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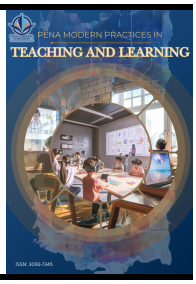

Technical Writing Skills through Project Based Learning in English for Specific Purposes: A Comprehensive Structured Review

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ABSTRACT

In recent years, the focus on enhancing technical writing skills through Project-Based Learning (PjBL) in English for Specific Purposes (ESP) has garnered significant attention due to its potential to transform educational outcomes. This systematic literature review aims to provide a comprehensive analysis of the recent applications and impacts of PjBL in developing technical writing skills within ESP contexts. The primary problem addressed is the need for an updated and structured overview of how PjBL is being utilized to enhance technical writing proficiency and related educational outcomes. To achieve this, we conducted an extensive search of scholarly articles from reputable databases such as Scopus, Web of Science, and ERIC, focusing on studies published between 2020 and 2025. Following the PRISMA framework, we identified 33 final primary studies for detailed analysis. The findings were categorized into three themes: (1) technological integration in PjBL for ESP, (2) enhancing soft skills and employability through PjBL in ESP, and (3) innovative pedagogical approaches and their impact on learning outcomes in ESP. The analysis reveals that PjBL in ESP contexts significantly improves student engagement, technical writing proficiency, and critical thinking skills. Furthermore, PjBL has been shown to support collaborative learning and provide opportunities for authentic, experiential learning. In conclusion, this review underscores the transformative potential of PjBL in enhancing technical writing skills in ESP, suggesting that future research should focus on optimizing PjBL frameworks, addressing implementation challenges, and exploring long-term impacts on learning outcomes. This comprehensive review provides valuable insights for educators, policymakers, and researchers aiming to leverage PjBL to improve technical writing skills in ESP courses.as a scalable and effective solution for enhancing language proficiency and career readiness skills in diverse educational settings.

1. Introduction

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In the contemporary globalized world, proficiency in English, particularly in technical and specialized domains, has become indispensable for academic and professional success. Technical Writing Skills (TWS) are essential competencies that facilitate the clear and effective communication of complex information. These skills are especially crucial in fields where precise and unambiguous documentation is required, such as engineering, information technology, and scientific research. Despite their importance, many students, and professionals struggle with mastering TWS, often due to inadequate instructional approaches that fail to engage learners in meaningful and practical experiences. This paper explores the efficacy of Project-Based Learning (PjBL) as an innovative pedagogical strategy to enhance Technical Writing Skills within the framework of English for Specific Purposes (ESP).

Project-Based Learning is an instructional methodology that encourages students to learn and apply knowledge and skills through an engaging project [29]. It is a dynamic approach that fosters active learning, critical thinking, and problem-solving abilities. PjBL situates learners in real-world contexts, enabling them to undertake projects that mirror the complexities and demands of their professional environments. This experiential learning model is particularly effective for teaching technical writing, as it provides students with authentic tasks that require the application of technical communication skills in a context that is both relevant and challenging.

English for Specific Purposes is a branch of language education that focuses on teaching English tailored to specific fields or professions. ESP courses are designed to meet the particular needs of learners, whether they are students preparing for careers in specialized domains or professionals seeking to improve their communication skills within their respective industries. The integration of PjBL into ESP courses offers a promising approach to bridge the gap between theoretical knowledge and practical application, thereby enhancing the overall effectiveness of technical writing instruction.

The significance of integrating PjBL in ESP to improve Technical Writing Skills lies in its potential to transform traditional educational practices. Conventional methods of teaching technical writing often involve isolated exercises that do not fully engage students or reflect the complexities of real-world tasks. In contrast, PjBL provides a holistic learning experience, where students are required to plan, research, draft, revise, and present their work in a collaborative and iterative process. This method not only improves their technical writing proficiency but also develops other essential skills such as teamwork, time management, and critical analysis.

Moreover, PjBL aligns with constructivist theories of learning, which posit that knowledge is constructed through active engagement and reflection. By participating in project-based tasks, students become active learners, constructing their understanding, and acquiring new knowledge through experience and interaction. This approach is particularly beneficial in ESP contexts, where the specific language and communication skills needed vary greatly depending on the field of study or professional domain.

The structured review presented in this paper examines the existing literature on the application of PjBL in ESP courses aimed at enhancing Technical Writing Skills. It explores various studies and pedagogical models to identify best practices and highlight the impact of PjBL on learners' performance. The review also addresses potential challenges and provides recommendations for educators seeking to implement PJBL in their technical writing curricula.

In conclusion, the integration of Project-Based Learning in English for Specific Purposes represents a significant advancement in the teaching of Technical Writing Skills. This innovative approach not only addresses the shortcomings of traditional instructional methods but also aligns with contemporary educational paradigms that emphasize active, experiential, and student-centered learning. By situating technical writing within meaningful and contextually relevant projects, PjBL

fosters a deeper understanding and mastery of essential communication skills, preparing students and professionals for success in their respective fields.

2. Literature Review

The integration of technical writing skills within Project-Based Learning (PjBL) frameworks in English for Specific Purposes (ESP) contexts has gained substantial attention in recent years. This structured review synthesizes findings from a variety of studies to illustrate how PjBL enhances technical writing competencies among students in diverse educational and professional fields.

Enhancing technical writing skills across various educational settings can be effectively achieved through the integration of design thinking, lexical acquisition, and project-based learning (PjBL) approaches. Andrews [2] highlights how design thinking phases which are empathizing, defining, ideating, prototyping, and testing solutions to encourage radical collaboration and real-world application in business communication courses, significantly improving technical writing through iterative feedback. Similarly, Skornyakova and Vinogradova [33] emphasize the importance of lexical competence in engineering education, showing that a model focused on critical and systematic thinking can enhance students' writing skills.

In vocational and trades education, Parkinson *et al*., [27] reveal the complexities of language use and the necessity of specialized vocabulary, while Ramdani *et al*., [30] demonstrates that PjBL in research method courses enhances scientific writing skills and reduces plagiarism. Multimodal community-engaged projects, as explored by Tham and Jiang [35], facilitate deeper learning and better engagement in technical communication through the use of diverse media and technologies. Additionally, Lavania and Giri [19] and Barr *et al*., [4] show that PjBL and authentic research projects in engineering and chemistry education not only boost students' motivation and understanding of technical concepts but also significantly improve their ability to document and present their findings, essential for professional technical writing. Combining these approaches fosters a comprehensive development of technical writing skills, preparing students for the demands of professional communication.

The integration of project-based learning (PjBL) into English for Specific Purposes (ESP) curricula has shown significant improvements in technical writing skills among students, as evidenced by various studies. Maheswaran *et al*., [24] explored the application of PBL in the context of renewable energy through the design of a piezoelectric energy wheel. This project not only enhanced students' understanding of renewable energy technologies but also bolstered their technical writing skills as they documented their research and findings. Similarly, Wahl and Adams [37] highlighted the benefits of PBL in technical design courses where students created and exchanged tech packs, thereby honing their pattern making and specification writing skills through realistic production experiences.

Experiential learning initiatives, such as those conducted by Ismael and Ayala [18], underscore the value of PjBL in developing comprehensive technical and soft skills. Their study on the impact of Engineers Without Borders (EWB) projects in Guatemala revealed that students gained critical technical writing and problem-solving skills, which were essential for documenting and managing sustainable water supply projects. This aligns with the findings of Cole [9], who demonstrated that peer assessment and group peer moderation in engineering courses significantly improve students' understanding and execution of technical writing tasks related to sustainable energy projects.

The importance of integrating real-world projects into technical education is further supported by Christensen *et al*., [8]. The Bell Academy's project-based curriculum at Iron Range Engineering fosters a transformation where students develop professional competencies, including technical

writing, as they engage in industry-relevant projects. This structured approach ensures that students are well-prepared for their future careers, emphasizing the role of practical, hands-on experience in mastering technical communication skills.

In the realm of digitalization and its impact on education, Cruz *et al*., [10] conducted a study on elementary school teachers' perceptions of digitalization. Their findings emphasize the need for strategic, pedagogical, and axiological considerations in implementing digital tools, which can also be extended to higher education contexts. Incorporating digitalization in ESP courses through PBL can enhance students' technical writing skills by familiarizing them with digital platforms and collaborative tools, as suggested by the integration of Wikipedia-based assignments in international settings by Liu *et al*., [21].

Lastly, the use of reproducibility as a teaching mechanism in AI courses, as explored by Lucic *et al*. [22], provides another layer of enhancement for technical writing skills. By engaging students in reproducibility projects, they not only learn about FACT-AI concepts but also improve their ability to document and communicate complex technical processes clearly and effectively.

In conclusion, project-based learning serves as a powerful pedagogical tool in enhancing technical writing skills within ESP programs. The collaborative, hands-on nature of PBL allows students to engage deeply with technical content, fostering both their understanding and ability to communicate complex ideas effectively. Studies by Maheswaran *et al*., [24], Wahl and Adams [37], Ismael and Ayala [18], Cole [9], Christensen *et al*., [8], Cruz *et al*., [10], Liu *et al*., [21], and Lucic *et al*., [22] collectively underscore the importance of PBL in developing these crucial skills, making it an indispensable component of modern technical education.

3. Materials and Methods

3.1 Identification

Several key steps in the systematic review process were used to choose a great deal of relevant literature for this study. First, keywords are selected, and then related terms are searched for using dictionaries, thesaurus, encyclopaedias, and past research. All relevant terms were selected after search strings for the Scopus, Eric and Web of Science (WoS) databases were created (see Table 1). During the first step of the systematic review process, 126 publications were successfully retrieved for the current study project from three databases.

Table 1
The search strings.

Database	Search String
Scopus	TITLE-ABS-KEY ((“English For Specific Purpose" OR esp OR "Technical English”) AND (“Project-Based Learning" OR pbl OR pjbl OR "experiential learning”)) **Date of Access: March 2025**
Eric	(“English For Specific Purpose" OR esp OR "Technical English”) AND (“Project-Based Learning" OR pbl OR pjbl OR "experiential learning”) **Date of Access: March 2025**
Wos	("English For Specific Purpose" OR esp OR "Technical English”) AND ("Project-Based Learning" OR pbl OR pjbl OR "experiential learning”) **Date of Access: March 2025**

3.2 Screening

During the screening process, the collection of potentially pertinent research items is reviewed for content that aligns with the predetermined research topic or questions. The screening phase often involves the application of content-related criteria, such as the selection of research items based on the machine learning-based classification of cervical cancer cells. All duplicate papers will be eliminated from the list of papers that were searched in this step. Based on the exclusion and inclusion criteria of this study, 47 papers were reviewed in the second stage of the screening process after 79 publications were excluded in the first (refer to Table 2). Since research articles and conference proceedings are the main source of useful recommendations, these criteria were applied before any other. Not included in the most current study are reviews, meta-synthesis, meta-analyses, books, book series, and book chapters. Moreover, the review was limited to English-language publications. It is imperative to bear in mind that the approach was limited to the year 2020-2025. Two publications in all were turned down due to duplication concerns.

Table 2
The selection criterion is searching

Criterion	Inclusion	Exclusion
Language	English	Non-English
Time line	2020 – 2025	< 2020
Literature type	Journal (Article), Conference	Book, Review
Publication Stage	Final	In Press
Subject	Social Sciences, Computer Science	Others

3.3 Eligibility

A collection of 45 papers was put together during the third stage, which is known as the eligibility evaluation. In order to verify that the papers matched the inclusion criteria and were pertinent to the research goals of the ongoing study, a thorough review of the titles and body of each article was carried out during this phase. Consequently, 12 data sets, papers, and articles were eliminated because they did not meet the eligibility requirements. These included being outside of the study's field, having a title that did not significantly connect to the goal of the investigation, having an abstract that had no bearing on the goal of the study, and lacking full text access supported by empirical evidence. Consequently, 33 articles are left for the next evaluation.

3.4 Data Abstraction and Analysis

An integrative analysis was used as one of the assessment strategies in this study to examine and synthesize a variety of research designs (quantitative methods). The goal of the competent study was to identify relevant topics and subtopics. The stage of data collection was the first step in the development of the theme.

Figure 2 shows how the authors meticulously analyzed a compilation of 33 publications for assertions or material relevant to the topics of the current study. The authors then evaluated the current significant studies related to e-learning during pandemic Covid 19. The methodology used in all studies, as well as the research results, are being investigated.

Next, the author collaborated with other co-authors to develop themes based on the evidence in this study's context. A log was kept throughout the data analysis process to record any analyses, viewpoints, riddles, or other thoughts relevant to the data interpretation.

Finally, the authors compared the results to see if there were any inconsistencies in the theme design process. It is worth noting that, if there are any disagreements between the concepts, the

authors discuss them amongst themselves. The produced themes were eventually tweaked to ensure consistency. The analysis selection was carried out by two experts to determine the validity of the problems. The expert review phase ensures the clarity, importance, and suitability of each subtheme by establishing the domain validity.

The research questions are as follow:
1. How does the integration of various technologies in project-based learning environments enhance the effectiveness of English for Specific Purposes (ESP) courses in terms of vocabulary acquisition, student motivation, and technical writing skills?
2. In what ways does project-based learning in ESP courses contribute to the development of soft skills and improving employability among students, particularly in business and engineering contexts?
3. How do innovative pedagogical approaches in project-based learning settings affect the learning outcomes of students in English for Specific Purposes (ESP) courses, specifically in terms of critical thinking, vocabulary acquisition, and writing.

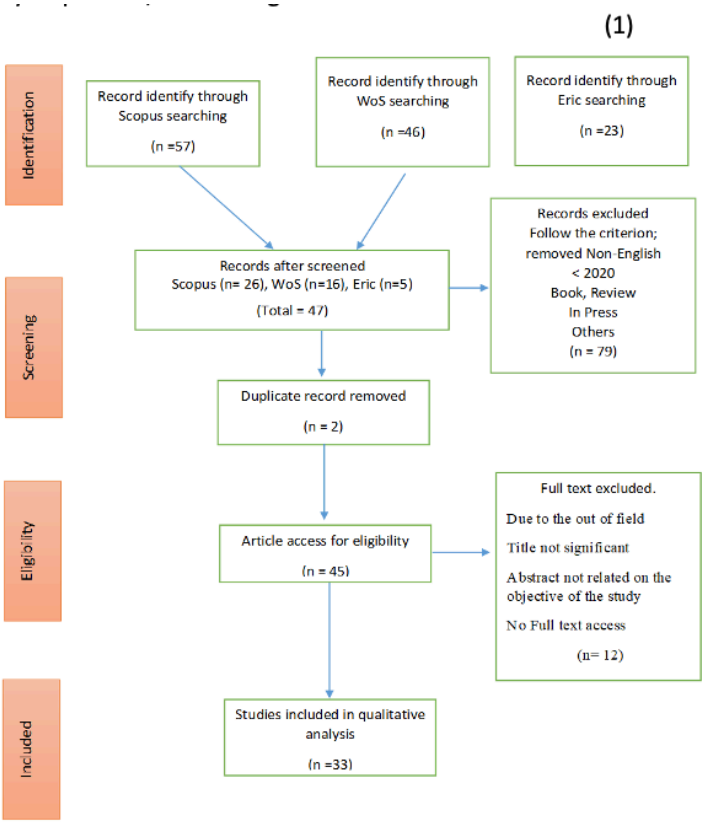

Fig. 1. Flow diagram of the proposed searching study

4. Results

4.1 Theme 1: Technological Integration in Project-Based Learning (PBL) for ESP

The integration of Project-Based Learning (PBL) within English for Specific Purposes (ESP) courses has gained substantial attention in recent years, particularly when enhanced by technological advancements. The study by Susanto ("Blended Learning Instruction in English for Specific Purposes: An Ethnographic Investigation of Project-Based Learning," 2022) delves into the ethnographic

investigation of PBL in a blended learning environment, focusing on Indonesian ESP contexts where teachers often come from non-ESP backgrounds. This research highlights the dual role of PBL as both a significant assessment source and a classroom activity, enhancing students' specific English skills, disciplinary knowledge, teamwork, and critical thinking. However, challenges such as the lack of disciplinary knowledge among ESP teachers and insufficient collaboration between language and disciplinary instructors were noted, emphasizing the need for more integrated teaching approaches.

The COVID-19 pandemic has accelerated the adoption of blended learning, significantly impacting engineering education. Anwar *et al*., [3] examined the application of blended learning-based projects in electronics engineering education, revealing that students effectively developed practical skills through project-based activities. The study underscores how small group projects, managed to adhere to pandemic restrictions, facilitated the production of innovative prototypes, such as an electrostatic precipitator-based exhaust fan. This approach not only bolstered students' technical capabilities but also demonstrated the practical application of theoretical knowledge, thus enhancing their readiness for post-pandemic professional challenges.

Incorporating virtual reality (VR) into PBL contexts has shown promising results in improving problem-solving performance, vocabulary acquisition, and motivation among ESP learners. Habibi *et al*. [15] explored how VR-assisted PBL contexts could benefit English language learners by providing immersive, interactive experiences. Their findings indicated that students engaging with VR technology exhibited superior vocabulary acquisition and increased motivation compared to their counterparts in traditional PBL settings. The study highlights VR's potential to create realistic and engaging learning environments, which can significantly enhance the effectiveness of PBL in ESP courses.

Digital storytelling as a participatory pedagogy has also emerged as an effective tool in ESP education. Morgado and Vesala-Varttala [25] proposed a pedagogical framework for digital storytelling, demonstrating its application in business and tourism management courses across Portugal and Finland. This approach facilitated purposeful learning and engagement, enabling students to develop language and communication skills alongside digital literacy and critical thinking. The framework's success in promoting active participation and meaningful learning experiences underscores its potential for broader application in ESP contexts.

The shift to online project-based learning (OPJBL) during the pandemic further highlighted the importance of teacher performance and technological resources in achieving effective learning outcomes. Habibi *et al*., [15] conducted a study involving Indonesian EFL undergraduates, revealing significant correlations between teacher performance, technological resources, and ESP learning outcomes. The use of structural equation modelling (SEM) provided a robust framework for assessing these relationships, confirming that both teacher performance and technological resources are critical in facilitating successful OPJBL experiences.

Another study that explored the integration of PBL with task-based language teaching and multimedia tools, such as YouTube, found that such a combination could significantly enhance student motivation. Rodriguez-Penarroja [31] highlighted that structuring PBL activities around communicative tasks and incorporating multimodal input through YouTube led to higher motivation levels and better academic performance among ESP students. This research supports the idea that merging different educational methodologies can create more engaging and effective learning environments in ESP courses.

The application of VR in experiential learning for vocabulary acquisition has also been investigated by Li *et al*., [16]. Their study on geography students demonstrated that VR-based learning approaches led to better incidental vocabulary acquisition and higher engagement levels compared to traditional video-based methods. The immersive nature of VR provided a more engaging

learning experience, promoting deeper cognitive, behavioural, and social engagement among students.

4.2 Theme 2: Enhancing Soft Skills and Employability through PBL in ESP

Project-Based Learning (PjBL) in English for Specific Purposes (ESP) has been widely recognized for its role in enhancing both soft skills and employability among students, particularly in business and engineering contexts. The shift from traditional lecture-based instruction to student-centered approaches has demonstrated significant improvements in students' professional preparedness. Research highlights that integrating real-world applications into ESP courses fosters self-management, communication skills, and teamwork, essential for navigating competitive job markets. El-Sakran [12] emphasizes that PBL enhances students' understanding of labour market demands, increasing awareness of personal strengths and weaknesses. Chan [6] further supports this by demonstrating how work-integrated learning (WIL) modules encourage students to identify their workplace communication needs, thereby refining their ability to function in professional environments. Similarly, Dmitrenko *et al*., [11] illustrate that project-based ESP learning strengthens critical thinking, emotional intelligence, and collaboration, ensuring that students are not only linguistically competent but also capable of addressing complex challenges in their respective industries.

The application of PjBL in ESP courses also promotes career-relevant skills that extend beyond linguistic proficiency. Chi [7] reports that business students participating in PjBL-based courses experience significant development in personal, professional, and social competencies, with social engagement emerging as a crucial factor for career success. The study suggests that motivation and discipline-based knowledge, which are often overlooked in conventional learning methods, play a key role in shaping students' employability. Furthermore, Saienko *et al*., [32] highlight that the effectiveness of PBL varies across different cultural and educational settings, with some students benefiting more from project-based learning while others find role-playing and interdisciplinary collaborations more effective in fostering creativity and adaptability. In engineering contexts, Fielden Burns and Rico Garcia [13] underscore the importance of intercultural and linguistic competencies in technical writing and communication, noting that PjBL can effectively integrate these elements to prepare students for global workplaces.

A key advantage of PjBL in ESP courses is its ability to simulate workplace scenarios, thereby bridging the gap between academic learning and professional requirements. Chan [6] identifies the interdisciplinary nature of WIL programs as an effective means of helping students develop confidence in professional discourse. The study suggests that allowing students to engage in real-world workplace simulations significantly enhances their communication skills, making them more adaptable to industry demands. Dmitrenko *et al*., [11] reinforce this argument by emphasizing that project-based learning cultivates soft skills essential for career progression, including independent research abilities, analytical thinking, and collaborative problem-solving. Similarly, El-Sakran [12] highlights that a student-centered learning environment fosters autonomy and responsibility, ensuring that students are prepared to take ownership of their professional development.

Despite its effectiveness, the implementation of PjBL in ESP still presents challenges that must be addressed to maximize its impact. Saienko *et al*., [32] observe that cultural differences influence students' learning preferences, necessitating adaptive teaching methodologies that cater to diverse learning styles. Additionally, Fielden Burns and Rico Garcia [13] suggest that while PjBL enhances intercultural awareness, students require further guidance in navigating linguistic and cultural nuances in global work environments. Chan [6] also notes that continuous innovation in WIL programs is necessary to ensure their relevance in rapidly evolving professional landscapes. While

PjBL has proven effective in developing employability skills, future research should explore long-term career outcomes to better understand how these skills translate into professional success.

In conclusion, the integration of PjBL in ESP courses significantly enhances students' soft skills and employability by providing authentic, hands-on learning experiences that mirror real-world challenges. Research by El-Sakran [12], Chan [6], and Dmitrenko *et al*., [11] underscores the importance of experiential learning in improving workplace readiness, while Chi [7] and Saienko *et al*., [32] highlight the role of cultural adaptability and motivation in shaping students' career trajectories. Fielden Burns and Rico Garcia [13] further illustrate the significance of global competencies in professional communication. As PjBL continues to evolve, further research is needed to refine its methodologies, ensure its adaptability across various educational and cultural settings, and assess its long-term impact on graduates' career development. By fostering essential workplace skills, PjBL remains a crucial pedagogical approach in preparing students for the complexities of modern professional environments.

4.3 Theme 3: Innovative Pedagogical Approaches and Their Impact on Learning Outcomes in ESP

The integration of innovative pedagogical approaches in English for Specific Purposes (ESP) has played a significant role in improving students' learning outcomes, particularly in the domains of critical thinking, technical writing, and vocabulary acquisition. Project-Based Learning (PBL) has been widely implemented as an effective methodology, with various studies demonstrating its impact on student engagement and skill development. Villalba [36] highlights the effectiveness of blogging within PjBL, which enhances students' writing skills and collaborative learning experiences in vocational training. The study suggests that blogging serves as an effective tool for improving students' written communication in both formal and blended learning environments. Similarly, Pollard and Olizko [28] investigates the role of art integration in ESP courses for engineering students, reporting improvements in conference-related communication skills and professional language proficiency. The study emphasizes the need for additional support in cooperative learning, time management, and writing skills to maximize the effectiveness of PjBL. Andelkovic, Mersnik, and Jovic [1] further reinforce the advantages of PjBL by demonstrating its effectiveness in a collaborative Wikipedia translation project, which improved students' content knowledge, technical skills, and teamwork abilities.

Incorporating innovative models into PjBL-based ESP courses fosters deeper cognitive engagement and enhances students' ability to process and apply knowledge. Hassan *et al*., [16] implement a synergy model, brain-based learning, and flipped classroom techniques to create an ESP-based learning environment, leading to significant improvements in students' critical thinking and writing skills. This approach encourages students to take ownership of their learning, promoting autonomy and accountability in academic tasks. Similarly, Olizko [26] explores the integration of environmental awareness in an English for the Media course, where students demonstrated enhanced scientific writing skills and a greater understanding of environmental issues. The study underscores the potential of PjBL in shaping students' perceptions of global challenges, further emphasizing the need for interdisciplinary approaches in ESP education. Meanwhile, Lytovchenko *et al.,* [23], examine the effects of online PjBL on vocabulary acquisition in ESP courses for engineering students, revealing that students who engaged in online PjBL showed significantly higher vocabulary retention compared to those taught through traditional methods.

PjBL has consistently been shown to outperform conventional teaching methods in ESP, with significant benefits in student motivation and academic performance. Tang *et al*., [34] compares traditional and problem-based learning approaches in college-level English instruction, finding that

students exposed to PBL demonstrate greater improvements in performance and more positive attitudes toward learning. This aligns with findings from Guslyakova *et al*., [14] who analyze the role of PjBL in ESL instruction, confirming its effectiveness in enhancing language proficiency and student motivation. The study provides recommendations for the widespread integration of PBL in ESL education while also suggesting further exploration into the long-term effects of this approach. Collectively, these studies illustrate the transformative potential of PjBL in ESP, particularly in enhancing students' technical writing, critical thinking, and interdisciplinary problem-solving skills.

Despite the clear advantages of PjBL, challenges remain in optimizing its implementation across diverse educational settings. While Villalba [36] and Olizko [26] demonstrate the value of incorporating digital tools and creative disciplines into PBL, they also emphasize the need for structured guidance in collaborative and time-management skills. Similarly, Andelkovic, Mersnik, and Jovic [1] call for improved teacher-student collaboration to refine organizational aspects of PBL. Hassan *et al.,* [16] and Kholil *et al.*, [17] suggest that integrating problem-solving-based learning with interdisciplinary topics can further enhance students' writing and critical thinking skills. Additionally, studies such as those by Lytovchenko *et al*., [23] and Tang *et al*., [34] advocate for continued exploration of online PBL, particularly in digital learning environments where students require greater flexibility and autonomy.

5. Conclusions

Issue 1: Technological Integration in Project-Based Learning (PjBL) for ESP

Project-Based Learning (PjBL) in English for Specific Purposes (ESP) has been shown to significantly enhance students' soft skills and employability, addressing a critical need in modern education. The shift from traditional lecture-based instruction to active, student-centered learning has facilitated the development of essential professional communication skills, collaborative work practices, effective self-management, and social responsibility. PjBL not only helps students align their skills with real-world job requirements but also fosters a deeper understanding of workplace communication needs. It emphasizes the importance of a student-centered approach, which enhances students' awareness of their strengths and weaknesses, preparing them for future careers. Work-integrated learning (WIL) modules play a crucial role in helping students proactively identify and address their workplace communication needs. Problem-based ESP learning equips prospective educators with critical soft skills such as emotional intelligence and problem-solving abilities. Moreover, PjBL supports personal, professional, and social development, motivating students and enhancing discipline-based knowledge. The collective findings underscore the necessity of shifting towards more student-centered, collaborative learning environments that not only improve employability but also foster creative thinking and intercultural competence. Consequently, educators and policymakers are encouraged to implement and optimize PjBL frameworks to better prepare students for the evolving demands of the job market, ensuring they possess the soft skills and professional competencies required for success.

Issue 2: Enhancing Soft Skills and Employability through PjBL in ESP

Enhancing soft skills and employability through Project-Based Learning (PjBL) in English for Specific Purposes (ESP) courses has shown significant benefits for students across various disciplines. Research highlights the critical role of soft skills, such as communication, teamwork, and critical thinking, in increasing graduates' competitiveness in the job market. Studies, such as those by El-

Sakran [12], Chan [6], Dmitrenko *et al*., [11], Chi [7], Saienko *et al*., [32] and Fielden Burns and Rico García [13], demonstrate that PjBL and other experiential learning approaches effectively bridge the gap between academic learning and real-world job requirements. For instance, PjBL in ESP courses empowers students to develop practical skills through authentic, context-based projects, enhancing their awareness of workplace communication needs and intercultural competencies. This method also encourages students to engage in self-directed learning, collaboration, and problem-solving, preparing them for future careers by improving their ability to handle complex tasks and adapt to diverse professional environments. Overall, the shift from traditional teacher-centered practices to student-centered, interactive learning environments is essential for fostering employability skills and ensuring students' success in their professional lives.

Issue 3: Innovative Pedagogical Approaches and Their Impact on Learning Outcomes in ESP

Innovative pedagogical approaches, such as project-based learning (PjBL) and problem-based learning (PBL), have shown significant positive impacts on learning outcomes in English for Specific Purposes (ESP) courses. Implementing these approaches in various contexts, such as blogging in a Business English course, integrating art in teaching future engineers, translating Wikipedia articles, and enhancing environmental awareness among journalism students, has led to improved language competencies, technical skills, and professional communication. For instance, students involved in blogging projects demonstrated enhanced written competence, while those engaging in art-integrated projects displayed increased confidence and proficiency in conference-related skills. Translation projects not only bolstered content knowledge but also fostered collaborative and problem-solving skills. Additionally, problem-based learning environments created opportunities for vocabulary acquisition, critical thinking, and independent learning, with students exhibiting higher academic success and satisfaction. These innovative methods highlight the effectiveness of integrating practical, real-world tasks into ESP curricula, promoting active engagement, and fostering essential 21st-century skills.

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