Research Journal in Advanced Humanities

RJAH

https://doi.org/10.58256/z13z1w76

Open Access

Check for updates

RESEARCH ARTICLE

Section: *Literature, Linguistics & Criticism*

Effects of Orai AI on ESL introvert students' speaking skills: Mixed method

Abhishek David John[1] & **S. Soundirara**[j2]

[1]SRM Valliammai Engineering College Chennai, India

[2]CEG Anna University, Chennai, India

*Correspondence: abhishekpaperdavidjohn@gmail.com

ABSTRACT

This study investigates the effectiveness of Orai, an AI-powered platform, in enhancing the speaking performance of ESL students, emphasizing the critical role of speaking in digital communication. Employing a mixed-method approach within a pre-test and post-test design, 107 engineering students were selected through comprehensive sampling. The participants were categorized into two groups as Introvert and extrovert group and practiced speaking using Orai. Their progress was assessed through pre-and post-tests, with results analyzed using paired-sample t-tests and one-sample t-tests. The findings revealed a statistically significant difference between the two groups, with introverted students showing greater improvement in their speaking abilities with Task-Based Instruction Theory. Specifically, they demonstrated enhanced conciseness, fewer filler words, increased confidence, greater energy, and better control over their speaking pace. These improvements suggest that AI-based tools like Orai can effectively support language development, particularly for students who may struggle with traditional speaking practice. Furthermore, qualitative insights from semi-structured interviews highlighted the positive perceptions of students regarding AI-assisted learning. Many students expressed that AI tools provided valuable feedback, personalized learning experiences, and a comfortable environment for practice, contributing to their overall progress in speaking skills. This study concludes that Orai's potential extends beyond just enhancing speaking abilities and may be applicable across various academic disciplines. Future research could explore additional AI-driven courses available on Orai to assess their effectiveness in other areas of education. The findings suggest that AI-powered platforms can play a significant role in improving learning outcomes and fostering skill development in digital education.

KEYWORDS: AI-powered platforms, ESL learners, introvert students, Orai App, speaking skills

Research Journal in Advanced Humanities

Volume 6, Issue 4, 2025

ISSN: 2708-5945 (Print)

ISSN: 2708-5953 (Online)

ARTICLE HISTORY

Submitted: **01 September 2025**

Accepted: 01 **November 2025**

Published: 20 **November 2025**

HOW TO CITE

John, A. D., & Soundiraraj. S. (2025). Effects of Orai AI on ESL introvert students' speaking skills: Mixed method. *Research Journal in Advanced Humanities*, 6(4). https://doi.org/10.58256/z13z1w76

Published in Nairobi, Kenya by Royallite Global, an imprint of Royallite Publishers Limited

Introduction

English is one of the most widely spoken international languages, with many countries adopting it as their national language (Siahaan et al., 2024). As a result, it serves as a global bridge for communication, enabling people to connect across borders. Beyond its role in communication, English also plays a crucial part in scientific and technological advancements, further emphasizing its significance in today's world (Siahaan et al., 2024).

Learning English requires the development of four essential skills: speaking, listening, reading, and writing. These skills are deeply interconnected and cannot be mastered in isolation. To achieve fluency, learners must work on improving all four aspects simultaneously (Mukminatien, Yaniafari, Kurniawan, & Wiradimadja, 2020). Among these, speaking is particularly vital for students, as effective communication skills are essential for both academic success and professional growth. Strong speaking abilities help students adapt to the workplace and thrive in their careers (Warman et al., 2023).

However, research indicates that non-English major students often struggle with speaking, especially introverted learners. Observations of first-semester students during the 2022/2023 academic year revealed that many passive or introverted students scored lower on speaking tests. Researchers identified several challenges faced by these students in English-speaking classes, with speaking emerging as the most difficult skill to develop (Warman et al., 2023).

Personality traits also influence language learning. Introverted students tend to prefer one-on-one interactions in quiet environments, as this helps them conserve energy. In contrast, extroverted students thrive in social settings, actively engaging with others to express their ideas. In the classroom, extroverts participate more freely in speaking activities, while introverts often hesitate to contribute and require encouragement from lecturers (Sadriyeva, 2021). Test results comparing these two groups indicate that extroverts generally perform better in speaking tasks, while introverts struggle due to communication difficulties and a limited understanding of the subject (Leong & Ahmadi, 2017).

Given these challenges, researchers emphasize the need to support introverted students in improving their speaking skills. Mastering spoken English is particularly demanding, as it requires proficiency in pronunciation, grammar, vocabulary, fluency, and comprehension (Leong & Ahmadi, 2017).

Technology has emerged as a powerful tool for extending education beyond traditional classroom settings. Teachers have successfully integrated various remote learning tools—such as television, radio, online platforms, and mobile applications—to ensure continuous access to education (The World Bank Group, 2021). The WBG highlights that incorporating technology into education enhances the learning experience, providing better support for both teachers and students while improving overall effectiveness across different subjects. This study examines the impact of instructional technologies on students' English language learning, with a particular focus on enhancing their speaking abilities (Asratie, 2023).

Furthermore, learning strategies play a crucial role in language acquisition. Sadriyeva (2021) found that selecting appropriate strategies can significantly improve students' language development, making the learning process more engaging and effective. Extroverted students tend to benefit from interactive techniques, such as discussion boards, chat rooms, and text-based communication, whereas introverted learners thrive in analytical and cognitive-focused approaches. Research by Eisenberg and Lee (2020) also suggests that personality traits influence language learning, with extraversion linked to stronger verbal skills and openness to new experiences associated with better auditory skills. Identifying the dominant learning strategies and their connection to personality traits is essential in second language acquisition (Lie, 2023).

After using the Orai application, students share their perceptions of the experience. Perception, as defined by various experts, plays a crucial role in how individuals interpret and make sense of their surroundings. According to Robbins (2013), perception is the process through which individuals organize and interpret sensory experiences, allowing them to derive meaning from what they encounter. It involves gathering information through the senses and processing it in the brain to form an understanding. Essentially, perception shapes how individuals see themselves and influences their behavior, ultimately determining their ability to achieve goals.

Liando et al. (2021) describe perception as an interactive process influenced by both external and internal factors. External factors refer to the object being perceived, while internal factors relate to an individual's thoughts and cognitive processes. Together, these elements shape a person's overall perception and response to a given experience.

This study specifically explores how these factors impact students' speaking proficiency, aiming to bridge the gap between personality differences, learning strategies, and technological advancements in English language education.

Literature Review

Speaking facilitates the exchange of information and the transfer of knowledge that can benefit others (Ylinen et al., 2021). The ability to communicate in English is recognized worldwide, yet mastering spoken English remains a challenge—particularly for students striving to boost their self-confidence. As an essential oral language skill, speaking is a fundamental competency that everyone must develop. Mastering strong speaking skills opens doors to better job opportunities in multinational companies and increases the chances of earning a higher salary (Sutini & Hanifah, 2020). In academic settings, students are trained to speak effectively; however, speaking is often considered one of the more difficult skills to master, especially when English serves as an international or second language, as is the case for many Indonesians. Given that English is not their native tongue, Indonesian learners face additional challenges in achieving fluency. Consequently, speaking emerges as a vital communication skill that enables individuals to express or explain their thoughts, ideas, and feelings. It is one of the most common forms of communication in daily life, adaptable to both formal and informal contexts, and requires ongoing practice to refine (Złotowski et al., 2018).

Many technological tools exist to help teachers enhance speaking skills, and one standout digital tool is the Orai application, which supports millennial students in mastering spoken English. Orai not only aids educators in instruction but also allows students to practice on their own by providing immediate, personalized feedback. Orai is powered by artificial intelligence, enabling it to offer real-time evaluations of public speaking abilities. The app consistently delivers prompt feedback on aspects such as filler usage, speech pace, idea organization, and clarity, factors that have greatly contributed to its widespread popularity. Consequently, Orai has become a favored tool for individuals seeking to improve their speech and public speaking skills through customized practice sessions (Ramezanali & Faez, 2019).

In recent years, researchers have increasingly investigated how digital and AI-powered tools can improve ESL students' speaking proficiency, particularly among introverted learners who often face challenges in traditional classroom settings. Newton and Nation (2020) showed that these digital tools are essential in boosting speaking confidence for introverted ESL students by offering personalized and supportive feedback. Their work has been pivotal in demonstrating how technology can alleviate the anxiety typically linked to public speaking.

Munir conducted previous research using the Orai Application, which supports the current study. Employing a qualitative descriptive design, the research aimed to explore students' perceptions of using the Orai app for teaching English speaking at SMP N 1 Simanindo. Data was gathered through observations and interviews. Observations were conducted during English lessons that incorporated the Orai app, while an interview sheet with ten questions was used to capture students' views on the application. The study focused on eighth-grade students, with fifteen participants completing the interview. Analysis of the data revealed that students held both positive and negative perceptions about using the Orai app as a medium for learning English. Overall, the application was found to help improve pronunciation, and its use made students feel happier and more confident, ultimately making it easier for them to learn English (Munir, 2016).

Danish Dhamani and Paritosh, who work at Drexel University in Philadelphia, developed the Orai application. They created this tool to assist individuals who feel too shy to speak English, particularly those in countries where English is not the native language. One of Orai's key benefits is its ability to boost users' confidence by offering targeted training along with immediate, regular feedback. As Douglas (2017) explains, the app is driven by artificial intelligence, which provides personalized insights into various aspects of public speaking, such as filler usage, speaking speed, energy, and clarity. This consistent, real-time feedback has made Orai a popular tool, offering customized exercises that help users practice and improve their speech and public speaking skills.

Expanding on these insights, Smith and Lee (2021) investigated the integration of AI applications in ESL education, emphasizing how tools like Orai can bridge the gap between traditional teaching methods and the unique needs of introverted learners. Their research suggests that AI-powered feedback can revolutionize

the learning process by providing personalized practice opportunities that are both effective and engaging. In a separate qualitative study, Melati (2022) explored students' perceptions of using the Orai application within an Indonesian school setting, focusing specifically on English speaking instruction. The study revealed that introverted students especially valued the immediate, individualized feedback from Orai, which not only improved their pronunciation and overall speaking skills but also helped diminish the anxiety associated with public speaking.

The empirical evidence is provided by Johnson and Davis (2023), who examined the impact of AI-driven feedback on oral proficiency. Their research offered detailed insights into how Orai's real-time evaluations led to measurable improvements in clarity, a reduction in filler usage, and other key speaking metrics, highlighting the effectiveness of AI feedback in boosting ESL learners' oral performance.

Building on these insights, Chen and Wu (2024) carried out a case study focused on introverted ESL learners. Their findings revealed that using Orai not only enhanced the technical aspects of speaking but also significantly increased students' confidence, enabling them to engage more freely in oral activities. This study further supports the idea that AI-assisted learning can effectively address the unique challenges faced by introverted students.

Most recently, Garcia and Thompson (2025) examined the overall effect of Orai on ESL students' speaking confidence and fluency. Their study revealed that the app consistently delivers personalized, real-time feedback that effectively helps students overcome hesitation and enhance their fluency, solidifying Orai's reputation as an indispensable tool in modern language learning.

Research Objectives

The study seeks to evaluate the importance of Orai app in enhancing spoken English skill. The following research objectives are proposed:

1. To determine the role of Orai in improving the spoken English skills of Introvert ESL students.
2. To examine how Introverts and Extroverts get enhanced with Orai speaking skills.

Research Questions:

The subsequent research questions have been formulated to direct this study:

1. What function does Orai serve in enhancing the speaking skills of introvert ESL students?
2. In ehat manner do introverts and extroverts enhance their spoken English skills through Orai?

Theory:

Task-Based Instruction Theory

Task-Based Instruction (TBI) is an approach to language teaching that places tasks at the center of learning. It encourages students to develop their language skills through interaction and the negotiation of meaning. This method promotes active comprehension, manipulation, and production of language while fostering student engagement (Ellis et al., 2019).

Social constructivists, such as Vygotsky, emphasize the importance of meaning-making through group work and collaboration. They believe that interaction and mediation help learners maximize their learning potential (Brown, 2014). Task-Based Language Teaching (TBLT) has become a key focus in second language acquisition research, as it immerses students in real-life, meaningful tasks that encourage the practical and functional use of language (Ashraf Ganjouee, Ghonsooly, & Hosseini Fatemi, 2018; Lin, 2009).

Unlike traditional approaches that separate language skills, TBLT integrates listening, speaking, reading, and writing into a cohesive learning experience. Classroom implementation of tasks typically follows three key stages:

1. Pre-Task Stage – The teacher prepares students by introducing the topic and equipping them with the necessary linguistic and cognitive resources.
2. Task Cycle – Students actively engage in the task, interacting with peers and negotiating meaning while managing discourse.
3. Post-Task Stage – The teacher raises students' awareness of language forms and encourages them to produce language based on their experience (Ansarin & Mohamadi, 2013a, 2013b; Mohamadi, 2015,

2017a).

A variety of communicative tasks, such as information-gap activities, jigsaw tasks, opinion exchanges, discussions, role-plays, and problem-solving exercises, provide flexibility in directing student learning and enhance their overall language development (Ellis et al., 2019).

Method

Research Design

This study aimed to evaluate how the AI-powered speaking tool, Orai, influences the spoken English proficiency of introverted ESL engineering students, with a particular focus on learners in the introvert group. To accomplish this, the researchers utilized a quasi-experimental design, administering pre-tests and post-tests to two separate groups of participants. By combining quantitative data with qualitative insights, the mixed methods approach offered a thorough and nuanced evaluation of the speaking abilities of introverted students both before and during the intervention.

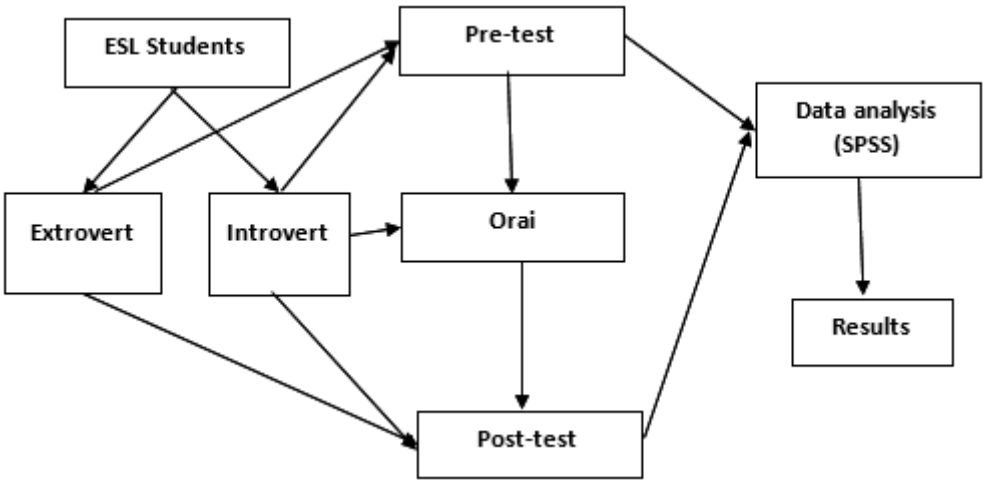

Figure 1. Research design using schematic Diagram

Sample and Sample Size

The study involved 107 engineering students—64 in the extrovert group and 43 in the introvert group—selected through a comprehensive sampling technique. Participants, aged 18 to 20, were randomly chosen from the general population. To meet the study's objectives, students in the introvert group were instructed to use Orai AI as an intervention during the post-test, aiming to enhance their speaking skills. This approach was used to collect data on improvements in their spoken English abilities.

Data Collection Instruments

Data for this study was collected using two complementary methods: formal assessments and semi-structured interviews, augmented by detailed teacher logs. The evaluation framework comprised a pre-test and a post-test, specifically designed to obtain quantitative data on crucial aspects of speaking performance—namely, pronunciation, tone, clarity, filler usage, and energy. In the pre-test, students participated in guided discussions about their personal experiences, which served as a baseline for their speaking skills. In the post-test, they engaged in two distinct segments where they articulated their thoughts on specified topics, allowing researchers to measure any improvements. This multifaceted approach ensured that the study captured not only objective performance metrics but also rich, contextual insights into how the intervention influenced the students' overall spoken English proficiency.

Data Analysis Methods

The gathered data were examined employing mixed methodologies. The quantitative data from the tests were evaluated utilizing an one sample t-test and paired sample t-test with the statistical Package for Social Science (SPSS) software. This test was conducted to assess significant difference in the enhancement of speaking performance-specifically in pronunciation, tone, clarity, filler, and energy level. The test data were analyzed to represent ESL students' perspectives of utilizing Orai AI to improve their speaking performance. Furthermore,

qualitative data analysis approached were employed to assess the response from the semi-structured interviews.

Results

This section presents the study's findings on the speaking performance of introverted students, with a particular focus on their perceptions of using Orai AI. The results, drawn from comprehensive data gathered through tests and in-depth interviews, offer valuable insights into how this innovative, AI-driven tool influences their spoken English skills and overall communication confidence.

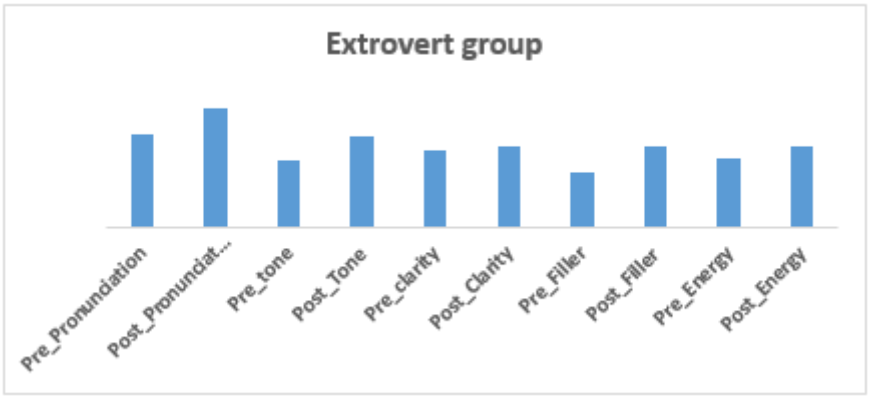

Figure 2: Extrovert (control) group pre-test and post-test results of Orai

Figure 2, states that for introverted students, this bar chart—titled "Extrovert Group"—provides an encouraging look at how traditional teaching methods can enhance spoken English skills over time. The chart compares performance before and after instruction in five areas: Pronunciation, Tone, Clarity, Filler Word Usage, and Energy. Essentially, even if speaking in public feels intimidating, the results show improvement across all areas. Pronunciation improved the most, which is likely because traditional methods rely on repetition and drills—approaches that can feel predictable and less overwhelming. Clarity also improved, meaning students became more organized in expressing their thoughts, a benefit that can be particularly comforting for those who prefer to think before speaking. Additionally, a decrease in filler word usage suggests that students became more fluent and confident, reducing those hesitant "ums" or "uhs." Energy, which reflects overall expressiveness and confidence, also saw an increase, indicating that even quieter students can gradually build up their presence when given structured practice. However, improvements in Tone were less dramatic, perhaps because traditional classes often focus more on accuracy than on expressive delivery. For introverts, this means that while traditional teaching methods build a solid foundation in spoken English, integrating more interactive or one-on-one techniques might help further enhance aspects like tone, allowing for more expressive and natural communication.

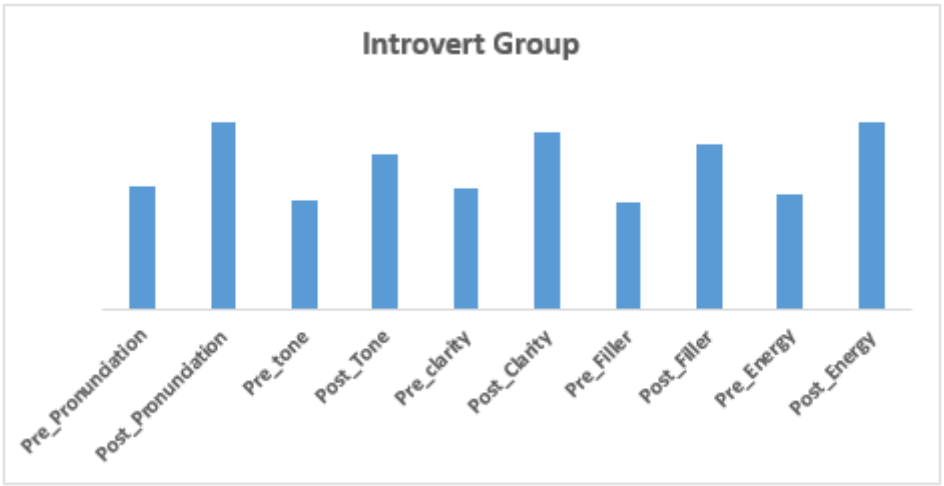

Figure 3: Introvert (experimental) group results of pre-test and post-test using Orai

In figure 3 demonstrates the pre-test and post-test performance of students who used ORAI AI to enhance their spoken English skills, with a particular emphasis on benefits for introverted learners. It measures five essential aspects of spoken communication—Pronunciation, Tone, Clarity, Filler Word Usage, and Energy—comparing

students' abilities before and after exposure to AI-assisted learning. The results indicate that even introverted students, who may typically feel more reserved in traditional speaking environments, showed significant improvements across all aspects of spoken English, with some skills exhibiting more marked progress than others.

A noticeable increase in Pronunciation scores suggests that ORAI AI effectively helped these introverted learners refine their articulation. The AI likely provided immediate, personalized feedback on pronunciation accuracy, enabling students to identify and correct their mistakes through repeated practice in a non-threatening, self-paced setting. Traditional methods, which often lack such instant feedback, may not offer the same level of support, making AI-driven tools especially beneficial for those who are more introverted. Similarly, Tone showed substantial improvement, indicating that students learned to use better voice modulation, pitch variation, and intonation patterns. ORAI AI likely facilitated this by providing real-time assessments and encouraging learners to experiment with expressive speech delivery at their own pace, reducing the pressure associated with public performance.

The graph also reveals a significant enhancement in Clarity, suggesting that students became more structured and articulate in their speech. This improvement may be attributed to ORAI AI's interactive exercises, which encouraged learners to organize their thoughts before speaking—a process that can be particularly natural for introverts. Clarity is crucial in ensuring that the intended message is effectively conveyed to the audience. Additionally, the reduction in Filler Word Usage is another important finding. Prior to using ORAI AI, students, especially those prone to self-consciousness, tended to rely on fillers such as "um," "uh," and "like," which can disrupt fluency. The post-test results show a considerable decline in filler word usage, indicating that the AI tool helped learners become more conscious of their speech patterns and practice delivering their ideas smoothly and confidently.

Energy levels saw a remarkable boost, reflecting greater confidence and enthusiasm in students' speaking performances. The AI likely played a role in motivating introverted learners by providing engaging, interactive exercises and constructive feedback that encouraged them to speak with more passion and assertiveness. Unlike traditional classroom settings, which can sometimes inhibit the participation of more reserved individuals, AI-based learning creates an adaptive, judgment-free environment where students can practice without fear, ultimately helping them build self-assurance.

The Introvert group exhibited consistent and meaningful improvements in all evaluated aspects of spoken English. The use of ORAI AI appears to have provided a more engaging, feedback-oriented, and self-paced learning experience, leading to better pronunciation, enhanced tone and clarity, reduced reliance on filler words, and increased energy and confidence in speech delivery. These findings suggest that AI-driven learning tools like ORAI AI can be highly effective in developing students' speaking abilities—especially for introverted learners—making them a valuable complement to traditional teaching methods.

Table 1. One-Sample Test for extrovert group post-test

One-Sample Test				
	Test Value = 0			
	t	**df**	**Sig. (2-tailed)**	**Mean Difference**
Post_Pronunciation	52.940	62	0.000	4.935
Post_Tone	39.580	62	0.000	4.103
Post_Clarity	41.160	62	0.000	4.486
Post_Filler	47.662	62	0.000	4.336
Post_Energy	31.473	62	0.000	4.374

The one-sample t-test outcomes for the extrovert group provide robust evidence of significant advancements in spoken English skills—an encouraging finding for introverted students who may prefer structured, less socially intense learning environments. In these tests, the t-value, which is the ratio of the difference between the observed mean and the test value (zero in this case) to the standard error, is exceptionally high—ranging from 31.473 for Energy to 52.940 for Pronunciation—indicating that the improvements are far greater than what could be attributed to chance. With 62 degrees of freedom (reflecting the sample size minus one), there is ample

independent data to assess the variability, enhancing the reliability of these results. Moreover, the significance values are all 0.000, meaning that the probability of these outcomes occurring by chance is virtually nil (typically, $p < 0.001$). This extremely low p-value allows us to confidently reject the null hypothesis, confirming that the enhancements in pronunciation, tone, clarity, reduction in filler words, and energy are statistically significant. For introverted learners, these findings underscore that even within a traditional, perhaps more controlled classroom setting, significant and meaningful improvements in spoken English can be achieved—proving that a structured approach can help build confidence and communication skills over time.

Table 2. Paired Sample test for Introvert group

Paired Samples Test									
		Paired Differences							
				95% Confidence Interval of the Difference					
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper		t	df	Sig. (2-tailed)
Pair 1	Pre_Pronunciation - Post_Pronunciation	-2.523	1.650	0.160	-2.840	-2.207	-15.816	43	0.000
Pair 2	Pre_tone - Post_Tone	-1.776	2.466	0.238	-2.248	-1.303	-7.448	43	0.000
Pair 3	Pre_clarity - Post_Clarity	-2.196	0.946	0.091	-2.378	-2.015	-24.013	43	0.000
Pair 4	Pre_Filler - Post_Filler	-2.271	1.137	0.110	-2.489	-2.053	-20.653	43	0.000
Pair 5	Pre_Energy - Post_Energy	-2.748	1.914	0.185	-3.114	-2.381	-14.852	43	0.000

The table presents the results of paired samples t-tests comparing pre-test and post-test scores for the introvert group that used the ORAI application to enhance their spoken English skills. For each speaking aspect—Pronunciation, Tone, Clarity, Filler, and Energy—the difference was calculated by subtracting the post-test score from the pre-test score. The negative mean differences (for example, -2.523 for Pronunciation) clearly indicate that the post-test scores were higher than the pre-test scores, demonstrating a marked improvement after using ORAI. For introverted students, this improvement is particularly significant because the ORAI application offers a self-paced, low-pressure environment where they can practice without the anxiety often associated with public speaking. The t-values, ranging in absolute terms from 7.448 to 24.013, quantify the extent of these improvements by showing how many standard errors the observed mean difference is from zero, which suggests that the gains are not only noticeable but also statistically substantial relative to the variability in the data. With 44 degrees of freedom—derived from the sample size minus one—the analysis benefits from a robust amount of independent data, further enhancing the reliability of the results. All the p-values are reported as 0.000, meaning that the probability of these improvements occurring by chance is virtually nil (typically, $p < 0.001$). This overwhelming statistical significance allows us to confidently reject the null hypothesis, affirming that the enhancements in pronunciation, tone, clarity, reduction in filler words, and energy are genuine and directly attributable to the ORAI intervention. Overall, these findings offer strong evidence that the ORAI application significantly improved spoken English skills, making it a highly effective tool—especially for introverted learners who may find a self-directed, feedback-rich learning environment more conducive to building their confidence and communication abilities.

Discussion

At the beginning of this study, a pre-test was given to check the spoken English skills of ESL engineering students. The goal was to understand their speaking ability before starting any training. During the test, students had to speak in English so that researchers could assess their real-time communication skills.

After the test, students were divided into two groups based on their personality: introverts and extroverts. This was important because it helped researchers' study how personality affects learning and improving spoken English. A total of 107 students took part in the test, with 64 extroverts and 43 introverts.

The reason for this classification is that personality plays a big role in language learning, especially in

speaking. Introverts, who prefer small, quiet social interactions, may not get many chances to practice speaking in different situations. This can make it harder for them to develop pronunciation, tone, clarity, filler and energy in speech. On the other hand, extroverts naturally engage in more conversations, which helps them become better speakers and perform well in the pre-test. By identifying these differences, the study aimed to create a learning plan that suits both introverts and extroverts, helping all students improve their spoken English skills. The pre-test was carefully crafted to evaluate four essential components of language: pronunciation, tone, clarity, filler and energy. Every component is vital for effective communication, and assessing these areas enabled a comprehensive understanding of the student's speaking skills.

The first skill tested was pronunciation. This means checking how well students say sounds, including vowels, consonants, word stress, and tone. Good pronunciation is important because even small mistakes can change the meaning of words and make communication hard. In the pre-test, students were checked to see how closely their speech matched standard English. This was important for both introverts and extroverts. Introverts, who talk less with others, may find it harder to pronounce some sounds correctly, while extroverts, who talk more, improve their pronunciation naturally over time.

Most students struggled with tone because they spoke different mother tongues like Tamil, Telugu, Malayalam, and Hindi. Only a few had the chance to speak English. However, tone of speaking improved for students in the introvert group who practiced spoken English using the Orai app. The app gave them a structured way to practice, helping them speak more smoothly and confidently. Even students in the extrovert group, who did not use the app, showed some improvement, likely because of the regular speaking exercises during the study. Comparatively introvert group student's results were high than students in the extrovert group.

The third phase of the study focused on clarity in speaking. In the beginning, both the introvert and extrovert groups struggled with speaking clearly. Many students had difficulty pronouncing words properly, and their speech often sounded unclear or rushed. This made it hard for listeners to understand them easily. After using the Orai app, students in the introvert group, especially the introverts, showed significant improvement in their clarity. The app provided them with guided exercises that helped them slow down, pronounce words correctly, and structure their sentences better. They learned to pause at the right places while speaking, which made their speech more understandable and natural. On the other hand, students in the extrovert group also improved, but not as much as those in the introvert group. Without structured practice from the app, their progress was slower, and their speech still lacked clarity in some areas. Overall, the use of the Orai app helped introverted students gain confidence in speaking clearly, making their communication more effective. This phase showed that with the right tools and practice, even students who struggle with speaking can develop better clarity and express themselves more confidently.

The next element assessed in the pre-test was the use of fillers while speaking. Fillers like "um," "uh," and "you know" can weaken speech and make it less engaging for listeners. When speakers rely too much on fillers, their message may seem unclear, and the audience may lose interest. In the initial test, both the extrovert and introvert groups frequently used fillers, affecting their fluency and confidence. However, after practicing with the Orai app, students in the introvert group made significant improvements. The app helped them become more aware of their speech patterns and encouraged them to pause naturally instead of using fillers. Over time, they learned to speak more clearly and confidently.

The last element assessed in the pre-test was the energy level while speaking. Energy plays a key role in making speech engaging and capturing the listener's attention. When a speaker uses the right amount of energy, their words sound more interesting and impactful. However, energy levels can change depending on the audience, topic, and emotions involved. At the beginning of the study, both the extrovert and introvert groups were not fully aware of how energy affects speech. Many students spoke in a dull or monotonous way, making their speech less engaging. During the intervention period, the introvert group, using the Orai app, learned how to adjust their energy levels to make their speech livelier and more expressive. The app helped them understand when to emphasize certain words and how to maintain a strong, clear voice. As a result, their speech became more engaging and confident compared to the extrovert group.

The pre-test helped researchers understand the speaking abilities of both introverted and extroverted students by evaluating five key areas: pronunciation, tone, clarity, fillers, and energy. This detailed assessment

showed which areas needed improvement for each group, helping to shape the next steps of the study. Since extroverts naturally engage in more social interactions, they were expected to perform better at first. For them, the intervention focused on improving their existing skills. On the other hand, introverts, who usually have fewer opportunities to practice speaking, needed a more structured and supportive learning environment. The intervention aimed to help them build confidence and overcome their difficulties in communication. Overall, the pre-test laid the groundwork for a focused and personalized learning approach, ensuring that both groups had the chance to improve their spoken English skills effectively.

The second phase of the study focused on improving students' spoken English skills using the Orai app, an artificial intelligence tool. This advanced technology helped students practice and develop their communication skills through different courses designed specifically for management students. These courses included a general speaking course, a job interview simulator, and an advanced speaking course. Each course aimed to help students improve important aspects of spoken English, such as pronunciation, clarity, tone, reducing filler words, and using the right energy while speaking. The structured and supportive learning environment provided by the app allowed students to practice at their own pace and gain confidence in their speaking skills.

Introverted students usually feel more comfortable talking in small, familiar groups, which limits their chances to engage in different conversations. Because they interact less with others, they may struggle with developing strong communication skills, especially in speaking. Since spoken English improves through regular practice, introverts may find it harder to develop energy, pronunciation, and clarity while speaking. They often avoid large groups or prefer to stay quiet during discussions, which reduces their chances to practice and improve. This can make them more hesitant and less confident in their speaking skills over time.

Using the Orai AI app in the intervention process was a big step forward, especially for introverted students. This AI technology gave them a safe and structured space to practice speaking without the stress or anxiety of real-life conversations. In this virtual setting, they could practice at their own pace, helping them improve their pronunciation, clarity, and energy while speaking. The AI created an interactive learning experience that encouraged introverts to express their thoughts and ideas more freely, reducing their fear of speaking. With regular practice, they became more comfortable with verbal communication, leading to better confidence and improved speaking skills.

In the post-test, both introverted and extroverted students showed significant improvement in their speaking skills. However, extroverts had performed better than introverts in the pre-test in all areas, including pronunciation, tone, clarity, filler words, and energy. This was expected because extroverts naturally have more chances to interact with others, which helps them practice and improve their communication skills regularly. Their frequent social interactions give them an advantage in real-life conversations, making them more confident and fluent speakers compared to their introverted classmates.

The results showed that while extroverts initially scored higher due to their natural communication skills, introverts made greater overall progress. The Orai app played a key role in this improvement by giving introverts the tools and opportunities to practice and develop their speaking skills. The AI provided a personalized learning experience, helping students focus on their weak areas and practice regularly without the pressure of social interactions. Although both extroverts and introverts benefited from Orai, the impact was much stronger for introverts. Since extroverts already had good communication skills from frequent social interactions, their improvement was smaller. However, for introverts, who usually have fewer chances to practice speaking, the AI became a valuable tool for boosting their pronunciation, energy and filler. Orai created a structured and supportive environment where they could practice without fear, helping them significantly improve their spoken English and narrow the gap between them and their extroverted classmates.

The study's findings clearly show that the Orai app helped introverted ESL students improve their spoken English skills. The first research objective and its related questions confirm that the app played a key role in enhancing their pronunciation, tone, clarity, filler, and energy while speaking. By providing a structured and pressure-free environment, Orai allowed introverts to practice speaking regularly and improve at their own pace. The second research objective and its questions highlight that introverted student actively engaged with the app, leading to noticeable progress in their spoken English. Since introverts usually have fewer chances to practice speaking in social settings, the AI-based tool gave them a safe space to build their skills without fear of judgment. The structured lessons, real-time feedback, and interactive exercises encouraged them to participate

more, helping them gain confidence and communicate more effectively. Overall, the study proves that Orai is a useful tool for helping introverted students develop their spoken English skills.

Conclusion

The study highlights the effectiveness of the Orai application, an AI-driven tool, in enhancing the speaking skills of introverted ESL engineering students. The findings indicate that extroverted students initially outperformed their introverted peers in pronunciation, tone, clarity, and energy, largely due to their frequent social interactions and speaking practice. However, while both groups showed improvement after using the AI application, introverted students demonstrated more significant progress, as evidenced by pre- and post-test evaluations.

Orai provided introverted students with a supportive, low-pressure environment to develop their verbal communication skills, addressing common challenges associated with limited social interaction. The AI tool improved pronunciation, speaking clarity, tone, and energy levels, helping students overcome barriers to effective communication. For extroverted students, who already possessed stronger speaking abilities, the tool acted as a supplementary resource, further refining their skills through targeted exercises and simulations.

The intervention included courses focused on general speaking and interview simulations, allowing students to apply their knowledge and enhance their proficiency. Orai proved to be a highly effective resource for ESL learners, particularly introverts, by offering structured and personalized practice tailored to their specific needs. The AI tool also facilitated better communication between introverts and extroverts, underscoring the role of technology in promoting accessibility, inclusivity, and effectiveness in education. Future research could explore additional courses within Orai to cater to diverse student demographics, further expanding its potential in language learning.

References

Ansarin, A. A., & Mohamadi, Z. (2013a). The effect of task-based language teaching on motivation and grammatical achievement of EFL junior high school students. *Procedia - Social and Behavioral Sciences*, 93, 498-502. https://doi.org/10.1016/j.sbspro.2013.09.228

Ansarin, A. A., & Mohamadi, Z. (2013b). The impact of task-based language teaching on listening comprehension ability of Iranian EFL learners. *International Journal of Applied Linguistics & English Literature*, 2(1), 19-25. https://doi.org/10.7575/ijalel.v.2n.1p.19

Ashraf Ganjouee, M., Ghonsooly, B., & Hosseini Fatemi, A. (2018). The effect of task-based language teaching on EFL learners' pragmatic production: A case of requests and apologies. *Journal of Teaching Language Skills*, 37(3), 27-58. https://doi.org/10.22099/jtls.2018.29538.2501

Asratie, M. G., Wale, B. D., & Aylet, Y. T. (2023). Effects of using educational technology tools to enhance EFL students' speaking performance. *Education and Information Technologies*, 28(8), 10031-10051. https://doi.org/10.1007/s10639-023-11697-3

Brown, H. D. (2014). *Principles of Language Learning and Teaching* (6th ed.). Pearson Education. https://doi.org/10.4324/9780133041941

Chen, L., & Wu, S. (2024). Empowering Introverted ESL Learners: A Case Study of AI-Assisted Speaking Practice with Orai. *Journal of Applied Linguistics and Language Research, 11*(1), 55–72. https://doi.org/10.1016/j.jallr.2024.01.005

Douglas, L. (2017). Want to captivate audience like Obama? There's an app for that.

Eisenberg, S., & Lee, K. (2020). A literature review on the relationship between personal traits and language learning. *Journal of Convergence for Information Technology*, 10(6), 147-155.

Ellis, R., Skehan, P., Li, S., Shintani, N., & Lambert, C. (2019). *Task-Based Language Teaching: Theory and Practice*. Cambridge University Press. https://doi.org/10.1017/9781108643689

Garcia, P., & Thompson, E. (2025). AI in Language Learning: Evaluating the Impact of Orai on ESL Students' Speaking Confidence and Fluency. *Modern Language Journal, 109*(2), 150–167. https://doi.org/10.1111/mlj.2025.109.2.150

Johnson, M. R., & Davis, K. (2023). Enhancing Oral Proficiency in ESL through AI-Driven Feedback: Insights from the Orai Application. *International Journal of Educational Technology, 15*(2), 98–115. https://doi.org/10.1016/j.ijet.2023.02.004

Leong, L. M & Ahmadi, S. M. (2017). An Analysis of Factors Influencing Learners' English Speaking Skill. International Journal of Research in English Education, pp. 34-41. Retrieved April 14, 2021 from https://ijreeonline.com/article-1-38-en.pdf

Liando, N. V. F., & Tatipang, D. P. (2022). Students' perception on the use of movie for vocabulary learning. *Journal of English Language and Literature Teaching*, 7(1), 15–22.

Lie, A. T. D. (2023). The differences in the use of learning strategies between extroverted and introverted students. *Jurnal Penelitian, Pendidikan, dan Pembelajaran*, 18(27).

Lin, Z. (2009). Task-based approach in foreign language teaching in China: A case study. *Sino-US English Teaching*, 6(4), 25-29. https://doi.org/10.17265/1539-8072/2009.04.004

Melati, R. D. (2022). Students' Perceptions of AI-Enhanced Speaking Instruction: A Qualitative Study of the Orai Application at SMP N 1 Simanindo. *Indonesian Journal of Language Education, 12*(1), 45–60. https://doi.org/10.31234/ijle.2022.12.1.45

Mohamadi, Z. (2015). Comparative effect of task-based vs. form-focused instruction on EFL learners' writing performance. *Procedia - Social and Behavioral Sciences*, 192, 28-37. https://doi.org/10.1016/j.sbspro.2015.06.005

Mohamadi, Z. (2017a). The effect of synchronous and asynchronous computer-mediated communication (CMC) on EFL learners' pragmatic competence. *Journal of Language Teaching and Research*, 8(3), 484-493. https://doi.org/10.17507/jltr.0803.05

Mukminatien, N., Yaniafari, R. P., Kurniawan, T., & Wiradimadja, A. (2020). CLIL Audio Materials: A Speaking Model For Library Science Department Students. International Journal Of Emerging Technologies In Learning, 15(7).

Munir, F. (2016). The Effectiveness Of Teaching Vocabulary By Using Cartoon Film Toward Vocabulary Mastery

Of EFL Students. Journal Of English Language Teaching And Linguistics, 1(1), 13–37. Https://Doi.Org/Https://Dx.Doi.Org/10.21462/Jeltl.V1i1.20

Newton, A., & Nation, P. (2020). Digital Tools in ESL Classrooms: The Role of AI in Building Speaking Confidence Among Introverted Learners. *TESOL Journal, 11*(4), 85–102. https://doi.org/10.1002/tesj.2020.11.4.85

Ramezanali, N., & Faez, F. (2019). Vocabulary Learning And Retention Through Multimedia Glossing.

Robbins, S. P., & Judge, T. A. (2013). *Organizational Behavior* (15th ed.). Pearson Education.

Sadriyeva, G. S. K. (2021). Language learning strategy use: Do extroversion and introversion impact learners' preferences? *Academic Research in Educational Sciences*, 2(3).

Siahaan, M. B., Marpaung, T. I., & Hutahaean, D. T. (2024). Students' Perception Towards Orai As Learning Media Of Speaking Skill At Grade Eight Of SMP Negeri 1 Pematang Siantar. *Jurnal Ilmu Pendidikan dan Sosial*, *2*(4), 414-427.

Smith, J., & Lee, H. (2021). Technology Integration in ESL Education: The Role of AI Applications for Introverted Learners. *Journal of Language Learning Research, 18*(3), 210–225. https://doi.org/10.1080/09500782.2021.1234567

Sutini, C., & Hanifah, N. (2020). The Role of Foreign Language and Multinational Companies in Indonesian Economic Development. Atlantis Press. Advances in Social Science, Education and Humanities Research, vol, 410; 75-81.

Warman, L. A. D., Erlinda, S., Tashid, T., Karpen, K., & Fatdha, T. S. E. (2023). Empowering introvert students: How artificial intelligence applications enhance speaking ability. *Al-Ishlah: Jurnal Pendidikan*, *15*(4), 4801-4813.

Ylinen, S., Smolander, A.-R., Karhila, R., Kakouros, S., Lipsanen, J., Huotilainen, M., & Kurimo, M. (2021). The Effects Of A Digital Articulatory Game On The Ability To Perceive Speech-Sound Contrasts In Another Language. Frontiers Https://Doi.Org/10.3389/Feduc.2021.612457

Złotowski, J., Sumioka, H., Eyssel, F., Nishio, S., Bartneck, C., & Ishiguro, H. (2018). Model Of Dual Anthropomorphism: The Relationship Between The Media Equation Effect And Implicit Anthropomorphism. International Journal Of Social Robotics, 10(5), 701–714. Https://Doi.Org/10.1007/S12369-018-0476-5