

A pilot study of exploring the use of an EFL speaking application called SBuddy

Kamla Al Amri

kamlas@squ.edu.om

Sultan Qaboos University

Muna Aullad Thani

Sultan Qaboos University

Research Article

Keywords: Motivation, design & development, MUSIC Model, & speaking proficiency

Posted Date: July 31st, 2026

DOI: <https://doi.org/10.21203/rs.3.rs-10283961/v1>

License:   This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Additional Declarations: No competing interests reported.

Abstract

Guided by design and development research (DDR) Type 1, this research project aims to design and develop a generative AI (GenAI) tool in the form of a mobile phone application designed to address a persistent challenge faced by English as a foreign language (EFL) learners. These learners encounter limited opportunities to practice spoken English at their convenience, contributing to lowering their motivation. It is hoped that the proposed GenAI-powered app serves as a conversational partner, enabling learners to enhance their speaking skills through regular, unrestricted interaction. The app is designed by operationalizing the ADDIE model, providing a systematic approach to analysis, design, development, implementation, and evaluation. Further, using Google AI Studio (Live Voice) platform, the app is theoretically designed based on the MUSIC Model of Motivation, incorporating its principles to foster learner engagement. By aligning the app features with motivational constructs such as empowerment, usefulness, success, interest, and caring, the tool aspires to support learners in improving their oral proficiency while concurrently boosting their motivation and confidence. In addition, the app allows the users to choose from varying levels of difficulty, offering a personalized and flexible language learning experience. Findings showed that the SBuddy application demonstrated notably high scores across three key dimensions: motivation, perceived usefulness, and design aesthetics. Additionally, participants provided substantive feedback and recommendations that may inform the continued development and refinement of future versions of SBuddy.

Introduction

Speaking is a key skill that every English as a Foreign Language (EFL) learner needs to develop. As English has become a global language, the ability to speak it is essential for communicating with people from different parts of the world. Speaking allows individuals to express their ideas, thoughts, and feelings clearly. It is also the most direct and commonly used skill in real-life situations, especially in daily interactions, job interviews, workplaces, and business settings. In many employment contexts, strong communication skills, especially speaking, are often more important than work experience or academic qualifications. Being able to speak confidently not only increases a learner's chances of success in their career but also boosts their self-confidence and supports the development of other language skills (Akhter, 2021; Al-Hassaani & Al-Saalmi, 2022, Riadil, 2020).

Problem Statement

Despite its importance, many EFL learners face challenges when it comes to speaking. These include relying too much on their first language, lack of motivation (Riadil, 2020), limited vocabulary and grammar knowledge, nervousness, low participation, and a lack of support from their environment (Ratnasari, 2020). In addition, many learners do not get enough practice speaking in English, which further limits their progress (Al-Hassaani & Al-Saalmi, 2022).

To address these issues, researchers have proposed several solutions. Recently, a growing number of studies have focused on the use of artificial intelligence (AI)-powered tools to improve speaking skills. For instance, Ding and Yusof (2025) explored the use of an AI chatbot called Mondly, Zou et al. (2025) used an AI platform named EAP, and Mingyan et al. (2025) investigated an AI application called Liulisho. These studies found that AI tools had a positive impact on learners' speaking abilities. They also helped increase motivation and encouraged learners to practice speaking outside the classroom (Ding & Yusof, 2025; Mingyan et al., 2025; Zou et al., 2025).

Study Rationale

Despite the growing body of research examining the integration of generative artificial intelligence (GenAI) tools in English as a Foreign Language (EFL) instruction (Ardini et al., 2024; Ding & Yusof, 2025; Mingyan et al., 2025; Zou et al. 2023) several important gaps remain in the literature. Most existing studies have focused on short-term interventions or learners' immediate perceptions of AI-assisted learning, with limited attention given to the long-term impact of GenAI tools on specific language skills, particularly speaking proficiency (Ardini et al., 2024; Zou et al. 2023). Moreover, while AI-powered applications are increasingly used to support language learning, there is a lack of empirically grounded research that systematically integrates motivational frameworks into the design of such tools. In particular, the MUSIC Model of Motivation (Jones, 2018, 2019, 2021), which has demonstrated effectiveness in enhancing learner engagement and motivation, has rarely been applied within AI-driven EFL speaking contexts. Additionally, existing literature shows little evidence of research conducted within the context of higher education in Oman, where educational factors may shape learners' engagement with AI technologies. To address these gaps, the present study investigates the impact of an AI-powered mobile application grounded in the MUSIC Model on the speaking skills of EFL learners at Sultan Qaboos University.

Methodology

Research design

Instructional technology is an empirical, applied discipline often defined by its distinctive blend of theory and practice. This research study uses design and development research methodology, particularly a Type 1 model (Richey & Klein, 2007; Richy et al., 2011) to design an EFL speaking app to help learners boost their motivation and enhance their speaking proficiency.

Literature offered many definitions for development research. For example, one definition for development research identifies it as "the systematic study of designing, developing, and evaluating instructional programs, processes, and products that must meet the criteria of internal consistency and effectiveness" (Richey & Seels, 1994, p. 127). Further, Richey and Klein (2007) described developmental research as "the systematic study of design, development, and evaluation processes with the aim of

establishing an empirical basis for the creation of instructional and non-instructional products and tools, along with new or enhanced models that guide their development” (p. 1).

Design and development research (DDR) can be categorized into two primary types based on its focus and outcomes. Type 1 research examines the processes involved in designing, developing, and evaluating individual products or programs. It seeks to produce organized knowledge derived from these efforts, while also investigating the contextual and procedural factors that influence successful implementation and practical use (Richey et al., 2004).

In contrast, Type 2 research emphasizes the examination of design, development, or evaluation processes, tools, or models. The primary outcomes of this research type include the formulation of new or refined design, development, and evaluation procedures and/or conceptual models, together with an analysis of the conditions that support their successful application across contexts (Richey et al., 2004). The following table summarizes this information as follows:

Table 1
Development Research Types in Design and Development Research (DDR)

Aspect	Type 1 Research	Type 2 Research
Research Focus	An investigation of individual product or program design, development, and evaluation initiatives.	An examination of processes, tools, or models utilized in design, development, and evaluation.
Primary Outcomes	A structured investigation into development experiences to generate generalizable lessons and to identify the conditions under which products or programs are most effectively employed.	The creation and refinement of design, development, and evaluation processes or models, along with an examination of the factors that enable their effective application.
Conclusions	Context-dependent	Broadly applicable
Note. Adapted from Richey, Klein & Nelson, 2004.		

Research procedures

This study employs a design and development research (DDR) Type 1 approach to design and develop a generative AI–powered mobile phone application aimed at supporting EFL learners’ speaking practice and motivation. The research procedure is guided by the ADDIE instructional design model, encompassing five iterative phases of analysis, design, development, implementation, and evaluation (Abuhassna et al., 2024).

During the analysis phase, learners’ needs, challenges in spoken English practice, and motivational issues have been identified through a review of relevant literature and contextual analysis. These challenges are further corroborated by the researchers’ professional experience as EFL practitioners. The design phase involved specifying learning objectives, app features, conversational structures, and

difficulty levels, with motivational principles systematically integrated based on the MUSIC model of motivation (Jones, 2018, 2019, 2021).

In the development phase, the application has been built using the Google AI Studio (Live Voice) platform to enable real-time conversational interaction. Accessing the app is done via a link, no download required. Iterative testing and expert review have been conducted to refine functionality and usability. The implementation phase involved deploying the application with EFL learners over a designated period of four weeks for regular speaking practice. Ultimately, the evaluation phase assessed the app's effectiveness and usability using a QuestionPro survey to collect data from the participating EFL learners.

Design and implementation of the SBuddy app using Google AI studio

The camel case styling of SBuddy is intentional. It highlights the two core elements of the name (S for Speaking, Buddy for companion) while giving it a unique, modern identity that stands out. The SBuddy app was developed using Google AI Studio, a free AI development platform powered by Google Gemini. Google AI Studio provides four core features: Chat, Stream, Generate Media, and Build. The SBuddy app was created using the Build feature, which enables users to design and deploy AI-based applications, including chatbots and web applications. This feature integrates Gemini's AI capabilities with embedded coding support, allowing AI functionality to be incorporated directly into the development process.

The development of SBuddy relied primarily on a prompt-based development process. Similar to platforms such as ChatGPT, Google AI Studio allows developers to interact with the AI through a chat interface to generate, revise, and refine application components. This process was iterative and conversational, with the AI responding to prompts by generating application code, modifying features, and saving updates in real time. This approach enabled continuous refinement through real-time conversational interaction and immediate implementation of updates.

The build process began by providing the AI tool with a detailed description of the app's purpose, design plan, and intended features, without initially requesting code generation. The AI was first instructed to review, revise, and enhance the conceptual plan. Based on these revisions, additional prompts were used to expand functionality and refine design elements. As development progressed, the AI generated and reviewed the application code, incorporated new features, and responded to iterative feedback. Whenever new ideas or improvements emerged, they were introduced directly through the app's chat interface, allowing seamless updates and ongoing refinement.

Regarding its features and content, SBuddy was designed to motivate users and support self-directed speaking practice. A strong emphasis was placed on positive reinforcement, with supportive and constructive feedback provided after each speaking session. The app's front page presents a welcoming

introduction that clearly communicates its main purpose: *"A Personal AI Tutor for Confident Speaking."* Once users begin, they are directed to a personalized setup page where they enter their name.

Accessibility was a central consideration in the app's design. SBuddy includes an accessibility-focused interface aimed at supporting learners with special needs, such as the option to select text-based practice instead of spoken interaction. After completing the setup process, users are introduced to an AI-driven virtual tutor dashboard that summarizes their learning experience, including completed stages, earned in-app credentials, and access to available training sessions.

The main interface of the speaking app offers two primary options. The first is the Magic Topic Generator, an AI-powered feature that enables learners to practice speaking on topics of their choice. Users can create or select topics, themes, or scenarios based on their interests and learning goals and choose a preferred difficulty level (beginner, intermediate, or advanced). The system then generates a personalized speaking activity tailored to these preferences. Upon completing each speaking session, users receive supportive and constructive feedback designed to enhance their speaking performance and build confidence.

In addition, SBuddy includes a set of pre-determined topic areas designed to develop essential speaking skills in real-world contexts. These areas include daily life, critical thinking, career and industry, reflecting personal, academic, and professional communication needs. Each area follows the same level of structure and provides guided conversational practice. Upon completing all areas within a given level, learners are rewarded with a digital badge, which serves as motivation and recognition of their progress.

Furthermore, SBuddy integrates vocabulary quizzes within each topic area. These quizzes allow users to assess their vocabulary knowledge, practice the correct pronunciation of key terms, and receive immediate feedback. This integration of speaking practice, assessment, and feedback supports comprehensive language development and enhances the overall learning experience offered by the app.

Participants

The study targeted some English as a Foreign Language (EFL) learners who face limited opportunities to practice spoken English in authentic and real contexts. The participating students have had varying levels of English proficiency and may have experienced low speaking confidence and motivation due to restricted practice opportunities outside classroom settings. All participants have had access to mobile phone devices, as the intervention is delivered through a generative AI-powered mobile application.

A convenience sampling was employed to select participants who meet these criteria and were motivated to improve their oral proficiency. The sample consisted of ten EFL learners. The sample also represented participants from both the Foundation (70%) and Credit (30%) Program at the Centre of Preparatory Studies (CPS) at Sultan Qaboos University. Although the two levels may differ in speaking ability, the app will allow both to capture a wider range of proficiency. The participants were the

researchers’ actual students and are accessible during the study period. There were no specific selection criteria beyond having access to a mobile phone, course enrollment and willingness to participate.

Most of the students were at an intermediate or upper-intermediate level of English proficiency, making them a representative target audience for a speaking practice tool. In addition, 80% of participants had previously used a mobile application to practice English speaking. Participants were provided with a checklist to self-monitor their engagement with the SBuddy application.

Table 2
Participants English Proficiency Level

Proficiency Level	Count	Percentage
Beginner	1	10%
Intermediate	5	50%
Upper-Intermediate	3	30%
Advanced	1	10%

Research tool

The primary research tool for this study is a user-testing QuestionPro survey designed to evaluate the generative AI–powered mobile phone application for EFL learners. The QuestionPro survey focused on capturing participants’ perceptions, experiences, and feedback regarding key design elements of the application, including usability, motivational features, and functionality.

The survey evaluated how well the SBuddy app supported spoken English practice, motivated learners, and met individual learning needs through adjustable difficulty levels. Based on the MUSIC Model of Motivation.

The survey was administered to students who used the application and aimed to collect both quantitative and qualitative data regarding usability, functionality, and motivational impact. The questionnaire consisted of seven sections. The First Section included an informed consent statement, ensuring that participation is voluntary, anonymous, and confidential. The Second Section gathered participants’ background information, including their English proficiency level, prior experience with mobile language-learning applications, and program affiliation.

Sections Three, Four, and Five comprised Likert-scale items measuring key constructs, ranging from “strongly disagree” to “strongly agree” for most items, enabling quantitative analysis of user perceptions. The usability section assessed ease of navigation, clarity of instructions, technical performance, and overall user-friendliness of the application. The functionality and AI features section evaluated the effectiveness of AI-generated feedback, accuracy of responses, reliability of the system, and the appropriateness of learning activities. The motivation section is based on the MUSIC model of

motivation and examines factors such as learner control, usefulness, success expectancy, interest, and perceived support.

Section Six included overall perception questions, combining binary (Yes/No) responses with follow-up explanations to capture participants' satisfaction, willingness to recommend the application, and intention to continue using it. Finally, Section Seven consisted of open-ended questions that allowed participants to elaborate on helpful features, challenges encountered, and suggestions for improvement.

Establishing Validity

To ensure the validity of the user-testing survey, content and construct validity have been established. The QuestionPro survey items were aligned with the MUSIC model of motivation and key design elements of the application, and reviewed by experts in EFL instruction, educational technology, and instructional design for relevance and clarity. The QuestionPro survey was developed and submitted to the research committee in the researchers' workplace for peer review and validation. The combination of expert review and construct alignment ensured that the survey accurately measured learners' perceptions of usability, motivation, and functionality.

Theoretical Framework: The MUSIC Model principles

Developed by Brett Jones (2018, 2019, 2021), the MUSIC model is an educational framework designed to enhance student motivation. The acronym MUSIC represents five key motivational constructs: eMpowerment, Usefulness, Success, Interest, and Caring. Each construct, along its own distinct significance in the learning context, is defined as follows. Empowerment means giving students some control and power over their learning, allowing them a degree of freedom, within the scope of their abilities, that increases their motivation and engagement. An example for this is offering learners choices of a variety of assignments and different learning activities. Usefulness, on the other hand, means perceiving the learning contents as meaningful, relevant, and valuable. Usefulness can be performed by creating and designing assignments that link learners with their future careers or offering them some real-world experiences and explaining to them the purpose of doing so. Learners' belief that they can succeed if they put forth effort depicts success in the model. Success can be represented by providing supportive corrective feedback and allowing test and assessment multiple retakes. Doing so will enhance the learners' confidence and boost their motivation. As for interest, instructors need to capture learners' attention and stimulate their interest by offering engaging and enjoyable materials and content. Instructors can do this by linking learning content to learners' personal interests and providing novel and innovative contents that sustain their passion in the learning process. Finally, the principle of caring refers to learners' genuine feeling of sense of belonging to the learning environment. They also feel that they are cared for and supported by their instructors and peers. In short, the contestants will integrate the above-mentioned principles in the design of the app features.

Justification for the selection of the MUSIC Model

The model has been validated across different educational contexts for enhancing motivation and engagement (Jones, 2018, 2019, 2021). The MUSIC model in the design of the SBuddy app has been used due to many reasons. First, it offered comprehensive framework that is based on the learner's psychology and motivation. Second, it also provided a learner-centered model. Third, it enhanced learners' autonomy by offering relevant app activities to the learners' professional and personal life. Fourth, it boosted learners' interest and engagement. Further, it has demonstrated a caring environment via user support or empathetic design features. Furthermore, the MUSIC model is aligned with the principle of technology-enhanced learning (focuses on GenAI). Ultimately, the MUSIC model encourages sustainability and life- long learning.

Literature Review

Employing instructional design and the ADDIE Model in developing speaking skills

The ADDIE model remains a widely adopted instructional design framework due to its systematic structure for developing effective learning experiences. Its five phases (analysis, design, development, implementation, and evaluation) provide a coherent foundation for designing instruction across disciplines. Empirical evidence supports its effectiveness in improving instructional quality and learner outcomes. For example, Abuhassna et al. (2024) stressed that integrating technology into ADDIE strengthens instructional planning and evaluation processes, while Chang and Abidin (2024) emphasized its role in improving teachers' ability to design structured learning experiences.

Although ADDIE has been applied across various disciplines, including medical education (Cheung, 2016) and religious studies (Hakim et al., 2021), its application in English language learning remains relatively limited in terms of specific skill development, particularly speaking skills.

Boateng et al. (2024) further argued that embedding continuous assessment within ADDIE improved instructional quality; however, such assessment practices were rarely aligned with real-time speaking performance evaluation. This reveals a significant gap in adapting ADDIE to support oral communication development in language learning contexts, particularly in AI-enhanced environments.

Technology-enhanced learning and Generative AI in speaking skill improvement

Technology integration has transformed language learning by enabling more interactive and personalized learning environments. Some studies demonstrated that digital and mobile learning tools enhanced engagement and accessibility (Azzahrah et al., 2022). Other literature highlighted improvements in interaction and personalization through technology-enhanced instructional models (Li & Chen, 2023).

In the context of English language speaking skills, recent research increasingly emphasizes the role of AI-driven tools. Wang et al. (2025) asserted that intrinsic motivation and positive emotional engagement significantly influenced learners' acceptance of AI-powered language learning tools, particularly in communicative contexts.

More specifically, Generative AI tools such as ChatGPT are emerging as significant supports for speaking skill development. Kohnke et al. (2023) argued that ChatGPT enabled learners to engage in simulated conversations, receive immediate feedback, and practice spoken language in low-anxiety environments. Similarly, Godwin-Jones (2024) highlighted that AI-driven conversational agents support oral fluency development by providing adaptive dialogue practice and personalized interaction.

Despite these advances, GenAI is still largely studied as a standalone tool rather than as part of a structured instructional system for developing speaking proficiency. Its integration into pedagogical frameworks such as ADDIE remains underexplored, limiting its systematic application in oral language instruction.

AI-driven apps and speaking skills

Recent research highlights the significant role of mobile and AI-driven language learning apps in developing speaking skills. For instance, Eshankulovna (2021) found that mobile language learning apps create a comfortable and flexible learning atmosphere by allowing students to practice anytime and anywhere, at their own pace. This autonomy enhances their motivation, particularly when speech recognition software provides constructive feedback without requiring teacher presence.

Similarly, Dandum et al. (2024) reported that the AI-driven app Rosetta Stone positively influences ESL students' English-speaking skill by offering a personalized learning experience. The app's features—such as direct feedback, a relaxed environment, and motivating speaking practice—contribute to its effectiveness. Additionally, Ardini et al. (2024) conducted a study on Jonglish, an app specifically designed to improve pronunciation through speech recognition technology that offers immediate feedback. They concluded that Jonglish effectively enhances pronunciation by providing a personalized and comfortable learning setting, allowing learners to progress at their own pace and increasing motivation.

Zou et al. (2023) emphasized that AI speaking evaluation systems deliver effective feedback to EFL learners, particularly improving speech content. Their study further explores how AI-driven applications support interactive activities that enhance pronunciation, accuracy, reading aloud, and presentation skills. In line with these findings, Vadivel et al. (2025) reported that AI-powered applications significantly improve students' speaking fluency and confidence. Students valued features such as engaging interactive activities, accessibility beyond the classroom, immediate feedback, self-directed practice using authentic language, and the ability to practice without fear of judgment.

Further supporting the benefits of AI in speaking skill development, Ding et al. (2025) investigated AI-powered conversation bots and their effect on second language speaking skills and anxiety reduction

among undergraduates. Their results showed that students using the AI-powered platform Mondly demonstrated noticeable improvement in fluency and pronunciation and experienced a significant reduction in speaking anxiety compared to a control group. Participants also reported enhanced confidence, motivation, and grammar skills through their interaction with the bot.

Similarly, Dai and Wu (2025) examined an AI-powered conversational system designed for Chinese university students learning English as a second language. Their study revealed that the system significantly increased student engagement and improved speaking proficiency compared to traditional methods. In speaking tests, students using the AI system scored higher in vocabulary usage and overall oral proficiency, indicating that AI-driven conversational bots offer a more engaging and effective platform for language practice.

Adding to this, Huang et al. (2024) found that teachers hold positive attitudes toward AI-assisted learning for speaking skills development, primarily because AI provides immediate, personalized feedback on pronunciation and fluency. This timely feedback helps students self-correct mistakes independently, reducing their reliance on teacher support. Moreover, students reported feeling more motivated and less anxious when practicing speaking with AI, as it creates a judgment-free environment and offers more practice opportunities than conventional classrooms.

Motivation in speaking skills development: The MUSIC Model perspective

Motivation plays a crucial role in the development of English-speaking skills, where learners often face anxiety, lack of confidence, and limited practice opportunities. The MUSIC Model of Motivation, comprising empowerment, usefulness, success, interest, and caring provides a comprehensive lens for understanding learner engagement in oral communication tasks (Jones 2018, 2020, 2021).

Freer and Evans (2019) emphasized that psychological needs such as autonomy, competence, and relatedness strongly influence learner engagement and persistence. In speaking contexts, these factors are particularly critical, as learners require confidence and supportive environments to develop oral fluency. Li (2022), using the ARCS model, similarly demonstrates that attention, relevance, confidence, and satisfaction significantly influenced engagement and performance.

In AI-enhanced language learning environments, Wang et al. (2025) showed that intrinsic motivation and positive emotional experiences are key determinants of learners' acceptance of AI-based tools. In speaking skill development specifically, GenAI tools can operationalize MUSIC principles by providing empowerment through autonomous practice, usefulness through real-time conversational support, success through immediate feedback, interest through interactive dialogue, and caring through non-judgmental interaction (Kohnke et al., 2023; Godwin-Jones, 2024).

However, motivation is still largely examined as an independent construct rather than being intentionally embedded into instructional design models or AI-supported speaking instruction systems.

Research Gap

Although instructional design, technology-enhanced learning, and motivation have been extensively studied, they remain largely disconnected research strands. ADDIE provides structural rigor, technology offers interactivity, and motivation explains learner engagement; however, their integration into a unified model for English speaking skills development is still lacking.

The emergence of Generative AI intensifies this gap. While studies show that AI tools can enhance conversational practice, feedback, and learner autonomy (Kohnke et al., 2023; Godwin-Jones, 2024), these tools are rarely embedded within structured instructional design models such as ADDIE. Moreover, their role in systematically supporting motivational dimensions of speaking performance remains underexplored.

This fragmentation limits the development of comprehensive pedagogical models that can simultaneously support instructional design, AI-driven interaction, and motivation in oral language learning.

Therefore, the current study addresses this gap by developing and evaluating an integrated framework that combines Generative AI, the ADDIE instructional design model, and the MUSIC Model of Motivation within the context of English-speaking skill development. This integration aims to enhance learners' oral fluency, communicative confidence, and motivational engagement in AI-supported language learning environments.

Findings & data analysis

A: Quantitative Findings

The following is a set of findings from the pilot usability survey of SBuddy, an AI-driven application designed to support English speaking practice among EFL learners. Data were collected between April and May 2026 from 11 participants, with 10 complete responses (90.91%) analyzed.

The following is an executive summary of the quantitative findings. The findings indicate strong user satisfaction. All respondents reported a positive experience and willingness to recommend SBuddy, while 90% expressed intention to continue use. Mean scores reflected high ratings across key dimensions: perceived usefulness for speaking development ($M = 4.6/5$), confidence-building ($M = 4.5/5$), and interface design ($M = 4.4/5$). One participant wrote "It is more of a development program than an educational Program.", summarizing his overall view about the SBuddy app.

Themes are analyzed in the order in which they appeared in the survey, progressing from usability and functionality and AI features, through to motivation, and concluding with an analysis of open-ended responses.

To start with, the usability section assessed ease of navigation, clarity of instructions, technical reliability, design friendliness, and comfort in independent use. Scores ranged from 3.8 to 4.4 out of 5. Scores are presented in descending order, from highest to lowest rated, rather than by their original sequence in the survey.

Table 3
Usability of SBuddy

Usability Statement	Mean Score out of 5
1. Design & layout were user-friendly	4.4
2. Comfortable using independently	4.1
3. Instructions were clear and easy to understand	4.0
4. App was easy to navigate	3.9
5. Used without technical difficulties	3.8

The design and layout received the highest score in this section (4.4/5), with 90% of users agreeing or strongly agreeing. One participant quoted, "Because it helps me develop my speaking skills and other skills as well, and it is also an easy to use application, so I enjoyed using it." Technical reliability scored lowest (3.8/5), with 40% remaining neutral, suggesting intermittent technical issues during testing. One participant reported a specific usability concern with the audio recording interface, noting that they were "Unable to click on the audio recording tool or see what you typed". This is a limitation that directly hindered their ability to complete the speaking tasks.

Second is functionality and AI features, this section evaluated the core AI-powered features: speaking opportunities, feedback quality, reliability, difficulty calibration, and vocabulary/pronunciation tools. Scores are presented in descending order, from highest to lowest rated, rather than by their original sequence in the survey.

Table 4
Functionality & AI Features

Functionality & AI Features Statement	Mean Score out of 5
1. Sufficient opportunities to practice speaking	4.3
2. Vocabulary quizzes and pronunciation useful	4.3
3. AI-powered responses accurate and helpful	4.1
4. Functioned reliably during use	4.1
5. Difficulty levels appropriate	3.9
6. AI feedback helped understand strengths/weaknesses	3.8

Speaking opportunities and vocabulary/pronunciation practice were rated most highly (4.3/5 each). Participants valued the app's ability to correct errors and identify vocabulary misuse in real time. One user wrote "It corrects the mistakes I make, and it also tells me when I use a word in the wrong place." Another participant mentioned this "the most helpful feature was the speaking practice with instant feedback. It helped me improve my pronunciation and confidence. I also liked the conversation topics because they made it easier to practice real-life situations."

AI feedback on strengths and weaknesses of the users' speaking proficiency scored the lowest in this section (3.8/5), with 30% of users remaining neutral. Some participants noted that feedback could be difficult to understand, or that the app did not consistently recognize their pronunciation. One user reported this "sometimes the feedback was hard to understand, and the app did not always recognize my pronunciation correctly. Also, some topics felt repetitive." Another participant stated another shortcoming with the AI feedback saying, "sometimes AI doesn't hear me. The responses are too long. Forgot to start the record. Repeated quizzes. Vocab outside the topic."

As for motivation, the motivation section was the most extensive, covering 13 items related to learners' confidence, task relevance, challenge level, engagement, and gamification features such as badges and progress tracking. Scores are presented in descending order, from highest to lowest rated, rather than by their original sequence in the survey.

Table 5
Motivation

Motivation Statement	Mean Score out of 5
1. Useful for improving English-speaking skills	4.6
2. Increased confidence in speaking English	4.5
3. Activities relevant to academic/real-life needs	4.3
4. Chose activities suiting personal interests	4.3
5. Badges make learning feel rewarding	4.2
6. Progress tracking is clear and easy to follow	4.1
7. Motivated to continue practicing	4.1
8. Made speaking practice interesting and engaging	4.1
9. Felt capable of completing activities	4.1
10. Tasks appropriately challenging for level	4.0
11. Enjoyed AI features (feedback, tracking, badges)	4.0
12. Allowed control over learning space	3.8
13. Feedback felt supportive and encouraging	3.5

The standout finding is that 90% of participants believe SBuddy is useful for improving their speaking skills (mean 4.6/5). Confidence-building also scored very highly at 4.5/5. Participants described noticing real progress in themselves. One user mentioned "Because I noticed a big development in myself." Another participant praised the app and said, "I would continue using Buddy because it helps me practice English anytime and improve step by step."

The weakest item in the motivation section was the emotional tone of feedback (3.5/5), with 20% of users disagreeing that feedback felt supportive. No participant selected 'strongly agree' for this item, a meaningful gap compared to other motivation items that averaged above 4.0. One participant expressed his frustration in using the app by saying, "sometimes the app did not understand my voice clearly, especially when I spoke fast." The same participant also added that some topics were repeated, and he suggested expanding the range of available topics by saying, "Also, I felt that some topics were repetitive, and I wanted more variety."

B: Open-ended Feedback Analysis (Qualitative)

1. Most helpful features:

Participants identified the following features as most beneficial for improving their speaking: Instant speaking feedback with real-time correction, pronunciation activities and word-level feedback, diverse conversation topics that simulate real-life situations, error correction that identifies misused vocabulary in context, and the variety of speaking tests and topic options. One user mentioned that "the speaking practice with instant feedback was very helpful. It improved my pronunciation and confidence. Also, the interactive conversations helped me practice real-life situations." These findings align with previous studies that discussed different advantages of AI-powered speaking tools, such as providing constructive and direct feedback (Ardini et al., 2024; Dandum et al., 2024; Eshankulovna, 2021; Vadivel et al., 2025) interactive activities (Dai and Wu, 2025; Vadivel et al., 2025; Zou et al., 2023;), improving speaking fluency and pronunciation (Ardini et al., 2024; Zou et al., 2023; Vadivel et al., 2025; Ding et al., 2025), and increasing motivation and confidence (Huang et al., 2024; Dai and Wu, 2025; Ding et al., 2025)

2. Challenges Experienced:

The following difficulties were reported by participants: voice recognition did not reliably capture speech, particularly at faster speaking rates. One user commented "sometimes the app did not understand my voice clearly, especially when I spoke fast." Another user also experienced some difficulty in finding or clicking the audio recording button, "unable to click on the audio recording tool or see what you typed." Add to this, some other challenges included: some conversation topics felt repetitive across sessions "I felt some topics were repetitive, and I wanted more variety", AI responses were perceived as overly long, vocabulary items sometimes fell outside the topic being practiced, and initial anxiety when starting the first conversation, "just feeling some tension at the beginning." One user reported "I had difficulty in starting the conversation, but after that it was easy." Another participant said, "there were not many

challenges; however, sometimes the app does not work properly, and sometimes it has difficulty understanding the words when I speak."

3. Overall satisfaction

All 10 participants (100%) reported being satisfied with their experience using SBuddy. Explanations cited practical skill improvement, ease of use, engaging activities, and confidence gains.

Table 5
Overall users' satisfaction

Measure	Result	Count
Overall satisfied with SBuddy	100% Yes	10/10
Would recommend SBuddy to other EFL learners	100% Yes	10/10
Would continue using SBuddy	90% Yes	9/10

SBuddy users expressed their satisfaction in different ways and because of many reasons. For instance, one user said "I am satisfied because SBuddy helped me practice speaking regularly and improve my confidence. The feedback was useful and easy to understand." This comment is consistent with the findings of Freer and Evans (2019) and Li (2022), which underscore confidence as a key factor influencing learners' development of oral proficiency. Additionally, another user was satisfied because he felt "The experience was useful and helped me learn better and the activities were fun and varied." Similarly, another user said he would recommend SBuddy to other users because of the app's simplicity and practicality, "I would recommend SBuddy because it is simple to use and helps learners improve their speaking skills in a practical way." Further, one participant commented on SBuddy accessibility, ease of use, and helping learner autonomy by saying, "Because it [SBuddy] can also help them [learners] develop their skills anytime and anywhere, and they can use it in any place. It doesn't require much knowledge to use." This finding emphasizes the importance of accessibility, a feature also highlighted by Azzahrah et al. (2022). Overall, the only participant who indicated they would not continue using SBuddy cited time constraints rather than dissatisfaction, noting they might return in coming days.

Design refinement and recommendations

Despite these encouraging results, participants identified areas for improvement, including voice recognition accuracy, topic variety, feedback tone, adding learner control features, developing a dedicated mobile application, and enriching visual design and interactivity. Users provided detailed and thoughtful suggestions for future versions of SBuddy. One participant submitted a particularly comprehensive wish list:

Written text when speaking. Various voices to speak with. More topics like animals, jobs, places, famous people, cooking, beauty, culture and ancient times. Different vocab activities – blocks and write the word in sentences, videos using that word, synonyms, and make quizzes from the topic we practice on.

Animation in the background instead of colours only. Feature of select the word from the written text and save it in favourite and make practices on it with more topics related to that word. Offline app. We suggest the topic we want to practise on and the AI generates it for us. AI gives stories, not only response to us.

Additional suggestions from other participants included speaker speed control and optional Arabic translation as one user suggested "controlling the speaker speed and the Arabic translation feature." In addition, another participant proposed having more conversation topics and different difficulty levels, improving voice recognition for non-native accent patterns, and including more feedback on grammar and sentence structure when this user mentioned "I suggest adding more conversation topics and different difficulty levels. It would also be helpful to improve voice recognition and add more feedback on grammar and sentence structure." In addition, another user recommended having a native mobile application rather than a browser-based site by preferring the application to be "a mobile app instead of a website on Google." In closing, these findings provide useful directions for future development of the next version of SBuddy.

Conclusion

Overall, this project operationalized design and development research (DDR) to create a generative AI mobile app (via link) that helped English as a Foreign Language (EFL) learners improve their speaking skills. The app (SBuddy), built with Google AI Studio (LiveVoice), functioned as a conversational buddy, offering flexible speaking practice to enhance EFL learners' motivation and confidence. It was guided by the MUSIC Model of motivation, incorporating features that promote empowerment, usefulness, success, interest, and caring. Additionally, SBuddy offered customizable difficulty levels for a personalized learning experience (autonomy).

This research article presented findings from the SBuddy testing survey, conducted with 11 participants (10 completed responses) between April and May 2026. Overall user response was overwhelmingly positive. All 10 participants reported satisfaction with their experience, all stated they would recommend SBuddy to other EFL learners, and 90% indicated they would continue using it. The app received particularly strong scores in motivation, perceived usefulness, and design aesthetics. In closing, the users offered some detailed feedback and suggestions for future version of SBuddy.

Declarations

AI Use Disclosure

In preparing this manuscript, the following AI tools were used: Google AI Studio (Live Voice) was used to create SBuddy and develop its voice interaction feature, ChatGPT (OpenAI) for language editing and refinement, Scite and Consensus for literature review and synthesis, and Claude (Anthropic) for data analysis support. The authors have reviewed and validated all AI-assisted content and accept full accountability for the final work.

Funding details: No funding was received.

Ethical Approval: This study was approved by the Central Research Committee at the Centre for Preparatory Studies (CPS) at Sultan Qaboos University. The study was conducted in accordance with the Sultan Qaboos University publishing policies and guidelines. All procedures performed in this research study involving human participants were in compliance with the ethical standards of Sultan Qaboos University.

Informed consent: Informed consent was obtained from all individual participants included in the study.

Disclosure Statement/ Conflict of Interest: The authors report there are no competing interests to declare.

Data Availability: The datasets generated and/or analyzed during the current study are included in this published article.

Clinical Trial Number: Not Applicable

Consent to Publish Declaration: Not Applicable

Acknowledgements: Special thanks to our students from Foundation and Credit English Program at the Centre for Preparatory Studies (CPS) for taking part in this study.

Author Contribution

K.A. did the following: started the idea of this research project Prepared and designed the methodology of the research Designed the research tool Designed part of the speaking app: SBuddy Wrote part of the literature review Analyzed data Reviewed the whole manuscript M.A. did the following: Wrote the introduction Wrote part of the literature review Designed the speaking app. SBuddy Prepared a check list for the app users/participants Reviewed the research tool Wrote part of the data analysis Both authors reviewed the manuscript.

References

1. Abuhassna H, Alnawajha S, Awae F, Adnan M, Edwards B. Synthesizing technology integration within the ADDIE model for instructional design: A comprehensive systematic literature review. *J Auton Intell.* 2024;7(5):1546. <https://doi.org/10.32629/jai.v7i5.1546>.
2. Akhter S. (2021). Exploring the significance of speaking skill for EFL learners. . [https://doi.org/10.36902/sjesr-vol4-iss3-2021\(1-9](https://doi.org/10.36902/sjesr-vol4-iss3-2021(1-9)
3. Al-Hassaani AMA, Al-Saalmi AFMQ. Saudi EFL Learners' speaking skills: status, challenges, and solutions. *Arab World Engl J.* 2022;13(2):328–37. <https://doi.org/10.24093/awej/vol13no2.22>.

4. Ardini S, Sunarya S, Latifah K. Development of mobile application through the concept of Artificial Intelligence to enhance pronunciation skill in EFL. *KnE Social Sci.* 2024.
<https://doi.org/10.18502/kss.v9i6.15254>.
5. Azzahrah A, Budiman I, Haryanti Y, Mahpudin M. Development of Android application learning media using ispring suite 9 to increase student learning motivation. *Eduhumaniora Jurnal Pendidikan Dasar Kampus Cibiru.* 2022;14(2):121–6. <https://doi.org/10.17509/eh.v14i2.41994>.
6. Boateng S, Gilbert G, Duedu C. Augmenting Academic Efficiency: The Integration of Assessments Within the Addie Model for Pedagogical Development. *ARETL.* 2024;1(1):1–12.
<https://doi.org/10.33422/aretl.v1i1.186>.
7. Chang L, Abidin M. Instructional Design of Classroom Instructional Skills Based on the ADDIE Model. *Technium Social Sci J.* 2024;55:167–78. <https://doi.org/10.47577/tssj.v55i1.10676>.
8. Cheung L. (2016). Using the ADDIE Model of Instructional Design to Teach Chest Radiograph Interpretation. *Journal of Biomedical Education*, 2016, 1–6. <https://doi.org/10.1155/2016/9502572>
9. Dai L, Wu F. An AI-powered conversational system for college students learning English as a second language. *Educ Inform Technol Adv* online publication. 2025. <https://doi.org/10.1007/s10639-025-13640-3>.
10. Dandum K, Charyulu NB, Kumari PS. AI-driven language learning: The impact of Rosetta Stone on ESL students' speaking proficiency. *Rupkatha J Interdisciplinary Stud Humanit.* 2024;16(4).
<https://doi.org/10.21659/rupkatha.v16n4.09>.
11. Ding D, Yusof AMB. Investigating the role of AI-powered conversation bots in enhancing L2 speaking skills and reducing speaking anxiety: a mixed methods study. *Humanit Social Sci Commun.* 2025;12(1). <https://doi.org/10.1057/s41599-025-05550-z>.
12. Eshankulovna RA. Modern technologies and mobile apps in developing speaking skill. *Linguistics Cult Rev.* 2021;5(S2):1216–25.
13. <https://doi.org/10.21744/lingcure.v5nS2.1809>
14. Godwin-Jones R. Generative AI, pragmatics, and authenticity in second language learning. *arXiv.* 2024. <https://doi.org/10.48550/arXiv.2410.14395>.
15. Hakim L, Zainiyati HS, Hana A, R., Alimina SF. The Implementation of ADDIE Al-Quran Hadith Learning Design Model at MTs Assathi'Karas. *Edukasia: Jurnal Penelitian Pendidikan Islam.* 2021;16(1):113–24.
16. Huang X, Han X, Dou A. Generative AI in EFL speaking instruction: Teachers' reflections on effectiveness and implementation barriers. *J High Vocat Educ.* 2024;1(5):15–20.
<https://doi.org/10.62517/jhve.202416503>.
17. Jones BD. *Motivating students by design: Practical strategies for professors.* 2nd ed. Charleston, SC: CreateSpace; 2018.
18. Jones BD. Testing the Model of Motivation Theory: Relationships between students' perceptions, engagement, and overall MUSIC ratings. *Can J Scholarsh Teach Learn.* 2019;10(3):1–15.
<https://doi.org/10.5206/cjsotl-rcacea.2019.3.9471>.

19. Jones BD. (2021). *Caring Strategies*. The MUSIC Model of Motivation.
<https://www.themusicmodel.com/caring/>
20. Kohnke L, Moorhouse BL, Zou D. ChatGPT for language teaching and learning. *RELC J*. 2023;54(2):537–50. <https://doi.org/10.1177/00336882231162868>.
21. Li B, Chen D. A Study of Smart Classroom Teaching Model of ADDIE Model under Digital Transformation. *Front Educational Res*. 2023;6(23). <https://doi.org/10.25236/fer.2023.062311>.
22. Mingyan M, Noordin N, Razali AB. Improving EFL speaking performance among undergraduate students with an AI-powered mobile app in after-class assignments: an empirical investigation. *Humanit Social Sci Commun*. 2025;12(1). <https://doi.org/10.1057/s41599-025-04688-0>.
23. Ratnasari AG. EFL Students' challenges in learning speaking Skills: A case study in Mechanical Engineering Department. *J Foreign Language Teach Learn*. 2020;5(1).
<https://doi.org/10.18196/ftl.5145>.
24. Riadil IG. A study of Students' Perception: Identifying EFL learners' problems in speaking skill. *Int J Educ Lang Relig*. 2020;2(1):31. <https://doi.org/10.35308/ijelr.v2i1.2256>.
25. Richey RC, Seels B. Defining a field: A case study of the development of the 1994 definition of instructional technology. In: Ely DP, editor. *Educational media and technology yearbook*. Volume 20. Libraries Unlimited; 1994. pp. 2–17.
26. Richey RC, Klein JD, Nelson WA. Developmental research: Studies of instructional design and development. In: Jonassen D, editor. *Handbook of research for educational communications and technology*. 2nd ed. Lawrence Erlbaum Associates; 2004. pp. 1099–130.
27. Richey RC, Klein JD, Tracey MW. *The instructional design knowledge base: Theory, research, and practice*. Routledge; 2011.
28. Richey R, Klein JD. *Design and development research: Methods, strategies, and issues*. L. Erlbaum Associates; 2007.
29. Vadivel B, Saeed HS, Bapir ZK, Abdulrahim AA, Bapir RK, Ahmed ES, Mohammed AN, Cihan University-Duhok. Developing speaking fluency through AI-powered applications for undergraduate EFL students in Kurdistan. *J Humanit Educ Dev*. 2025;7(6). <https://doi.org/10.22161/jhed.7.6.7>. Article 7.
30. Wang C, Li X, Zou B. Revisiting Integrated Model of Technology Acceptance Among the Generative AI-Powered Foreign Language Speaking Practice: Through the Lens of Positive Psychology and Intrinsic Motivation. *Eur J Educ*. 2025;60(1). <https://doi.org/10.1111/ejed.70054>.
31. Zou B, Du Y, Wang Z, Chen J, Zhang W. An investigation into artificial intelligence speech evaluation programs with automatic feedback for developing EFL learners' speaking skills. *SAGE Open*. 2023;13(3). <https://doi.org/10.1177/21582440231193818>.
32. Zou B, Xie S, Wang C. Students' Willingness to Communicate (WTC) in using Artificial intelligence (AI) technology in English-Speaking practice. *Int J Inform Communication Technol Educ*. 2025;21(1):1–18. <https://doi.org/10.4018/ijicte.375387>.