Impact of Artificial Intelligence-Based Mobile Applications on the Development of Second Language Oral Proficiency: A Study Based on BAMS Students Learning English as a Second Language

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Abstract

Gampaha Wickramarachchi University of Indigenous Medicine offers the Bachelor of Ayurveda Medicine and Surgery (BAMS) degree programme, in which English oral proficiency is essential for academic presentations, research defense, and clinical communication. A preliminary pilot study indicated that more than 40% of BAMS undergraduates lacked the communicative confidence and fluency required for academic and professional contexts despite possessing knowledge of English grammar. This study investigated the potential of ChatGPT, an Artificial Intelligence (AI)-driven mobile application, as a conversational learning tool for bridging the gap between theoretical language knowledge and pragmatic communicative use of English. It also explored the potential of AI-supported practice to promote imaginative learning through simulated, authentic, and context-sensitive communication. The study employed a mixed-methods approach using a one-group pre-test–post-test pre-experimental design. The participants were 80 BAMS undergraduates with B1-level speaking proficiency. Over a two-month intervention, participants engaged in ten demonstration and practice sessions using ChatGPT as a conversational partner for selected topics and academic presentation tasks, with immediate AI-generated feedback. Data were collected through pre- and post-tests based on IELTS speaking materials and a Likert-scale perception questionnaire. Quantitative data were analysed using a paired-samples *t*-test, while qualitative responses were coded and thematically analysed to identify recurring patterns in learners' perceptions and experiences.The paired-samples *t*-test revealed a statistically significant increase in oral proficiency scores following the intervention. Mean post-test scores (M = 6.7, SD = 0.48) were higher than pre-test scores (M = 5.3, SD = 0.68), with $t(79) = 14.32$, $p < .01$. Notable gains were observed in fluency and pronunciation. Qualitative findings indicated positive learner perceptions, with 86% of participants agreeing that AI-supported practice created a low-anxiety environment that facilitated fluency and vocabulary development. The findings suggest that ChatGPT-based practice has potential as a personalized supplementary resource for developing ESL oral proficiency among BAMS undergraduates. Its pragmatic value supports authentic academic and professional communication, while imaginative learning enables engagement with simulated clinical, academic, and everyday situations. However, without a control or comparison group, improvements cannot be attributed solely to ChatGPT. The findings provide context-specific evidence and underscore the need for controlled research into AI-assisted pragmatic and imaginative English learning.

Keywords: *Artificial Intelligence, ChatGPT, English as a Second Language, Imaginative Learning, Oral Proficiency*