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THE USE OF AN AI-POWERED SPEAKING TOOL (SKY) IN HIGHER EDUCATION: A MIXED-METHODS STUDY OF LEARNER ENGAGEMENT AND SELF-EFFICACY [ABSTRACT]

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ABSTRACT

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| Aim/Purpose | This mixed-methods study explores the relationships between the use of an AI-based application for second language learning in higher education and students' Self-Efficacy, Fear of AI Challenges, Self-Image, and engagement-related indicators. |
| Background | Despite the growing presence of AI in education, its integration into second language instruction in academic settings is still limited. This study is unique in developing a dedicated AI tool and examining its connection to key learner measures using both quantitative and qualitative methods. |
| Methodology | 580 students completed the pre-course questionnaire and 647 completed the post-course questionnaire. All were enrolled in CEFR-aligned English courses (Pre-Basic 1 to Advanced). As part of the coursework, students used SKY, an AI-powered conversation app via WhatsApp, designed to support speaking—the most difficult skill to teach in second language instruction. Students interacted with SKY three times a week for 15 minutes per session. Quantitative analysis used paired T-tests and regression models; qualitative findings were drawn from open-ended responses. |
| Contribution | The study introduces SKY as a new AI-based tool and provides data on how its use relates to learners' confidence, emotions, and engagement. |
| Findings | Significant increases were found in all Self-Efficacy measures ($p < .05$). Fear of AI Challenges decreased, particularly in the “Intimidating” and “Unpleasant Feeling” categories, while “Uplifting Challenge” scores rose slightly. |

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The Use of an AI-Powered Speaking Tool

Some Self-Image indicators improved. Higher Self-Efficacy was linked to lower fear and greater engagement (Participation, Inter-action, Wordy Talk). Qualitative responses confirmed these trends, with students describing SKY as easy, motivating, and flexible.

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| Recommendations for Practitioners | Integrate AI tools like SKY regularly to encourage speaking practice in low-pressure, accessible formats. |
| Recommendations for Researchers | Study how specific AI design elements—such as feedback tone and personalization—affect learning experiences. |
| Impact on Society | AI tools like SKY can promote accessible, inclusive speaking practice and reduce anxiety in academic language learning. |
| Future Research | Future studies could examine how different types of AI feedback (supportive vs. corrective) influence Self-Efficacy and willingness to speak. |
| Keywords | AI in language learning, second language instruction, higher education, self-efficacy, student engagement |

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