

The Resurgence of Speaking Confidence: The Use of Google Home in Pesantren

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Abstract

Purpose: This study aims to explore the application of Google Home in Islamic boarding schools by students to determine how it is used, particularly in improving confidence in speaking English. Given these conditions, the researchers also looked at the challenges and obstacles that arise in an environment with its own characteristics compared to regular schools in general. On the other hand, this study is expected to contribute to the modernization of Islamic boarding schools.

Methodology: This study employs a mixed-method approach designed sequentially and explanatorily through online surveys and semi-structured interviews. Quantitative analysis was conducted by adapting the Self-Regulated Listening Scale (Yabukoshi, T., 2024), modified to include items relevant to the study, which involved 107 participants. Then, semi-structured interviews were conducted with four selected students to further explore the research findings.

Results: Quantitative analysis revealed that most students showed an increase in psychological readiness to speak, felt more comfortable practicing with Google Home. Qualitative findings confirm this; students described how Google Home provides a judgment-free practice environment, which helps reduce anxiety and motivates independent learning initiatives such as repeating instructions, bravely using new vocabulary, and improving pronunciation.

Applications/Originality/Value: This study implements Google Home technology in Islamic boarding schools, which are institutions with very strict rules and routines. The author fills this gap by creating space for students to build confidence in speaking English.

Keywords : google home, speaking confidence, santri, self-regulated learning

Introduction

A person's self-confidence is a key asset in learning any subject, where it plays a role in helping students to achieve their learning goals. In the context of learning English, the biggest challenge according to students is speaking skills (Ratnasari, A. G. 2020), where self-confidence is the most crucial thing to focus on in order to achieve these skills (Nety et al., 2020). A feeling of confidence (such as freedom from fear, anxiety, and other negative emotions) will accelerate a student's speaking (Ozdemir & Papi, 2021). The problem becomes even more complex when considering the situation in Indonesia, where many students still struggle with speaking because they do not have an environment or a space to give them more opportunities to speak (Jon et al., 2021).

More specifically, there are institutions that have unique social problems that create social pressure there, such as Pesantren (Saidah et al., 2025). Moreover, strict regulations and limitations arising from the religious orientation of education become a challenge for students there who already have English language skills (Sari, 2023), due to their fear of standing out or being different from others. Thus, a sense of self-confidence needs to be fostered by encouraging solutions that create a social environment free from pressure, making opportunities to practice English easier.

On the other hand, technological breakthroughs in the field of education have been very significant and transformative, not only in terms of the ease of obtaining new information, but also in terms of changes in the way student learning (Chen, Z. 2024), especially with AI that bring Voice-Based that offers Natural Process Language Learning and Automatic Speech Recognition (Freeda et al., 2024), such as Google Home, which has the potential to create a socially pressure-free and safe environment for anyone who wants to speak. Previous studies have shown significant positive results from the use of IPA (Intelligent Personal Assistant, e.g.: Google Assistant, Apple's Siri, Amazon's Alexa) on EFL learners, such as: increased

willingness to communicate, enhanced self-confidence, reduced sense of anxiety when speaking English (Tai & Chen, 2020). Yet, the majority of these studies have only been applied in public schools, universities, or urban environments, with no research exploring more traditional environments or Pesantren.

With the unique characteristics of pesantren, this gap becomes increasingly clear, including the lack of opportunities for interaction in English and the lack of innovation in technology learning media, which raises the potential for the use of voice-based technology. Based on this gap, this study attempts to explore how santri use Google Home to see its effect on self-confidence and self-regulated learning to improve their speaking skills. This study also identifies the challenges and barriers when using Google Nest to improve their speaking skills in an Islamic boarding school environment.

Literature Review

Within the field of foreign language acquisition, second language self-confidence—or L2 self-confidence—refers to learners' conviction in their capacity to utilize a foreign language for communication, marked by minimal anxiety and a strong sense of competence (Matitaputty, 2023). In contrast to self-efficacy, which pertains to specific tasks and emphasizes outcomes, self-confidence demonstrates more extensive and enduring traits, and also suggests an individual's mental preparedness for engagement (Garcia et al., 2024). Consequently, self-confidence is crucial as a primary influence on a student's Willingness to Communicate (WTC) (Chen et al., 2021). Hence, students with good language proficiency are strongly influenced by their psychological readiness, which will encourage their performance development (Davronovich, 2025). Meanwhile, poor performance is greatly influenced by the environment. For example, in Indonesia, English needs to be taught more frequently so that it will not cause "affective barriers," allowing students to show their abilities without feeling anxious or doubtful when communicating (Shankar et al., 2025). This issue is particularly relevant in environments such as Islamic boarding schools, where many students' abilities are not developed due to frequent social pressure (Saidah et al., 2025).

Before the rise of AI in language learning tech, CALL, or Computer Assisted Language Learning, was the first pioneer in this field, followed by MALL, or Mobile-Assisted Language Learning, which is more flexible to use (Pooley et al., 2024). During the expansion of AI, technological facilities were developed that combined NLP (Natural Language Processing) with ASR (Automatic Speech Recognition), which has the potential to help individuals obtain immediate and accurate verbal feedback. These two components are integrated into an interface called VUI (Voice User Interface) (Mukherjee et al., 2024). Thus, the system is capable of creating a comfortable and supportive learning approach, creating a speaking learning environment that reduces anxiety and fear for learners (Sultana & Jamin, 2021). Among the technologies that meet the criteria mentioned above is Google Home. This device has a voice interface that is ideal for use as a personal assistant, so in most instances it will eliminate the constraints that occur when speaking with other people (Salas-Pilco et al., 2022).

The strict 24-hour schedule and focus on religious studies are normal conditions in Islamic boarding schools, which limit students's opportunities to practice English (Rahman et al., 2023). In addition, the challenges of social and cultural factors such as shyness among students when trying to perform (Yabukoshi, T., 2024), as well as negative judgments from their friends, which will continue to prevent an individual from trying to improve their English speaking skills. To address these sociocultural hurdles, a subtle and individualized technological approach is required to facilitate practice (Sultana & Jamin, 2021). Therefore, Google Home can be an alternative solution that provides a personal environment for students to develop their English language skills despite the limitations of their environment.

Although various studies have proven that AI-based voice assistants can improve fluency and reduce anxiety (Salas-Pilco et al., 2022), most of these studies were conducted in public schools or universities, with "limited evidence in religious-based institutions" such as Islamic boarding schools. Furthermore, existing research tends to separate psychological variables, so that the interrelationship between increased self-confidence and Self-Regulated Learning (SRL) in an AI-based context "is rarely studied together." Moreover, there is a lack of research examining how Google Home is naturally used in boarding schools, particularly those with strict rules regarding technology. This deficiency highlights the importance of further, detailed investigation into the difficulties of integrating Voice User Interface technology into religious education to fully grasp its effects.

Methodology

This study applied a sequential mixed approach using quantitative and qualitative methods, beginning with an online survey instrument to assess frequency, self-confidence and self-regulation learning in the use of Google Home, followed by semi-

structured interviews to explore in greater depth the overview of usage and the barriers they faced, as well as to analyze other potential issues that arose and the factors causing the difficulties they experienced.

This study collected quantitative data from 107 junior high and high school students who filled out an online questionnaire. For one month, the Google Home device was placed in a fixed and provided written instructions for use on the strategic location, which is on the main terrace as the main access for students when going to or leaving the dormitory. The researcher chose this location so that it would be easily visible to everyone, easy to reach and access, and provide natural usage so that students would feel like using it in a reflexive and easy way.

After one month, the researcher distributed questionnaires using a Likert Scale (1-5) online to the students. There were three sequential categories in the questionnaire: usage frequency check (rare [once a week], average [3-4 a week], often [every day]), self-regulated learning (forethought, performance, and self-reflection), self-confidence (measuring confidence and comfort when speaking English to Google Home). The reliability test result using Cronbach's alpha was 0.76.

After that, the researcher analyzed the results of quantitative studies to categorize students based on their level of self-confidence (high and low [H1 & H2] and frequency (often and rarely [L1 & L2]) in collecting qualitative data. Semi-structured interviews were conducted to collect qualitative data in a private place in order to explore in more detail the interaction between Google Home and the santri. The questions are: preparation before use, strategies during interaction, evaluation after use, perceptions of English language use, and the obstacles and challenges they faced while using the device at the pesantren.

During the interviews, the participants' voices were recorded and their body language was noted as supporting data during data collection. After that, data analysis began with summarizing all the recordings, followed by thematic coding and transcribing specific clips to identify other more in-depth findings related to the students' reflections and barriers.

To ensure the reliability and credibility of this mixed-method study, the researcher conducted triangulation: contrasting quantitative and qualitative results, ensuring that all participants' answers were consistent, and taking additional notes during interviews. All participants were provided with information regarding the confidentiality of their identities and ensured their consent throughout the study, ensuring that their participation was voluntary.

Findings and Discussion

Findings

Natural Usage Patterns of Google Home in Islamic Boarding Schools

Placing Google Home in crowded areas encourages natural use of the device without the need for follow-up from researchers. The survey results prove that almost all students tried Google Home at least a few times in a month, with usage levels ranging from very frequent to infrequent. Qualitative analysis shows that unrestricted access triggers usage that is highly dependent on uncertain situations, especially primary access; students tend to try it when no one else is around or with friends with whom they have chemistry.

Students H1 and H2 said that an open location was not a problem, because they felt comfortable trying different commands or practicing pronunciation. However, unlike students L1 & L2, they stated that they were reluctant to try it in front of many people, indicating that social factors greatly influence their courage to speak, even though Google Home is a medium designed not to give judgments (only to execute commands). Thus, these findings reinforce the opinion that AI devices do not completely eliminate social pressure, but can ease the psychological burden compared to when speaking in front of other people. The results of this study are in line with research on voice user interfaces (VUI) that focuses on the importance of the usage environment on the effectiveness of voice-based learning, as well as how interactions without formal guidance further mature students' mentalities.

The Impact of Google Home on Self-Confidence in Speaking English

Analysis of the questionnaire data shows that the majority of respondents feel that their confidence in speaking English increases when interacting with Google Home. Items such as "feeling less afraid to speak" received average scores above

the “agree” category. Therefore, this pattern is consistent with qualitative data, in which all participants stated that Google Home is more comfortable, non-judgmental, and makes it easier for them to try repeatedly without pressure.

In interviews, participants with high self-confidence scores and those with low self-confidence scores alike expressed that they felt more comfortable speaking with Google Home because it was able to identify their English language deficiencies simply by responding to their commands without judging what they had said.

These findings reinforce the affective filter theory and the role of low-risk environments in boosting confidence in a second language. The natural interactions that occur with AI provide a safe space that is not available in formal classrooms, especially in Islamic boarding schools with their packed schedules and limited speaking practice rooms.

The Role of Google Home in Supporting Self-Regulated Learning (SRL)

Even without specific instructions, students naturally develop SRL patterns in three phases:

Forethought (spontaneous planning): When introduced to Google Home devices, many students want to try certain words or phrases in English, or are triggered when they see their friends successfully giving commands. This social trigger factor proves that intrinsic motivation and curiosity are the initial drivers, not academic pressure.

Performance (practice): Interaction with Google Home indirectly leads students to self-correct. When Google Home did not misunderstand the instructions, students tried various ways to get Google Home to follow their commands. Repeating phrases, correcting pronunciation, or slowing down their speech, they automatically did these things when mistakes occurred. From this example, it is clear that metacognitive monitoring was taking place, where students evaluated their output based on the AI's immediate response.

Self-Reflection (post-use evaluation): Both students with high self-confidence (H1 & H2) and low self-confidence (L1 & L2) showed reflection after using Google Home. The difference between students with high self-confidence was that they were better able to prepare for the future in a more structured manner, compared to students with low self-confidence, who were only able to identify their shortcomings. Changes in tone and expression when recounting their experiences indicate a positive shift in their perception of their self-confidence.

Overall, Google Home not only functions as a speaking practice tool, but also indirectly facilitates experience-based independent SRL, which is in line with literature stating that voice user interfaces (VUI) can trigger learning through practice without explicit instruction.

The Influence of Usage Patterns on Social Dynamics in Pesantren

The complex social situation in Islamic boarding schools, which cannot be easily separated, shows that students there choose not to take risks in doing something in order to maintain their self-image. This will hinder their efforts to develop, because they are afraid of being judged when they try something new and cannot stand being ridiculed by their friends. This can be seen from the response of the interviewee, who confessed that he did not feel embarrassed or afraid of making mistakes when talking to the Google Home.

On the other hand, some students mentioned that their peers sometimes observe them without revealing their intentions, creating an ambiguous influence: sometimes motivating, sometimes causing doubt. The “first come, first served” condition in using Google Home can trigger a small competitive dynamic, although most students only see it as an opportunity to try it first. The placement of the device also has a significant influence. When placed in a crowded area, it will affect the desire to use it when it is quiet.

Discussion

It was found that providing opportunities to practice without fear of being judged supports students' courage to speak. This is in line with research on affective filters and willingness to communicate, which shows that a sense of security can reduce anxiety and encourage natural speaking practice. With the presence of Google Home, the boarding school environment, known for its culture of politeness, fear of making mistakes, and strong social pressure, is able to introduce a new

environment by creating opportunities to practice speaking without feeling threatened and maintaining students' self-image. Thus, even with limited use, students who lack confidence still have the courage to try.

The main challenge for Google Home users is when their commands are not responded to or are not detected correctly by the device. This shows that frequent errors can lead to improvements, in line with VUI studies. Similar observations were made in this study, where students tried repeatedly to get Google Home to recognize their words, and some gave up. Thus, technology can either empower or disappoint users, depending on their psychological state and surrounding environment.

The majority of students prepared their English phrases before speaking to Google Home, demonstrating forethought. However, many students were not accustomed to assessing their abilities, indicating low self-reflection. This is in line with SRL research related to the planning stage, which is easy to apply. It also confirms the gap in research that voice AI rarely examines the role of SRL comprehensively.

The frequency of Google Home usage does not determine SRL levels or increased self-confidence. This is related to previous research that self-efficacy affects a person's self-confidence.

Limitation and Future Suggestions

This study provides an early overview of how Google Home can facilitate improvements in self-confidence and self-regulated learning in the context of Islamic boarding schools. However, several points need to be criticized in order to gain a more proportional understanding of these findings and open up scope for further research.

First, this study was conducted in a natural environment with only one Google Home device placed in a common area of the Islamic boarding school. The avoidance of using the device when the area was crowded was an obstacle for many students, especially those with low self-confidence. Therefore, the optimal condition does not entirely depend on self-confidence levels; it shows that it is still tied to "social pressure," although to a lesser extent than when practicing with teachers or peers. Therefore, further research is needed to compare patterns in different conditions, such as public and private locations like classrooms or dormitories, to see which variables have a stronger influence on students' self-confidence development.

Second, the study is not focused on specific measurements regarding speaking ability, like fluency, accuracy, or pronunciation. The instruments utilized do not evaluate real linguistic activity; instead, they evaluate perceived confidence and self-regulated learning (SRL) habits. Therefore, self-confidence may not correspond to an actual increase in one's ability to carry out the speaking task. Future studies could use tools that measuring competencies, like AI phonetic analyses or speaking assessments that occur before and after an instructional intervention to bridge the gap between the perceived confidence and actual speaking improvements.

Third, there was no observation of students' attitudes toward technology, particularly their familiarity with AI technologies, and their ability to comprehend the accents of Google Home devices. This gap could have affected their overall experience. Students who are more knowledgeable about technology are likely to have a better ability to adapt and use voice assistants more confidently. Future studies may consider the engagement of digital literacy as a potential moderator and try to establish whether the relationship between the use of Google Home and self-efficacy is uniform among other classes of technological proficiency.

In the end, the pesantren setting has unique attributes and values that might affect the students' acceptance of new technologies, including voice-activated AI. Although this research indicates growing interest, it must be held with caution when applied to other pesantren. The use of Google Home as a medium for practicing speaking in Islamic boarding schools can improve our understanding of the dynamics of cultural differences that occur in such institutions.

Finally, this study has shown how to enhance confidence in the potential of voice technology, which can serve as self-regulated learning within an Islamic pedagogical framework. To ensure the maximum potential of this artificial intelligence technology in a pesantren-based environment, particularly without detaching it from Islamic education, its implementation needs to be more carefully planned and structured so that the output produced can be more successful in improving language fluency.

Conclusion

This study shows significant results in the use of Google Home to boost students' confidence when speaking English. The survey results show that the majority of students have demonstrated proper preparation before speaking, mastering and monitoring during use, and reflecting for future improvement, especially through the establishment of a pressure-free and non-judgmental practice environment.

Quantitative data did not show any correlation between the frequency of Google Home usage and specific SRL phase levels or self-confidence levels. The in-depth interviews further revealed that it was not only students with high self-confidence who achieved more stable and immersive results; students with low self-confidence still felt more comfortable speaking English with Google Home because they did not feel the usual social pressure when speaking.

In theory, the reduction of anxiety and self-regulation in speaking activities with the help of technology reaffirms the influence of the VUI-based practice environment. In its application, Google Home is able to create a practice environment without any embarrassment, allowing students to practice freely. However, social factors such as the equitable distribution of devices remain a challenge in this study.

Limitations of the devices, lack of follow-up regarding usage frequencies, no pre-test and post-test, and lack of observation of continuous changes are limitations in this study. Further research should increase the number of devices, extend the intervention period, and incorporate elements that encourage self-reflection to gain a deeper understanding of the correlation between voice artificial intelligence, self-regulation, and self-confidence. This study opens the way for many researchers to integrate the use of artificial intelligence with learning models and to assess the long-term impact of students' English speaking skills.

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