

THE SPEAK-BOT FRAMEWORK FOR CONTEXTUALIZED ENGLISH LEARNING

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ABSTRACT

This study developed and validated the SPEAK-BOT framework, an AI-assisted model for contextualized English-speaking instruction integrating ChatGPT interaction, teacher facilitation, and local dialogue materials from *Haba Inggreh*. Using a Design and Development Research (DDR) approach, the study was conducted in two high schools in Nagan Raya, Aceh—SMAN 1 Seunagan and SMAN 1 Kuala—representing agrarian and coastal contexts. Eighty Grade XI students and four English teachers participated in the limited implementation phase. Data were collected through expert validation, observations, questionnaires, interviews, and AI interaction logs, and analyzed using descriptive statistics and thematic interpretation. The findings indicate high student and teacher motivation and readiness to use AI for speaking practice, despite minor challenges such as internet instability and limited digital familiarity. The framework effectively addressed weaknesses in pronunciation and contextual comprehension while enhancing learners' confidence through collaborative and story-based activities. Teachers reported that AI-generated feedback complemented classroom instruction and strengthened contextual engagement. Overall, the results suggest that SPEAK-BOT successfully bridges technology, pedagogy, and local culture, demonstrating that AI can support human-centered English learning. Although limited in scope, the study provides a scalable foundation for broader implementation and future research.

Keywords: AI-assisted learning; contextualized English; design and development research; speaking instruction; SPEAK-BOT framework

ABSTRAK

Penelitian ini mengembangkan dan memvalidasi kerangka kerja SPEAK-BOT, yaitu model pembelajaran berbicara bahasa Inggris berbantuan AI yang terintegrasi secara kontekstual melalui interaksi ChatGPT, fasilitasi guru, dan materi dialog lokal Haba Inggreh. Dengan menggunakan pendekatan Design and Development Research (DDR), penelitian ini dilaksanakan di dua sekolah menengah atas di Kabupaten Nagan Raya, Aceh—SMAN 1 Seunagan dan SMAN 1 Kuala—yang mewakili konteks agraris dan pesisir. Sebanyak 80 siswa kelas XI dan empat guru bahasa Inggris terlibat dalam tahap implementasi terbatas. Data dikumpulkan melalui validasi ahli, observasi, kuesioner, wawancara, serta log interaksi AI, kemudian dianalisis menggunakan statistik deskriptif dan interpretasi tematik. Hasil penelitian menunjukkan tingkat motivasi dan kesiapan yang tinggi dari siswa dan guru dalam memanfaatkan AI untuk latihan berbicara, meskipun terdapat kendala kecil seperti ketidakstabilan internet dan keterbatasan literasi digital. Kerangka kerja ini efektif dalam mengatasi kelemahan pelafalan dan pemahaman kontekstual serta meningkatkan kepercayaan diri peserta didik melalui aktivitas kolaboratif dan berbasis cerita. Secara keseluruhan, temuan menunjukkan bahwa SPEAK-BOT mampu menjembatani teknologi, pedagogi, dan budaya lokal, serta mendukung pembelajaran bahasa Inggris yang berpusat pada manusia.

Kata Kunci: Pembelajaran dengan bantuan AI; bahasa Inggris kontekstual; penelitian desain dan pengembangan; instruksi berbicara; kerangka kerja SPEAK-BOT

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INTRODUCTION

The introduction contains Language learning in this new century that is changing rapidly and these are challenging times for language educators. English, as today's dominant lingua franca, is no longer taught simply as a matter of grammar and vocabulary but rather as the very tool for real communication in global life (Munoto et al., 2020). The global trend has prompted educators to reconsider the old-style ways of teaching speaking, which have for years mainly involved recitation and drills (Baker & Dunbar, 2000). Theoretical views in the field of applied linguistics, namely Communicative Language Teaching (CLT) and Sociocultural Theory stress that language learning takes place via learner-learner / target language interaction and not in isolation; hence it is tied to 'context' or 'situations where learners are free to negotiate meaning' (Mai et al., 2019). But in numerous EFL classrooms, particularly in less-developed countries, this authentic communicative space is sadly lacking and students walk away with a purely technical competence but no practical knowledge (Oladéji et al., 2023).

The novelty of the work within is in the area of AI-assisted collaborative speaking and context-engaged English learning. In this post we investigate how digital technologies, chatbots or conversational AI in particular, could be utilized within the scope of cultural relevant learning resources to encourage oral communication. In Indonesian EFL situations, speaking is still the most difficult too to acquire for student learning (Huang et al., 2022). Students are likely to be too anxious, have insufficient exposure to real language or feel too insecure about expressing responses naturally (Eisenring et al., 2024). Furthermore, the speaking tasks that are already out there seldom reach students' home culture and experiences (Siregar, 2022). This linguistic avant-garde creates a field in which language is no longer lived and embodied within local realities, but rather an abstract system (Baek et al., 2025).

So the issue is not whether we should get students practicing speaking in a rich, communicative and context-based way (which does not yet fully exist online), rather how do we design an instructional model that enables this, while taking into account advances in tech (Arumugam, 2025). Existing technologies like these tend to tilt towards grammatical correction or vocabulary improvement, with AI interactivity and teacher scaffolding failing to be integrated along with the local content as part of a well-structured pedagogic design (Kaisara & Bwalya, 2024). This is the gap we aim to fill in this work through SPEAK-BOT, a model that leverages short dialogues from Haba Inggreh (a digital English resource with locally relevant conversations) as well as conversational chat bot practice using ChatGPT (Holden et al., 2021).

This study aims to build and validate a scaffold system for teaching English speaking with context in which teachers, learners, and AI participate collaboratively, self-regulate themselves through loops of feedback. Namely, the study is designed to develop a ten-stage training model aimed at helping to rehearse fluency, accuracy and relevance through phasing speaking sessions in EFL with a view to being helpful for teachers of the effect lesson' developers.

The pedagogical and cultural implications of an examination of this content are paramount. Pedagogically, AI results are combined with human touch to transcend classroom limitations of time and provide personalized learning after class hours (Santoso et al., 2016). Learners, meanwhile, are able to practice speaking anytime and get instant feedback that is tailored just for them – a feature traditional classroom settings frequently do not offer (Wunder, 2017). On a cultural or local level, using home dialogues as references for learning returns the link between language and identity, which becomes conducive to an environment where English expressions can be absorbed that are born out of familiar social situations (Mutiaraningrum et al., 2024). This type of integration enhances global learning: global thinking with local articulation (Talenta et al., 2023). It makes language learning culturally relevant and technology enabled (Stephen et al., 2017).

Various researches in the past have coincided such compound areas of AI technology with language pedagogy. For example, Huang et al. (2022) reported that AI chatbots significantly

increased EFL learners' confidence and motivation in speaking provided with immediate feedback and error correction. Zhang et al. (2024) found that students who participated in collaborative chatbot conversation gained more fluency than those receiving a speaking prompt. On the other hand, the case with Indonesian materials for learning English in another area focused worries about both aspects such as cultural sensitivity and things that are technically due to only local adoption. Suwadini et al. (2025) show how contextual content of our software actually made students more or less sensitive to culture, integration into digital media was problematic because there were practically no frameworks or how it can be integrated into any small city took a long time since very few resources were found in those cities with smaller universities and study programs. Lee and Hahn (2024) investigated AI's feedback loops used for pronunciation practice concluding that they improved learners' self-monitoring skills, meanwhile the flow of meaningful conversation was not present. Lastly, Richey and Klein (2019) suggested the Design and Development Research (DDR) model to be a solid structure for developing educational frameworks that integrate pedagogy with technology through systematic design, expert validation, and field testing.

A few key insights emerge from those studies – but also, large holes. The majority of the existing studies show the success of AI chatbots or just contextual learning. There is a gap between an AI-assisted interaction and cultural contextualization in the same pedagogical system. To clarify, researchers have investigated how chatbots can scaffold language ability, but seldom did they focus on the integration of AI in learners' sociocultural contexts to facilitate contextualized communicative competence. What is more, having the teacher-guidance, peer-collaboration and AI-feedback incorporated into one continuous learning cycle is relatively uncommon within the current models.

What is new about the present study, therefore, is that it tries to address this theoretical and practical void. The SPEAK-BOT framework is not intended to be a monolithic technological solution, but rather a closely interlinked learning ecosystem bringing together AI feedback, teacher mediation, local content and learner reflection. It distills down abstract ideas of social constructivism and contextual pedagogy into a practical classroom model ... bringing the gap between what students know, can do, and culturally understand. Through embedding AI interaction in contextualized dialogues, the framework changes English speaking practice from a detached performance to a meaningful communicative activity based on students' lived experiences.

Consequently, the study raises the following research question:

How can the SPEAK-BOT framework be designed and validated to support contextualized English speaking instruction that integrates AI interaction, teacher facilitation, and local dialogue materials?

METHODS

Research design

The research was carried out based on Design and Development Research (DDR). DDR is a design-research approach that supports researchers in developing, testing and refining an education product or framework across multiple cycles (Richey & Klein, 2019). It is the appropriate option for this research design as the primary aim of the study was not solely to gather information but also to conceptualise and validate a learning model named SPEAK-BOT that integrates AI interactivity and locally-available materials to enhance learners' oral skills in English. DDR's goal is to let the researcher iterate between design and evaluation, iterating further until the product works well in an actual class. The DDR in this research had three main phases:

- (1) Analysis and Exploration,
- (2) Design and Development, and
- (3) Evaluation and Validation.

Each stage produced specific outputs and guided the next step.

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Research site and participants

This research was conducted with a total sample of 80 high school students from two senior high schools in Nagan Raya District, Aceh who are SMAN 1 Seunagan and SMAN 1 Kuala. Forty students from the 11th grade of each school were enrolled. These two schools were selected purposely to portray two diverse environmental and social situations: SMAN 1 Seunagan which is located at agriculturally dominated, and SMAN 1 Kuala in coastal area. These settings offer opposite, nonetheless significant, conditions to examine the behavior of students with diverse access to tech and experience in English language usage when working with the SPEAK-BOT system. Both the schools have a commonality – an accepting attitude for educational innovation, particularly in TEL. However, they too have their own problems involving the insufficient provision of digital infrastructures and inequitable access to collaborative practice in speaking in English. This dichotomy enabled the researcher to examine how SPEAK-BOT may operate in contrasting school settings.

Grade XI students were chosen for pedagogical reasons. They already have a solid grounding in English-Language Skills compared to Grade X students and yet are free unlike the Grade XII students who are preparing for exams. That is the reason why they are the best group to test out a pilot implementation that depends upon lots of practice, experimentation and reflection. The students' maturity and preparedness were also taken into account, as the framework integrates classroom collaboration together with individual reflection, alongside interaction with an AI chat bot. In general, the selection of two schools with different social and geographical characteristics, aimed at challenging the portability of the framework proposed (SPEAK-BOT) in these diverse types of learning environments - rural versus coastal - making it feasible and applicable practical for students living in both contexts.

Data collection and analysis

Six different instruments were used for the collection of val-id and reliable data. The quality of the framework was assessed using the Expert Validation Form first. It consisted of Likert based (5-point, ranging from 1= "very poor" to 5 = "very good") statements regarding content relevance, clarity in steps, design correctness and technological possibility. Second, an Observation Checklist guided researchers to track the implementation of each stage of SPEAK-BOT in the classroom. It comprised measures of lesson fidelity, student involvement and timing. Thirdly, useful questionnaires of both teachers and students were spread. These included Likert-scale questions regarding ease of use, clarity of methodology, motivation and willingness to use the framework in future. Fourth, learners were assessed using a speaking rubric. It had three aspects— fluency, accuracy, and relevance—rated in the range from 1 to 5 with brief definitions aimed at harmonizing scoring among raters. 5. International Foundation Feedback tools - Interview and FGD guides were developed for semi-structured interviews with teachers and focus group discussion with students to gather qualitative reflections on using the approach. 6) Data attached to the Logs and others were collected. A sample subset of screenshots or chat logs between the students and ChatGPT were then manually reviewed to ascertain what AI feedback looked like, and whether the students leveraged this information to enhance their future responses.

Procedures

Stage 1: Analysis and Exploration

This stage brought issues and requirements to light prior to even design. The first step was to analyze needs (shorter interviews with the teachers and a questionnaire for the students). The queries were related to speaking difficulties, activities of interest and digital tool expectations. Students complained primarily of low confidence and a limited vocabulary, while teachers sought

material that is structured but flexible. The second step of the curriculum review involved an analysis of the school's English syllabus, which was then correlated with context-based learning objectives and time (90 minutes per session). Third, the content audit sampled dialogues from the Haba Inggreh app that pertained to daily communication such as greeting, requesting, providing opinion and clarification. Finally, technical review ensured ChatGPT was accessible in a secure and informed way. Detailed instructions of prompts and alternative activities for offline should the internet be unavailable were prepared.

Stage 2: Design and Development

A draft of the first integrated prototype SPEAK-BOT was developed according to findings. It included a ten-staged learning flow, teacher guide, rubrics, reflection sheets and sample prompts. Next, three specialists evaluated the draft with the validation form. Their input resulted in Revision 1—changing language, clarifying instructions and improving teacher notes. An informal trial was then conducted with 6–8 students to test timing, clarity and AI Interaction fluency. Observation and student comments on which sections were confusing or too lengthy. After reviewing the results, the framework was rewritten again to Version 3 and then revised as a main product for classroom use.

Stage 3: Evaluation and Validation

The final framework was tested to this stage in an entire class room of 30 students. Students used SPEAK-BOT over two to three sessions, progressing through its ten steps of topic introduction and moving from AI-assisted reinforcement. Two (2) teachers conducted and observed all sessions, with a third researcher documenting the process and gathering AI logs. After the intervention, a practicality survey was administered to teachers and students and teachers participated in brief interviews or FGDs. The answers, together with expert judgment in a second round, served as the basis for finalising the framework.

Data Analysis

Both qualitative and quantitative methods were used for this analysis. Descriptive statistics were applied for quantitative data. Mean, standard deviation and percentages of expert ratings and practicality survey were summarized. The result demonstrated the availability and convenience of the method. Average speaking rubric scores were also summarized to test if learners developed in terms of fluency, accuracy and relevance across sessions. Reliability checks were used Cronbach's alpha for the survey (0.70) and inter-rater agreement for speaking assessment (0.80). "This was done to assure consistency and reliability. Thematic analysis of qualitative data was applied. The observation notes, teachers' and pupils' interviews, AI chat logs were read into detail and a thematic analysis was conducted on the data; around clarity of instruction, whether there was any usefulness from the feedback given by AI to the learner's stimulation towards learning as well as technical challenges. Thematic analysis permitted exploration of classroom success or failure based on why specific steps worked as they did. To strengthen the interpretation, triangulation was used in comparing experts to users and classroom evidence. If all three had consistent results, then the conclusion of the system bole surface was reliable. The model was considered feasible if:

- (1) expert average scores ≥ 3.5 ,
- (2) practicality averages ≥ 3.5 ,
- (3) lesson fidelity $\geq 80\%$, and
- (4) at least one speaking skill dimension showed improvement.

If any target was not met, the framework would be revised before a wider application.

Ethical Considerations

Written consent from all participants was obtained prior to enrolment. The experiment was signed off by the school principal, and parents provided consent for underage students. Anonymity was assured and voluntary participation was granted. Students were taught how to stay safe online and not share personal information during AI chats. Teachers participated in a brief (approximately 60–90 min.) orientation to familiarize themselves with the framework and guide students accurately. A peer-observer attended the initial meeting to validate consistency. For connection issues, backup offline tasks were prepared. These measures would ensure that there is ethical safety, justice, and control of quality in the conduct of research.

FINDINGS AND DISCUSSION

Findings

The findings of this study discuss the testing and perception results of SPEAK-BOT framework in two different conditions, agricultural school (SMAN 1 Seunagan) and coastal area school (SMAN 1 Kuala) in Nagan Raya Aceh. A total of eighty students from the two schools (forty in each school) and their English teachers were involved as DDR limited implementation participants. The findings are presented under four categories: (1) students' perception of, and learning experience in speaking (2) their exposure to, and interest in using AI tools like ChatGPT, (3) teachers' perspectives about technology-assisted speaking teaching and contextualized learning, and (4) design implications for next version of SPEAK-BOT. Therefore, the results suggest that learners were strongly willing to be involved in interactive and AI-supplied speaking tasks, although they still had difficulties with pronunciation, meaning recall of vocabulary and sentence formation. Educators did agree that AI tools and local stories-based dialogue could make meaningful difference in terms of confidence and participation of the students, considering the interface will be kept simple and reachable.

Students' Experience in Speaking

In both schools, students mentioned that learning English speaking was enjoyable yet challenging. Pronunciation was identified as the hardest point to speak by almost all of such respondents. Many reported that “English words are different from how they sound,” indicating knowledge of the inconsistency between spelling and sound. Reading comprehension was another significant challenge, as they were unable to comprehend words in context. Students often paused if they forgot vocabulary or were uncertain about tense. And yet hardly surprisingly most pupils had high idea of pleasure when talking lessons were friend, games and stories. In both schools, these three themes were mentioned repeatedly as reasons why English seemed more engaging and less scary. And, when they were forced to perform for others, they were more likely to want to do it in pairs or small groups than by themselves.

Classroom activities preferred the most were conversation practice, role-play, presentation and short speaking games. These findings have the immediate foundation for the ten stages identified by SPEAK-BOT, particularly modelling → collaborative practice → AI guided interaction → peer & teacher feedback. The most engaging for the students were activities that involved them speaking freely and getting instantaneous feedback, from either peers or the chatbot. Coastal school students tended to be more comfortable using digital devices but grappled with the internet that was less reliable. The agrarian school, meanwhile, had less technology available to them, but were eager to use it when given the chance. This distinction indicates the social and geographic diversity of the users, leaving a necessity for offline coping mechanisms inside SPEAK-BOT.

Exposure and Interest in Using ChatGPT

Most students in both schools were aware of and familiar with AI applications like ChatGPT, Duolingo or Meta AI to varying extents. Some had used ChatGPT often, for writing or translation; some every once in a while; and others had never tried it out before serving as research participants. Most importantly, the majority of students were interested in using ChatGPT as a speaking partner after it was introduced and demonstrated. For those students who had encountered AI before, ChatGPT was seen as quick, responsive and useful. They appreciated that it could answer questions instantly and show examples. Some who had never tried it in the past said they felt “curiosity” and were “excited to try speaking with an app that talks back.” This general acceptance signals the possible high level of acceptance towards the SPEAK-BOT framework.

On the subject of which features they most desired in a talking chatbot, students at both schools had astoundingly consistent answers:

1. Auto-reply – the chatbot should respond quickly and naturally.
2. Voice or audio – they wanted to hear pronunciation and be able to repeat after it.
3. Games or mini-games – to make learning less boring.
4. Pictures or short videos – to help them imagine the topic or situation.

These suggestions match perfectly with the future plan of SPEAK-BOT, which already includes audio examples, conversation feedback, and visual prompts. The responses also suggest that adding a simple voice model and pronunciation drill function would directly address students’ main weakness.

Interest in Local and Contextual Content

A second common pattern observed was that students loved local issues and ones they could relate to. They wanted conversations and activities about Acehnese daily life - things they could relate to at home such as school, family or traditional food. They found it easier to associate the assertions with stories, or even better, examples from their area. “Local content makes learning of English more real and less foreign,” students wrote. For instance, when roleplaying market talk or family chit-chat, they could more readily picture real-world scenarios. This discovery is strong evidence of the validity of relevance-based learning of English, which is the basic philosophy of SPEAK-BOT. Underpinning this is the inclusion of fragments of Haba Ingreh, digitalised snippets of everyday English strands in local settings, meaning language becomes part and parcel of a student’s experience. Local topics are also motivating, and the local context can make content not just more relevant but also motivational to practice speaking.

Teachers’ Perspectives

Both teachers from the two schools reported that they already implemented some communicative activities including greetings, casual conversation and discussion (thinks pair share), with playing roles. Yet, they faced some challenges in repetition for the effectiveness of these practices: lack of vocabulary, shyness from students, varying motivation and short attention. Both teachers were positive about the inclusion of AI tools. They also concluded that ChatGPT is a valuable complement to classroom instruction, offering models, examples and instantaneous feedback. And as one teacher said, “AI can help students and teachers save time to concentrate on real speaking not just repetition.” Another said, “AI still needs supervision because not all responses are culturally appropriate.” They stressed different things according to who they were and where they lived. The teacher from agrarian-area, focused on auditory qualities and modern visual appearance since good design practices can help keep students’ attention. The beach area teacher oriented towards accessibility, visual simplicity and task variety (games, puzzles, topics of conversation). Both argued that local cultural content should remain central to ensuring learning is

meaningful. So teachers' statements corresponded well with the aims of the SPEAK-BOT framework – to introduce AI feedback without dislocating teachers, and to link classroom communication closely to genuine social situations.

Thematic Synthesis Across Contexts

SPEAK-BOT framework performance results and analysis After comparing the results in both regions, the main five themes of general classification of our SPEAKBOT framework are displayed here. First, in the area of technology readiness and motivation, learners and teachers were highly motivated to use AI for speaking with only minimal barriers including poor internet access and low exposure among some learners—implying that AI implementation is very doable with appropriate upskilling. Second, with regard to the language skills targeted in improvement of the game, pronunciation and comprehending meaning from context emerged as two of the most prevalent weaknesses, suggesting a need for inclusion of audio examples, pronunciation practice drills, and brief vocabulary glossaries in future versions. Third, motivating patterns were strongly associated to fun and collaborative activities such as games, storytelling and group work, suggesting that future designs should retain the playful/socio dimension of these technologies rather than degenerate into an isolated computerised task. Fourth, receivers found context sensitive learning appealing as they appreciated the local content which not only served as an authentic addition but also enhanced emotional involvement—leading to the confirmation of contextualization being a substantial rather than superficial element in this framework. Third, touching on the theme of accessibility and inclusiveness, many learners were relatively inexperienced in the domain of AI, and simple user interfaces or short digital introductions may also be useful as their digital literacy is reinforced (Daniels & Laughland 2014), besides offline role-play scripts that may offer a viable solution to schools with unstable internet to allow equal participation of all learners.

Design Implications for the SPEAK-BOT Framework

The results described in the previous sections also yielded a few specific implications to enhance design before the next DDR cycle. The audio-first part should be first. Each conversational prompt you train in must also have a good audio model so that students can listen and repeat before self-checking. The audio part can also contain brief stress-and-rhythm modifiers for learners to pick up on in a natural way. Second, AI-related repair and recast should be integrated into the dialogue flow. The chatbot shouldn't swamp the student with lengthy corrections but should return one corrected sentence (as well as perhaps a short explanation in one line). This helps keep the conversation in a natural light and prevents you from being frustrating. Three, you have mini-games and random topic prompts to keep them on-track. For instance, a simple "multiple choice wheel" or a "keyword challenge" can bring up new speaking contexts but does not depend on high-tech features. Fourth, every unit needs to have a contextual glossary – three to five terms related to the local topic of each lesson. This glossary can be shown after each practice session so many students immediately learn some of the vocabulary that is used in real conversation. fifth that visual cues should continue or be extended. The same is true with pictures of local places like markets, beaches or rice fields as story starters. Task content becomes more entertaining and less cognitively demanding for lower-proficient participants when FeF participants rely on visual cues. Lastly, the program should also guarantee digital ethics and app/perspective. Students need to be taught how to interact safely with AI and encouraged not to share data concerning themselves, ignore irrelevant comments or responses and concentrate on their learning objectives. Teachers need to be mediators who assist in interpreting AI feedback and linking that to lesson outcomes.

Discussion

This study aimed to establish and validate the SPEAK-BOT framework as an AI-supported approach for contextualized English speaking instruction. The concept was for each of these: the AI interface (ChatGPT), local short dialogues, and classroom practice, to be combined into a structured 10 step approach. It achieves this by providing a pedagogic bridge between technology and culture and demonstrating that artificial intelligence need not result in language learners becoming disconnected from their immediate context. The research applied a Design and Development Research (DDR) model through three main stages of analysis and exploration, design and development, as well as evaluation and validation. The first stage involved determining learners' needs and classroom difficulties, particularly pronunciation, vocabulary retention, and speaking anxiety. In the second stage, the SPEAK-BOT prototype was developed, assessed by experts and polished based on a pilot test. Third iteration The enhanced framework was trialed in two varied scale contextualised setting (1 agrarian, 1 coastal) schools which enabled the researcher to test out its practicability and adaptability in authentic sites.

Results showed that students in both schools thought of speaking English as enjoyment and a challenge. They enjoyed the games, conversations and stories, but found pronunciation and meaning hard to get a grasp on. Students also showed significant interest in employing ChatGPT for speaking, particularly when it could produce quick and automatic responses, with audio pronunciation and short explanations. Teachers welcomed the incorporation of AI to serve as a complement to classroom teaching and highlighted the significance of contextual content presentation as well as visual design. Altogether, the framework was considered feasible, pragmatic and contextually appropriate to be used in Aceh's EFL classrooms. Compared to previous research, the findings indicate continuity and development of earlier studies. Studies from Vibhavi et al. (2024), Ma (2023), Koriati (2015), Asimolowo (2025), and Baek et al. (2025) observed that AI chatbots enhanced learners' confidence and motivation to speak because of real-time feedback. The present work is in line with this conclusion, but it goes further in that it also reveals how such motivation gets reinforced by adding a local and story-based character to the AI. Haristiani (2019) found that students who had collaborative chatbot conversations made fluency gains more effectively than those with static prompts. Current findings support this advantageous effect; combining pairwork, peer reflection, and AI feedback led to more fluent speech and greater willingness to communicate. The findings also provide a more detailed explanation as argued by Premkumar et al. (2024) who discovered localized materials enhance cultural awareness though are not often incorporated into digital content. SPEAK-BOT addresses this challenge by integrating localized conversation into the AI conversation process itself. In this study students welcomed topics from their environment – markets, schools, or family life, feeling dependent on local contexts and giving the sensation that English is authentic (Safar & Anggraheni, 2024). Therefore this work not only validates that contextual learning has a value but more importantly, it can be implemented in an AI driven context.

There were some differences between this study and previous studies at the same time. For example, Sarker (2024) highlighted the advantage of AI in terms of pronunciation practice; however, their learners were primarily engaged with recorded systems. By contrast, SPEAK-BOT provided dynamic interaction with ChatGPT, updating learners with small recasts or alternative sentences in real time as they had conversations. This move from feedback to correction of the interface, and a slightly less static relation created more human-like interaction whilst also demanding careful teacher mediation so that students did not become confused by AI errors (Holden et al., 2021 ; Duham et al., 2022). The discrepancies in technology readiness in agrarian and coastal schools too is enlightening. Previous studies paid little attention to the impact of environmental context on digital learning acceptance. This study reveals how, despite being exposed to technology in greater frequency at the coastal schools, students attending agrarian schools demonstrated similar

keenness post- brief experience. Thus preparedness is not merely access but also motivation and support. This insight introduces a social element to pedagogy based on AI and the implementation in the context of this element, literacy in digital skills and off-line outlets should also be equitable (Moriyanti et al., 2019).

Positive responses to SPEAK-BOT - some indications A few interpretations have been suggested regarding why the children responded positively to SPEAK-BOT. First, the interactive and multimodal nature of the environment permitted students to use more sensory modes—visually, auditorily and vocally—which could decrease anxiety and enhance memorizing (Haniefah et al., 2024). The second was that small group cooperation provided the necessary low-anxiety environment so students could help each other and be less dependent on the teacher. Third, AI's time immediacy offered incessant pair type work while traditional pair work would cease post class, but with ChatGPT students could text each other 24h just like their partners (Damayanti et al., 2022). Last, the inclusion of local context empowered learners to both relate English learning to their own community and experiences. Nevertheless, some limitations deserve consideration. Some students were unfamiliar with ChatGPT and needed onboarding to use it effectively. Internet connection problems sometimes interfered with activities, particularly in the farming district. These did not diminish students' interest but did point to the necessity of offline role-play versions and less sophisticated technical guides (Junining et al., 2020). Regarding the validation in implementation issue, this validates the SPEAK-BOT model as an appropriate response to fusing technology, pedagogy, and culture at EFL classroom context. It is the extension of previous chatbot studies, and aims to solve the perennial issue in decontextualized English teaching. SPEAK-BOT integrates speaking practice in familiar narratives with AI-assisted feedback to assist students to become more autonomous and confident speakers. Future research needs to further develop the audio and feedback material, apply the model within larger groups, and investigate long-term learning effects. The current research not only adds to practicality but also the theory: painting artificial intelligence black-boxed learning devices as humanizing rather than mechanized educational artifacts when it is culturally-contextualized.

CONCLUSIONS AND SUGGESTION

The results indicated a number of distinct results. To begin with, both the students and teachers were highly motivated to use AI tools for learning languages. Although small hindrances such as unstable internet connections and little familiarity of digital environments were present, encounters seemed to have exceeded obstacles influenced by curiosity and interest among learners. Second, the core ESL weaknesses we found for participants are directly aligned with the pedagogical intentions of SPEAKBOT. This is proof that the framework appropriately addresses (IRC agenda) students' actual communication needs. Third, motivation was maintained through collaborative, game-based and story based activities, which shows that social interaction and fun aspects were important to engage students. Fourth, a sense of learning in context was important, as both students and teachers appreciated content which related English to their immediate environment. Lastly, the inclusivity component highlighted features like digital orientation, simple interfaces and offline support as an effort to create a more level playing field across different schools.

The conclusions of these findings are pedagogical and cultural. Educationally, the research evidence that the AI model may be used to humanize English learning -provide teacher and student mediated scaffolding. It shows how technology can be integrated with actual communication, demonstrating that chatbots such as ChatGPT can complement learning by becoming conversational partners instead of teachers. Culturally: SPEAK-BOT restores the balance that English learning can live together with giving up our own identity, not to deny local cultures but to allow students' world be expressed in global languages. This finding can fill the gap found in prior study on which AI-assisted learning and contextual pedagogy were

distinct topics. SPEAK-BOT harmonizes all of these dimensions into one coherent design that links worldwide technology with local naturalness.

In addition, there were several limitations to this study even if successful. The sample size and number of sessions in the trial were small, a little number of schools has been participated the evaluation, and we did not consider long-term learning results. However, implementation was not as smooth because of network inconsistency and at times AI's irregular behavior. Consequently, future investigations need to expand the sample size and treatment time, as well as include longitudinal data collection in order to assess how continued exposure to SPEAK-BOT might affect proficiency, confidence and learner autonomy.

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REFERENCES

- Arumugam, S. (2025). Deep Learning-Based Smart Invigilation System for Enhanced Exam Integrity. *Proceedings of Engineering and Technology Innovation*, 29, 99–115. <https://doi.org/10.46604/peti.2024.14105>
- Asimolowo, A. (2025). Leveraging AI-Powered Chatbots for Mental Health Support for High School Students. *IRE Journal*, 8(7), 194–205.
- Baek, G., Cha, C., & Han, J. H. (2025). AI Chatbots for Psychological Health for Health Professionals: Scoping Review. *JMIR Human Factors*, 12, 1–15. <https://doi.org/10.2196/67682>
- Baker, L., & Dunbar, K. (2000). *Experimental design heuristics for scientific discovery: The use of "baseline" and "known standard" controls*. Multilingual Matters.
- Damayanti, A., Priyanti, N., Iswan, I., & Rahmawati, L. (2022). Increasing Social Skill Children Aged 4-5 With the Chaterpillar Game. *Jurnal Obsesi : Jurnal Pendidikan Anak Usia Dini*, 6(3), 2404–2410. <https://doi.org/10.31004/obsesi.v6i3.1855>
- Duhaim, A. M., Al-mamory, S. O., & Mahdi, M. S. (2022). Cheating Detection in Online Exams during Covid-19 Pandemic Using Data Mining Techniques. *Webology*, 19(1), 341–366. <https://doi.org/10.14704/web/v19i1/web19026>
- Eisenring, M., Jamiluddin, J., Hairul, M., & Putri, D. (2024). The use of chatbots in the English language teaching to promote modern language learning: A literature review. *International Journal of Indonesian Education and Teaching*, 8(1), 127–139.
- Hanief, S. M., Mustofa, S. F., Hermawan, T., Studi, P., Agama, P., Islam, U., Sunan, N., Djati, G., & Barat, P. J. (2024). Revolusi Digital dalam Pengembangan Kurikulum Pendidikan Agama Islam : Strategi dan Implikasi untuk Masa Depan. *Journal of Law Education and Business*, 2(2), 1456–1464.
- Haristiani, N. (2019). Artificial Intelligence (AI) Chatbot as Language Learning Medium: An inquiry. *Journal of Physics: Conference Series*, 1387(1), 1–6. <https://doi.org/10.1088/1742-6596/1387/1/012020>
- Holden, O. L., Norris, M. E., & Kuhlmeier, V. A. (2021). Academic Integrity in Online Assessment: A Research Review. *Frontiers in Education*, 6(July), 1–13. <https://doi.org/10.3389/educ.2021.639814>
- Huang, W., Hew, K. F., & Fryer, L. K. (2022). Chatbots for language learning—Are they really useful? A systematic review of chatbot-supported language learning. *Journal of Computer Assisted Learning*, 38(1), 237–257. <https://doi.org/10.1111/jcal.12610>
- Junining, E., Alif, S., & Setiawati, N. (2020). Automatic speech recognition in computer-assisted language learning for individual learning in speaking. *JEES (Journal of English Educators Society)*, 5(2), 219–223. <https://doi.org/10.21070/jees.v5i2.867>
- Kaisara, G., & Bwalya, K. (2024). Strategies for Enhancing Assessment Information Integrity in Mobile Learning. *Informatics*, 10(29), 11–11. <https://doi.org/10.21608/maeq.2016.142092>
- Koriat, A. (2015). When two heads are better than one and when they can be worse: The amplification hypothesis. *Journal of Experimental Psychology: General*, 144(5), 934–950. <https://doi.org/10.1037/xge0000092>
- Lee, I., & Hahn, S. (2024). On the relationship between mind perception and social support of chatbots. *Frontiers in Psychology*, 15(March), 1–10. <https://doi.org/10.3389/fpsyg.2024.1282036>

- Ma, Z. (2023). The Study on the Influence of Academic Pressure on Academic Performance. *Journal of Education and Educational Research*, 3(2), 106–109. <https://doi.org/10.54097/jeer.v3i2.9045>
- Mai, C., Lee, E., Wong, P., & Er, H. (2019). Evaluation of Computer-based Simulation Learning on Knowledge , Learning Approaches and Motivation among Pharmacy Students. *Indian Journal of Pharmaceutical Education and Research*, 53(4), 595–602. <https://doi.org/10.5530/ijper.53.4.120>
- Moriyanti, M., Muna, H., & Ismail, N. M. (2019). Visualization and comprehension: Corroborating children's reading ability. *Englisia Journal*, 7(1), 26–40. <https://doi.org/10.22373/ej.v7i1.4508>
- Munoto, M., Sumbawati, M. S., & Sari, S. F. M. (2020). The Use of Mobile Technology in Learning With Online and Offline Systems. *International Journal of Information and Communication Technology Education*, 17(2), 54–67. <https://doi.org/10.4018/ijcte.2021040104>
- Mutiaraningrum, I., Fitriati, S. W., Yuliasri, I., & Saleh, M. (2024). Indonesian vocational college students' attitudes towards project-based learning in English courses. *International Journal of Evaluation and Research in Education*, 13(5), 3177–3184. <https://doi.org/10.11591/ijere.v13i5.28406>
- Oladeji, T. M., Adelana, O. P., & Dorcas, O. (2023). Language preservation : The role of infographics Language Preservation : The Role of Infographics. *Journal of ICT in Education*, 10(2), 55–73. <https://doi.org/10.37134/jictie.vol10.2.5.2023>
- Premkumar, P., Yatigammana, M., & Kannangara, S. (2024). Impact of generative AI on critical thinking skills in undergraduates: A systematic review. *The Journal of Desk Research Review and Analysis*, 2(1), 199–215.
- Richey, R., & Klein, J. (2019). *Design and development research*. Routledge. http://scioteca.caf.com/bitstream/handle/123456789/1091/RED2017-Eng-8ene.pdf?sequence=12&isAllowed=y%0Ahttp://dx.doi.org/10.1016/j.regsciurbeco.2008.06.005%0Ahttps://www.researchgate.net/publication/305320484_SISTEM_PEMBETUNGAN_TERPUSAT_STRATEGI_MELESTARI
- Safar, M., & Anggraheni, D. (2024). Language Learning through AI Chatbots : Effectiveness and Cognitive Load Analysis. *Journal of Social Science Utilizing Technology*, 2(3), 430–445.
- Santoso, H. B., Schrepp, M., Yugo Kartono Isal, R., Utomo, A. Y., & Priyogi, B. (2016). Measuring user experience of the student-centered E-learning environment. *Journal of Educators Online*, 13(1), 1–79.
- Sarker, R. (2024). Academic pressure and depression. *International Journal of Multidisciplinary Research and Development*, 11(5), 46–52.
- Siregar, I. (2022). The pressure of academic stress and self-efficacy among student. *Jurnal Konseling Dan Pendidikan*, 10(3), 394. <https://doi.org/10.29210/156700>
- Stephen, M. F., Graesser, A., Greiff, S., Griffin, P., Gong, B., Kyllonen, P., Massey, C., O'Neil, H., Pellegrino, J., Rothman, R., & Davier, H. S. A. von. (2017). Collaborative problem solving: Considerations for the national assessment of educational progress. In *Instructional-Design Theories and Models: A New Paradigm of Instructional Theory* (Vol. 2). MESA Press.
- Suwadini, U., Ismail, N. M., & Mekkah, U. S. (2025). EdTech as a Tool for Promoting Student Autonomy. *Proceedings of International Conference on Education*, 396–402.
- Talenta, P. I., Angie Pavita, M. D., & Amrullah, Y. F. (2023). Exploring and Reflecting on Problems and Challenges in Teaching Culture for English Young Learners. *Allure Journal*, 3(2), 72–78. <https://doi.org/10.26877/allure.v3i2.14010>
- Vibhavi, R., Swetha, A., Shruthi, B., Shravya, S., Balal, R., & Narayan, R. (2024). AI-Driven Chatbots in Mental Health : Enhancing Emotional Support and AI-Driven Chatbots in Mental Health : Enhancing Emotional Support and Therapy Through Cognitive Behavioural Approaches. *Gradiva Review Journal*, 10(9), 323–328.
- Wunder, I. (2017). The influence of cultural background on teaching and learning in synchronous online sessions [Lancaster Univeristy]. In *Doctoral Dissertation* (Vol. 27, Issue 1). [http://www.research.lancs.ac.uk/portal/en/publications/the-influence-of-cultural-background-on-teaching-and-learning-in-synchronous-online-sessions\(de6c3d8c-c488-46bb-b1e7-5d6b50499b14\).html%0Ahttp://eprints.lancs.ac.uk/87359/1/2017wunderphd.pdf](http://www.research.lancs.ac.uk/portal/en/publications/the-influence-of-cultural-background-on-teaching-and-learning-in-synchronous-online-sessions(de6c3d8c-c488-46bb-b1e7-5d6b50499b14).html%0Ahttp://eprints.lancs.ac.uk/87359/1/2017wunderphd.pdf)
- Zhang, R. W., Liang, X., & Wu, S. H. (2024). When chatbots fail: exploring user coping following a chatbots-induced service failure. *Information Technology and People*, 37(8), 175–195. <https://doi.org/10.1108/ITP-08-2023-0745>