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IMMEDIATE EFFECTS OF AN AI-BASED SPEAKING PLATFORM (SPEECHACE) ON THAI EFL STUDENTS' SPEAKING PERFORMANCE

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ABSTRACT

Abstract—This study examined the immediate effects of an AI-based speaking platform, Speechace, on English speaking performance among Thai EFL university students. A quasi-experimental one-group pretest–posttest design was employed with 60 undergraduate English major students at a public university in Thailand. Participants completed a speaking task via the Speechace website before and immediately after receiving automated AI-generated feedback focusing primarily on pronunciation and fluency. Speaking scores generated by the system were analyzed using descriptive statistics and paired-sample t-tests. In addition, a questionnaire was administered to explore students' perceptions of the platform in terms of usability, perceived impact, and satisfaction.

The findings indicated a statistically significant increase in students' post-test speaking scores compared to their pre-test performance, suggesting immediate performance gains following AI-assisted feedback. Questionnaire results revealed positive student perceptions toward Speechace, particularly regarding its usefulness for speaking practice and ease of use. While this study does not claim long-term improvement in overall speaking proficiency, the results highlight the potential of AI-supported platforms to facilitate short-term speaking performance adjustment and learner engagement in EFL classroom contexts. The study contributes classroom-based evidence from a Southeast Asian EFL setting and suggests that AI-based speaking tools can serve as effective supplementary resources for speaking practice rather than as standalone assessment instruments.

Keywords—Artificial intelligence, EFL speaking, Speechace

INTRODUCTION

English speaking ability is widely regarded as an essential skill for university students in non-English-speaking contexts, particularly where English is used for academic communication, professional interaction, and international collaboration. Despite continuous exposure to English

instruction, many Thai EFL learners continue to experience difficulties in speaking confidently and accurately, especially in terms of pronunciation and fluency. These challenges are often associated with limited opportunities for individualized practice, fear of making mistakes, and insufficient feedback in large classroom settings.

Recent developments in educational technology have introduced AI-based platforms designed to support language learning through automated speech analysis and immediate feedback. Such platforms allow learners to practice speaking independently while receiving system-generated feedback on specific aspects of speech production. In EFL contexts, where instructional time and personalized feedback are often constrained, AI-supported speaking tools may offer practical support for short-term performance improvement and learner engagement.

Speechace is an AI-based speaking platform that analyzes learners' speech and provides feedback primarily on pronunciation and fluency, with additional attention to stress and intonation. Previous research has reported positive learner perceptions and potential benefits of AI-assisted speaking tools; however, classroom-based evidence focusing on immediate performance outcomes remains limited, particularly in Southeast Asian EFL contexts. Previous research in higher education contexts has demonstrated that technology-assisted language learning can effectively support the development of students' language achievement, particularly when instructional design emphasizes guided practice and feedback during the learning process [1].

Therefore, this study aims to investigate the immediate effects of using the Speechace platform on Thai EFL students' speaking performance through a controlled pretest-posttest design. In addition, it explores students' perceptions of the platform as a supplementary speaking practice tool. By focusing on short-term performance changes rather than long-term proficiency development, this study seeks to provide realistic and context-appropriate evidence regarding the pedagogical role of AI-based speaking platforms in EFL classrooms.

OBJECTIVES OF THE RESEARCH

1. To examine immediate changes in Thai EFL students' English speaking performance before and after using the Speechace platform.
2. To investigate students' perceptions of the usability and perceived impact of Speechace as a tool for English speaking practice.

RESEARCH METHODOLOGY

Research Design

A quasi-experimental one-group pretest-posttest design was employed to examine immediate changes in students' English speaking performance following the use of an AI-based speaking platform. The design was selected to capture short-term performance differences before and immediately after exposure to AI-generated feedback.

Participants

The participants were 60 undergraduate students majoring in English at the Faculty of Humanities and Social Sciences, Suan Sunandha Rajabhat University, Thailand. Systematic sampling was used to select students who had no prior experience using the Speechace platform. All participants completed the research procedures.

Instruments

Two instruments were used. First, an English speaking performance task administered through the Speechace website served as both the pretest and posttest. Speaking scores were generated by the system based primarily on pronunciation and fluency, with additional consideration of stress and intonation. The maximum possible score was 36 points. Second, a questionnaire was developed to examine students' perceptions of the platform in terms of usability, perceived impact on speaking practice, and satisfaction. Content validity of the questionnaire items was evaluated by three experts using the Index of Item-Objective Congruence (IOC). Responses were collected using a five-point Likert scale.

Procedure

The study was conducted in four stages. First, participants completed the pretest speaking task on the Speechace platform to establish baseline performance. Second, participants received automated AI-generated feedback focusing on pronunciation accuracy and fluency. Brief guidance on interpreting the feedback was provided by the researcher without additional instructional intervention. Third, immediately after the feedback session, participants completed the same speaking task as the posttest. Finally, participants responded to the perception questionnaire regarding their experience using the platform.

Data Analysis

Descriptive statistics were used to summarize speaking performance scores and questionnaire responses. A paired-sample t-test was conducted to compare pretest and posttest speaking scores. Statistical significance was set at the 0.05 level.

RESULTS

4.1 Changes in Speaking Performance

As shown in Table 1, students' posttest speaking scores were significantly higher than their pretest scores, indicating immediate performance gains following AI-generated feedback. The paired-sample t-test revealed a statistically significant difference between pretest and posttest speaking scores. The mean pretest score was 22.59 (SD = 1.68), while the mean posttest score increased to 24.10 (SD = 1.18). The results indicated that posttest scores were significantly higher than pretest scores, $t(59) = 6.75$, $p < .05$, suggesting immediate performance gains following AI-generated feedback.

Table 1 Comparison of Pretest and Posttest Speaking Scores

Test	N	Mean	S.D.	<i>t</i>	<i>p</i>
Pretest	60	22.59	1.68	6.75	< .05
Posttest	60	24.10	1.18		

Note. Maximum score = 36.

4.2 Students' Perceptions of the Speechace Platform

Table 2 presents a summary of students' perceptions of the Speechace platform, showing high levels of perceived usability, impact on speaking practice, and overall satisfaction. Overall, students reported positive perceptions of the Speechace platform. Participants indicated that the system was easy to use and that the feedback provided was clear and helpful. Regarding perceived impact, students reported that the platform supported speaking practice, particularly in pronunciation and fluency. Satisfaction-related responses suggested that students viewed Speechace as a useful and worthwhile supplementary tool for English speaking practice.

Table 2 Summary of Students' Perceptions of the Speechace Platform

Dimension	Mean	SD	Interpretation
Usability	4.21	0.70	High
Impact	4.40	0.44	High
Satisfaction	4.19	0.67	High

CONCLUSION AND FUTURE WORK

This study investigated the immediate effects of using an AI-based speaking platform, Speechace, on English speaking performance among Thai EFL university students. The findings demonstrated statistically significant immediate performance gains following AI-generated feedback, particularly in areas related to pronunciation and fluency. In addition, students expressed positive perceptions of the platform's usability and perceived impact on speaking practice. Artificial intelligence (AI)-powered English speaking platforms are effective in developing the speaking skills of English as a Foreign Language (EFL) learners, improving fluency, speech coherence, and willingness to communicate (WTC) better than traditional speaking practice. For example, using the Andy English Chatbot and AI apps integrated with social networks promotes interactive speaking practice and significantly enhances speaking skills [5]. Furthermore, AI platforms can help reduce speaking anxiety and boost learners' confidence, especially in online environments that reduce social pressure [6].

Several limitations should be acknowledged. The study employed a single-group design without a control group, and the posttest was administered immediately after the feedback session using the same speaking task. As a result, the observed gains reflect short-term performance adjustment rather than long-term speaking proficiency development. Future research should consider longitudinal designs, delayed posttests, and comparative instructional approaches to examine sustained effects on speaking development. However, using AI to support real-time speech may increase the workload and stress on users, so appropriate design is needed to maximize benefits [7].

Beyond research implications, the findings suggest practical pedagogical applications in phonetics-related courses such as English Sound System. Given that the observed gains represent immediate performance adjustment, AI-based platforms like Speechace may be most appropriately integrated as formative practice tools rather than formal assessment instruments. When used as exercises rather than tests, such platforms can support pronunciation and fluency practice by providing immediate feedback while reducing learner anxiety associated with graded evaluation.

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