

Students' Acceptance of an AI-Powered Chatbot for Pronunciation and Speaking Practice in a Rural Indonesian EFL Classroom: A TAM-Informed Mixed-Methods Study

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ABSTRACT

This study assessed students' adoption of an AI-powered chatbot deployed to improve pronunciation and English speaking practice in a rural Indonesian senior high school. Perceived utility, perceived ease of use, and desire to continue using the technology were interpreted using a TAM-informed embedded mixed-methods methodology. Nineteen 10th-grade students engaged in nine educational sessions of voice interaction with ChatGPT, speech shadowing, and a genre-based approach. Quantitative data were collected using a 15-item Likert scale questionnaire and pre-test-post-test speaking tests, while qualitative data were collected using semi-structured interviews. Overall, the questionnaire was evaluated quite positively ($M = 4.27/5$; Cronbach's $\alpha = .838$). Vocabulary development obtained the highest rating ($M = 4.44$), followed by feedback effectiveness ($M = 4.37$), fluency ($M = 4.26$), overall effectiveness ($M = 4.18$), and confidence ($M = 4.09$). Speaking scores also improved considerably from $M = 28.87$ to $M = 64.54$, $t(18) = 9.874$, $p < .001$, Cohen's $d = 2.265$. Interviews revealed that perceived utility was high due to pronunciation modeling, vocabulary increase, instant feedback, customization, and repeated practice. The

more I used it, the easier it got, but there were still some difficulties around building prompts, understanding native speaker accents, internet connectivity, and sometimes receiving irrelevant results. Fifteen students chose AI-assisted learning, and fourteen reported greater AI practice post-intervention, showing good behavioral intention. The findings suggest that usefulness was the strongest basis of acceptance, while ease of use was conditional on scaffolding, infrastructure, and teacher mediation. AI chatbots can therefore complement, rather than replace, teachers in rural EFL speaking instruction.

Keywords: AI-powered chatbot; Technology Acceptance Model; pronunciation; speaking skills; EFL; rural education.

INTRODUCTION

Being able to speak English is becoming one of the factors for engagement in the field of academia, job and communication especially in a global and digitally connected culture (Chen, 2024; Hidayat, 2024). English is one of the compulsory subjects in secondary education in Indonesia. Due to this matter, learners are encouraged to strengthen their skills in listening, speaking, reading, and writing in

the Merdeka Curriculum (Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi, 2022). From all of those skills, speaking, however, is a complex ability. Learners require to organize their ideas, retain vocabulary, activate their grammatical knowledge, and generate intelligible speech under real-time communicative pressure (Brown, 2004; Bygate, 1987). In EFL contexts, there are very few opportunities to practice speaking in a real and meaningful way and moreover, there are still impediments (Leonita et al., 2023; Purwati et al., 2023).

Issues are even more complicated for rural schools. Digital infrastructure, instructional materials, stable energy and availability of trained language support may not be as accessible in rural schools as it is in urban settings (Khan et al., 2019; Wood, 2023). The preliminary survey in SMA Negeri 4 Tanah Siang found that just 21.9% of students considered speaking as their strongest English skill. 53.1% of the students identified themselves as hesitant speakers and 50% of them experienced shyness when speaking English. Many pupils have experience of speaking activities but few considered themselves fluent. The local evidence showed a requirement for frequent low-pressure practice, timely feedback, pronunciation models and learning support that was tailored to the individual.

AI-powered chatbots have emerged as potential conversational partners for language learning. Unlike fixed rule-based systems, generative chatbots can interpret open-ended prompts, generate context-sensitive responses, and provide interactive feedback (Adamopoulou & Moussiades, 2020; Kohnke et al., 2023). In EFL instruction, they can create opportunities for repeated conversation, vocabulary development, pronunciation rehearsal, and non-judgmental corrective feedback (Belda-Medina & Calvo-Ferrer, 2022; Annamalai et al., 2023; Qiao & Zhao, 2023). ChatGPT is particularly relevant because its voice-input and audio-response features allow learners

to hear models, imitate pronunciation, repeat sentences, and request clarification or slower delivery. These functions are potentially valuable in classrooms where access to fluent English-speaking partners is limited.

However, the existence of valuable technology does not guarantee that students will adopt it, or continue to use it. The acceptance of a system is based on the perception of the learners on its utility, ease of use and whether the experience will make future use easier. The Technology Acceptance Model (TAM) explains the adoption of technology based on two core beliefs: perceived usefulness (PU), which is the extent to which a user believes that a technology will improve performance, and perceived ease of use (PEOU), which is the extent to which a technology is perceived as requiring little effort (Davis, 1989). These beliefs influence attitudes and intention to behave. Usefulness may be evidenced in students' perceived gains in vocabulary, pronunciation, fluency, confidence and quality of feedback in an educational setting. Ease of use may be evidenced in students' ability to interact via voice input, formulate prompts, understand responses and access the system reliably.

Earlier studies have indicated favorable learning results (e.g. fluency, pronunciation, confidence, motivation and autonomy) from AI-supported speaking practice (Kohnke et al., 2023; Lo et al., 2024; Qiao & Zhao, 2023). Yet most research has focused on higher education, urban settings, or general language outcomes. Less is known about technology acceptance among school-age learners using an AI chatbot for a specific speaking genre in a rural, resource-constrained context. Furthermore, many acceptance studies rely exclusively on survey scores and do not connect learner perceptions with objective speaking outcomes or detailed accounts of classroom use.

The present article addresses this gap by reanalyzing the student-side evidence from an original classroom intervention through a

TAM-informed lens. The chatbot was integrated with the Genre-Based Approach (GBA), the Teaching-Learning Cycle, and speech shadowing. GBA provided structured movement from Building Knowledge of the Field (BKOF) and Modeling of Text (MOT) to Joint Construction of Text (JCOT) and Independent Construction of Text (ICOT), while shadowing enabled students to listen to and immediately repeat AI-generated speech. The article focuses only on students' acceptance and use of the chatbot, drawing on questionnaire, interview, and speaking-performance data.

The research questions of this study are:

RQ1. What were the students' perceptions of the AI-powered chatbot's effectiveness and simplicity of use for pronunciation and descriptive speaking practice?

RQ2. How were students' perceived usefulness and ease of use related to their intention and actual inclination to utilize the AI-powered chatbot?

LITERATURE REVIEW

AI-Powered Chatbots for EFL Speaking and Pronunciation

In regular EFL lessons, the time for interaction and teaching the students one by one is restricted, but it can be improved with the help of AI chatbots in an effective way. The voice talk feature allow learners to interact. Moreover, learners can ask for examples, practice target expressions, obtain instant feedback, and repeat activities without waiting for the teacher's attention (Belda-Medina & Calvo-Ferrer, 2022; Kohnke et al., 2023). Meta-analytic and review results show that dialogue-based AI can help improve speaking, especially when learners are given enough practice and feedback opportunities (Qiao & Zhao, 2023; Lo et al., 2024).

Pronunciation is closely related to speech recognition and speech generating aspects as they offer repetitive imitation and auditory models. On the other hand, the potential benefits of chatbots should be taken with a pinch of salt. They may be

inconsistent, too complex, inaccurate, and not nuanced enough to take learners' levels and cultural backgrounds into account (Lo et al., 2024; Rouabhia, 2024). Voice interaction may also be affected by accent, background noise, speech recognition issues and connectivity. Therefore, chatbot-assisted speaking should be pedagogically designed and supervised by teachers, rather than being an independent alternative to human teaching.

Technology Acceptance Model

Technology Acceptance Model (Davis, 1989) states that perceived ease of use and perceived usefulness are the factors of technology acceptance. Perceived usefulness is the expected contribution of a system to task performance. This is roughly how much students feel an AI speaking chatbot helps them to pronounce words more precisely, to learn vocabulary, to structure sentences, to talk more fluently, to provide valuable feedback and to build confidence. Perceived ease of use refers to the extent to which the system is perceived as easy to use, such as students' ability to generate prompts, turn on voice input, interpret the response, and practice without much technical difficulties.

TAM also suggests that utility and convenience of use are factors contributing to behavioral intention. Intention can be derived, in the classroom research, from students' declared preference for future AI-assisted learning, willingness to use the chatbot again and greater practice following the intervention. Because the present questionnaire was originally designed to measure perceived effectiveness rather than to estimate a full structural TAM model, the study used TAM as an interpretive framework rather than claiming causal path testing. The quantitative dimensions represented performance-related usefulness, while interview evidence provided direct indicators of ease of use, barriers, preference, and continued-use behavior.

Pedagogical Grand Theories and Instructional Framework

The intervention was also based on the Sociocultural Theory and Connectivism that rationalize students' perception of usefulness of the technology. Learning is a mediated interaction and scaffolding process in the Zone of Proximal Development (Vygotsky, 1978). The chatbot was given the role of a digital resource for modeling and correcting assistance while the teacher was given the roles of advice, emotional support, and instructional judgments in this study. Knowledge is spread among human and digital nodes. Learning is the process of connecting one to relevant information sources (Siemens, 2005). The chatbot interaction extended the students' learning network and provided them with rapid access to models, explanations and language examples.

The Genre-Based Approach, in the classroom, systematized these notions. Students gained contextual and lexical information in BKOF, studied AI constructed descriptive models in MOT, worked on spoken texts in JCOT and produced individual spoken descriptions in ICOT (Martin & Rose, 2008; Emilia, 2010). Speech shadowing which supplemented the cycle by asking students to listen and reproduce model speech and so helped articulation, rhythm, intonation and fluency (Adank et al., 2010). Such planned integration was vital, as acceptance of technology can depend not only on the software itself, but also on whether classroom assignments make obvious and manageable its benefits.

MATERIALS & METHODS

Research Design

The study used an embedded mixed-methods design based on the TAM. Quantitative findings described students' reported learning effectiveness and objective speaking improvement, and qualitative evidence described how learners experienced usefulness, ease of use, hurdles, and continued-use intention. Interpretation

was accomplished by a convergent joint reading of questionnaire dimensions, speaking scores, and coded interview topics (Creswell & Creswell, 2018; Fetters et al., 2013)

Research Site and Participants

The investigation was conducted at SMA Negeri 4 Tanah Siang. SMA Negeri 4 Tanah Siang is a public senior high school in the rural area of Murung Raya Regency, Central Kalimantan, Indonesia. Students come to the school from scattered communities, a consequence of limits imposed by availability of device, electricity and reliability of internet. The pupils were 19 students of Grade X, 12 boys and 7 girls with the English proficiency about CEFR A1 to B1. The whole class was chosen as the accessible Grade X group studying descriptive speaking in the academic year 2025/2026.

AI-Assisted Instructional Procedure

The intervention was nine instructive meetings. Most students utilized pairs of shared Chromebooks to engage with the chat bot, utilizing voice and text input. Each meeting was based on the four stages of the GBA. In BKOF, the teacher engaged students' prior knowledge and domain specific terminology. Students practiced pronunciation in controlled shadowing, and heard descriptive models provided by AI in the MOT context. Partners wrote mini paragraphs in JCOT, asked for help with vocabulary or sentences and got feedback from the AI. At ICOT students gave oral presentations of their own work and adapted their performance to feedback. The teacher prompted, modeled safe and productive use of AI, monitored responses and intervened when outputs were irrelevant or too complex.

Instruments

Three data sources were used. First, a 15-item five-point Likert questionnaire measured five dimensions: vocabulary development, fluency, confidence, feedback

effectiveness, and overall effectiveness. Responses ranged from 1 (strongly disagree) to 5 (strongly agree). Dimension means of 4.21-5.00 were interpreted as very effective, 3.41-4.20 as effective, 2.61-3.40 as moderately effective, 1.81-2.60 as ineffective, and 1.00-1.80 as very ineffective. The overall internal consistency of the 15 items was acceptable to good (Cronbach's alpha = .838).

Second, semi-structured interviews were conducted with all 19 participants after the intervention. Eight main questions explored emotional responses, learning support, difficulties, confidence, useful features, practice frequency, feedback, and learning preference. The interview corpus contained 152 substantive responses. Meaning units were coded into 57 initial codes and seven broader categories: affective response and confidence; AI features and learning support; language and speaking development; practice, access, and AI literacy; feedback and revision; challenges and limitations; and learning preference.

Third, students completed equivalent pre-test and post-test spoken descriptive tasks. Three raters assessed generic structure, vocabulary, specificity, fluency, grammatical accuracy, and coherence using an analytic rubric. The speaking scores were not treated as a TAM construct; instead, they provided objective criterion evidence for students' judgments of usefulness.

Data Analysis

Questionnaire data were analyzed using means, standard deviations, category interpretations, and Cronbach's alpha. Speaking scores were analyzed using descriptive statistics, the Shapiro-Wilk test of difference scores, a paired-samples t-test, and Cohen's d. The normality assumption was met, $W = .940$, $p = .259$. Interview

responses were analyzed through thematic content analysis following familiarization, meaning-unit identification, initial coding, category development, theme review, and interpretive mapping to TAM (Braun & Clarke, 2006). Frequencies indicated the number of coded meaning units, not the number of unique students, except where participant counts were explicitly available. To preserve confidentiality, participants were identified as S01-S19.

Ethical Considerations

The research and data collection has been approved by the school. Informed consent from the participant was secured before data collection. Participation was voluntary, students' identities were anonymized in analysis, and AI use was supervised by the teacher. Students were instructed not to enter personally sensitive information into the chatbot. The technology was used as a learning aid and did not replace teacher assessment or pastoral responsibility.

RESULT

RQ1: Perceived Usefulness and Ease of Use

The questionnaire results demonstrated strong perceived usefulness. The overall mean across the 15 items was 4.27, categorized as very effective. Vocabulary development received the highest dimension score ($M = 4.44$), followed by feedback effectiveness ($M = 4.37$) and fluency ($M = 4.26$), all categorized as very effective. Overall effectiveness ($M = 4.18$) and confidence ($M = 4.09$) were categorized as effective. The pattern indicates that students valued the chatbot most strongly for concrete language support and feedback, while affective change, although positive, developed somewhat more gradually.

Dimension	TAM interpretation	Mean	Interpretation
Vocabulary development	Perceived usefulness	4.44	Very effective
Feedback effectiveness	Perceived usefulness	4.37	Very effective
Fluency	Perceived usefulness	4.26	Very effective
Overall effectiveness	Global usefulness/attitude	4.18	Effective
Confidence	Affective benefit	4.09	Effective
Overall questionnaire	Overall acceptance	4.27	Very effective

The objective speaking results supported these usefulness perceptions. The mean score rose from 28.87 (SD = 7.74) in the pre-test to 64.54 (SD = 19.99) in the post-test. The mean gain was 35.66 points. A paired-samples t-test showed a statistically significant improvement, $t(18) = 9.874$, $p < .001$, with a very large effect size, Cohen's d

$= 2.265$ (95% CI [1.396, 3.117]). Although the one-group design does not isolate the chatbot from all instructional influences, the magnitude and direction of change were consistent with students' reports that AI-assisted modeling, feedback, and repeated practice improved their performance.

Measure	Pre-test	Post-test	Inferential result
n	19	19	-
Mean	28.87	64.54	Mean gain = 35.66
SD	7.74	19.99	$t(18) = 9.874$
Range	15.30-42.00	40.00-94.30	$p < .001$; $d = 2.265$

Interview findings clarified the sources of perceived usefulness. Pronunciation improvement was the most frequent language-development code (23 coded meaning units), followed by vocabulary improvement (19), sentence and text construction support (8), repetitive pronunciation practice (8), fluency improvement (6), and intonation improvement (5). Students described how the chatbot pronounced words slowly, repeated models, offered text relevant to a descriptive topic, and corrected errors. Voice input was the most useful feature with 19 coded meaning units. Corrective feedback was cited 25 times, and increased awareness of errors was explicitly mentioned in eight meaning units. These patterns indicate that usefulness was not limited to the fact that students received answers; students valued the chatbot as an interactive model for pronunciation, practice partner, and source of formative feedback. Students reported benefits in accessibility and personalization as well. Information support appeared 14 times, immediate AI response 11 times, personalized learning 11 times, and perceived ease and speed of learning 11 times. Learners appreciated being able to ask questions directly without

waiting for the teacher to finish assisting classmates. Several participants explained that the chatbot adapted its response to their learning pace and could repeat pronunciation until they were ready to perform. This individualized availability strengthened perceived usefulness in a class where one teacher could not provide continuous one-to-one speaking practice to every learner.

Perceived ease of use was positive but conditional. Three coded meaning units explicitly stated that AI was easy to use or did not present significant difficulty and students' competence improved with experience. However, the difficulty of constructing prompts appeared 10 times, the difficulty of AI accent six times, the difficulty of real-time speech comprehension five times, and the inconsistent or irrelevant AI responses six times. One student reported an internet connectivity problem, while another described time pressure. Thus, students did not perceive the system as uniformly effortless. All of this was made possible by the teacher offering prompts, modeling voice input, encouraging requests such as 'speak slowly', and providing peer support.

TAM-related theme	Key qualitative indicator	Coding frequency
Usefulness: pronunciation	Pronunciation models and improvement	23
Usefulness: feedback	Corrective suggestions and revisions	25
Usefulness: vocabulary	Vocabulary expansion	19
Usefulness: voice interaction	Voice input identified as most useful	19

Usefulness: personalization	Adaptation to needs or pace	11
Ease facilitator	Learning perceived as easier/faster	11
Ease barrier	Prompt construction difficulty	10
Ease barrier	Accent comprehension/imitation difficulty	6
Ease barrier	Inconsistent or irrelevant response	6
Ease barrier	Real-time AI speech comprehension	5

RQ2: Continued-Use Intention and Actual Use Tendency

The second research question was: Did students experiences lead to intention and increased use. Fifteen students preferred AI assisted learning and five statements preferred teacher led learning, one participant stated nuanced or mixed preferences across responses, therefore, coding frequencies should not be interpreted as mutually exclusive percentages. Students who preferred AI generally liked the instant help, the personalization, the pronunciation practice, and the ability to ask questions over and over. Students who preferred the teacher said they valued the emotional comfort, the dynamic human interaction, and the pronunciation that was easier for non-native learners to follow.

Behavioral evidence also suggested increased acceptance. Fourteen coded meaning units indicated that AI practice became more frequent after the intervention. Seven students reported practicing both at home and at school, whereas twelve described practice as mainly or exclusively classroom-based, and six noted limited

home practice. These overlapping patterns indicate that intention was generally positive but that actual independent use was constrained by access, habit, connectivity, or the availability of school devices. The intervention therefore increased willingness and familiarity more consistently than it guaranteed sustained home use.

Confidence and affective responses further supported continued-use intention. Positive learning experience was coded 20 times, speaking-confidence improvement 20 times, and self-reported numerical confidence gain 16 times. Increased motivation appeared six times, and reduced anxiety six times. Students frequently described AI practice as enjoyable, new, exciting, and less judgmental. At the same time, three meaning units showed remaining speaking anxiety, and several students continued to feel more comfortable with a teacher. Thus, the pattern of usage was not substitutive but complementary: students used AI for private practice and instant support, but valued the teacher for his emotional and pedagogical importance.

Indicator of intention/use	Finding	Interpretation
Preference for AI-assisted learning	15 coded participant preferences	Strong positive intention
Preference for teacher-led learning	5 coded participant preferences	Human support remained important
Increased AI practice after treatment	14 coded meaning units	Actual use tendency increased
Practice at home and school	7 students	Emerging independent use
Classroom-only/mainly classroom practice	12 students	Use constrained by access/context
Positive learning experience	20 coded meaning units	Favorable attitude toward use
Speaking confidence improvement	20 coded meaning units	Affective reinforcement of intention

DISCUSSION

Perceived Usefulness as the Strongest Basis of Acceptance

Results showed that perceived usefulness was the most important factor for students'

acceptance of chatbot. The highest questionnaire ratings concerned vocabulary and feedback, while interview data emphasized pronunciation modeling, corrective feedback, voice input, and

repeated practice. In TAM terms, students accepted the technology because they could connect its use with visible improvement in the central learning task. The statistically significant speaking gain externally supported this belief, although the pre-experimental design warrants caution in attributing the whole gain to the chatbot alone.

This finding is consistent with earlier research. This finding shows that conversational AI can help speech through tailored interaction, instant feedback, and seamless practice (Belda-Medina and Calvo-Ferrer, 2022; Kohnke et al., 2023; Qiao and Zhao, 2023). It also extends previous work by showing that school-age learners in a rural Indonesian context perceived usefulness at multiple levels: linguistic development, access to explanations, reduced waiting time, and preparation for public performance. The voice feature was particularly important because it transformed the chatbot from a text generator into an oral model and interactive rehearsal partner.

The usefulness finding can also be explained by Sociocultural Theory. The chatbot's models, prompts, corrections, and repeated explanations were scaffolded for a limited time, but the teacher structured activities within students' developmental readiness (Vygotsky, 1978). The technology was not autonomous; its utility came from the interaction of AI assistance, teacher mediation, peer collaboration, GBA stages, and shadowing. Connectivism was similarly effective in explaining how students grew their network of learning by making connections with an ever-present digital source of knowledge (Siemens, 2005).

Ease of Use Was Developed, Not Assumed

Students' comments suggested that simplicity of use was more complex than usefulness. But they found the chatbot fast and easy to access. But they also had challenges with formulating prompts, natural speaker accents, real-time audio, and

getting meaningful answers. This distinction is important for TAM interpretation. A system may be perceived as highly useful even when it initially requires substantial effort. In the present study, usefulness appears to have encouraged students to persist despite usability barriers.

Ease of use increased through instructional scaffolding. Prompt templates reduced the cognitive burden of formulating requests; speech-shadowing commands helped students regulate speed and repetition; headsets reduced noise; pair work enabled peer assistance; and teacher monitoring prevented learners from accepting unsuitable outputs. These adaptations suggest that PEOU in rural school settings is partly a property of the instructional ecosystem rather than only of the application interface. Teachers and school infrastructure therefore shape technology acceptance by making the system more understandable, reliable, and pedagogically manageable.

The accent-related difficulty also highlights a design issue. Exposure to fluent or near-native models can be useful, but speech that is too fast or too unfamiliar may reduce comprehensibility for A1-B1 learners. AI-supported speaking tools should allow easy control of rate, accent, repetition, and linguistic complexity. Teacher pronunciation was still valued, as it was perceived as more accessible and emotionally responsive. Therefore, AI voice should complement a range of both human and non-human models rather than become the only pronunciation standard.

Behavioral Intention, Continued Use, and the Role of Context

The positive change in behavioral intention was indicated by higher practice frequency post-intervention and a high preference for AI-assisted learning. Students wanted to continue because the chatbot responded quickly, provided personalized help, supported pronunciation, and allowed repeated attempts without negative judgment. The results are consistent with

the expectation from TAM that positive usefulness and manageable effort are drivers of intention. Such gains in confidence and enjoyment in learning probably reinforced this relationship by providing emotional rewards of use.

Nevertheless, intention did not always become autonomous home practice. Many students used the chatbot mainly at school. This intention-behavior gap can be explained by rural infrastructure, limited personal access, unstable internet, and the fact that the school organized devices and structured tasks. Acceptance should therefore not be measured only through stated willingness. Actual use depends on facilitating conditions. For rural implementation, schools need reliable connectivity, sufficient compatible devices, low-bandwidth alternatives, and explicit opportunities for guided transfer from classroom to independent practice.

The continuing preference of some learners for teacher-led instruction is not a rejection of technology. Their narratives emphasized comfort, concentration, clearer pronunciation, and dynamic human interactivity. These needs reveal the limitations of a purely instrumental acceptance model. TAM is useful in explaining usefulness, effort and intention, but classroom acceptance can be relational too. Students might wish to use AI to practice and receive help when they need it, but they want teachers for empathy, reassurance, contextual judgment and social connection. So a blended model is more pedagogically effective than an AI-only approach.

Implications for EFL Teaching

The findings suggest that English teachers need to introduce AI chatbots through explicit routines rather than open and unsupported use. Teachers need to model short and level-appropriate prompts and teach learners how to ask for slower speech and repetition, verify AI-generated language, and require students to revise rather than simply copy responses. Voice

interaction needs to be embedded within clear speaking goals such as pronouncing target vocabulary, shadowing model sentences, constructing descriptive clauses and rehearsing a final oral text.

The GBA cycle offers a practical structure for this integration. During BKO, the chatbot can support topic vocabulary and background knowledge. During MOT, it can produce short oral models. In JCOT pairs can negotiate content and request feedback. In ICOT individuals can rehearse, record, revise and present. This sequence makes the usefulness of AI visible while controlling complexity. In rural settings, pair rotation, downloadable materials, text-mode fallback, and teacher-prepared prompt cards can reduce access barriers.

This study demonstrates to researchers the benefits of combining acceptance data with performance evidence and qualitative explanation. A high usefulness rating is more persuasive when it converges with objective improvement and detailed accounts of how the technology supported learning. Future studies should use a larger sample, a validated TAM questionnaire with distinct PU, PEOU, attitude, and behavioral-intention scales, and structural modeling where sample size permits. A comparison group and follow-up measurement would also clarify causality and sustained use.

Limitations

The findings should be interpreted within several limitations. The study involved one intact class of 19 students in a single rural school, which limits generalizability. The one-group pre-test-post-test design cannot rule out maturation, teacher effects, repeated testing, or other instructional influences. The questionnaire was originally designed around perceived effectiveness rather than as a complete TAM scale; therefore, the present analysis is TAM-informed and descriptive, not a causal test of the full model. Interview coding frequencies reflect meaning units and may include more than one code from a participant. Finally,

students' home use was self-reported rather than captured through automated usage logs.

CONCLUSION

Students highly regarded the pronunciation and descriptive speaking practices with the AI-powered chatbot. Perceived usefulness was evidenced by highly favorable ratings of vocabulary development, feedback and fluency and was supported by significant improvement in speaking scores. Students appreciated voice input, repeated pronunciation modelling, timely remedial feedback, individualised support and instant access to descriptive language resources. Ease of use was perceived to increase with experience and instructor scaffolding, but was moderated by prompt creation, accent understanding, occasional extraneous responses and rural connectivity limitations. Positive preferences, increased practice frequency and increased confidence levels were noted, indicating positive intention to continue use of AI, although home use was sporadic. The chatbot proved to be useful as a teacher-mediated learning partner rather than as a substitute for human instruction. The ideal model for rural EFL speaking education is a hybrid model combining AI availability with instructor empathy, pedagogy judgment, GBA scaffolding and adequate infrastructure.

Declaration By Authors

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