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The Impact of *Character.ai* in Fostering Students Speaking Self-Confidence

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Abstract

This study investigates the impact of Character.ai (C.ai) on speaking self-confidence among Indonesian EFL learners in secondary school setting. Despite English's global importance, EFL learners often struggle with speaking due to linguistic barriers (e.g., grammar, pronunciation) and psychological barriers (e.g., anxiety, low confidence). Leveraging AI's potential, this quantitative study employs a pre-experimental one-shot case study design to evaluate Character.ai 's effectiveness. Data were collected from 37 eleventh-grade students at SMAN 01 Gunung Putri, Bogor, through post-tests assessing speaking skills (fluency, grammar, vocabulary, pronunciation, comprehension) and self-confidence (ability, assurance, engagement). The results revealed 41% students achieved of "Very Good" category, 43% students achieved of "Good" category, 11% students achieved of "Adequate" category. Statistical analysis (one-sample t - test, t (36) = 2.121, p = 0.041) confirmed a significant improvement in speaking confidence. However, challenges such as classroom noise and low-quality smartphone speakers affected the experience. While C.ai offers real-time feedback and personalized learning without teacher guidance, students' confidence may also be influenced by other external factors. Thus, the findings highlight both the potential and limitations of using AI-based tools in language learning.

Keywords: English language, AI-based application, speaking skills, self-confidence, personalized learning

1. INTRODUCTION

English is widely used as a global lingua franca across various domains, particularly in education fields (Getie, 2020). Indonesia is one of country affected by the use of English as a language bridge. English

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language functions as an unlimited "language bridge" for communication (Atasheva, 2024).

Despite this growing demand, Indonesian's level of English competence remains relatively low. According to the English First English Proficiency Index (EF EPI). Indonesia ranks 79th out of 113 countries, this ranking has improved by just one place from the 2022 ranking, which ranked Indonesia 80th out of 113 countries. Although the improvement is only one rank higher, this represents a small step forward in terms of Indonesia public's awareness of the importance of English language. In the data of EF EPI 2023, it indicates the total of Indonesia's English proficiency score is 493, Java was the province with the higher score in English proficiency and Papuan province was the lowest score in English proficiency. That shows that Indonesian's English skills fall short of its importance.

These national-level challenges are reflected at the classroom level, where the learners often struggle with speaking skills. Common barriers include psychological barriers (e.g., anxiety, shyness, lack of confidence, low motivation and fear of mistake) and linguistic barriers (e.g., vocabulary, pronunciation, grammar, fluency and comprehension) (Amoah & Yeboah, 2021). These combined factors frequently lead the learners to reluctance to participate in practicing speaking English.

To overcome these barriers, the integration of AI-based applications in English learning is seen as a promising solution. AI-based applications in language learning is also expected to provide more personalized, low-pressure environments that reduce anxiety and enhance students' confidence in speaking and also in speaking performance. AI-based applications in language learning can also offer immediate feedback for the learners and making them suitable for improving students' speaking performance. Therefore, this study aims to investigates the effectiveness of AI-based applications using Character.ai (C.ai) in enhancing student's speaking confidence.

2. LITERATURE REVIEW

2.1. Overview of Speaking in English Language Learning.

English plays a central role as a medium for students to acquire and convey knowledge and information (Curry & Lillis, 2024). Therefore, the students are expected to master the four essential language skills: reading,

writing, listening and speaking. Speaking is often considered the most challenging for students to master (Amani & Fedai, 2024). This view is supported by Goh and Burns(2023), who stated that speaking is complex skill requiring continuous practice, especially for students from non-native English-speaking backgrounds.

Many students struggle to speak English due to various factors. Linguistically, they experience confusion in determining the use of tenses or grammar, lack of vocabulary and difficulty of pronunciation, especially in patterns of similar-sounding words (e.g., bare vs bear, accept vs except). Psychologically, students often feel anxious when speaking in front of the class and are afraid of making mistakes in constructing sentences. Additionally, the students often pause briefly while speaking to think of the vocabulary they will use. These barriers lead to a tendency from them to use English passively rather than actively in communication.

In response to these challenges, the new innovations are needed to reduce barriers to students' English practice, one of which is the use of advanced technology, particularly in artificial intelligence (AI). The use of AI-based applications can provide the students the opportunities to speak and English practice without fear of making mistakes and it offers a comfortable space to personalized learning (Lee & Davis, 2024). these encourages the students to speak actively by interacting with AI characters through the application. In addition, the use of AI-based application can provide real-time feedback to students (Evenddy, 2024). From these real-time feedbacks, the students can recognize their mistakes linguistically such as vocabulary, pronunciation and grammar without fear of judgment from others. On the psychological side, the students enhance their confidence in communication with their characters or their custom characters through application, boosting their motivation and reducing their anxiety during speaking particularly, it encourages students who are shy or fear of speaking English to discuss short topic as practice (C. Zhang & Meng, Yiwen and Ma, 2024).

Unlike speaking practice through AI-based applications, traditional settings of English-speaking practice environments such as interacting with other people can make students feel awkward and shyness to communicate. In addition, students are unsure whether they will receive comprehensive feedback on their speaking practice, especially if the

students' conversation partners have a low level of proficiency. Despite these limitations, a balanced combination of traditional learning settings and AI-based learning is still important to maximize learning outcomes (Eliott, 2024).

C.ai is an AI-powered conversational platform that enables students to interact with virtual characters. By engaging in simulated dialogues such as role-plays simulated phone calls with people, learners are encouraged to speak more actively and naturally. Furthermore, C.ai provides real-time feedback through conversation transcripts, which students can access after each session.

2.2. Barriers in Speaking Practice

2.2.1. *Linguistic Barriers*

Linguistic barriers in speaking skills typically involve grammar, vocabulary, pronunciation, fluency and comprehension (Seldon & Tshomo, 2024). These elements are key to clear spoken communication. Without those skills, students often struggle to express ideas and becomes hesitant to speak.

Each linguistic barrier affects speaking performance in different ways. For instance, students with limited vocabulary tend to pause frequently during speaking due to they struggle to find the right words. This hesitation leads to inefficient and disjointed communication. In terms of pronunciation, common difficulties arise with fricative sounds such as the initial sounds in the words "thank" and "father", or distinguishing between voiced and voiceless sounds. These pronunciation challenges are often rooted in the lack of sufficient pronunciation instruction in EFL classrooms (Diaz et al., 2024).

Furthermore, students who lack fluency tend to stutter or speak hesitantly, which not only affects the flow of speech but also disrupts comprehension. Grammatical difficulties, such as the misuse of tenses or sentence structures, can increase students' anxiety and lead to reduced speaking confidence. According to Mahdi (2024), linguistic barriers contribute significantly to students' challenges in mastering grammatical structures, fluency, vocabulary, and pronunciation.

There issues demonstrate how linguistic barriers are not isolated but, interrelated. Lack in vocabulary can affect fluency, while poor pronunciation can increase anxiety. Together, these factors may reduce students' willingness to speak. According to Derakshan and Eysenck

(2009, as cited in Szyszka et al., 2024), such weakness interface with cognitive processes by diverting attention to task-irrelevant stimuli, resulting in less effective performance. Therefore, to handle these issues is important to support the students in speaking skill developing effectively.

2.2.2 *Psychological Barriers*

Psychological barriers in speaking skills involve lack of confidence, lack of motivation, anxiety, shyness, embarrassment, fear of mistakes while speaking English (Gobena, 2025). Anxiety during English speaking reduces students' confidence and motivation (Cooray et al., 2024). As a result, the learners feel shy and fearful, and eventually avoid speaking due to fear of making mistakes. Gobena (2025) found that students with high anxiety often avoid speaking in class due to fear of making mistakes, which limits their opportunities to improve. They also tend to mix English with their mother tongue to minimize the risk of making errors. Emotional barriers can bring negative effects to students in language learning (Gulrukh & Dinora, 2025).

According to Maclntyre & Gardner (Thảo, 2024), there are three categories of anxiety: trait anxiety, state anxiety, and situation-specific anxiety. Trait anxiety refers to a person's general tendency to feel anxious in various situations, as part of their personality traits. However, individuals with trait anxiety often experience more anxiety than others. State anxiety refers to temporary anxiety in response to particular moment in time. And situation-specific anxiety refers to prolonged and complex anxiety triggered by specific events such as examination, presentation and speeches. Maclntyre & Gardner also noted that situation-specific anxiety can be seen as a form of trait anxiety that is limited to a particular context. Based on this category of anxiety, it can be concluded that students' anxiety in speaking English comes under the category of situation-specific anxiety and also trait anxiety if students have excessive and severe anxiety. This framing helps explain why the learners experience increased anxiety when performing speaking tasks, particularly, in the classroom settings where they fear being judged or making mistakes.

By integrating AI-based applications, students have the opportunity to speak with virtual characters within the application. For instance, the findings by Tzu-Yu and Howard showed that the use Google Assistant can reduce speaking nervousness, such as anxiety and shyness, and

increase students' communication confidence. The study also suggests that the use of AI-based platforms such as Google Assistant provides a private and non-judgmental environment, allowing students to speak freely without social pressure. These features help reduce speaking anxiety especially for shy learners in EFL settings (as cited in Qassrawi et al., 2024).

Similarly, C.ai allows students to interact with customized virtual characters. Students can repeatedly practice speaking in a less intimidating environment, which helps reduce embarrassment and encourages confidence.

2.3. Self-Confidence in English Speaking

According to Perry (2021)defines self-confidence as measure of an individual's self-perceived of confidence, which depends on situational settings and background. In the context of English language learning, self-confidence refers to students' belief in their ability to express themselves verbally in foreign language especially in speaking skill. Students' beliefs are often shaped by factors such as self-esteem, learning personality, language proficiency, English material and Teaching method (Supriyanto & Savitri, 2024).

The relationship between self-confidence and speaking in the context of language learning is the goals for building effective communication (Briones et al., 2023). And this relationship also involves two factors; cognitive and affective factors. In cognitive factor, people able to control their behavior according to goals or higher plans. As for the affective factor, there are two variables in psychological variables self-efficacy and self-esteem that giving impact to students' performance especially during speaking. Based on the above explanation, it can be concluded that the concept of self-confidence is the strength of two variables between self-efficacy and self-esteem that make an individual has good ability and strong self-confidence (Joy et al., 2020).

In response to the need to support these affective dimensions, AI-based educational technology has emerged as tools to foster leaners' self-efficacy and emotional confidence. For instance, Zhang (as cited in, Parsakia, 2023) discuss an AI-based educational chatbot paradigm that aims to improve learner's emotional confidence and self-efficacy through interactive dialogue and emotionally supportive interactions. These AI-based are designed not only to assist with language tasks but also to build

positive emotional experiences, thereby supporting the affective needs of learners in language learning. This conceptual framework is further supported by empirical findings, which demonstrate that AI-based tools can influence learners' self-efficacy and self-esteem. Leavitt (2022 as cited in, Parsakia, 2023) found that chatbot tutors helped increase students' confidence levels in an introductory programming course, with stronger effect observed among female students, suggesting that AI can help bridge gender confidence gaps. In addition, chatbots that offer personalized learning and positive feedback have been shown to enhance learners' sense of self-worth by recognizing their achievements and progress. Ameen (2022 as cited in, Parsakia, 2023) discover the relationship between stress and the use of Chat GPT in Thailand. These findings suggest that AI-based application, such as chatbots may provide a psychologically safe space where learners feel less social pressure. By reducing stress and anxiety, which in turn can indirectly enhance user's self-efficacy.

In addition to this, Lu (as cited in, Wu et al., 2024) highlights that the use of generative AI in experience personalized learning from pre-serve teacher who gain higher score in self-efficacy and higher thinking in both experimental and control group. This indicates that technology can provide individual's personalized learning. Similarly, Yang (2022, as cited in, Xiao et al., 2025) conducts task-oriented voice chatbot named by Ellie that used as speaking partner in English. The findings point out that the students showed increase their enthusiasm and significance in their interaction with Ellie and also increase their self-efficacy in English as EFL contexts, this suggest that AI-based chatbots are not only functional for language but, also beneficial in boosting learners' confidence in EFL context.

These empirical insights align with Bandura's self-efficacy theory in Kabilovna & Alexandrovna (2024) that individual's expectations in student's ability to succeed influence amount of their effort. For instance, the student's ability in speaking with AI-based application helps them to develop stronger self- efficacy belief and also develop their motivation and self-confidence in language performance. In addition to self-efficacy, self-esteem is another affective factor that can be influenced by the use of AI-based in educational settings. Based on the findings in Kabilovna & Alexandrovna (2024), the result of interview with teachers reflect dual

impact to learners. The first teacher noted that the use of AI can help students to get instant feedback and personalized learning and also the teacher found that the use AI in EFL learners can boost self-esteem. In contrast, the second teacher points out that the use of AI has a weakness for some students feel discomfort due to less interaction with human and empathy.

However, many English classroom still focus primarily on achieving in linguistic factors in speaking performance, such as vocabulary, pronunciation, grammar, fluency and comprehension, while often overlooking the affective domain or psychological barriers that learners face. In fact, in EFL contexts frequently experience anxiety, low self-confidence, shyness and fear making mistakes when required to speak English in front of others, such as during presentations or peer conversations. Despite the exploration of the benefits of AI-based tools in supporting language learning, limited studies have specifically examined barriers and foster self-confidence in speaking performance among EFL learners. Therefore, this research aims to fill that gap by investigating how AI-based applications can support affective factors particularly self-confidence in the speaking development of EFL students.

2.4. Artificial Intelligence in English Learning

2.4.1 Definition of Artificial Intelligence

According to Russell and Norvig, Artificial Intelligence does not have a universally agreed-upon definition. However, a common understanding is that AI refers to machines designed to assist human tasks (Sheikh et al., 2023). Floridi (2023)stated that there is no single standard definition of AI. The EP Mandate defines Artificial Intelligence (AI) as a system that operates in an autonomous manner using data to gain specific goals through machine learning or logic-based methods, producing outputs such as content, predictions, or decisions (Floridi, 2023)

2.4.2 The use of Artificial Intelligence Application in Language Learning

The existence of AI in various aspects of life aims to simplify human tasks, including in the field of education (Amoroso & Tamburrini, 2019, as cited in Sio et al., 2024). In the educational context, AI-based applications are used to assist students in learning English, particularly in speaking practice, vocabulary acquisition, pronunciation improvement and grammar correction through AI-based tutors (Raja & Alagumathi,

2024; Zhang et al., 2024). With these conveniences, AI-integrated language learning offers students a new learning and personalized learning experience (Chan as cited in Qassrawi et al., 2024).

One empirical study that supports these claims is conducted by Junaidi et al (2020) who examined the use of AI-based application called Lyra Virtual Assistant to enhance students' speaking performance at SMP TB Pekanbaru. The study employed a quantitative method with a quasi-experimental design. The population consisted of seventh-grade students, with two groups selected as samples: Class VII.1 as control group and Class VII.3 as experimental group, each consisting of 32 students. The researchers used oral speaking tests administered as pre-tests and post-tests. Based on the findings, the post-test score of experimental group was 69.59, while the control group scored 63.61. These results indicate that the use of the Lyra Virtual Assistant had a positive impact on students' speaking performance, demonstrating the effectiveness of AI-based applications in language learning contexts.

This research provides empirical support for the integration of AI in English language instruction, particularly in developing students' speaking skills. These findings are consistent with the concept of Zone of Proximal Development (ZPD) by Vygotsky (1978, as cited in Ferguson et al., 2022) that the optimal learning occurs when there is a distance between what a learner can perform without guidance and what learner can do with guidance is at a minimum. This is in line with Keenan who stated about the socio-constructivist approach in Vygotsky's theory, which emphasizes learning through interaction and scaffolding (Kharroubi & El Mediouni, 2024) in this context, AI-based applications such as C.ai can act as mediator that provide timely-feedback in real time, reduce learning anxiety and simulated guided interaction.

Building on the previous findings, this study shifts the focus from linguistic improvement to affective support by exploring how C.ai, an AI-based application as conversational tool, can enhance student's self-confidence in speaking English. While C.ai was not originally develop with affective domains in mind, this study adopts the application from a pedagogical perspective that prioritizes psychological safe. C.ai simulates human interactions through character personalization and provides private, judgment-free, private conversations, allowing students to practice speaking English in a low-pressure environment. Unlike Lyra,

which was designed for general speaking performance, C.ai offers a space that reduces social pressure and fear of making mistakes, two major barriers in oral language practice, thereby increasing students' willingness to speak and gradually improving their self-confidence.

C.ai is AI-based applications on mobile phone, which can be downloaded on smartphone and users can interact with AI-customed character tutors. Despite, C.ai is not specifically designed or educational or affective purposes. However, C.ai can be effectively repurposed to support affective of language learning, especially student's self-confidence in speaking English. Unlike typical chatbot interface, the features offered by C.ai include: Creating or selecting custom characters as personalization, interacting in voice call simulations, accessing the full transcript of each conversation real time as chat history.

In the use of AI-based application such as C.ai must also consider the cultural and technological realities of Indonesian classroom, where smartphones are an affordable alternative. This is particularly relevant with availability of AI-based applications ae accessible smartphones. Therefore, teacher supervision is needed to monitor students during the use of AI-based applications. Although AI can assist human's tasks in various fields, particularly in educational setting, AI-based application also presents both advantages and disadvantages. According to Eliott (2024)and Vall & Araya (2023), AI-based applications in the EFL classroom offer several advantages such as time-efficiency, availability and accessibility, personalized learning, real-time feedback and cost-effectiveness.

However, AI-based application also presents the disadvantages such as limited human interaction, the application can reduce students' opportunities for direct interaction in the classroom as EFL learners. Additionally, the risk of excessive dependence on AI-based applications might weaken students; initiative and critical thinking skills. There are also ethical concerns regarding data security and privacy, as many AI-based applications collect and process user data, sometimes without full transparency. Furthermore, stable internet access, particularly challenging in regions with unequal internet infrastructure, this becomes a serious barrier, leading to unequal learning opportunities for EFL learners in language learning through digital technology integration (Eliott, 2024).

3. METHODS

This study employed a quantitative method using a pre-experimental design in the form of a one-shot case study. In this design, data were collected through a post-test only, administered after the treatment, without a pre-test. According to Fraenkel, the one-shot case study is the form of experimental research, involving a single group without a comparison group, where no control group was involved (Hardiyanti & Herda, 2023). However, this design has a key limitation, the absence of both a pre-test and a control group make it impossible to compare students' performance before and after the intervention. Therefore, although this study observed post-test results, it cannot conclusively conclude that the improvement was entirely due to the use of AI-based applications. External factors such as students' prior knowledge, classroom environment, or individual motivation may also influence the result. These limitations should be considered when interpreting the findings and drawing conclusions about the application's effectiveness.

The sample consisted of 37 eleventh-grade students from class XI-1 at SMAN 01 Gunung Putri. This class was selected using purposive sampling, as the students represented a diverse range of English proficiency levels, which made them suitable for observing the general effectiveness of the AI-based applications. Additionally, all students in the class had access to personal smartphones, which was essential for engaging with the AI-based personalized learning. Data were collected using an oral post-test aimed at assessing students' speaking skills and self-confidence after using the AI-based application.

The assessment instrument comprised two components:

- Speaking skills were evaluated based on Hughes (2003, as cited in Ilham et al., 2019): fluency, pronunciation, grammar, vocabulary and comprehension.
- Self-confidence was assessed using modified indicators from Griffee's theory which originally used questionnaires (Gabejan, 2021)In this study, the researcher adapted it into a rubric-based observation using three indicators:

1. Ability: students' proficiency in grammar, pronunciation and vocabulary.
2. Assurance: Students' comfort level and confidence while speaking

3. Willing Engagement: students' interest and initiative in participating in the speaking task.

3.1 Validity Test

The rubric for self-confidence was developed by adapting indicators from Griffee questionnaire into observable behaviors. Validity was tested using Pearson Correlation, with r count value higher than the r table value (0.325) for N = 37, indicating acceptable item validity.

Table 1.
Pearson Correlation Coefficients for Validity of Speaking Rubric Items

Item	r_{count}	r_{table}	Status
1	0.905	0.325	Valid
2	0.903	0.325	Valid
3	0.850	0.325	Valid
4	0.920	0.325	Valid
5	0.903	0.325	Valid

Table 2.
Pearson Correlation Coefficients for Validity of Self-Confidence Rubric Items

Item	r_{count}	r_{table}	status
1	0.836	0.325	Valid
2	0.917	0.325	Valid
3	0.936	0.325	Valid

3.2 Reliability Test

The reliability of the assessment instruments was tested using Cronbach's Alpha. For the speaking component, five items yielded a Cronbach's Alpha value of 0.947, indicating high reliability. For the self-confidence component, three items yielded a Cronbach's Alpha value was

0.879, also indicating high reliability. Both values are higher than acceptable threshold of > 0.6, confirming the instrument's reliability.

Table 4.
Cronbach's Alpha Reliability Score for Speaking Rubric Items (Post-test)

Cronbach's Alpha	N of items
.947	5

Table 5.
Cronbach's Alpha Reliability Score for Self-Confidence Rubric Items (Post-test)

Cronbach's Alpha	N of items
.879	3

The data analysis was conducted using SPSS software. Raw post-test scores were converted into 10-100 scale to facilitate categorization into performance levels and align with school grading standards. A normality test was first conducted to examine the data distribution. Subsequently, a one sample t-test was used to compare students' post-test scores with the minimum passing grade (KKM) for English subject, which is set at 75. This benchmark served as the reference mean to determine whether students' performance after the AI-based application treatment was significantly higher than the expected standard.

Table 6.
Categories Score of Post-test Outcomes

Range Score	Category
81 -100	Very Good
61 – 80	Good
41 – 60	Adequate
21 – 40	Poor
0 – 20	Very Poor

4. RESULTS

The result of the research indicated an influence of the use of AI-based application in students' speaking confidence. Although the post-test scores were derived from two assessment rubrics, speaking component (e.g., fluency, pronunciation, grammar, vocabulary and comprehension) and speaking self-confidence (e.g., ability, assurance and willing engagement) the analysis and discussion in this research focus primarily on students' speaking confidence, in line with the research objective.

Although the statistical test used total post-test scores, the detailed results in this section will emphasize students' speaking confidence. This focus aligns with the study objective and highlights changes in students' confidence levels after the treatment. The following table presents the classification of speaking confidence categories based on the post-test results:

Table 7.
The Result of Self-Confidence Assessment in Post-test

Category	Range scores	Number of Students	Percentages %
Very Good	81 – 100	15	41%
Good	61 – 80	16	43%
Adequate	41 – 60	4	11%
Poor	21 – 40	2	5%
Very Poor	< 20	0	0%
Total		**37**	**100%**

Based on the Table 7, the students were categorized in "Very good" with scores ranging from 81 – 100 were 15 students (41%), this category demonstrated speaking confidence across three key indicators based on speaking self-confidence rubric. The students who spoke accurately, using appropriate vocabulary, grammar and pronunciation, and speaking clearly and fluently (ability). The student who spoke confidently with strong eye contact and relaxed natural body language (Assurance). The

students who spoke actively and express their ideas and good in responding the questions (Willing Engagement).

The students who categorized in "good" in scores ranging from 61 – 80 were 16 students (43%). In "Good" category demonstrated speaking with some minor weaknesses across three key indicators, the students who spoke clearly involves linguistic aspects with minor errors and few pauses during speaking (ability). The students who spoke confidently with good eye contact and natural body language during speaking with minor nervousness (assurance). The students who can show their good enthusiasm with good response to questions (willing engagement).

The students who categorized in "Adequate" in scores ranging from 41- 60 were 4 students (11%). In "adequate" category demonstrated speaking with moderate self-confidence across three key indicators, the students who spoke quite clearly with appropriate vocabulary with some errors and noticeable pauses but still fluent (ability). The students who spoke quite confidently and quite eye contact during speaking with some nervousness (assurance). The students had quite good response but they had limited enthusiasms during speaking (willing engagement).

The students who categorized in "Poor" in scores ranging from 21 – 40 were 2 students (5%). In this category demonstrated the students with low speaking confidence across three key indicators, the students who spoke with errors pronunciation, pauses during speaking, limited vocabulary and grammar errors with not fluent (ability). The students who spoke lacking confidence indicates little eye contact with nervous body language (assurance). The students with a minimum level of enthusiasm and prompt's need for speaking (willing engagement).

The last category is "Ver Poor". No students were categorized as "Ver Poor" with scores ranging from 0 – 20. This category indicates that the students demonstrate the lowest level of self-confidence across three key indicators, the student who spoke unclearly with many errors in grammar, dan pronunciation, and limited vocabulary, often causing frequent pauses during speaking (ability). The students tend to avoid eye contact and appear anxious, indicating a lack-confident when speaking English (assurance). The students show reluctance to participate in speaking and display no enthusiasm while speaking English (willing engagement).

According to the results suggest that the majority of students (84%) were classified into their the "Very Good" and "Good" categories of speaking confidence in the post-test after treatment using C.ai for speaking practice. To provide deeper insight into this categorization, the average scores of students in each self-confidence indicator (ability, assurance, and willing engagement) are presented in the following table:

Table 8.
The Average Scores of Self-Confidence Indicators

Indicator	Mean Score
Ability	4
Assurance	4
Willing Engagement	4

Based on Table 8 presents the average scores for each self-confidence component in post-test after students used C.ai for speaking practice. The three indicators are ability, assurance and willing engagement, were each scored on a scale 1 to 5.

The average score of students' speaking confidence for ability item was 4, indicating that most students demonstrated good speaking skill in terms of vocabulary, pronunciation and grammar. For assurance, the average score was 4, suggesting students generally showed their confidence through eye contact and body language during speaking English. However, some of them shown signs of nervousness. The willing engagement item had the average score at 4, reflecting students' enthusiasm while speaking and actively participation in expressing their ideas. This can be concluded that the speaking self-confidence of students in class XI- falls into the "Good" category. This also indicated in Table 7, where more students achieved scores in the "Good" category than in other categories.

After presenting the descriptive data, a normality test was conducted to ensure the distribution of data, followed by a one-sample t-test to test whether the average self-confidence scores of students differed significantly from the expected threshold.

Table 9.

Kolmogorov-Smirnov Test

	Statistic	Df	Sig.
Students' speaking confidence	.127	37	.136

Based on Table 9, the Kolmogorov-Smirnov normality test showed a significance value of 0.136 (>0.05), which means that the post-test data was normally distributed. Since only the post-test was used without control or pre-test, a one-sample t-test was used to test the significance of students' confidence in speaking.

Table 10.

One sample T-test

Test Value = 75				
Students' speaking confidence	T	df (n-1)	Sig.	Mean Difference
	2.121	36	.041	4.86486

Based on the table 10, the one sample t-test showed a significance value of 0.041 with t-count = 2.121. The test value set at 75, which represents the Minimum Mastery Criterion (KKM) established by the school for English subject. This benchmark indicates the minimum score students must achieve to be considered as having met the required standard in the subject. Therefore, the following decision criteria are used: If p-value < α (0.05) then, H0 is rejected, indicating a significant difference. If p-value > α (0.05) then, H0 is accepted, indicating no a significant difference. Since the p-value (0.041) is less than the significance level (0.05), the result statistically significant, and the null hypothesis is rejected.

Regarding the t-table and t count values:

If t-count >t-table, then H0 is rejected (significant difference).

If t-count <t-table, then, H0 is accepted (no significant difference).

The t-count obtained from Table 10 is 2.121 with degree of freedom (df = n-1) of 36. The critical t table value for df = 36 at α = 0.05 is 2.028. Since between t-count (2.121) > t-table (2.028), this confirms that there is a significant difference.

Based on the one sample t-test, the results shows a statistically significant difference between the students' speaking self-confidence scores and the benchmark score (KKM = 75), with a p-value of 0.041 and a t-count greater than the t- table value. This indicates that, students achieved scores above the minimum mastery criterion. However, while the statistical results suggest a positive effect, it does not necessarily prove that the use of C.ai enhance student's speaking self-confidence or reduce student's anxiety in speaking. During implementation, some students struggled to hear response of AI character's voice clearly, which caused by low-quality smartphone speakers. In addition, overlapping noise from nearby classrooms, despite using headsets to reduce the noise, disrupted student focus and interfered with the issues AI's voice output during practice.

Environmental and technical may have limited the application's effectiveness, despite students' positive response to its innovative approach, C.ai allowed students to personalize their speaking practice by customizing their AI partners, in practice there were disruptions caused by these external factors. Nevertheless, in the use of C.ai, the students can personalize their experience.

Regarding personalized learning in this context, students structure their dialogue flows under predefined topics, which can increase students' willingness to communicate (WTC) and confidence. This is in line with Zhang et al (2024), the students' interaction with AI in speaking practice can enhance students' WTC and confidence.

Therefore, the results confirm a statistically significant improvement in students' speaking self-confidence through C.ai, however there is several challenges such as environmental noise and technical limitations. These findings suggest that the observed improvements may not be caused solely by the application itself, which may also be influenced by contextual factors to be discussed further in conclusion.

5. CONCLUSSION

This study aimed to investigate the effectiveness of AI-based application in enhancing the students' speaking self-confidence. The results indicate that the use of C.ai as AI-based application has a statistically positive effect on students' confidence in speaking. This is evidenced by the students' achievements in the "Very Good" category,

with 15 students (41%), in the "Good" category with 16 students (43%), in the "Adequate" category with 4 students (11%), and in the "Poor" category with 2 students (5%). However, as this study employed a pre-experimental design with post-test only and no control group, the internal validity is limited. Thus, the findings should be interpreted with careful consideration, as causal claims cannot be fully substantiated.

Future research is recommended to adopt an experimental design including a control group or using a pre-test and post-test to enhance validity. Study longitudinal could also provide insights into long-term impact of AI-supported as speaking practice application over time. Additionally, comparative studies between AI-based method and traditional class method may reveal the effects on language learning outcomes and student's self-confidence.

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