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USING BLENDED LEARNING TOOLS TO IMPROVE PROFESSIONAL VOCABULARY OF MEDICAL STUDENTS

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Abstract: the rapid digitalization of higher education has significantly transformed instructional approaches in medical education. One of the major challenges faced by medical students is the acquisition of professional medical vocabulary, which is essential for academic success and effective clinical communication. This study explores the effectiveness of blended learning tools in developing professional vocabulary competence among medical students. A quasi-experimental research design was employed, involving an experimental group exposed to blended learning and a control group receiving traditional instruction. Data were collected through pre- and post-tests, questionnaires, and classroom observations. The findings demonstrate that blended learning significantly enhances students' vocabulary acquisition, retention, and contextual usage of medical terminology. The results suggest that integrating digital learning tools with face-to-face instruction provides a flexible, interactive, and learner-centered environment that supports professional language development in medical education.

Keywords: blended learning, medical education, professional vocabulary, medical terminology, higher education

Introduction

Professional vocabulary plays a crucial role in medical education, as it enables students to comprehend academic texts, communicate effectively in clinical settings, and engage in professional discourse. Medical terminology is complex, specialized, and often challenging for students, particularly when learned through traditional lecture-based methods.

In recent years, blended learning has emerged as an innovative pedagogical approach that combines online digital tools with conventional face-to-face instruction. This model offers opportunities for interactive learning, self-paced study, and increased exposure to professional language. Despite the growing adoption of blended learning in medical education, empirical research focusing specifically on its impact on professional medical vocabulary acquisition remains limited. Therefore, this study aims to examine the effectiveness of blended learning tools in developing professional vocabulary competence among medical students.

Literature Review

Blended Learning in Higher and Medical Education**:** blended learning is defined as the systematic integration of online learning activities with traditional classroom instruction. Previous studies have highlighted its positive impact on learner autonomy, motivation, and academic achievement. In medical education, blended learning has been widely used to support anatomy, clinical skills, and theoretical knowledge acquisition.

Vocabulary Acquisition in Professional Education: vocabulary learning is a fundamental

component of language competence, particularly in professional and academic contexts. Research suggests that vocabulary acquisition is most effective when learners are exposed to repeated, contextualized, and multimodal input. Digital tools such as learning management systems, mobile applications, and online quizzes facilitate spaced repetition and interactive learning.

Medical Vocabulary Learning Challenges: medical vocabulary consists of Latin and Greek-based terms that require both memorization and contextual understanding. Traditional teaching methods often fail to provide sufficient practice opportunities, resulting in low retention and limited communicative competence. Blended learning environments can address these challenges by offering authentic materials, multimedia resources, and collaborative learning tasks.

Methodology

Research Design: this study adopted a quasi-experimental research design with pre-test and post-test measures to evaluate the effectiveness of blended learning tools in professional vocabulary acquisition.

Participants: the participants were undergraduate medical students enrolled in a medical university. They were divided into two groups: an experimental group (blended learning) and a control group (traditional instruction). Participation was voluntary, and ethical research standards were maintained.

Instructional Intervention:

The blended learning intervention included:

- Online vocabulary modules delivered via a learning management system;
- Interactive quizzes, videos, and digital flashcards;
- Face-to-face sessions focused on case studies, discussions, and practical application of medical terms.

The control group received traditional lecture-based instruction without online supplementation.

Data Collection Tools:

Data were collected using:

- Professional medical vocabulary tests (pre-test and post-test);
- Student perception questionnaires;
- Classroom observation checklists.

Data Analysis: quantitative data were analyzed using statistical methods, including paired sample t-tests and independent sample t-tests. Qualitative data from questionnaires were analyzed thematically.

Results

The analysis revealed a statistically significant improvement in vocabulary test scores in the experimental group compared to the control group. Students exposed to blended learning

demonstrated higher retention rates and better contextual usage of medical terminology. Questionnaire results indicated positive attitudes toward blended learning, with students highlighting flexibility, accessibility, and increased engagement as key benefits.

Discussion

The findings confirm that blended learning tools have a positive impact on professional vocabulary acquisition among medical students. The integration of online and face-to-face instruction provided multiple exposures to medical terminology, supporting deeper processing and long-term retention. These results are consistent with previous studies emphasizing the effectiveness of blended learning in professional and academic language development.

Conclusion

This study concludes that blended learning is an effective instructional approach for developing professional medical vocabulary. By combining digital tools with traditional instruction, educators can create a learner-centered environment that enhances vocabulary competence and prepares students for academic and clinical communication. Future research should investigate long-term outcomes and the integration of blended learning with clinical simulations.

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