A PEDAGOGICAL ANALYSIS OF MOBILE-ASSISTED LANGUAGE LEARNING FOR ENHANCING RECEPTIVE COMPETENCE IN MEDICAL ENGLISH

Jabborova Madinabonu

ESP teacher

Tashkent State Medical University

The first Department of Uzbek and Foreign Languages

E-mail: madinameliboyeva422@gmail.com

Abstract. This study investigates the effectiveness of Mobile-Assisted Language Learning (MALL) in developing receptive skills, particularly reading and listening, in Medical English among university students. In the context of globalization, English plays a key role in accessing medical knowledge and professional communication. A mixed-method approach was used, including pre- and post-tests, questionnaires, and observations. The results show that mobile applications significantly improve students' receptive competence by providing interactive and flexible learning environments. In addition, MALL enhances learner motivation and autonomy. The study concludes that integrating mobile technologies into ESP-based medical education improves language proficiency and prepares students for real clinical communication.

Key words: *Mobile-Assisted Language Learning, Medical English, Receptive Skills, ESP, Reading, Listening, Mobile Applications*

Аннотация. Данное исследование рассматривает эффективность мобильного обучения языку (MALL) в развитии рецептивных навыков — чтения и аудирования — у студентов медицинских вузов. В условиях глобализации английский язык играет важную роль в доступе к медицинским знаниям и профессиональной коммуникации. В работе применён смешанный метод, включающий тестирование, анкетирование и наблюдение. Результаты показывают, что мобильные приложения значительно повышают уровень рецептивной компетенции студентов. Кроме того, MALL способствует развитию мотивации и самостоятельности обучающихся. В заключение отмечается, что интеграция мобильных технологий в медицинское образование улучшает языковую подготовку студентов.

Ключевые слова: *мобильное обучение, медицинский английский, рецептивные навыки, ESP, чтение, аудирование, мобильные приложения*

Annotatsiya. Ushbu tadqiqot mobil yordamli til o‘rganish (MALL) texnologiyalarining tibbiyot talabalari orasida reseptiv ko‘nikmalarni, ya’ni o‘qish va tinglab tushunishni rivojlantirishdagi samaradorligini o‘rganadi. Globalizatsiya sharoitida ingliz tili tibbiy bilimlarni o‘zlashtirish va professional muloqotda muhim ahamiyat kasb etadi. Tadqiqotda aralash metodologiya qo‘llanilib, testlar, so‘rovnomalar va kuzatuvlar orqali ma’lumotlar yig‘ildi. Natijalar mobil ilovalar o‘quvchilarning reseptiv kompetensiyasini sezilarli darajada oshirishini ko‘rsatdi. Bundan tashqari, MALL o‘quvchilarning motivatsiyasi va mustaqilligini rivojlantiradi. Xulosa qilib aytganda, mobil texnologiyalarni tibbiy ta’limga joriy etish til ko‘nikmalarini yaxshilaydi.

Kalit so‘zlar: *mobil yordamli o‘qitish, tibbiy ingliz tili, reseptiv ko‘nikmalar, ESP, o‘qish, tinglash, mobil ilovalar*

1. INTRODUCTION

In the era of globalization, English has become the dominant language of science, technology, and medicine (Crystal, 2003). Most medical research articles, clinical guidelines, and professional communication are conducted in English (Hyland, 2006). Therefore, medical students must develop strong language skills, particularly in understanding written and spoken medical content. In Uzbekistan, the demand for healthcare professionals who can communicate

in English is steadily increasing due to international collaboration and access to global knowledge (Dearden, 2014). However, many students struggle with receptive skills because of complex medical terminology and limited exposure to authentic materials. Recent advancements in educational technology have introduced Mobile-Assisted Language Learning (MALL) as an effective solution. Mobile applications provide flexible, accessible, and interactive learning environments, enabling students to practice language skills anytime and anywhere (Kukulska-Hulme & Shield, 2008).

2. LITERATURE REVIEW

English for Specific Purposes (ESP) is a learner-centered approach that focuses on the specific linguistic and communicative needs of students within particular professional domains (Hutchinson & Waters, 1987). In the context of medical education, ESP plays a crucial role in equipping students with the ability to comprehend specialized terminology, interpret clinical documentation, and engage in professional communication (Dudley-Evans & St John, 1998). Unlike General English, ESP emphasizes functional language use in real-life contexts, which is essential for medical students who must operate in complex and high-stakes environments. Receptive skills, particularly reading and listening, are fundamental components of language proficiency. According to Cummins (1979), cognitive academic language proficiency (CALP) enables learners to process complex academic texts and lectures, which is critical in medical education. Reading skills allow students to access scientific literature, clinical guidelines, and research articles, while listening skills are essential for understanding lectures, clinical instructions, and patient communication. These skills are interconnected and contribute significantly to academic success and professional competence. In recent years, Mobile-Assisted Language Learning (MALL) has emerged as an innovative approach to language education. MALL utilizes mobile devices such as smartphones and tablets to facilitate language learning in flexible and interactive ways (Kukulska-Hulme & Shield, 2008). One of the key advantages of MALL is its accessibility, allowing learners to engage with educational content anytime and anywhere. Additionally, mobile applications often incorporate multimedia elements, including audio, video, and interactive exercises, which enhance comprehension and retention.

3. METHODOLOGY

This study employs a mixed-method research design, combining both quantitative and qualitative approaches to provide a comprehensive evaluation of the effectiveness of Mobile-Assisted Language Learning in enhancing receptive skills. The use of mixed methods allows for a more nuanced understanding of both measurable outcomes and student experiences. The study was conducted with medical students enrolled in a university in Uzbekistan. A total of 60 participants were selected and divided into two groups: an experimental group and a control group. The experimental group used mobile applications designed for Medical English learning, while the control group followed traditional classroom-based instruction. The participants were selected based on similar proficiency levels to ensure comparability. Multiple data collection tools were used to ensure reliability and validity: **Pre-test and Post-test:** These tests measured students’ reading and listening comprehension before and after the intervention. **Questionnaires:** Structured questionnaires were used to gather students’ perceptions of mobile learning, including motivation, engagement, and usability. **Classroom Observation:** Observations were conducted to analyze student participation, interaction, and engagement during learning activities. The study was conducted over a period of eight weeks. The procedure included the following stages:

1. Administration of a pre-test to assess baseline receptive skills
2. Implementation of mobile-assisted learning activities for the experimental group
3. Traditional instruction for the control group
4. Administration of a post-test

5. Collection of questionnaire responses and observational data

Quantitative data from tests were analyzed using statistical methods to identify improvements in performance. Qualitative data from questionnaires and observations were analyzed using thematic analysis to identify patterns in student attitudes and experiences. Ethical standards were strictly followed throughout the study. Participation was voluntary, and informed consent was obtained from all participants. Confidentiality and anonymity were maintained, and data were used solely for research purposes.

4. RESULTS AND DISCUSSION

The findings of the study indicate that Mobile-Assisted Language Learning has a significant positive impact on the development of receptive skills in Medical English. The experimental group demonstrated a notable improvement in both reading and listening comprehension compared to the control group. Statistical analysis of pre- and post-test results showed a measurable increase in performance, supporting the effectiveness of mobile learning tools. One of the key factors contributing to this improvement is the use of multimedia input in mobile applications. Audio recordings, videos, and interactive exercises provided students with exposure to authentic language use, which enhanced their ability to process complex medical information. These findings are consistent with previous research highlighting the benefits of MALL in language acquisition (Li, 2024; Alemi, 2020). Furthermore, students in the experimental group reported higher levels of motivation and engagement. The flexibility of mobile learning allowed them to practice at their own pace and revisit materials as needed. This autonomy is a crucial factor in successful language learning, as it encourages independent study and continuous improvement. However, the study also identified certain challenges. Some students experienced technical difficulties, such as limited internet access or unfamiliarity with mobile applications. Additionally, the absence of immediate teacher support in some cases reduced the effectiveness of learning. These findings suggest that MALL should be integrated with traditional teaching methods rather than used as a standalone approach.

5. CONCLUSION

In conclusion, this study confirms that Mobile-Assisted Language Learning is an effective and innovative approach to developing receptive skills in Medical English. By providing flexible, interactive, and learner-centered environments, mobile applications significantly enhance students' ability to understand written and spoken medical content. The integration of MALL into ESP courses offers numerous benefits, including increased motivation, improved autonomy, and greater exposure to authentic materials. These factors contribute to the development of both linguistic competence and professional communication skills. However, the successful implementation of mobile learning requires careful planning and support. Educators should combine digital tools with traditional teaching methods to ensure a balanced and effective learning experience. Training students in the use of mobile applications and providing technical support are also essential. Future research should explore the long-term effects of MALL and its impact on other language skills, such as speaking and writing.

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