However, the other 50% do not apply these practices, suggesting opportunities to improve the teacher's focus on promoting reading comprehension.

On the other hand, it is relevant to mention that in question 6. 40% of the students indicated that their teacher always offers them support and guidance to read correctly, implying that the majority feel supported in their reading process in the English class. In contrast, most students indicate that help is insufficient or not present, revealing that there may be opportunities to improve in this area.

In the same way, it is possible to observe that in question 7. 25% of the students indicated that their teacher always proposes exercises and activities to improve reading comprehension in the English class. Different from the vast majority who express that these exercises and activities are not applied with the desired frequency, which could be an opportunity to improve the teaching of reading in the English class.

Similarly, in question 8.30% of students answered that their teacher always provides them with readings to develop fluency and understanding of the English language, revealing that most students need to be provided with resources to improve their reading skills.

Additionally, it is possible to observe that in question 9.25% of students responded that their teacher always uses literal strategies such as summaries, true or false, text analysis, or vocabulary exploration to achieve text comprehension. However, most students indicated that these strategies must be applied with the desired frequency.

It shows that 60% of respondents agreed that the PBL methodology motivates and improves the acquisition of reading skills in students, while the remaining 40% agreed. On the other hand, it can be appreciated that 80% of respondents answered that It allows for the integration of individual and group learning experiences and content in the classroom, while the remaining 20% agreed.

Subsequently, it can be noted that 60% of respondents agreed that the decision to use the PBL methodology is the most accurate, while 20% decided and an equal percentage was neutral. In sixth place, it can be evidenced that 60% of respondents agreed that reading based on PBL is a motivating strategy that facilitates English reading. However, the remaining 40% decided.

However, it is worth mentioning that 80% of the respondents agreed that integrating PBL through reading activities that involve the student's environment motivates the learning of English vocabulary, while the remaining 20% agreed.

Likewise, it can be observed that 60% of the respondents agreed that the PBL methodology had developed motivation, collaborative participation, critical thinking, and problem-solving skills in students, while the remaining 40% strongly agreed.

In the penultimate place, it is observed that 20% strongly agreed that PBL projects still needed to be implemented to promote or motivate reading habits in the institution. At the same time, the majority disagree with the following three criteria.

Finally, it can be concluded that 60% of the respondents agree that integrating active methodologies such as PBL contributes positively to the acquisition and comprehension of English reading skills, while 40% strongly agree.

The observation data shows that in all items, a percentage of students need to improve their participation and performance in class. It reflects the importance of teachers being attentive to each student's needs and working with them to improve their academic performance and learning skills. Likewise, the importance of stimulating and promoting student motivation towards educational tasks and resources are highlighted to favor the optimal development of their abilities.

On the other hand, the authorities mention that PBL methodology stimulates students in developing their abilities and skills in reading and comprehension of the English language and, therefore, in the teaching of English. However, they emphasize that other methodologies are also used and generate positive results.

Both the surveyed teachers from the institution and external teachers refer to the satisfactory results obtained when applying the PBL methodology; the findings indicate that participants hold a favorable perspective regarding the PBL methodology and its impact on students' academic formation. Similarly, most respondents believe it can improve English reading comprehension skills. Therefore, the surveyed teachers agree that integrating active methodologies such as PBL contributes to developing reading comprehension in the English language. However, there needs to be more clarity regarding implementing it and its influence on stimulating reading habits.

The survey results from the students indicate that while there are areas for improvement in the student's reading skills, there are also positive aspects to build upon. Many students need to enhance their reading abilities, including using an appropriate tone of voice, improving fluency, and gaining confidence. The findings suggest that the focus should be on improving fluency and intonation while providing a more comprehensive range of reading materials. Additional support and resources are needed to help students comprehend the meaning and message of the texts they read and to establish a consistent and regular English reading practice.

5. Discussion and Conclusions

Developing reading and comprehension skills, especially in English, from a young age is critical to success in education. However, creating the habit of voluntary reading assignments can be challenging. PBL is an educational methodology that allows applying linguistic competencies, confident reading, and investigation in a meaningful context, making it a practical approach to motivating and developing these skills.

Significant correlations with existing literature on PBL were identified, which refer to positive results obtained through this methodology. According to [43], optimal outcomes have been achieved regarding student performance and teacher acceptance regarding its use and application.

In today's society, with the extensive use of the internet, reading and comprehension must go hand in hand with technological advancements. Therefore, it is essential to present a variety of texts using different tools to promote reading in the English language. It is crucial to involve students in projects that motivate them to participate actively and generate other language skills, demonstrating their enthusiasm for the activities proposed by the teacher.

Additionally, it highlights the importance of presenting texts to students engaged in reading comprehension in physical and digital formats, utilizing various virtual media and leveraging available technology [33].

PBL offers a variety of didactic materials that meet the student's needs and demands, and students take an active part in the learning process. It increases interest and motivation and higher text comprehension, participation, collaboration, and self-evaluation. On the other hand, in traditional learning, teaching materials are based on the curriculum text. Students are passively receptive to the process; motivation depends on teachers' skills to encourage learning. Consequently, comparing traditional and project-based learning, significant differences in the approach and methodology used in the learning process are evidenced.

The results highlight the need to develop reading and comprehension skills in English early, which requires adequate motivation and support. PBL is presented as a valuable tool to motivate and develop these skills as it offers a variety of didactic materials, greater student participation, and self-evaluation, allowing each area to contribute comprehensively to the project outcome [44]. Therefore, teachers are willing to use unconventional approaches to achieve adequate reading levels and help students gain fluency in reading.

PBL is particularly valuable for motivating English reading and comprehension skills, allowing students to apply their language abilities in a meaningful context. Students can read and comprehend English texts related to their interests by engaging in projects, increasing their motivation and confidence in their language skills.

The following conclusions were obtained based on the results: PBL methodology is a natural and effective alternative for developing English language reading competency in primary school students. This research provides various conceptual references and contributions about the methodology so that teachers become aware of the need to improve their students' reading practices and commit to researching, training, and applying various methodologies, including PBL, to overcome the condition of the majority of students (75%) who expressed their desire to improve their English reading practice.

The importance of applying the PBL methodology is highlighted, as it facilitated the implementation of activities such as short fragments, stories, and legends from their environment, instructional, narrative, and informative texts to promote motivation for reading and the acquisition of the English language in primary school students. As a result of the application of PBL, better academic performance was evident as it allowed planning, executing, and evaluating activities to promote reading and learning of the English language, as teachers mention in 80% through reading activities involving student environment motivate students' participation. The teacher assumed the role of guide or mentor, which resulted in positive outcomes.

The PBL methodology effectively integrates experiences and content in teaching, promoting individual and collective work, collaboration, and problem-solving. Both teachers 40% AA agree and 60% A agree, and students 15% AA agree and 50%. In addition, this methodology addressed the challenge of apathy towards reading and advanced reading and understanding of the English language.

Implementing the PBL methodology as an effective tool for promoting reading in the English language in primary school students is recommended. It is worth mentioning that both teachers 60% AA agree and 40% A agree and students 25% AA agree, and 55% have highlighted the benefits obtained with this methodology, such as the development of motivation, teamwork, critical thinking, and problem-solving during the teaching-learning process of English language reading competency.

Finally, it is suggested to continue researching the application of this methodological tool to explore further the benefits that could contribute to developing new didactic strategies to improve English language reading comprehension and promote students' academic and personal success.

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