Explore Blended Learning On English For Medical Purpose (EMP) Acquisition Among Vocational Medical Students

Liu Shanshan, Kai Yan Wong, and Ye Xin

Abstract **– This study investigates the implementation of blended learning in English for Medical Purposes (EMP) instruction at Shangqiu Medical College, focusing on vocational medical students' learning experiences, perceptions, and challenges. Grounded in the evolution of blended learning and its growing significance in higher and medical education, the research situates EMP within a rapidly digitalizing pedagogical landscape. A qualitative single-case study design was adopted to explore how blended learning is experienced in a real instructional context, particularly within College English Teaching programs integrating both online and face-to-face components (Yin, 2018; Garrison & Vaughan, 2008).The study was conducted at Shangqiu Medical College, an institution actively integrating digital platforms and blended pedagogies into medical education. Participants included 12–15 second-year EMP students selected through purposive sampling. Data were collected through semi-structured interviews aligned with the Community of Inquiry framework, focusing on teaching presence, social presence, and cognitive presence. Additional attention was given to learners' perceived challenges, engagement patterns, and suggestions for improvement (Creswell & Poth, 2016).The methodological approach emphasizes credibility and trustworthiness through triangulation, member checking, pilot testing, and thematic analysis supported by NVivo software. The study is designed to generate in-depth, context-rich insights into how blended learning supports or constrains EMP acquisition in vocational medical education settings. By focusing on a underexplored institutional context in China, this research contributes to the understanding of how blended learning functions in English for Medical Purposes education. It also provides a foundation for improving instructional design, teacher training, and learner support systems in technologically enhanced language learning environments (Boelens et al., 2017; Rasheed et al., 2020).**

Keywords **– Blended Learning; English for Medical Purposes (EMP); Vocational Medical Students; Community of Inquiry (CoI); Qualitative Case Study**

I. INTRODUCTION

Blended learning, which integrates face-to-face instruction with online learning activities, has emerged as an important pedagogical approach in contemporary education. This model combines the flexibility of digital technologies with the interactive advantages of traditional classroom teaching, allowing students to access learning materials anytime while still benefiting from in-person guidance and communication (Garrison & Kanuka, 2004; Means et al., 2013). In language education, blended learning supports both autonomous learning and collaborative interaction, making it particularly suitable for specialized language instruction. Through online videos, quizzes, and interactive exercises, learners can repeatedly review complex content, while classroom sessions provide opportunities for discussion, role-play, and immediate feedback. Such integration promotes deeper engagement and supports diverse learning needs (Boelens et al., 2017). The significance of blended learning has increased considerably in recent years, especially following the COVID-19 pandemic, which accelerated the adoption of digital tools in higher education. Institutions worldwide shifted toward hybrid and blended models to ensure continuity of learning and enhance instructional flexibility (Hodges et al., 2020). This transformation is particularly relevant in vocational and medical education, where students must develop both theoretical knowledge and practical skills. Blended learning enables the integration of multimedia resources, virtual simulations, and face-to-face clinical practice, thereby supporting the development of professional competencies (Rowe et al., 2012; He et al., 2024). For vocational medical students, this approach can enhance exposure to authentic clinical scenarios while allowing repeated practice of specialized language skills. English for Medical Purposes (EMP) has become increasingly important in medical education as English serves as the lingua franca of international healthcare. Proficiency in medical English enables students to read academic literature, communicate with patients and colleagues, and participate in global professional collaboration (Chan et al., 2022; Liang et al., 2025). Unlike general English instruction, EMP requires mastery of technical vocabulary, discipline-specific discourse, and context-appropriate communication skills. Students must be able to explain diagnoses, write medical reports, and interact effectively in clinical environments (Pavel, 2021; Nguyen, 2025). These requirements create challenges for traditional classroom teaching, which often lacks authentic materials and opportunities for realistic communication practice. Blended learning offers a promising solution by combining digital resources with face-to-face activities that simulate real clinical interactions.

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II. PROBLEM STATEMENT

Blended learning has been widely promoted in higher education as an instructional approach that integrates online learning with face-to-face teaching to enhance flexibility, learner engagement, and instructional effectiveness (Garrison & Kanuka, 2004; Graham, 2013). In medical and health-related education, blended learning is considered particularly valuable for supporting both theoretical learning and practical skill development (Rowe et al., 2012). However, the effectiveness of blended learning is highly context-dependent and varies across disciplines, institutions, and learner groups (Halverson et al., 2017).

In China, vocational medical colleges have increasingly adopted blended learning in English for Medical Purposes (EMP) courses to meet the growing demand for medical professionals with adequate English communication skills. Despite this expansion, there is limited empirical understanding of how vocational medical students perceive blended EMP learning, particularly in relation to the integration of online and face-to-face components. Without examining students' perceptions, it remains unclear whether blended EMP instruction effectively supports their learning needs and engagement.

Furthermore, while blended learning has been implemented in EMP courses, how it is actually enacted in vocational medical classrooms remains underexplored. Existing studies often focus on technological adoption rather than pedagogical practices, leaving gaps in understanding how instructional design, facilitation, and feedback are integrated across online and face-to-face environments. This lack of clarity makes it difficult to evaluate whether blended learning is being implemented in a pedagogically coherent and effective manner in EMP instruction.

In addition, vocational medical students encounter specific challenges when learning EMP through blended learning, including difficulties in self-regulating learning, limited exposure to authentic medical communication contexts, and constraints in applying language knowledge to academic and clinical settings. Given these gaps, there is a clear need to explore vocational medical students' perceptions of blended EMP learning, examine how blended learning is implemented in EMP courses, and identify the challenges that affect effective EMP acquisition in vocational medical contexts. Addressing these issues provides the rationale for the research objectives of this study and contributes to a deeper understanding of how blended learning can be optimized to support EMP acquisition among vocational medical students.

are afraid to use English in a real context (Lamb, 2007).

III. LITERATURE REVIEW

Blended learning has become a prominent instructional approach in higher education, particularly in specialized language education such as English for Medical Purposes (EMP). This literature review examines the evolution of blended learning, its application in higher education and language learning, the role of blended learning in EMP instruction, and the perceptions, implementation, and challenges associated with this approach.

Evolution of Blended Learning

Blended learning emerged in the early 2000s as institutions began integrating digital tools into traditional classroom teaching. During this period, blended learning was primarily used to supplement face-to-face instruction rather than transform pedagogy. Learning Management Systems (LMS) such as Blackboard, Web CT, and Moodle enabled instructors to upload materials, manage assignments, and create discussion forums, but interaction remained limited and mostly asynchronous (Garrison & Kanuka, 2004; Means et al., 2013). Although these early platforms lacked interactivity, they established the foundation for technology-enhanced learning by standardizing course delivery and expanding access to digital resources (Conole et al., 2008; Graham, 2013).

Between 2011 and 2019, blended learning evolved toward more student-centreed approaches. The flipped classroom model became widely adopted, allowing students to study content online before class and engage in collaborative activities during face-to-face sessions (Bishop & Verleger, 2013; O'Flaherty & Phillips, 2015). This shift reflected constructivist learning theories, which emphasize active participation, collaboration, and knowledge construction through interaction (Vygotsky, 1978; Garrison & Vaughan, 2008). Technological advancements such as synchronous communication tools, interactive quizzes, and real-time polling further enhanced engagement and feedback in blended environments (Boelens et al., 2017; Hrastinski, 2008). During this stage, blended learning gained popularity in STEM fields, while its application in language education, particularly EMP, remained limited.

The COVID-19 pandemic accelerated the adoption of blended learning worldwide. Institutions rapidly transitioned to online and hybrid models, leading to increased investment in digital infrastructure and teacher training (Hodges et al., 2020; Dhawan, 2020). In language education, new technologies such as virtual simulations, AI-assisted speaking tools, and interactive case-based modules were introduced to support authentic communication practice (Derakhshan et al., 2024; Khazaie & Ebadi, 2025). These innovations demonstrated that blended learning could enhance both language proficiency and professional communication skills, particularly in specialized contexts such as medical education.

Blended Learning in Higher Education

Recent studies highlight the effectiveness of blended learning in higher education. Boelens et al. (2017) identified flexibility, interaction, feedback, and learner autonomy as key factors influencing successful implementation. Similarly, Broadbent and Poon (2017) found that blended learning promotes self-regulation and independent learning but may also lead to procrastination if students lack time-management skills. Rasheed et al. (2020) further emphasized that technological readiness, instructor competence, and assessment design significantly influence blended learning outcomes.

Research also indicates that blended learning enhances student engagement. Henrie et al. (2015) reported that synchronous tools such as video conferencing and interactive polling increased participation and satisfaction. AlJarrah et al. (2018) similarly found that collaborative tasks, including group projects and peer feedback, improved motivation and interaction in blended courses. These findings suggest that well-designed blended environments can support active learning and improve academic performance.

Blended Learning in Language Education and EMP

Blended learning has increasingly been applied in English for Specific Purposes (ESP) and EMP instruction. Sun et al. (2018) found that blended learning improved

vocabulary retention and reading comprehension among ESP learners by combining online exercises with classroom discussion. Nguyen (2025) emphasized that EMP instruction requires authentic clinical scenarios, such as patient interviews and case discussions, which can be effectively supported through blended learning.

Emerging technologies further enhance blended EMP instruction. Khazaie and Ebadi (2025) demonstrated that augmented reality (AR) improved reading comprehension and motivation in EMP courses. Similarly, Derakhshan et al. (2024) found that virtual reality (VR) simulations helped students practice medical communication in realistic environments, improving fluency and confidence. These studies highlight the potential of immersive technologies to support contextualized language learning in medical education.

Research also emphasizes the importance of learner strategies. Noprival and Alfian (2024) reported that EMP students used cognitive, metacognitive, and social strategies in blended environments. The multimodal nature of blended learning allowed students to engage with content through videos, simulations, and discussions, promoting autonomy and deeper learning. However, the study also noted that students may feel overwhelmed without clear guidance and structured support.

The Growing Importance of EMP

English for Medical Purposes has become increasingly important in global healthcare education. EMP focuses on specialized vocabulary, professional communication, and discipline-specific discourse required in clinical settings (Pavel, 2021; Cao, 2022). In non-English-speaking countries such as China, the demand for EMP has increased due to internationalization and the need for access to global medical literature (Lu, 2020; Xu, 2025). Despite this demand, EMP instruction often relies on traditional grammar-based teaching methods, which fail to develop communicative competence (Yang, 2020; Guan, 2023).

Blended learning offers a solution by integrating online resources with face-to-face communication practice. Liu et al. (2023) found that blended EMP courses improved students' confidence, fluency, and accuracy in clinical communication. Online components such as vocabulary exercises and video simulations were complemented by classroom role-plays and discussions, creating a balanced learning experience. These findings support the use of blended learning as an effective approach for EMP instruction.

Perceptions, Implementation, and Challenges

Students generally report positive perceptions of blended learning, particularly its flexibility and accessibility. Broadbent and Poon (2017) noted that students value the ability to review materials at their own pace. AlJarrah et al. (2018) found that relevance to professional goals increased motivation and engagement. However, learner perceptions are influenced by digital literacy, instructor presence, and course design (Boelens et al., 2017; Rasheed et al., 2020).

Despite its advantages, implementing blended learning in EMP presents challenges. Technological barriers such as limited internet access and inadequate devices remain significant, especially in rural institutions (Czerniewicz et al., 2020). Pedagogical challenges include limited teacher training and lack of authentic EMP materials (Zhang, 2022; Nguyen, 2025). Learner-related challenges such as low self-regulation, language anxiety, and limited motivation also affect outcomes (Broadbent & Poon, 2017).

Assessment in blended EMP environments remains another concern. Traditional written tests may not adequately evaluate communicative competence. Performance-based assessments such as role-plays, presentations, and portfolios are recommended to measure real-world language use (Arani, 2022; Nate, 2024). Furthermore, cultural factors, particularly teacher-centreed learning traditions, may hinder student autonomy in blended environments (Wang & Han, 2018).

IV. PROPOSED METHOD

This study adopts a qualitative case study methodology to explore the impact of blended learning on English for Medical Purposes (EMP) acquisition among vocational medical students in College English teaching at Shangqiu Medical College. The qualitative approach is appropriate because the research seeks to understand students' experiences, perceptions, and challenges in a real educational setting. Qualitative research allows for in-depth exploration of participants' perspectives and provides rich descriptions of complex educational phenomena that cannot be captured through numerical data alone (Creswell & Poth, 2018). The study focuses on how blended learning influences EMP acquisition, including teaching practices, student interaction, and cognitive engagement within the specific context of a vocational medical college.

Research Design

This research employs a qualitative single case study design. Case study methodology is widely used to investigate contemporary phenomena within real-life contexts, particularly when the boundaries between the phenomenon and context are not clearly defined (Yin, 2018). In this study, the bounded case is Shangqiu Medical College, where blended learning has been implemented in College English teaching. The case study design enables a detailed examination of how blended learning is experienced by vocational medical students studying EMP.

The study adopts a single instrumental case study approach focusing on second-year vocational medical students enrolled in blended EMP courses. A single-case design is appropriate because the institution represents a unique context where blended learning has been systematically integrated into College English instruction. Single-case studies allow researchers to develop deep contextual understanding and generate insights about specific educational practices (Stake, 1995; Yin, 2018). The research aims to explore students' perceptions, implementation experiences, and challenges associated with blended learning.

Qualitative research is selected because it supports exploration of participants' lived experiences. Unlike quantitative methods that emphasize measurement,

qualitative research emphasizes meaning-making and interpretation (Merriam & Tisdell, 2016). This approach is particularly suitable for examining blended learning in EMP, as students' perceptions of teaching presence, social interaction, and cognitive engagement require detailed narrative data. The flexibility of qualitative case studies also allows the researcher to identify emerging themes during data collection and analysis (Stake, 1995).

Research Location

The study is conducted at Shangqiu Medical College in Henan Province, China. The institution is a higher vocational medical college that offers programs in clinical medicine, nursing, medical imaging, and other healthcare disciplines. The college has implemented blended learning in College English teaching to improve students' language proficiency and professional communication skills. English plays a critical role in medical education because it allows students to access international medical literature and communicate in professional contexts.

The blended learning approach at Shangqiu Medical College integrates face-to-face instruction with online learning components. The model includes classroom lectures, interactive group activities, online videos, quizzes, discussion forums, and digital assignments. Face-to-face sessions emphasize role-playing, communication practice, and collaborative learning, while online components provide flexible access to materials and self-paced learning opportunities (Garrison & Vaughan, 2008; Graham, 2013). Continuous assessment is implemented through both online and offline activities, providing timely feedback and monitoring student progress (Dziuban et al., 2018).

The adoption of blended learning at Shangqiu Medical College aims to address limitations of traditional instruction, including limited classroom time, insufficient practice opportunities, and lack of individualized learning support. The blended model allows students to review content repeatedly and participate in interactive activities, thereby enhancing EMP acquisition and communication competence.

Population and Sampling

The population of this study consists of second-year vocational medical students enrolled in English for Medical Purposes courses at Shangqiu Medical College. These students have completed at least one semester of blended learning instruction. At this stage, students possess basic English knowledge and are able to reflect on their learning experiences. The total population includes approximately 60–80 students.

Given the qualitative case study design, purposive sampling is employed to select participants. Purposive sampling is commonly used in qualitative research to identify participants who have direct experience with the phenomenon under investigation (Creswell & Poth, 2018). This method ensures that participants can provide rich and relevant data regarding blended learning experiences in EMP courses.

The sampling criteria include: (1) second-year vocational medical students, (2) enrollment in EMP courses, (3) completion of at least one semester of blended learning instruction, (4) participation in both online and face-to-face learning activities, and (5) representation of different English proficiency levels. These criteria ensure variation in experiences and perspectives.

The sample size for the study is 12–15 students. Qualitative research typically uses small samples to allow in-depth exploration of participants' experiences. The selected sample size is based on the principle of data saturation, which occurs when no new themes emerge from additional data collection (Guest, Bunce, & Johnson, 2006). Previous qualitative studies suggest that 12–15 participants are sufficient for achieving saturation in homogeneous groups (Creswell, 2014).

Data Collection

Semi-structured interviews are used as the primary data collection method. Semi-structured interviews allow flexibility while ensuring that key topics are addressed consistently across participants (Yin, 2018). This method is appropriate for exploring students' perceptions of blended learning and EMP acquisition.

Interviews are conducted during Weeks 6–8 of the semester. Each interview lasts approximately 30–45 minutes and takes place in a quiet meeting room on campus. With participants' consent, interviews are audio-recorded for accuracy. The interview protocol includes open-ended questions addressing perceptions of blended learning, teaching presence, social interaction, cognitive engagement, challenges, and improvement strategies.

The interview protocol is structured into several sections. The first section collects demographic information such as program, learning experience, and digital learning familiarity. The second section explores overall perceptions of blended learning. The third section focuses on teaching presence, including instructional design and teacher support. The fourth section examines social presence, including peer interaction and communication. The fifth section investigates cognitive presence, including understanding of medical English and application of knowledge. The final section explores challenges and improvement strategies.

Pilot testing is conducted with one or two participants before the main data collection. The pilot study helps refine interview questions and ensure clarity. Participants in the pilot study are excluded from the main sample to avoid bias (van Teijlingen & Hundley, 2001).

Data Analysis

Thematic analysis is used to analyze qualitative data. Thematic analysis is suitable for identifying patterns and themes in interview data (Braun & Clarke, 2014). The analysis follows six steps: familiarization, coding, theme development, review, definition, and reporting.

Interviews are transcribed verbatim within 48 hours. Transcripts are read multiple times to gain familiarity. Initial codes are generated using both inductive and deductive approaches. Deductive coding is guided by the Community of Inquiry framework, including teaching presence, social presence, and cognitive presence. Inductive coding allows new themes to emerge from participants' responses.

NVivo software is used to organize and analyze data. NVivo supports systematic coding, categorization, and visualization of qualitative data (Bazeley & Jackson, 2013). Themes are refined by comparing coded data with the full dataset. Final themes represent students' experiences of blended learning in EMP.

V. CONCLUSION

This conceptual qualitative study set out to explore the impact of blended learning on English for Medical Purposes (EMP) acquisition among vocational medical students at Shangqiu Medical College. Drawing on a single instrumental case study design, the research examined how students experience blended learning in College English courses, with particular attention to teaching presence, social presence, and cognitive presence within the Community of Inquiry (CoI) framework. Through an integration of literature and methodological inquiry, this study contributes to a deeper understanding of how blended learning operates in EMP contexts and how it can be optimized for vocational medical education.

Summary of Key Findings from the Literature and Methodological Exploration

The literature reviewed in this study demonstrates that blended learning has evolved significantly over the past two decades, shifting from a supplementary instructional tool to a transformative pedagogical model in higher education (Garrison & Kanuka, 2004; Graham, 2013). Early applications focused primarily on content delivery through Learning Management Systems, while more recent developments emphasize student-centreed learning, interactivity, and immersive digital experiences (Boelens et al., 2017; Dziuban et al., 2018). The COVID-19 pandemic further accelerated the adoption of blended learning, making it a dominant instructional model in many educational systems worldwide (Hodges et al., 2020).

In the context of language education, particularly English for Specific Purposes (ESP) and EMP, blended learning has demonstrated considerable potential for enhancing vocabulary acquisition, reading comprehension, and communicative competence (Sun et al., 2018; Nguyen, 2025). The integration of digital tools such as video simulations, augmented reality (AR), and virtual reality (VR) has further strengthened the authenticity and contextualization of language learning experiences (Derakhshan et al., 2024; Khazaie & Ebadi, 2025). These technologies enable learners to engage in simulated clinical environments, thereby bridging the gap between theoretical knowledge and real-world medical communication.

However, the literature also highlights persistent challenges. These include inadequate digital infrastructure, limited teacher training, uneven student digital literacy, and insufficiently developed assessment strategies (Rasheed et al., 2020; Zhang, 2022). In EMP contexts specifically, a key issue is the lack of discipline-specific pedagogical design, as many programs still rely on general English teaching models that do not reflect authentic medical communication needs (Pavel, 2021; Guan, 2023). Additionally, learner-related challenges such as low self-regulation, language anxiety, and motivational difficulties continue to influence student engagement in blended learning environments (Broadbent & Poon, 2017).

Interpretation within the Community of Inquiry Framework

This study is conceptually grounded in the Community of Inquiry (CoI) framework, which emphasizes the interaction of teaching presence, social presence, and cognitive presence in effective online and blended learning environments (Garrison, Anderson, & Archer, 2000). Within this framework, blended learning in EMP can be understood as a multidimensional learning process that extends beyond content delivery to include interaction, collaboration, and knowledge construction.

Teaching presence plays a central role in structuring blended EMP learning experiences. Effective instructional design, clear learning objectives, and timely feedback are essential for guiding students through both online and face-to-face components of learning (Garrison & Vaughan, 2008). However, the literature suggests that many instructors in vocational medical colleges lack adequate training in designing integrated blended learning experiences, which can lead to fragmented instruction and reduced learning effectiveness (Liu et al., 2023; Zhang, 2022).

Social presence is equally important in EMP learning, as it influences students' willingness to communicate and engage in collaborative tasks. Blended learning environments that incorporate interactive discussions, peer collaboration, and role-play activities can enhance students' confidence in using medical English in authentic contexts (Boelens et al., 2017). Nevertheless, cultural and pedagogical traditions in some contexts, particularly teacher-centreed learning environments, may limit student interaction and participation (Wang & Han, 2018).

Cognitive presence, which refers to learners' ability to construct and apply knowledge, is particularly relevant in EMP education. The integration of online simulations, case-based learning, and clinical role-play activities supports the development of critical thinking and applied language skills (Nguyen, 2025). However, without appropriate scaffolding and instructional support, students may struggle to connect theoretical knowledge with practical application.

Theoretical and Practical Contributions

This study contributes to the theoretical understanding of blended learning in EMP by integrating insights from the CoI framework with the specific demands of vocational medical education. It highlights that effective EMP learning requires not only technological integration but also pedagogical alignment between online and offline components. The findings emphasize that blended learning should not be viewed simply as a delivery mode, but as a structured pedagogical ecosystem that supports language acquisition through interaction, reflection, and practice.

From a practical perspective, the study offers important implications for curriculum design in vocational medical colleges. First, EMP instruction should incorporate authentic clinical scenarios that allow students to practice real-world

communication. Second, instructors should receive targeted training in blended learning design, particularly in integrating digital tools with classroom instruction. Third, institutions should invest in improving digital infrastructure and ensuring equitable access to learning technologies. Finally, assessment practices should move beyond traditional written examinations to include performance-based evaluations such as role-plays, simulations, and portfolios.

Challenges and Limitations

Despite its potential, blended learning in EMP is not without limitations. Technological disparities remain a major challenge, particularly in under-resourced institutions where access to stable internet and digital devices is limited (Czerniewicz et al., 2020). Additionally, both students and instructors may lack the digital literacy required to fully engage with blended learning environments. Cultural factors, including traditional teacher-centreed pedagogies, may also hinder the adoption of student-centreed learning approaches (Zhang, 2022).

From a methodological perspective, this study is limited by its reliance on a single-case design, which focuses exclusively on Shangqiu Medical College. While this allows for in-depth contextual analysis, it limits the generalizability of findings to other educational settings. Furthermore, as a qualitative study, the findings are based on subjective interpretations of participant experiences rather than measurable outcomes.

Future Research Directions

Future research should expand the scope of investigation to include multiple institutions and comparative studies across different regions. Quantitative or mixed-methods approaches could also be employed to measure the effectiveness of blended learning in improving EMP proficiency. Additionally, further studies should explore the role of emerging technologies such as artificial intelligence, virtual reality, and adaptive learning systems in enhancing EMP instruction.

Longitudinal studies would also be valuable in examining how sustained exposure to blended learning influences long-term language development and professional communication skills among medical students. Moreover, research should continue to explore teacher training models that support effective blended learning implementation in vocational medical education.

Final Remarks

In conclusion, blended learning represents a promising pedagogical approach for enhancing English for Medical Purposes acquisition among vocational medical students. Its ability to integrate online flexibility with face-to-face interaction makes it particularly suitable for developing both linguistic competence and professional communication skills. However, its effectiveness depends on careful instructional design, adequate institutional support, and alignment with learner needs. By addressing existing challenges and strengthening pedagogical practices, blended learning can play a transformative role in preparing future healthcare professionals for the linguistic demands of global medical practice.

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