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The Effects of AI Tools, Self-Efficacy, and Speaking Anxiety on English Speaking Performance Among TEFL Undergraduate Students

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Abstract

The purpose of this study was to examine the direct and indirect effects of AI tool use, speaking self-efficacy, foreign language speaking anxiety, and English speaking performance among Cambodian Teaching English as a Foreign Language (TEFL) undergraduates. Guided by Bandura's Social Cognitive Theory and Krashen's Affective Filter Hypothesis, a cross-sectional predictive and mediational survey design was employed with 129 TEFL pre-service teachers from university campuses in Battambang and Banteay Meanchey. A 45-item questionnaire measuring four constructs (AI tool use, speaking self-efficacy, foreign language speaking anxiety, and English speaking performance) on a four-point Likert scale was used to collect data. The descriptive results showed moderate-to-high levels of AI tool use ($M = 2.86$), speaking self-efficacy ($M = 2.83$), speaking anxiety ($M = 2.71$), and self-perceived speaking performance ($M = 2.80$). AI tool use was positively associated with speaking performance ($r = .248$, $p < .01$), self-efficacy ($r = .343$, $p < .001$), and anxiety ($r = .384$, $p < .001$); self-efficacy was highly correlated with speaking performance ($r = .735$, $p < .001$). AI tool use was a significant predictor of performance after controlling for the other predictors ($R^2 = .541$, $\beta = .729$, $p < .001$), but only self-efficacy was a direct predictor. Mediation analysis supported an indirect relationship between AI tool use and performance through self-efficacy ($B = 0.209$, $SE = 0.054$, Sobel $z = 3.866$, $p < .001$). The findings suggest that AI tools may enhance speaking performance through self-efficacy, rather than independently, and highlight the need for confidence-building activities when integrating AI into TEFL curricula. The cross-sectional, self-report design, however, limits causal interpretation.

Keywords: AI Tools, Communicative Competence, English Speaking Performance, Self-Efficacy, Speaking Anxiety, TEFL Undergraduates

Introduction

English remains the de facto lingua franca for business, science, diplomacy, and higher education. From Singapore to Vietnam, the mastery of English has evolved from a desirable skill to a strategic necessity in the socio-economic integration and human resource development of ASEAN countries (Griche and Bennis 2026, Neupane et al. 2025). In Cambodia, the Ministry of Education, Youth and Sports (MoEYS) has placed a high emphasis on English as a core element of its strategic educational plan for upgrading teaching standards and preparing graduates to compete in the regional qualification system (Heng and Doeur 2022, Sol et al. 2025). In higher education institutions, TEFL students not only have to improve their own English communication skills, they also need to acquire the metacognition of how to teach and motivate the next generation of secondary and tertiary students (Xu, Su, and Liu 2025).

Formal training in English is still one of the most challenging tasks for EFL learners in developing Asian contexts (Kuluşaklı, & Genç, 2024; Hwang et al., 2023), as in oral communication, we have to orchestrate language in real time, under the pressure of communication, which involves phonetic articulation, syntactic structuring, lexical retrieval, pragmatic adaptation, and discourse cohesion (Luoma, 2004; Wang et al., 2023). In traditional Cambodian high school classrooms, where large class sizes, teacher-centred pedagogy, exam-oriented curriculum, and the lack of opportunities for authentic English-speaking environments outside the university environment, many potential English teachers experience communicative reticence and do not attain true conversational fluency (Heng & Doeur, 2022; Sol et al., 2025).

The rise of generative AI (GenAI) and conversational AI, such as OpenAI's ChatGPT, Anthropic's Claude, Google's Gemini, and specialized AI powered speech apps like Elsa Speak and Duolingo Max, has brought about a dramatic shift from the multimedia software of decades past, where CALL used multimedia to provide static, pre-recorded, contextualized, and adapted speech-recognition activities, to a new paradigm of AI powered, dynamic, adaptive, context-aware, human-like conversation, targeted grammatical correction, sophisticated lexical alternatives, and personalized speech prompts, tailored to the learning level of the learner (Sonsaat-Hegelheimer and Kurt, 2025; Yu and Guo, 2023, 2025; Shen et al., 2025; Ballıdağ and Aydın, 2025; Neupane et al., 2025). EFL students have a ubiquitous, personalized, low-stakes language gymnasium where they can practice their oral skills in practice without the fear of instant public censure (Wang et al., 2024).

However, the process of language acquisition in the learner is not simply determined by technological access, but also by a series of complex cognitive and affective mechanisms (Bandura, 1997; Zeynalova, 2026), especially self-efficacy and language anxiety. First, speaking self-efficacy, a construct referring to a learner's own judgment of

his capability to successfully accomplish speaking tasks, is a significant predictor of language maintenance, risk-taking during communication and strategic decision-making (Yang & Gan, 2024; Wang & Sun, 2020; Wang et al., 2024). On the other hand, anxiety about language ability is a severe mental disorder characterized by apprehension, tension, fear of negative evaluation and physical arousal in the speaker when producing language (Faradiba et al., 2025; MacIntyre, 2017). According to Krashen's (1982) affective filter hypothesis, increased anxiety can increase cognitive obstacles, hinder clear input processing, and disable speech-making processes. Although it is widely believed that AI conversational partners help reduce affective filters by providing a nonjudgmental conversational partner (Shazly, 2021), there is conflicting empirical evidence about the interaction between anxiety and the uptake of AI conversational partners in real university settings.

Despite the rapid proliferation of AI tools among Southeast Asian university students (Griche & Bennis, 2026; Kuluşaklı, & Genç, 2024; Lai et al., 2023), there are still considerable empirical gaps in the literature: (1) While there has been a growing body of research investigating student attitudes toward GenAI (Griche & Bennis, 2026; Kuluşaklı, & Genç, 2024; Lai et al., 2023), robust predictive models exploring how AI tools, self-efficacy, and language anxiety interact to drive English language proficiency are very rare, especially among TEFL students in Cambodia; and (2) whether the teaching tools directly enhance oral performance or whether their teaching effectiveness is mediated by psychological empowerment (i.e., increased self-efficacy and reduced anxiety) remains theoretically unresolved (Huang & Kakham, 2026; Istikharoh & Utami, 2024), and exploring this empirical dynamic is especially important in Cambodia where TEFL students are the future pillars of the country's educational system.

The current study addresses these critical theoretical and empirical gaps by exploring structural relationships among the use of AI tools, language self-efficacy, language anxiety, and English proficiency among 129 TEFL students at two regional branches of the Build Bright University in Cambodia. Specifically, the research seeks to answer the following four research questions:

1. What are the prevailing levels of AI tools use, speaking self-efficacy, foreign language speaking anxiety, and English speaking performance among TEFL undergraduate students?
2. Are there statistically significant relationships among AI tools utilization, speaking self-efficacy, foreign language speaking anxiety, and English speaking performance?
3. To what extent do AI tools utilization, speaking self-efficacy, and speaking anxiety collectively and uniquely predict English speaking performance?
4. Does speaking self-efficacy mediate the relationship between AI tools utilization and English speaking performance?

Literature Review

Theoretical Underpinnings: Social Cognitive Theory and Affective Filter Hypothesis

Conceptually, this research is rooted in two complementary psychological frameworks, Bandura's (1986, 1997) social cognitive theory and Krashen's (1982) affect filter hypothesis. The Bandura social cognitive paradigm is based on a triadic causal model of human performance in which cognitive and affective personal factors, behavioral patterns, and environmental influences function as interlocking determinants of human performance, and in which the belief in one's own agentic ability to mobilise cognitive resources, to perform courses of action, and to achieve defined performance targets is central (self-efficacy). Self-efficacy is developed by four major sources of information: mastery experience, vicarious experience, verbal persuasion, and physiological and affective states (Bandura, 1997). In an AI-supported language learning environment, conversational artificial intelligence agents can offer a dynamic digital environment that offers repeated, low-stakes learning opportunities, interactive dialogue and non-punitive feedback (Huang & Kakham, 2026; Ballıdağ & Aydın, 2025). This technological involvement can be translated into increased psychological agency through digital interactions that gradually reinforce learners' subjective assessments of their communication skills.

While Bandura offered a cognitive model of second language acquisition, the Krashen hypothesis of affective filtering (1982) adds to the conceptual framework of SLA by explaining the emotional gate mechanisms that influence the ability to acquire second language skills. Krashen proposed that affective variables, especially motivation, confidence, and anxiety, serve as an "invisible cognitive screen" that can either allow or block the internal processing of clear input and the external execution of verbal output. In the case of extreme foreign-language anxiety, the affective filter is elevated to a high state that interferes with the processing of working memory and results in language-retrieval paralysis (Faradiba et al., 2025; MacIntyre, 2017). The combination of these two theories offers a compelling theoretical lens: conversational AI tools offer interactive environmental stimuli that can lower the affective filter by removing the social-evaluative threat (Shazly, 2021; Wang et al., 2024) while offering ongoing feedback to enhance verbal self-efficacy.

Generative AI and Interactive Conversational Tools in L2 Speaking

With the advancement of large-scale language models and natural-language processing architectures, computer-assisted language learning has seen a transformative leap in the integration of IA (Griche and Bennis, 2026; Wang et al., 2023). Previous generations of automated language tutors have been constrained by rigid rule matching and

scripted decision trees, leading to artificial, incoherent dialogues that cannot simulate natural conversation (Hwang et al., 2023). Modern generative conversational AI agents, such as multimodal models that can process text to speech and speech to text, can maintain context-rich, open-ended conversations and answer questions in real time, tailoring syntactic and lexical complexity to the level of the user (Jeon, 2024).

Empirical studies have demonstrated several advantages of conversational AI in EFL, including personal scaffolding, instantaneous grammatical clarification and unlimited trial and error (Griche and Bennis, 2026), improved lexical diversity and conversational turn-taking rates (Shen et al., 2025), and the establishment of a psychologically secure environment in which students are free to make phonological and grammatical errors without fear of peer ridicule or instructor reprimand (Bin-Hajji et al., 2024; Tai and Chen, 2024). Yet recent critical studies indicate that it is not the technology itself that leads to language development, but the self-regulation, strategic problem-solving, and critical assessment that the learner brings to the situation (Li et al., 2025; Xia et al., 2026; Torres and Kahveci, 2025).

Speaking Self-Efficacy as a Psychological Driver of Oral Proficiency

Self-efficacy is one of the most robust predictors of academic achievement and language skills development, which has been well documented in applied linguistics and educational psychology (Yang & Gan, 2024; Wang et al., 2024). In the context of speaking, self-efficacy in English refers to the ability to use the right words, to form grammatically correct sentences, to speak clearly, to keep the conversation going, and to use compensatory pragmatic strategies in real-time conversation (Wang & Sun, 2020; Zhang, 2026). Research findings have consistently demonstrated that learners with high verbal self-control strive for more challenging communicative goals, persevere in the face of lexical errors, take more conversational turns, and demonstrate more resilience in the face of communicative failure (Xu, Su, & Liu, 2025; Istikharoh & Utami, 2024).

In the digital and artificial learning environment, self-efficacy has an important role to play as learners receive real-time validation and a learning scaffolding when interacting with AI-based conversational tools, which positively restructures their cognitive appraisal of language skills (Huang & Kakham, 2026; Shazly, 2021). When EFL university students used ChatGPT for focused oral preparation, Zhang (2026) discovered that they had significant improvements in task-specific self-efficacy and higher performance on formal verbal tests. Therefore, self-efficacy has been identified as a fundamental psychological mechanism that guides technological practice into observable communicative outcomes rather than as a passive correlate.

Foreign Language Speaking Anxiety in Communicative Contexts

Foreign language speaking anxiety is the most frequently reported affective barrier in SLA (Zeynalova, 2026; MacIntyre, 2017) and FLCA was conceived of as a type of anxiety specific to the foreign language classroom (Zeynalova, 2026), which consists of three interrelated components: communication apprehension, test anxiety, and fear of negative evaluation. In communicative EFL contexts, speaking anxiety is exhibited in a range of physiological symptoms (e.g., elevated heart rate, muscle tremors, sweating), cognitive disruptions (e.g., lexical blocking, working memory overload), and behavioral avoidance strategies (e.g., silent pauses, refusal to volunteer) (Faradiba et al., 2025; Peng & Li, 2025).

An empirical paradox: Some recent studies indicate that conversational AI could help to reduce speaking anxiety by eliminating the socio-evaluative threat in human-to-human classroom (e.g., Shazly, 2021;, 2024; Wang et al., 2024), whereas other studies indicate that anxious learners may use digital AI tools as a compensatory coping strategy to manage their heightened communicative apprehension (Ballıdağ & Aydın, 2025; Hwang et al., 2023). Given the aforementioned psychological stress caused by oral exams and public presentations in resource-constrained higher education settings, such as Cambodia, it is important to investigate the intersection of speaking anxiety and the use of AI tools.

English Speaking Performance and Communicative Competence

In modern language pedagogy, communicative competence is a framework for spoken proficiency, first developed by Canale and Swain (1980) and later revised by Celce-Murcia (2007) and Luoma (2004) to encompass four interrelated dimensions: grammatical competence (syntactic precision and morphological command), sociolinguistic/pragmatic competence (contextual appropriateness and stylistic register), discourse competence (structural coherence, topical coherence, and narrative resolution), and strategic competence (the strategic application of verbal and non-verbal processes to overcome communication failures).

For undergraduate TEFL students, this means evaluating their spoken performance in terms of linguistic accuracy and functional conversational fluency (Xu, Su, & Liu, 2025; Torres & Kahveci, 2025), including the ability to make clear academic presentations, sustain spontaneous conversations, ask questions to keep conversation flowing, and manipulate stress and intonation to convey more nuanced interpersonal meanings (Griche & Bennis, 2026; Neupane et al., 2025). Multi-item self-report scales calibrated against validated communicative competence rubrics can be used to assess students' perceived functional mastery across multiple communicative domains.

Conceptual Framework and Research Hypotheses

Grounded on Social Cognitive Theory (Bandura, 1997) and the Affective Filter Hypothesis (Krashen, 1982), this study proposes a comprehensive structural model in which the use of AI tools is the exogenous predictor, speaking anxiety and speaking self-efficacy are the affective and cognitive predictors, and English speaking performance is the primary endogenous outcome. Furthermore, given the theoretical assumption that technology affects human performance primarily through the alteration of internal cognitive appraisals (Huang & Kakham, 2026; Istikharoh & Utami, 2024), speaking self-efficacy is expected to mediate the effect of AI tools on speaking performance. Accordingly, the following five directional hypotheses are formulated for empirical testing:

H1: The use of AI tools is significantly and positively related to English speaking performance.

H2: Speaking self-efficacy is significantly and positively related to English speaking performance.

H3: Speaking anxiety is significantly and negatively related to English speaking performance.

H4: Collectively, AI tools utilization, speaking self-efficacy, and speaking anxiety significantly predict English speaking performance.

H5: Speaking self-efficacy mediates the relationship between AI tools utilization and English speaking performance.

Methodology

Research Design

The study employed a quantitative, non-experimental, cross-sectional correlational and predictive survey research design (Creswell & Creswell, 2023). Quantitative survey methodology was deemed appropriate due to the nature of the study and because it enables the objective, standardized measurement of interrelated psychological and behavioral constructs in a geographically distributed sample, permits strong statistical hypothesis testing, and allows for the testing of complex mediational hypotheses using multivariate regression and path analytic techniques (Kline, 2023).

Population, Sampling, and Participants

The target population for this study was undergraduate pre-service teachers enrolled in four-year Bachelor of Education (B.Ed.) programs majoring in Teaching English as a Foreign Language (TEFL) at two provincial campuses of Build Bright University (BBU), the Battambang campus and the Banteay Meanchey campus, two major

regional teacher education hubs for undergraduates from a range of socioeconomic and educational backgrounds from rural and semi-urban northwestern Cambodia. Purposive and convenience sampling were employed to recruit participants.

Of the 129 TEFL undergraduate students who completed the survey instrument with no missing data, the sample was demographically diverse, with 99 female (76.7%) and 30 male (23.3%) respondents, consistent with the female predominance in language education programs throughout Southeast Asia; 109 students (84.5%) were between 18 and 22 years old, 10 (7.8%) were 23–27, 7 (5.4%) were under 18, 2 (1.6%) were 28–32, and 1 (0.8%) was over 33; 54 (41.9%) were in Year 2, 44 (34.1%) were in Year 3, and 31 (24.0%) were in their graduating Year 4; 50 (38.8%) had studied English for 4 to 6 years, 48 (37.2%) for more than 6 years, 24 (18.6%) for 1 to 3 years, and 7 (5.4%) for less than 1 year; 60 (46.5%) rated their self-assessed English proficiency on the Common European Framework of Reference (CEFR) as Intermediate (B1), 39 (30.2%) as Upper-intermediate (B2), 15 (11.6%) as Elementary (A2), 7 (5.4%) as Advanced (C1), 7 (5.4%) as Beginner (A1), and 1 (0.8%) as Very advanced (C2). Notably, the use of AI was very high, with 64 students (49.6%) saying they use AI tools every day or almost every day, 58 (45.0%) using them a few times a week, and only 7 (5.4%) using them a few times a month. Of the 127 participants, 96 (74.4%) were from the Battambang campus, and 33 (25.6%) from the Banteay Meanchey campus.

Instrumentation and Operationalization of Constructs

Data were collected via a structured, self-administered questionnaire with five sections and 53 items: Section A (demographic and educational background information: 8 items: gender, age, year of study, duration of English study, self-rated CEFR proficiency, frequency of speaking English, frequency of AI tool use, and university campus), and Sections B through E, which operationalized the four latent psychological and behavioral constructs through 45 items scored on a uniform four-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree). A four-point forced-choice scale was used to eliminate the midpoint/neutral bias in Asian educational contexts, where respondents are compelled to make a directional evaluative judgment (Dörnyei & Dewaele, 2022).

Section B operationalized AI Tools for English Speaking Practice (10 items, B1–B10), with items drawn from validated CALL and GenAI scales (Griche and Bennis, 2026; Wang et al., 2023) assessing practical applications such as conversational partner simulation (B1), presentation rehearsal (B2), unscripted Q&A practice (B3), grammatical error detection (B4), lexical enhancement (B5), pronunciation and naturalness feedback (B6), leveled speaking activity generation (B7), real-time query resolution (B8), goal setting (B9), and critical verification of AI responses (B10).

Adapted from the English Speaking Self-Efficacy Scale and self-efficacy

construction guidelines by Yang & Gan, 2024; Wang & Sun, 2020 with 11 items adapted from Bandura, 2006, students were asked to rate their confidence in each of the following linguistic and communicative subskills: lexical selection (C1), syntactic construction (C2), register appropriateness (C3), phonological intelligibility (C4), intonation/stress modulation (C5), spoken fluency (C6), presentation confidence (C7), spontaneous question answering (C8), academic topic explanation (C9), conversation initiation/termination (C10) and communicative repair strategies (C11).

Foreign Language Speaking Anxiety (10 items, D1–D10) was measured in Section D using the Foreign Language Classroom Anxiety Scale (FLCAS; Horwitz et al., 1986) and communicative anxiety dimensions (Faradiba et al., 2025; MacIntyre, 2017). Items included unscripted speaking nervousness (D1), processing speed worry (D2), peer evaluation apprehension (D3), embarrassment over linguistic errors (D4), comparative self-deprecation against fluent speakers (D5), oral test anxiety (D6), teacher interrogation fear (D7), presentation anxiety (D8), and autonomic physiological reactions such as fast heartbeat (D9) and trembling/sweating under pressure (D10).

Functional mastery in topical vocabulary usage (E1, E2), complex idea expression (E3), syntactic complexity (E4), rapid lexical retrieval (E5), spoken fluency and reduced hesitations (E6), pause management (E7), conversational turn-taking and initiation (E8, E9, E10), structural coherence and idea connection (E11, E12), interpersonal intelligibility (E13), and expressive vocal intonation (E14) were assessed in Section E, Self-Perceived English Speaking Performance (14 items, E1–E14), based on the taxonomy of communicative competence (Canale and Swain, 1980; Celce-Murcia, 2007).

Instrument Validity and Reliability

Content and face validity were established through expert review before field deployment: a panel of three senior professors in applied linguistics and TESOL teacher education at Battambang Teacher Education College and Build Bright University reviewed the questionnaire items for theoretical alignment, construct coverage, linguistic clarity, and cultural appropriateness for Cambodian undergraduates, and minor syntactical modifications were made based on their recommendations to ensure clear understanding by non-native English speakers.

The internal consistency analysis based on Cronbach's alpha (α) confirmed the reliability of the constructs empirically, with all four subscales having high to outstanding internal consistency coefficients (Table 2) of above .70 (Kline, 2023), namely: AI Tools for Speaking (α = .832), Speaking Self-Efficacy (α = .875), Speaking Anxiety (α = .903), and English Speaking Performance (α = .880), and a strong overall reliability coefficient (α = .915) of the 45-item composite survey instrument.

Data Collection Procedure and Ethical Considerations

In the 2025-2026 academic year, the questionnaire was formally approved by the Academic Affairs divisions and Faculty of Arts, Humanities and Languages at Build Bright University, and administrative permissions were given, then distributed electronically using Google Forms and sent to institutional student Telegram groups and class learning management platforms via course instructors.

A strict protocol of ethical protections was in place, the survey itself began with a signed informed consent declaration that explained the purpose of the research, the name of the institution at which the researcher was conducting the research, and guarantees of voluntary participation, total anonymity, and individual response confidentiality, participants were made aware that there was no reward or consequence to their participation based on their course grades, and that they could withdraw at any time without penalty, no financial or academic rewards were given, and participation was voluntary.

Data Analysis Techniques

The resulting dataset was cleaned, outlier checked, and analyzed using Python (v3.13) and standard quantitative packages (Pandas, NumPy, SciPy). Descriptive statistics (frequencies, percentages, means, standard deviations, minimum, maximum, skewness, and kurtosis) were calculated to describe sample demographics and to assess the distributional properties of the data. Skewness and kurtosis indices were compared with Kline (2023) normality guidelines (skewness within ±2.0 and kurtosis within ±7.0) to ensure univariate normality.

Bivariate relationships among study constructs were analyzed with Pearson product-moment correlation coefficients (r) and multiple linear regression analysis (OLS) was conducted to examine the predictive ability of AI tools, self-efficacy, and speaking anxiety on English speaking performance, and multicollinearity was tested with Tolerance and Variance Inflation Factors (VIF). Hypothesized mediational mechanism of speaking self-efficacy (H5) was tested with the Baron and Kenny (1986) causal steps approach and Sobel (1982) z-test for the statistical significance of indirect effects through mediation path analysis.

Results and Discussion

Demographic Profile of the Respondents

Table 1 shows the demographic and academic profile of the 129 participants, which included 99 (76.7%) female and 30 (23.3%) male participants, and the majority were aged 18–22 years (n = 109, 84.5%), followed by 23–27 years (n = 10, 7.8%), under 18 years (n = 7, 5.4%), 28–32 years (n = 2, 1.6%), and over 33 years (n = 1, 0.8%). Second-

year students were the largest academic cohort (n = 54, 41.9%), followed by third-year (n = 44, 34.1%) and fourth-year graduating students (n = 31, 24.0%).

English Learning Background: Most participants had a high degree of formal exposure (50, 38.8% for 4-6 years, 48, 37.2% for >6 years, 24, 18.6% for 1-3 years, and 7, 5.4% for <1 year). Self-Assessed CEFR: Most participants self-assessed themselves in the intermediate bands (60, 46.5% for Intermediate [B1], 39, 30.2% for Upper-intermediate [B2], 15, 11.6% for Elementary [A2], 7, 5.4% for Advanced [C1], 7, 5.4% for Beginner [A1], and 1, 0.8% for Very advanced [C2]). Frequency of Oral Practice: 54, 41.9% spoke English sometimes, 48, 37.2% often, 21, 16.3% always, and 6, 4.7% rarely. Interestingly, using AI tools was a daily routine: 64, 49.6% used AI tools every day or almost every day, 58, 45.0% a few times a week, and 7, 5.4% a few times a month. Campus: 96, 74.4% were studying at Build Bright University Battambang, and 33, 25.6% were studying at the Banteay campus.

Table 1: Demographic characteristics of the respondents (N = 129)

Demographic Variable	Category / Profile	Frequency (n)	Percentage (%)
Gender	Female	99	76.7%
	Male	30	23.3%
Age Group	Below 18	7	5.4%
	18–22	109	84.5%
	23–27	10	7.8%
	28–32	2	1.6%
	Over 33	1	0.8%
Year of Study	Year 2	54	41.9%
	Year 3	44	34.1%
	Year 4	31	24.0%
Duration Learning English	Less than 1 year	7	5.4%
	1–3 years	24	18.6%
	4–6 years	50	38.8%
	More than 6 years	48	37.2%
Self-Rated Proficiency (CEFR)	Beginner (A1)	7	5.4%

Demographic Variable	Category / Profile	Frequency (n)	Percentage (%)
	Elementary (A2)	15	11.6%
	Intermediate (B1)	60	46.5%
	Upper-intermediate (B2)	39	30.2%
	Advanced (C1)	7	5.4%
	Very advanced (C2)	1	0.8%
English Speaking Frequency	Rarely	6	4.7%
	Sometimes	54	41.9%
	Often	48	37.2%
	Always	21	16.3%
AI Tool Usage Frequency	A few times a month	7	5.4%
	A few times a week	58	45.0%
	Every day or almost every day	64	49.6%
University Campus	Build Bright University, Battambang	96	74.4%
	Build Bright University, Banteay Meanchey	33	25.6%

Descriptive Analysis and Scale Reliability

Table 2 presents descriptive statistics (means, standard deviations, minimum, maximum, skewness, kurtosis, and Cronbach's alpha) for each latent construct for the first research question (RQ1); because the items were measured with a four-point Likert scale (1 = Strongly Disagree to 4 = Strongly Agree), mean scores were assessed using typical four-interval classification standards: 1.00–1.75 = Low, 1.76–2.50 = Moderate-Low, 2.51–3.25 = Moderate-High, and 3.26–4.00 = High.

Table 2 shows that the overall mean (M) was highest for AI Tools for Speaking (M = 2.857, SD = 0.403, α = .832), followed by Speaking Self-Efficacy (M = 2.826, SD = 0.390, α = .875), English Speaking Performance (M = 2.803, SD = 0.335, α = .880), and Speaking Anxiety (M = 2.705, SD = 0.532, α = .903). All of the univariate normality was confirmed: skewness ranged from -1.349 to -0.015; kurtosis ranged from 0.476 to 6.255, indicating that the parametric inferential procedures were justified (Kline, 2023).

Table 2: Construct-Level Descriptive Statistics, Normality Indices, and Reliability Coefficients

Construct	Items	Mean	SD	Min	Max	Skewness	Kurtosis	Cronbach's α
AI Tools for Speaking	10	2.857	0.403	1.000	4.000	-1.039	5.290	.832
Speaking Self-Efficacy	11	2.826	0.390	1.273	4.000	-0.015	3.444	.875
Speaking Anxiety	10	2.705	0.532	1.000	4.000	-0.381	0.476	.903
English Speaking Performance	14	2.803	0.335	1.000	3.857	-1.349	6.255	.880

A more detailed analysis of items of the survey by constructs (Table 3) reveals important behavioral and affective patterns. In the AI Tools dimension, students reported the most agreement on affordances related to linguistic scaffolding, such as finding better words when unable to express oneself (item B5: M = 3.16, SD = 0.57), noticing grammar mistakes in spoken output (item B4: M = 3.13, SD = 0.58), turning to AI when unsure how to say something (item B8: M = 2.99, SD = 0.63), critically checking important AI answers before trusting them (item B10: M = 2.91, SD = 0.64), and receiving feedback to make English sound clearer and more natural (item B6: M = 2.91, SD = 0.60), while unscripted Q&A without preparation (item B3: M = 2.52, SD = 0.66) and rehearsing presentations beforehand (item B2: M = 2.58, SD = 0.66) were lower, indicating that students tend to leverage AI more as a linguistic consultant and error-checking tool than an independent simulation environment.

The highest levels of confidence in speaking self-efficacy (Table 3) were reported for giving short presentations with confidence (item C7: M = 2.98, SD = 0.64), adapting explanations when misunderstood (item C11: M = 2.95, SD = 0.53), choosing the right words for academic or everyday situations (item C3: M = 2.89, SD = 0.49), and knowing the correct English words (item C1: M = 2.88, SD = 0.54); lower confidence was observed in sustained speech without getting stuck (item C6: M = 2.59, SD = 0.63) and articulating academic topics (item C9: M = 2.69, SD = 0.61), which reflect areas where fluency and stamina may be strengthened.

The strongest triggers of Speaking Anxiety (see Table 3) were unscripted speaking nervousness (M = 2.86, SD = 0.70), comparative self-doubt when comparing their English to fluent speakers (M = 2.86, SD = 0.77), anxiety over slow response times (M = 2.84, SD = 0.64), and fear of peer judgment (M = 2.72, SD = 0.77). The strongest somatic anxiety

markers (item D9: M = 2.66, SD = 0.71; item D10: M = 2.71, SD = 0.70) related to physiological anxiety markers such as heart palpitations and trembling or sweating under communicative pressure.

Finally, in English Speaking Performance (Table 3), students received the highest ratings for asking conversational follow-up questions (E10: M = 2.91, SD = 0.47), discussing familiar topics (E1: M = 2.88, SD = 0.52), connecting ideas clearly (E11: M = 2.87, SD = 0.55), being understood without difficulty (E13: M = 2.87, SD = 0.54), and modulating intonation for emotion and emphasis (E14: M = 2.87, SD = 0.58); and the lowest ratings for using longer, grammatically complex sentences correctly (E4: M = 2.60, SD = 0.58), which reflects their self-efficacy worries about syntactic elaboration under communicative pressure.

Table 3: Item-Level Descriptive Statistics for study variables

Item Code	Questionnaire Statement	Mean	SD	Level
AI Tools for Speaking	*Dimension Subscale Summary*			
B1	I use AI as a conversation partner to practice speaking English.	2.78	0.67	Mod-High
B2	I practice presentations or speaking tasks with AI before doing them in real life.	2.58	0.66	Mod-High
B3	I use AI to practice answering English questions without preparing my answers first.	2.52	0.66	Mod-High
B4	AI helps me notice grammar mistakes in my spoken English.	3.13	0.58	Mod-High
B5	AI helps me find better words when I cannot express myself well.	3.16	0.57	Mod-High
B6	AI feedback helps my English sound clearer and more natural.	2.91	0.60	Mod-High
B7	I ask AI to create speaking activities that fit my English level.	2.88	0.65	Mod-High
B8	I turn to AI when I do not know how to say something in English	2.99	0.63	Mod-High
B9	I use AI to set personal goals for improving my English speaking.	2.69	0.73	Mod-High
B10	I check important AI answers before I trust or use them.	2.91	0.64	Mod-High

Item Code	Questionnaire Statement	Mean	SD	Level
Speaking Self-Efficacy	*Dimension Subscale Summary*			
C1	I can usually find the right English words when I speak.	2.88	0.54	Mod-High
C2	I can make correct English sentences while speaking.	2.81	0.57	Mod-High
C3	I can choose expressions that fit both academic and everyday situations.	2.89	0.49	Mod-High
C4	People can understand my English pronunciation clearly.	2.86	0.57	Mod-High
C5	I can use stress and intonation to make my meaning clear.	2.79	0.60	Mod-High
C6	I can keep speaking without getting stuck too often.	2.59	0.63	Mod-High
C7	I can give a short presentation in English with confidence.	2.98	0.64	Mod-High
C8	I can respond to an unexpected question in English.	2.80	0.62	Mod-High
C9	I can explain an academic or professional topic clearly.	2.69	0.61	Mod-High
C10	I can start and end an English conversation naturally.	2.85	0.61	Mod-High
C11	I can change the way I explain something when someone does not understand me.	2.95	0.53	Mod-High
Speaking Anxiety	*Dimension Subscale Summary*			
D1	Speaking English without preparation makes me nervous.	2.86	0.70	Mod-High
D2	I worry about being too slow when answering in English.	2.84	0.64	Mod-High
D3	I worry that other students will judge my English.	2.72	0.77	Mod-High
D4	I feel embarrassed when I make English mistakes.	2.71	0.76	Mod-High

Item Code	Questionnaire Statement	Mean	SD	Level
D5	I feel less confident when I compare my English with fluent speakers.	2.86	0.77	Mod-High
D6	English speaking tests make me feel anxious.	2.68	0.65	Mod-High
D7	I feel nervous when a teacher suddenly asks me a question in English.	2.50	0.80	Mod-Low
D8	I feel nervous giving an English presentation, even after practicing	2.50	0.75	Mod-High
D9	My heart beats faster when I speak English in front of others.	2.66	0.71	Mod-High
D10	I sometimes shake, sweat, or feel physically tense when speaking English under pressure.	2.71	0.70	Mod-High
English Speaking Performance	*Dimension Subscale Summary*			
E1	I can talk about familiar topics using suitable English words.	2.88	0.52	Mod-High
E2	I can use special vocabulary when talking about different topics.	2.70	0.54	Mod-High
E3	I can explain both simple and detailed ideas in English.	2.79	0.55	Mod-High
E4	I can use longer and more complex sentences correctly when speaking.	2.60	0.58	Mod-High
E5	I can quickly choose words that fit what I want to say.	2.79	0.53	Mod-High
E6	I can keep speaking English without stopping too often.	2.71	0.60	Mod-High
E7	I can handle pauses without losing my listener's attention.	2.73	0.54	Mod-High
E8	I can start and respond naturally in English conversations.	2.86	0.53	Mod-High
E9	I can take turns and keep a conversation going.	2.84	0.46	Mod-High
E10	I can ask questions that help continue an English conversation.	2.91	0.47	Mod-High

Item Code	Questionnaire Statement	Mean	SD	Level
E11	I can connect my ideas clearly when I speak English.	2.87	0.55	Mod-High
E12	I can bring my spoken message to a clear ending.	2.83	0.50	Mod-High
E13	People can understand what I say in English without much difficulty.	2.87	0.54	Mod-High
E14	I can change my voice and intonation to show questions, emphasis, and feelings.	2.87	0.58	Mod-High

Bivariate Correlation Analysis

Pearson product-moment correlation coefficients (r) were calculated for the four constructs to answer the second research question (RQ2) and to test hypotheses H1, H2, and H3. The correlation matrix and the two-tailed significance levels are shown in Table 4. As expected in H1, there was a positive relationship between using AI tools and English speaking performance ($r = .248$, $p = .004$, two-tailed), indicating a small but statistically significant effect, which lends preliminary empirical support to the hypothesis that TEFL students who use AI conversational tools more frequently tend to self-report higher levels of oral communicative performance.

As predicted by H2, self-efficacy was found to have a very large and positive relationship with English speaking performance ($r = .735$, $p < .001$), indicating that cognitive self-belief in one's oral communication skills is the strongest correlate of communicative performance among TEFL undergraduates. On the other hand, contrary to H3, foreign language speaking anxiety was found to have a negligible and statistically non-significant correlation with English speaking performance ($r = -.053$, $p = .549$), although the relationship was negative as predicted, suggesting that high anxiety does not always lead to low performance in a direct and straightforward manner and that there may be compensatory or mediating mechanisms involved.

More importantly, speaking self-efficacy ($r = .343$, $p < .001$) and speaking anxiety ($r = .384$, $p < .001$) were both statistically significant positive correlates of AI tools use, with a correlation of .024 ($p = .786$) essentially indicating that self-efficacy and anxiety are orthogonal dimensions of cognition and affect rather than two ends of a single continuum.

Table 4: Pearson Correlation Matrix among study constructs

Construct	1	2	3	4
1. AI Tools for Speaking	1.000			
2. Speaking Self-Efficacy	.343***	1.000		
3. Speaking Anxiety	.384***	-.024	1.000	
4. English Speaking Performance	.248**	.735***	-.053	1.000

*Note: ** p < .01, *** p < .001 (two-tailed)*

Multiple Linear Regression Analysis

In order to answer the third research question (RQ3) and to test hypothesis H4, a multiple linear regression analysis was conducted with English speaking performance as the dependent variable and AI tools use, speaking self-efficacy, and speaking anxiety as independent predictors. The results of the omnibus model summary and detailed parameter estimates are shown in Table 5.

The regression model was significant, $F(3, 125) = 49.079$, $p < .001$, $R = .735$, $R^2 = .541$ (Adjusted $R^2 = .5298$, Standard Error of the Estimate = 0.2295), and thus provided strong empirical support for hypothesis H4..

Yet examination of the individual regression coefficients reveals some interesting differences in the unique predictive contribution of the variables. Each unit increase in speaking self-efficacy predicted a 0.626 unit increase in speaking performance after adjusting for AI tools and speaking anxiety ($B = 0.6255$, $SE = 0.0563$, $\beta = .7288$, $t = 11.114$, $p < .001$). The direct effect of AI tools utilization decreased to near-zero and became nonsignificant with self-efficacy controlled ($B = 0.0114$, $SE = 0.0589$, $\beta = .0138$, $t = 0.194$, $p = .847$). Similarly, speaking anxiety had no statistically significant unique direct effect ($B = -0.0257$, $SE = 0.0420$, $\beta = -.0408$, $t = -0.611$, $p = .542$).

Collinearity diagnostics suggested that multicollinearity was not an issue for the regression model (tolerance values: 0.728 to 0.854; VIF values: 1.171 to 1.373), and residual diagnostics confirmed normality, homoscedasticity, and independence of errors (Kline, 2023).

Table 5: Multiple Linear Regression Model Summary and parameter estimates predicting English speaking performance

Predictor	B	SE B	Beta (β)	t-value	p-value	Tolerance	VIF
Constant (Intercept)	1.0720	0.1924	—	5.571	< .001	—	—
AI Tools for Speaking	0.0114	0.0589	.0138	0.194	.847	0.728	1.373
Speaking Self-Efficacy	0.6255	0.0563	.7288	11.114	< .001	0.854	1.171
Speaking Anxiety	-0.0257	0.0420	-.0408	-0.611	.542	0.825	1.213

Model Summary: $R = .735$, $R^2 = .541$, Adjusted $R^2 = .530$, $F(3, 125) = 49.079$, $p < .001$, SE = 0.2295

Mediation Analysis: The Mediating Role of Speaking Self-Efficacy

This finding that AI tool usage was significantly correlated with speaking performance ($r = .248$, $p = .004$) at the bivariate level but became completely nonsignificant ($\beta = .014$, $p = .847$) in the presence of speaking self-efficacy indicated a full mediation mechanism, which was formally tested by mediation path analysis using the four-step framework for mediation by Baron and Kenny (1986) and the Sobel (1982) test, and hypothesis H5 was confirmed (Table 6).

The total effect of the use of AI tools on English speaking performance (path c) without the mediator was statistically significant (B = 0.2055, SE = 0.0713, t = 2.8808, p = .0046, $R^2 = .061$); use of AI tools significantly predicted the hypothesized mediator, speaking self-efficacy (path a: B = 0.3310, SE = 0.0806, t = 4.1076, $p < .001$, $R^2 = .117$); speaking self-efficacy significantly predicted speaking performance while controlling for AI tools (path b: B = 0.6317, SE = 0.0552, t = 11.4375, $p < .001$); and finally, when both AI tools and speaking self-efficacy were modeled simultaneously, the direct effect of AI tools on speaking performance (path c') shrank to virtually zero and was statistically non-significant (B = -0.0036, SE = 0.0534, t = -0.0679, p = .9459).

The indirect effect of AI tools on speaking performance through speaking self-efficacy was calculated as a × b: Indirect Effect = a × b = 0.3310 × 0.6317 = 0.2091 (SE = 0.0541); the Sobel test indicated that this indirect effect was significant at the highest confidence level (z = 3.8659, $p < .001$, 95% Confidence Interval [0.1031, 0.3151]). As the direct path (c') became entirely non-significant after adding self-efficacy, speaking self-efficacy was fully mediated, and hypothesis H5 was strongly confirmed: AI tools usage will not directly improve speaking performance, but their whole empirical impact will be mediated through psychological speaking self-efficacy.

Table 6: Summary of Mediation Analysis (Total, Direct, and Indirect Effects)

Model Pathway	Effect (B)	SE	t / z	p-value	95% CI	Outcome
Total Effect (c): AI Tools → Speaking Performance	0.2055	0.0713	2.8808	.0046	[0.0645, 0.3465]	Significant
Path a: AI Tools → Speaking Self-Efficacy	0.3310	0.0806	4.1076	< .001	[0.1715, 0.4905]	Significant
Path b: Speaking Self-Efficacy → Speaking Performance	0.6317	0.0552	11.4375	< .001	[0.5225, 0.7409]	Significant
Direct Effect (c'): AI Tools → Speaking Performance	-0.0036	0.0534	-0.0679	.9459	[-0.1093, 0.1021]	Non-Significant
Indirect Effect (a × b): AI Tools → SE → Performance	0.2091	0.0541	3.8659*	< .001	[0.1031, 0.3151]	Full Mediation

*Note: * Indicates Sobel test z-statistic; 95% Confidence Interval based on asymptotic standard errors*

Discussion of Findings

This study sought to investigate how the interplay between current AI tools, speaking self-efficacy, and speaking anxiety impact English speaking performance of TEFL undergraduate pre-service teachers in Cambodia, which has important theoretical and pedagogical implications for the cognitive-affective processes of computer-assisted language learning in Southeast Asian higher education.

The descriptive results indicate that conversational AI has been well received by the Cambodian TEFL undergraduates (94.6% of respondents used AI tools more than once a week), but the item-level data (Table 3) indicate that they mainly use AI to supplement vocabulary (B5: M = 3.16), check grammatical correctness (B4: M = 3.13), and clarify queries in real-time (B8: M = 2.99) rather than for spontaneous spoken interaction (B3: M = 2.52), which is in line with the most recent CALL scholarship (Moorhouse & Griche & Bennis, 2026; Wang et al., 2023) that states that generative AI is used by second language learners for text-based and speech-assisted prompts as an asynchronous reference grammar and thesaurus. This is also reflected in the fact that students demonstrated critical digital literacy (B10: M = 2.91), which means that they recognize that outputs from AI need to be verified critically before they are applied in an academic context.

Second, the most important empirical finding of this study is that speaking self-

efficacy ($\beta = .729$, $t = 11.11$, $p < .001$) was the most significant predictor of speaking performance, accounting for 54.1% of the variance in speaking performance, thereby empirically supporting the central role of Bandura (1997) Social Cognitive Theory in EFL communicative competence. Students who are self-efficacious about retrieving vocabulary, modulating intonation, constructing sentences, and pragmatically adapting to a conversation are far more likely to be able to produce successful spoken language. This aligns with previous research (Wang and Sun 2020, Wang et al. 2024, Zhang 2026) which shows that internal self-efficacy beliefs function as the psychological engine that fuels linguistic knowledge in real-time communication.

Third, the full mediation mechanism identified in this study (Sobel $z = 3.866$, $p < .001$) resolves a critical theoretical contradiction in the emerging literature on generative AI in education: while some commentators view that technology automatically improves language abilities by AI-supported immersion (Kuluşaklı and Genç, 2024; Shen et al., 2025), the empirical path model in this study demonstrates that the effect of AI tool adoption on oral performance is not direct ($\beta = .014$, $p = .847$), but rather an external cognitive scaffolding environment that supports mastery experiences and non-punitive feedback, which enhances the learner's speaking self-efficacy (Path a: $B = 0.331$, $p < .001$), which in turn drives oral communicative performance (Path b: $B = 0.632$, $p < .001$). This supports the theoretical hypothesis formulated by Chen and Hwang (2024) and Istikharoh and Utami (2024): it is only when educational technologies have successfully enhanced learners' self-regulatory cognitive appraisals that they can deliver substantial communicative gains.

Conclusion

Summary of Key Findings

This study aims to investigate the structural effects of the use of AI tools, speaking self-efficacy, speaking anxiety, and self-perceived oral performance on English speaking performance of 129 TEFL undergraduates at two regional campuses of Build Bright University in Cambodia. Three major empirical findings were drawn: 1) TEFL undergraduates do use AI tools, with moderate-to-high levels of technological adoption, speaking self-efficacy, speaking anxiety, and self-perceived oral performance; 2) multiple linear regression analysis showed that the three predictors together explained 54.1% of the variance in English speaking performance, with speaking self-efficacy as the single strongest direct predictor; and 3) mediation analysis showed that speaking self-efficacy fully mediated the relationship between the use of AI tools and speaking performance. AI conversational agents do not mechanically produce speaking competence; their pedagogical potential hinges entirely on their capacity to elicit internal linguistic and communicative self-efficacy in learners.

Theoretical and Pedagogical Implications

This study extends Bandura (1997) social cognitive theory and Krashen (1982) affective filter hypothesis to the new frontiers of generative AI-mediated language acquisition, showing that the oral language outcomes are mediated by AI tools exclusively via the psychological channel of self-efficacy, providing a robust empirical model to caution against technological determinism and to reaffirm the centrality of learner agency and cognitive self-belief in SLA.

From a pedagogical point of view, the findings provide a clear and immediate set of recommendations for TEFL teacher educators, university administrators, and curriculum developers in Cambodia and other developing Asian contexts: First, teacher education programs should go beyond the bans or policies on the surface and integrate structured AI-supported speaking pedagogies by designing planned interactive tasks for students to practice their academic presentations, role-plays, and receive formative lexical feedback from speech-enabled AI chatbots (e.g., ChatGPT Voice, Claude, Elsa Speak) before they are expected to collaborate in the classroom.

Second, because speaking performance is dependent on self-efficacy, instructional design should be based on Bandura's four sources of self-efficacy; lecturers should design AI tasks to provide incremental mastery experience, from structured prompts to unscripted debates to gain confidence in speaking. Third, because anxious students seek out AI as a low-stakes safe place, teachers must legitimize AI conversational practice as a sanctioned, low-stakes preparatory stage that reduces the affective filter to allow students to transition to high-stakes human-to-human classroom discussions

Limitations and Recommendations for Future Research

There are several methodological limitations in the present study: It employed a cross-sectional survey design rather than longitudinal and quasi-experimental intervention designs that are able to track changes in self-efficacy and oral proficiency over a longer period of AI integration; English speaking performance was operationalized via self-perceived communicative competence scales that have been validated and are highly correlated with actual achievement, but future research should include objective oral performance evaluations, such as standardized IELTS/TOEFL speaking test scores or blind rubric-based oral assessments; and the sample was limited to 129 TEFL undergraduates from two regional branches of a single private university in northwestern Cambodia, and subsequent research should expand the sampling frame to include public universities, provincial teacher training colleges (BTECs), and diverse academic disciplines across Southeast Asia to increase cross-contextual generalizability.

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Conflict of Interest Statement

The author declares that there is no conflict of interest regarding the publication of this paper.

Ethics Statement

This study was conducted in strict accordance with ethical research standards and institutional academic integrity guidelines. Informed consent was obtained electronically from all participating undergraduate students prior to survey administration. Participation was entirely voluntary, with guaranteed anonymity and confidentiality of individual responses. Respondents were informed of their right to withdraw from the study at any point without academic penalty. The data collected were utilized solely for academic research purposes.

Author Contribution Statement

Hou Malika: Conceptualization, methodology, investigation, and writing – original draft.
Tang Kimleng: Methodology, investigation, data curation, and writing.
Raya Sonysa: Investigation, data curation, and writing.
Sin Seavmeyli: Investigation, data curation, and writing – review and editing.
Heang Pichchansonita: Investigation, formal analysis, and writing – review and editing.
Chhen Sela: Conceptualization, methodology, and supervision– review and editing.
All authors reviewed and approved the final manuscript and agreed to be accountable for their respective contributions.

Declaration on the Use of Artificial Intelligence (AI)

AI tools were used solely to improve the grammar, clarity, and readability of this

manuscript. All scientific content and interpretations are the original work of the authors.

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Appendix: Survey Questionnaire Instrument

Section A: Demographic and Educational Background Information

A1. Gender: [ ] Female [ ] Male

A2. Age: [ ] Below 18 [ ] 18–22 [ ] 23–27 [ ] 28–32 [ ] Over 33

A3. Year of Study: [ ] Year 2 [ ] Year 3 [ ] Year 4

A4. Duration of Learning English: [ ] Less than 1 year [ ] 1–3 years [ ] 4–6 years [ ] More than 6 years

A5. Self-Rated English Proficiency (CEFR): [ ] Beginner (A1) [ ] Elementary (A2) [ ] Intermediate (B1) [ ] Upper-intermediate (B2) [ ] Advanced (C1) [ ] Very advanced (C2)

A6. Frequency of Speaking English: [ ] Rarely [ ] Sometimes [ ] Often [ ] Always

A7. Frequency of AI Tool Usage: [ ] A few times a month [ ] A few times a week [ ] Every day or almost every day

A8. University Campus: [ ] Build Bright University, Battambang [ ] Build Bright University, Banteay Meanchey

Section B: AI Tools for English Speaking Practice (10 Items)

Scale: 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Agree (A), 4 = Strongly Agree (SA)

B1. I use AI as a conversation partner to practice speaking English.

B2. I practice presentations or speaking tasks with AI before doing them in real life.

B3. I use AI to practice answering English questions without preparing my answers first.

B4. AI helps me notice grammar mistakes in my spoken English.

B5. AI helps me find better words when I cannot express myself well.

B6. AI feedback helps my English sound clearer and more natural.

B7. I ask AI to create speaking activities that fit my English level.

B8. I turn to AI when I do not know how to say something in English.

B9. I use AI to set personal goals for improving my English speaking.

B10. I check important AI answers before I trust or use them.

Section C: English Speaking Self-Efficacy (11 Items)

Scale: 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Agree (A), 4 = Strongly Agree (SA)

C1. I can usually find the right English words when I speak.

C2. I can make correct English sentences while speaking.

C3. I can choose expressions that fit both academic and everyday situations.

C4. People can understand my English pronunciation clearly.

C5. I can use stress and intonation to make my meaning clear.

C6. I can keep speaking without getting stuck too often.

C7. I can give a short presentation in English with confidence.

C8. I can respond to an unexpected question in English.

C9. I can explain an academic or professional topic clearly.

C10. I can start and end an English conversation naturally.

C11. I can change the way I explain something when someone does not

understand me.

Section D: Foreign Language Speaking Anxiety (10 Items)

Scale: 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Agree (A), 4 = Strongly Agree (SA)

D1. Speaking English without preparation makes me nervous.

D2. I worry about being too slow when answering in English.

D3. I worry that other students will judge my English.

D4. I feel embarrassed when I make English mistakes.

D5. I feel less confident when I compare my English with fluent speakers.

D6. English speaking tests make me feel anxious.

D7. I feel nervous when a teacher suddenly asks me a question in English.

D8. I feel nervous giving an English presentation, even after practicing.

D9. My heart beats faster when I speak English in front of others.

D10. I sometimes shake, sweat, or feel physically tense when speaking English under pressure.

Section E: Self-Perceived English Speaking Performance (14 Items)

Scale: 1 = Strongly Disagree (SD), 2 = Disagree (D), 3 = Agree (A), 4 = Strongly Agree (SA)

E1. I can talk about familiar topics using suitable English words.

E2. I can use special vocabulary when talking about different topics.

E3. I can explain both simple and detailed ideas in English.

E4. I can use longer and more complex sentences correctly when speaking.

E5. I can quickly choose words that fit what I want to say.

E6. I can keep speaking English without stopping too often.

E7. I can handle pauses without losing my listener's attention.

E8. I can start and respond naturally in English conversations.

E9. I can take turns and keep a conversation going.

E10. I can ask questions that help continue an English conversation.

E11. I can connect my ideas clearly when I speak English.

E12. I can bring my spoken message to a clear ending.

E13. People can understand what I say in English without much difficulty.

E14. I can change my voice and intonation to show questions, emphasis, and feelings.