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Integrating Problem-Based Learning with English for Medical Purposes: A Strategy to Enhance Communication and Clinical Reasoning Skills

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Abstract

This article explores an innovative approach that combines Problem-Based Learning (PBL) with English for Medical Purposes (EMP) in undergraduate medical education. While PBL is widely recognized for enhancing clinical reasoning, communication, and self-directed learning, EMP supports the linguistic needs of non-native English-speaking medical students. By embedding clinical cases in English within PBL tutorials, students can simultaneously develop their language fluency, communication skills, and medical knowledge. This paper presents a rationale for integration, proposes a model framework, and outlines the benefits, potential challenges, and future recommendations for implementing this dual-purpose instructional strategy at a medical institution like University of Medicine and Pharmacy at Ho Chi Minh City (UMP).

To evaluate the feasibility and impact of this integrated approach, a survey was conducted among 268 second-year medical students who had participated in some EMP-PBL sessions. The results revealed overwhelmingly positive responses: students reported enhanced vocabulary retention, improved confidence in English communication, and greater engagement during clinical discussions. Many also noted that the integrated format better prepared them for future international or interdisciplinary collaboration. However, challenges such as cognitive overload and difficulty articulating complex ideas in English were also reported, highlighting the need for instructional scaffolding, bilingual support, and facilitator training. These findings underscore the potential of integrating EMP into PBL to improve both academic and linguistic outcomes and support the development of globally competent healthcare professionals in multilingual learning environments.

Keywords: Problem-Based Learning, English for Medical Purposes, medical education, communication skills, clinical reasoning.

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1. INTRODUCTION

Medical students today face increasing demands to acquire both clinical competence and strong communication skills in English. English is the global language of medicine, essential for accessing scientific literature, participating in international research, and engaging in professional collaboration. At the same time, Problem-Based Learning (PBL) has emerged as a leading method in medical education for fostering critical thinking, teamwork, and lifelong learning skills. Meanwhile, English for Medical Purposes (EMP), which provides students with the linguistic tools to function effectively in English-speaking academic and clinical environments, is often taught separately from clinical content. Typically, EMP instruction addresses the linguistic needs of medical students, particularly in non-native English-speaking contexts. This article introduces a forward-thinking strategy that integrates EMP into PBL, allowing students to develop their clinical knowledge and English proficiency in tandem.

2. LITERATURE REVIEW

2.1. Problem-based learning (PBL) in Medical Education

Problem-Based Learning (PBL) is a learner-centered teaching strategy that emphasizes deep engagement with case studies or subject matter. It enables educators to step back from traditional lecturing and instead facilitate group discussions, providing guidance and monitoring student progress. This method encourages students to take ownership of their learning by exploring topics independently and developing their own solutions to problems. PBL nurtures essential 21st-century skills - including critical thinking, problem-solving, creativity, and analytical ability - which are increasingly vital for personal and professional development. As these competencies are key to students' future success, it is important to foster habits of critical and reflective thinking.

Indeed, Problem-Based Learning (PBL) is an instructional method centered on students, which educators employ to enhance learners' critical and analytical thinking through collaborative exploration of real-world or open-ended issues (Ali, 2019). This method supports the development of key academic and professional skills, including critical thinking, problem-solving, analytical reasoning, and effective communication. Additionally, PBL provides opportunities for students to collaborate, research and evaluate relevant materials, tackle complex issues, and foster lifelong learning habits (Ali, 2019). Studies have demonstrated that PBL improves not only academic performance but also communication skills and self-directed learning capacity (Trullàs et al., 2022; Gwee, 2008).

2.2. The Role of English in Medical Education

English is the primary language of instruction and research in many medical schools worldwide. Non-native English speakers often struggle to keep up with English-language textbooks, articles, and lectures. English proficiency is particularly important for academic success, participation in international conferences, and accessing evidence-based resources. The integration of English in medical education, however, requires sensitivity to cultural and linguistic challenges (Gwee, 2008).

2.3. English for Medical Purposes (EMP)

EMP is designed to meet the specific linguistic demands of medical students. It typically focuses on vocabulary development, reading comprehension, communication skills, and writing in clinical and research contexts. However, traditional EMP instruction is often decontextualized from medical practice, limiting its impact. Yu and Seepho (2015) argue that PBL-based EMP materials, grounded in clinical contexts, can foster meaningful engagement and language use.

2.4. The Case for Integration

Integrating EMP into PBL addresses the limitations of traditional EMP by embedding language learning into meaningful, content-rich scenarios. This approach aligns with language acquisition theories that stress the importance of contextualized learning. When students are required to solve clinical problems in English, they naturally develop both medical knowledge and language skills. Moreover, the collaborative nature of PBL supports peer interaction and cooperative language practice (Lee & Kwan, 1997).

Number	Educational Feature	Traditional EMP	Integrated PBL-EMP
1	Context of Language Use	Decontextualized	Medical case-based
2	Student Engagement	Passive	Active, collaborative
3	Communication Practice	Simulated	Real-time, clinical scenarios
4	Focus on Problem Solving	Minimal	High
5	Language Skill Development	Isolated	Embedded in clinical tasks

***Table 1**: Pedagogical Rationale for PBL-EMP Integration*

A teacher should use the steps in the problem-solving process to choose, design, and implement the ideal PBL subject. These steps are: choosing the right content, figuring out the resources available, writing a problem statement, selecting a motivating activity or topic, developing a focus question, and figuring out evaluation strategies (Delisle, 1997).

Delisle (1997) also emphasized that the more engaged students are with a particular issue, the more committed they become to finding its solution and the more effort they are likely to invest. Therefore, selecting an appropriate topic and carefully crafting the problem are essential responsibilities for instructors when applying PBL effectively.

In addition, Duch et al. (2001) suggest that for PBL to be effectively implemented in the classroom, teachers should design problems with specific characteristics to support student engagement and learning. The problems should inspire students to explore concepts more deeply, offer guiding elements that help them make logical decisions, and align with core problem-solving processes. Additionally, the content should be meaningful and relatable, connecting to students' personal experiences or prior knowledge. For group-based learning, the problem must be sufficiently complex to promote collaboration among students. Finally, the problem should be introduced in stages to help learners identify key learning issues, conduct research, and uncover the central concepts needed for resolution.

3. METHODOLOGY FOR INTEGRATION

3.1. Curriculum Design

Clinical scenarios and PBL case studies are presented entirely in English. Materials are adapted to match students' language proficiency while preserving medical accuracy. Scenarios reflect real-world problems relevant to the course objectives.

3.2. Facilitator Training

Instructors receive training to support both clinical and language development. They are encouraged to guide discussions in English, correct language use sensitively, and model effective communication. Faculty readiness and cross-disciplinary collaboration are critical to this process.

3.3. Assessment Strategy

Students are evaluated on both clinical reasoning and English proficiency. Assessments may include presentations, written reflections, vocabulary quizzes, and participation in English-language discussions. Peer and self-assessment techniques may also foster reflective learning.

Adapted from Yu & Seepho (2015), Gwee (2008), and Trullàs et al. (2022), this EMP-PBL Integration Cycle outlines six key stages designed to integrate language and content learning in a problem-based curriculum.

EMP-PBL Integration Cycle	
1	Case Design/ Case Development
2	Language - Content Alignment
3	Facilitated Discussion
4	Collaborative Resolution
5	Feedback & Reflection
6	Language Consolidation

***Table 2**: EMP-PBL Integration Cycle*

1. Case Development

Carefully constructed clinical cases are created in English, ensuring relevance to both medical learning outcomes and language level. The cases should reflect real-world challenges and encourage student inquiry.

2. Language and Content Alignment

Key medical terminology and communication functions are embedded in the case. Language objectives are aligned with content goals to support integrated skill development.

3. Facilitated Discussion

Guided by a trained facilitator, students engage in structured group discussions to explore the case. The use of English is encouraged throughout to build both fluency and subject comprehension.

4. Collaborative Problem Solving

Students work collaboratively to analyze the case, identify learning issues, and propose evidence-based solutions. Peer interaction promotes both content mastery and communicative competence.

5. Feedback and Reflective Learning

Instructors provide targeted feedback on both language use and clinical reasoning. Students are encouraged to reflect on their performance to reinforce understanding and communication strategies.

6. Language Reinforcement and Consolidation

Vocabulary, functional phrases, and key concepts are revisited and practiced through follow-up tasks, such as case summaries, presentations, or role-play, to ensure language retention and transferability.

4. STUDENT SURVEY ON PBL-EMP INTEGRATION

The insights obtained from this survey provide essential guidance for designing, piloting, and refining the integration of Problem-Based Learning (PBL) with English for Medical Purposes (EMP) in medical education. They also support broader efforts to enhance student-centered learning and English language proficiency through innovative, contextualized instruction at UMP.

4.1. Survey Objective

The main objective of this survey was to explore the perceptions, challenges, and learning experiences of medical students participating in PBL sessions conducted in English. The findings aimed to inform the implementation and improvement of EMP-PBL integrated teaching strategies, with a focus on enhancing clinical communication, problem-solving, and language development in authentic medical contexts.

4.2. Survey Instrument Development

To investigate students' experiences with PBL-EMP integration, a structured questionnaire was developed. It consisted of 8 questions combining multiple-choice, Likert-scale, and open-ended formats. The survey covered several key themes, including students' perceived benefits of using English in PBL, difficulties encountered during discussions, preferences for language support strategies, and expectations regarding communication and academic outcomes. The questionnaire also assessed students' comfort level with English use in group settings and their perceived progress in clinical reasoning and medical vocabulary. Microsoft Forms was used to design and distribute the survey, enabling efficient digital access, anonymous participation, and real-time data collection.

4.3. Participants

The survey targeted second-year medical students enrolled in the integrated EMP-PBL pilot course offered by the Faculty of Medicine and the Department of Foreign Languages. A total of 268 medical students participated in the survey, representing the full pilot group for the semester. Participation was voluntary, and all responses

remained anonymous. Students were informed of the survey's purpose, and informed consent was implied through submission.

4.4. Survey Administration

The final version of the survey was distributed using a Microsoft Forms link shared through the university's Learning Management System (LMS) and official email communication channels. Students were given one week to complete the questionnaire at their convenience. All responses were automatically stored in the platform and exported to Microsoft Excel for analysis. Descriptive statistics (e.g., frequencies, percentages, and means) were used to identify key trends, while qualitative responses were coded for recurring themes to support interpretation.

4.5. Survey Results

The results of the pilot student survey offer important insights into students' perceptions, challenges, and support needs concerning the integration of Problem-Based Learning (PBL) with English for Medical Purposes (EMP).

The responses reveal a generally positive perception of the integrated PBL-EMP approach:

Number	Statements	% Agree/Strongly Agree
1	English integration made learning more engaging	74.2
2	Clinical case discussions in English improved medical terminology understanding	93.3
3	PBL helped practice communication skills in realistic contexts	88.0
4	Students felt confident expressing thoughts in English	86.6
5	Facilitators supported both language and clinical learning effectively	89.2
6	Using English helped retain knowledge better	98.5
7	PBL-EMP was more motivating than traditional language classes	97.0
8	Integration prepares students for international practice	95.5

Table 3: *Quantitative Results (Likert-Scale Statements)*

The survey results reveal several noteworthy patterns. The highest level of agreement (98.5%) was observed for the statement that using English in clinical scenarios helped enhance knowledge retention, indicating strong support for contextual language learning. Similarly, students rated their motivation and preparedness for future international practice very highly, reflecting the perceived relevance and applicability of the integrated PBL-EMP approach. Only a small proportion of respondents expressed disagreement with any of the statements, suggesting a generally high level of satisfaction with the model.

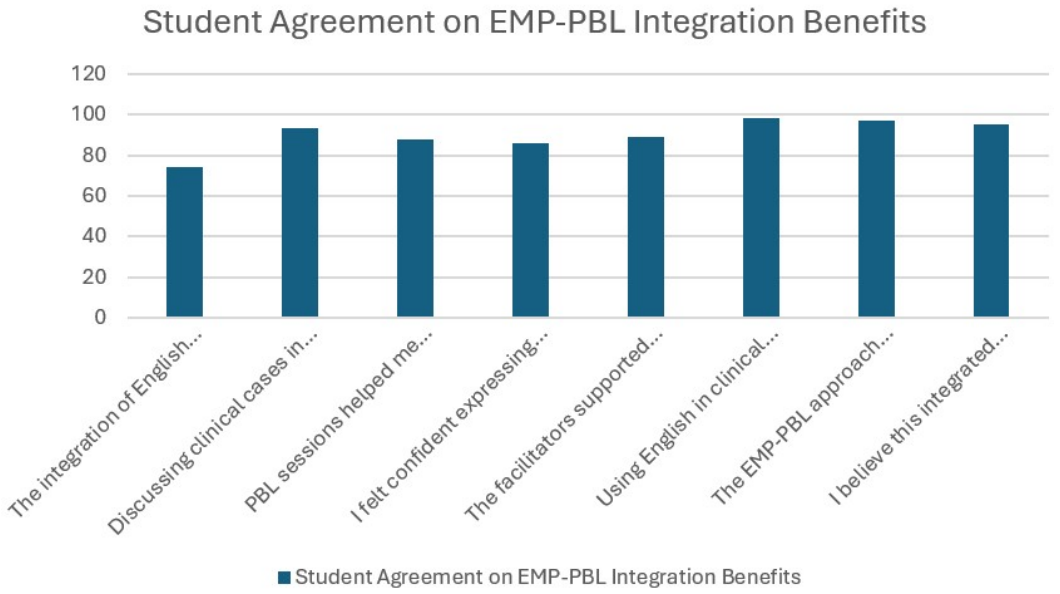

***Figure 1**: Student Agreement on EMP-PBL Integration Benefits*

In addition to the quantitative data, the survey included open-ended questions designed to capture students' personal reflections on their experiences with the integration of Problem-Based Learning and English for Medical Purposes. These qualitative responses provided valuable insights into the perceived benefits of the approach, the challenges students encountered, and their suggestions for improving future implementation. Analyzing these comments revealed recurring themes that further contextualize and enrich the survey's overall findings.

Students' open-ended responses revealed several key themes regarding the perceived benefits, challenges, and recommendations related to the integration of English into PBL sessions. Many participants emphasized that using English in realistic, clinical contexts significantly enhanced their vocabulary acquisition and boosted their confidence in speaking. They found that engaging with authentic case scenarios was more impactful and memorable than traditional textbook-based approaches. Furthermore, a number of students reported that participating in English-medium discussions helped them feel more prepared for future international work environments and professional communication demands.

Despite these benefits, students also identified several challenges. A recurring difficulty involved articulating complex ideas due to limited vocabulary and language structures. Some expressed anxiety about making grammatical errors in front of their peers, which affected their willingness to contribute during discussions. Others found it challenging to keep up with the pace of conversations, especially when encountering unfamiliar accents or varied pronunciation.

To enhance the learning experience, students proposed several improvements. A commonly suggested strategy was to provide key vocabulary lists prior to each session, especially to support those with lower English proficiency. Several students recommended implementing a phased approach to English use - allowing for some native language support in initial sessions before transitioning fully to English. Additionally, learners expressed interest in having more opportunities to practice through structured activities such as case summaries, model dialogues, and guided speaking tasks focused on clinical communication.

4.6. Survey Findings

The findings from the student survey highlight a generally positive reception of the integrated Problem-Based Learning and English for Medical Purposes (PBL-EMP) model. Quantitative data revealed high levels of agreement regarding the benefits of using English in clinical scenarios, with 98.5% of students indicating that it enhanced their ability to retain knowledge. Similarly, strong agreement was recorded for motivation (97.0%) and

perceived preparedness for international practice (95.5%). These figures suggest that students not only found the integrated approach engaging but also relevant to their future professional goals. Qualitative responses supported these trends, with many students noting improvements in vocabulary, confidence, and the practical relevance of using English in medical discussions. However, challenges such as language anxiety, difficulty expressing complex ideas, and pronunciation barriers were commonly reported. Students recommended introducing pre-session vocabulary support, allowing limited use of native language in early stages, and incorporating more structured speaking practice. Overall, the survey underscores the effectiveness of the PBL-EMP integration while pointing to specific areas for pedagogical enhancement.

In conclusion, the survey findings support the effectiveness of integrating PBL with EMP in enhancing language competence and clinical reasoning among medical students. The results suggest high levels of engagement, motivation, and perceived relevance. However, to maximize impact, structured language support and scaffolding strategies are essential - particularly for learners with lower English proficiency. These findings will inform future adjustments to curriculum design and facilitator training in the EMP-PBL pilot program.

5. DISCUSSION

The integration of Problem-Based Learning (PBL) with English for Medical Purposes (EMP) represents a transformative pedagogical strategy in medical education - one that simultaneously addresses students' clinical reasoning and professional language development. Findings from this study, supported by survey responses and existing literature, highlight the broad benefits of this dual-focused approach and its alignment with the goals of 21st-century medical education.

Survey results revealed that students experienced improved knowledge retention and vocabulary acquisition when engaging with clinical content in English. This finding is consistent with Yu and Seepho (2015), who advocate for contextual language use in medical settings as a driver of deeper and more meaningful learning. Students in the pilot study expressed that real-world clinical scenarios provided a more memorable and engaging way to build medical English proficiency. Notably, over 98% agreed that using English in PBL sessions enhanced their ability to remember medical terms, confirming Lim's (2023) argument that contextualized problem-solving increases student investment and learning outcomes.

Beyond language gains, the integration of English into PBL discussions also promoted collaborative learning, critical thinking, and peer engagement. These cognitive and interpersonal benefits align with the findings of Trullàs et al. (2022), who demonstrated that PBL improves not only academic achievement but also social interaction and communication skills essential to medical professionalism. As students navigated open-ended problems in English, they were required to articulate their reasoning, negotiate meaning with peers, and develop arguments—skills vital to effective clinical practice in multilingual environments.

Motivation emerged as another key outcome of the integrated model. Students indicated that using English in PBL sessions gave them a sense of relevance and ownership over their learning. They viewed the sessions as directly applicable to their future careers, especially in international or community-based medical contexts. Forbes et al. (2023) similarly highlighted how PBL prepares students for socially responsive medical roles by cultivating interpersonal, reflective, and communicative competencies.

However, while the benefits are clear, challenges were also identified. Students reported difficulty expressing complex ideas in English due to limited vocabulary and grammar confidence. Anxiety about speaking in front of peers and coping with unfamiliar pronunciation further hindered participation. These findings echo concerns raised by Lim (2023), who emphasized that successful PBL implementation requires careful scaffolding and language-sensitive facilitation. To overcome these barriers, students recommended the use of bilingual vocabulary support, model clinical expressions, and a phased approach to full English immersion.

Institutional factors also play a critical role in successful implementation. Qin et al. (2016) found that PBL positively impacts students' perceptions of their learning environment by enhancing learner autonomy,

engagement, and academic atmosphere. Integrating EMP into this structure further personalizes the educational experience. However, resistance from faculty, time constraints, and inconsistent application of the PBL methodology—what Lim (2023) refers to as "implementation drift"—remain ongoing concerns. Faculty training, curriculum alignment, and iterative feedback are essential to address these limitations.

Lastly, it is crucial to align assessment methods with the goals of EMP-PBL integration. Traditional examinations focusing on memorization may fail to capture the growth in communication, reasoning, and collaborative abilities that this model fosters. Scholars such as Forbes et al. (2023) and Lim (2023) advocate for scenario-based assessments and performance tasks that more accurately reflect real-world competencies.

In conclusion, this study reinforces a growing consensus in the literature that integrating EMP within a PBL framework enhances medical education holistically. It equips students with not only the clinical knowledge but also the linguistic fluency, critical thinking, and professional readiness needed in a globalized healthcare landscape. For lasting impact, institutions must invest in faculty development, provide structured linguistic scaffolding, and adopt flexible assessment strategies that support this integrative model.

6. CHALLENGES AND SOLUTIONS

While the integration of Problem-Based Learning (PBL) and English for Medical Purposes (EMP) presents numerous benefits, its implementation is not without challenges. Addressing these issues requires thoughtful design, institutional support, and sensitivity to learners' linguistic and cultural contexts.

6.1. Managing Cognitive Load

Students may experience cognitive overload when simultaneously engaging in complex clinical reasoning and second-language communication. This dual demand can lead to reduced confidence and participation. To mitigate this, scaffolding strategies such as pre-teaching essential vocabulary, offering bilingual glossaries, and using formative language feedback are recommended (Yu & Seepho, 2015). These supports help reduce extraneous cognitive effort and enable learners to focus on both content and communication more effectively.

6.2. Faculty Preparedness and Training

Instructors may be unaccustomed to facilitating sessions that combine language and clinical objectives. Without adequate preparation, this can result in inconsistent application or reliance on traditional teacher-centered methods. Faculty development workshops, co-teaching with language specialists, and reflective teaching practice have been shown to improve facilitation quality. Lee and Kwan (1997) emphasize that tutor training is essential for managing cross-linguistic dynamics and helping instructors guide discussions in a way that promotes both language development and content learning.

6.3. Cultural and Linguistic Factors

In many Asian educational settings, students may exhibit reluctance to participate in open discussions due to hierarchical norms or fear of losing face. Gwee (2008) notes that these socio-cultural factors must be addressed through inclusive, non-threatening learning environments. Encouraging small-group collaboration, allowing strategic code-switching when appropriate, and gradually shifting to English-only interaction can help students become more comfortable expressing themselves.

Number	Challenge	Mitigation Strategy
1	Dual cognitive load	Pre-teaching vocabulary, bilingual glossaries, and formative language feedback
2	Faculty unfamiliarity	Faculty workshops, co-facilitation with EMP instructors, and reflective teaching
3	Cultural communication norms	Supportive group environments, code-switching allowances, and peer facilitation

Table 4. *Anticipated Challenges and Mitigation Strategies*

(Adapted from Yu & Seepho (2015); Lee & Kwan (1997); Gwee (2008))

7. CONCLUSION

The integration of Problem-Based Learning and English for Medical Purposes is a promising strategy for medical education in multilingual settings. By addressing both linguistic and clinical competencies, this model prepares students for academic success and global medical practice. Institutions should consider adopting and adapting this framework to modernize their medical English curriculum. Cross-cultural sensitivity, faculty collaboration, and iterative feedback are essential for sustainability.

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