

Article

The Effectiveness of a Teaching Strategy Based on Generative Artificial Intelligence in Developing Oral Communication Skills among Second-Year Middle School Students

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Abstract: This study examined the effectiveness of a teaching strategy based on generative artificial intelligence (GAI) in developing oral communication skills among second-year middle school students. A quasi-experimental design with two equivalent groups was employed. The sample comprised 64 students: 32 students in the experimental group, who were taught using the GAI-based strategy, and 32 students in the control group, who were taught using the conventional method. The researcher developed a 30-item oral communication skills test and verified its validity, reliability, and psychometric properties. The data were analyzed using an independent-samples t-test. A statistically significant difference was found at the 0.05 level between the post-test mean scores of the two groups in favor of the experimental group, indicating that the GAI-based strategy was effective in developing oral communication skills. The study recommends integrating generative AI applications into English language instruction and teacher-training programs while maintaining teacher supervision, ethical use, and learner privacy. Further studies should examine other educational stages, language skills, and learning variables.

Keywords: generative artificial intelligence, teaching strategy, oral communication skills, English language, middle school students.

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1. Introduction

The world is currently witnessing rapid advancements in artificial intelligence technologies, particularly generative artificial intelligence, which has become one of the most prominent technologies used in developing the educational process and improving teaching and learning methods. These technologies have contributed to providing interactive learning environments that help learners practice the language more realistically and provide immediate feedback tailored to the learner's level and needs. This has led educational institutions to integrate them into curricula and modern teaching strategies. [1] Oral communication skills in English are among the most important language skills that the curriculum seeks to develop. However, field observations and reports from educational supervisors indicate a clear weakness among middle school students in practicing speaking skills. This is due to the reliance on traditional teaching methods that focus more on memorizing vocabulary and grammar than on actual language practice in the classroom, in addition to the students' feelings of fear and anxiety when speaking English. [2]

Several recent studies have indicated that generative AI applications, such as ChatGPT and conversational smart assistants, have the potential to provide continuous language training opportunities, develop fluency, improve pronunciation, and increase learners' self-confidence when speaking English through conversational simulation and immediate feedback. [3]

Through her observations of English language teaching in middle schools and interviews with several teachers, the researcher noted a weakness in students' oral communication skills and a limited use of modern AI-based teaching strategies. This led to the need to develop a generative AI-based teaching strategy to determine its effectiveness in developing oral communication skills among second-year middle school students.

Therefore, the research problem can be formulated as the following question: What is the effectiveness of a generative AI-based teaching strategy in developing oral communication skills among second-year middle school students?

The importance of this research stems from the significance of English as a global language for scientific and cultural communication. Mastering its skills has become an urgent necessity in light of technological advancements and global knowledge exchange, requiring educational institutions to develop their teaching methods to align with the demands of the 21st century. The research is also significant because it addresses a modern educational trend: generative artificial intelligence. This is one of the most important applications of the Fourth Industrial Revolution, as it contributes to designing flexible learning environments, promotes self-directed learning, increases student interaction within the classroom, and provides diverse opportunities for natural language practice. [4] Furthermore, the research is important because it focuses on oral communication skills, which are fundamental to learning English. Oral communication represents the ultimate goal of language learning, contributing to increased self-confidence and the development of the ability to engage in dialogue and interact with others using the language correctly. [5]

This research may contribute to presenting a modern teaching strategy that can be used to develop English language teaching methods. It also provides teachers and educational supervisors with a scientific guide on how to employ generative artificial intelligence applications in classrooms to improve student learning.

Furthermore, this research can open the door for researchers to conduct subsequent studies addressing other variables, such as critical thinking, motivation, language proficiency, and creative writing, in light of modern artificial intelligence applications.

The current research aims to identify:

The Effectiveness of a Teaching Strategy Based on Generative Artificial Intelligence in Developing Oral Communication Skills among Second-Year Middle School Students

To achieve the research objective, the researcher formulated the following null hypothesis:

There is no statistically significant difference at the (0.05) significance level between the mean scores of the experimental group students who studied using a generative artificial intelligence-based teaching strategy and the mean scores of the control group students who studied using the traditional method in the post-test of oral communication skills.

The current research is limited to:

1. Human scope: Second-year intermediate school students.
2. Spatial scope: A daytime intermediate school for girls affiliated with the General Directorate of Education of Salah al-Din Governorate/Tikrit Education Department.
3. Temporal scope: The first semester of the academic year (2025–2026).
4. Subject scope: Teaching English using a generative artificial intelligence-based strategy and developing oral communication skills.

Slavin [6] defined effectiveness as the extent to which a program or educational strategy achieves its planned learning objectives and produces a noticeable improvement in student learning compared with prior performance or other teaching methods.

Operational Definition: - It is the degree of impact that a teaching strategy based on generative artificial intelligence has on developing oral communication skills among second-year middle school students. It is measured by the difference in the average scores of the experimental and control groups on an oral communication skills test.

Richards and Rodgers [7] defined a teaching strategy as a set of organized procedures and activities planned and implemented by the teacher to achieve learning objectives through content organization, selection of teaching methods and tools, and management of teacher-learner interaction.

Operational Definition: This refers to the set of educational steps and procedures developed by the researcher, based on employing generative artificial intelligence applications in teaching English, with the aim of developing oral communication skills among second-year middle school students.

UNESCO [4] defined generative artificial intelligence as a type of artificial intelligence technology capable of producing new text, images, audio, and other content in response to user input through advanced models.

Operationally, it is defined as the set of smart applications employed by the researcher within the classroom to provide conversational situations and language activities that help second-year middle school students practice English and develop their oral communication skills.

Brown and Lee [5] defined oral communication skills as the learner's ability to use spoken language correctly and effectively to express ideas and feelings and to interact with others in different communicative situations.

The researcher defines it operationally as the score obtained by the student in the oral communication skills test prepared by the researcher to measure fluency, correct pronunciation, vocabulary use, and linguistic interaction.

In the last decade, the world has seen tremendous progress in Artificial Intelligence (AI) and the technology has become a critical cog that has changed the game in many areas of life, especially in education. Generative AI (GAI) is now becoming a reality thanks to the evolution of deep learning techniques and large language models. In contrast to traditional AI applications [8] that analyze and classify data, this is a new generation that generates new content such as text, pictures, sound or video, based on the data on which it is trained.

Automated Education Generative (GAI) is one of the most significant innovations in the teaching sector. It delivers sophisticated learning environments which enable learners to learn independently, provide instant feedback, mimic real-life scenarios, and produce educational materials and content customized to the needs of individual learners. This boosts the quality of education and learning effectiveness especially in teaching foreign languages [4].

Among the most popular GAI applications used in education are ChatGPT, Google Gemini, and Microsoft Copilot. These applications depend on sophisticated language models that can interpret and produce text that is semantically and syntactically similar to people's conversations. This has made them useful learning tools for the training of learners in the English language skills of speaking, reading, and writing as well as listening [9].

Generative AI can be described as a group of algorithms with deep learning models and artificial neural networks that produce new content that resembles how a human artist creates things. Unlike traditional AI systems, which are good at prediction or classification [10], these models can generate coherent text, answers, dialogues, and ideas interactively.

It is also considered as an intelligent system that can learn from huge amount of data and then generate new coherent and consistent information. One of its greatest utilities was that it could adjust its responses based on the needs of the user and the context of the learning situation, making it one of the most vital technologies that are currently being used in e-learning and blended learning [11].

English is a subject in which generative AI applications have the greatest potential for improving learning. English is a subject that is dependent upon linguistic interaction and ongoing conversation. The applications can help learners practice their English conversation with an intelligent assistant that can correct students' grammatical mistakes, offer new vocabulary, and correct pronunciation and grammatical structures, as well as help build their sense of self-fluency and self-confidence [2].

In addition, Generative AI has the potential to create educational opportunities not possible in a traditional classroom setting. The ability to start unlimited conversations with no fear and no embarrassment due to making mistakes will lessen language anxiety and enhance the learners' oral communication ability [5].

The use of generative AI is a contemporary English language teaching practice. It can be used to:

1. Create realistic dialogue situations.
2. Train students in conversation.
3. Correct grammatical errors.
4. Provide immediate feedback.
5. Prepare interactive activities.
6. Develop vocabulary.
7. Improve pronunciation skills
8. Design online oral tests. [4]

indicated that the structured educational application of generative artificial intelligence can positively influence the quality of learning when it is used following pedagogical principles linking to the role of the teacher, ethics of the use of technology, and learners' privacy. See Figure (1)

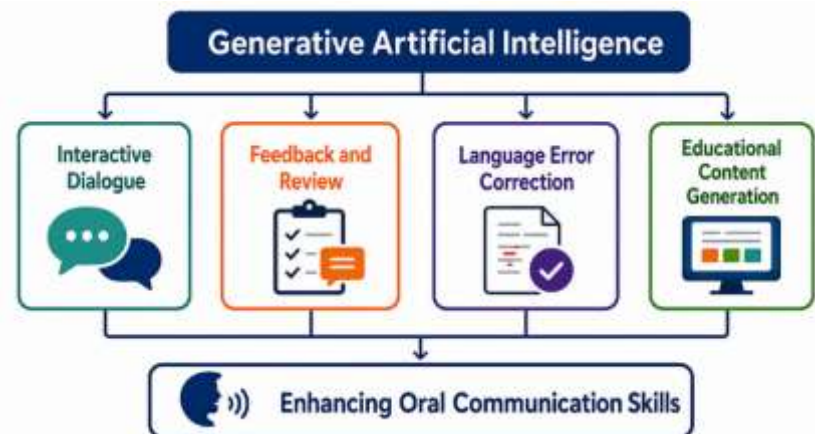


Figure 1. The Use of Generative Artificial Intelligence in English Language Teaching

Oral communication skills are one of the four essential skills of language aimed at students learning English: they are the means by which the learner expresses himself/herself and interacts with others in different life settings. The OCA emphasizes that oral success is real evidence of the success of the language learning process, since it is based on the expertise of the language teaching specialist. Language learning is not just about memorizing vocabulary and mastering grammar; it also involves behaving appropriately in the language context of oral and aural communication [2].

Oral communication skills are described as a complex, multidimensional, interactive process of integrating many sub-skills, including pronouncing correctly, using fluency, selecting correct vocabulary, using correct grammatical structures, comprehending what's just being said, and reacting to what the other person is saying in a conversation. Hence, skills development is best given within a context of a learning environment that provides for practice and ongoing interaction [5]. There has been a major shift in the approach of teaching the English language in the past few decades from a focus on grammar and translation to a focus on communicating in English. It is because oral communication is a major focus of language learning and requires learners to be actively involved in oral activities and real-life contexts that model the actual use of the language [7].

Oral communication is the individual's ability to use spoken language accurately and effectively to express his or her ideas, inform and provide information to others, and interact with them through a range of communication settings using the appropriate vocabulary and structures [12].

It is further described as, "The act of communicating (through speaking) with another(s) to exchange ideas and information, which requires the integrated cognitive, linguistic and social skill set that enables one to communicate effectively with another(s)" [13]. The following are parts of Oral Communication Skills.

Communication is viewed as a series of interrelated skills in oral communication:

First: The learner's speaking ability with no long pauses, hesitation, and logical flow of ideas is calculated by Fluency [5].

Second: Accuracy – using the correct grammar, syntax, and words in speech [2].

Third: Pronunciation: This involves the correct pronunciation of English sounds, with careful attention to the intonation, stress, and rhythm aspects [14].

Fourth: Vocabulary: To choose words that are suitable to the communicative situation and to use them correctly [15].

Fifth: Interaction – When referring to interaction, the learner should be able to manage the dialogue, respond in an appropriate way to the other party, and keep the dialogue going [13].

The Role of Generative Artificial Intelligence in Developing Oral Communication

Generative AI helps improve oral communication skills by providing a virtual dialogue partner that can interact with the learner continuously, correct linguistic errors, suggest alternative expressions, and ask a variety of questions appropriate to the learner's level. This increases practice opportunities and boosts self-confidence.

These applications also allow learners to repeat conversations multiple times without feeling embarrassed or afraid of making mistakes. This positively impacts linguistic fluency and the accuracy of oral performance, making learning more enjoyable and effective [4].

Teaching Strategies Based on Generative Artificial Intelligence

Teaching strategies based on generative artificial intelligence are a modern trend in education. They rely on integrating generative AI applications into educational situations to provide an interactive, learner-centered learning environment. This environment helps learners construct knowledge through dialogue, inquiry, immediate feedback, and self-directed learning. This strategy emerged in response to the rapid advancements in artificial intelligence (AI) technologies, which have contributed to a qualitative shift in teaching methods and learning approaches, particularly in foreign language teaching [11].

This strategy is based on employing generative AI applications, such as ChatGPT, Gemini, and Copilot, as educational tools that help learners practice the language continuously, engage in dialogues, correct linguistic errors, and receive immediate feedback. This positively impacts the development of oral communication skills and increases learners' motivation to learn English [4].

A generative AI-based teaching strategy refers to a set of structured educational procedures in which teachers utilize generative AI applications to achieve specific

learning objectives. This is accomplished by providing an interactive learning environment that helps students practice English language skills, actively build knowledge, and develop their thinking and linguistic communication abilities [4], [11].

The strategy can be adopted in an English lesson in the following ways:

First: Preparation Phase: The teacher prepares the students for the lesson, sets out the goals of learning for it and motivates the students by presenting a communicative situation or an introduction question that is related to the topic of the lesson.

Second: Use interaction with the artificial intelligence application: Phase: Students interact with the artificial intelligence application to: a) dialog in English b) answer questions in English in accordance with correct language use or c) act out a real-life situation in English in accordance with correct language use.

Third: The Feedback Phase: The artificial intelligence gives feedback for grammatical mistakes, pronunciation, and word use. The teacher then discusses this feedback with the students and guides them to improvement/ better performance.

Fourth: Application Phase: Students try out new communicative activities individually or in teams with the feedback attained in the previous phase.

Fifth: Evaluation Phase: The teacher assesses the students' performance skills through a verbal communication skill scale and finally, gives feedback.

The stages of the generative artificial intelligence-based teaching strategy are summarized in Figure (2).



Figure 2. Stages of the Generative Artificial Intelligence-Based Teaching Strategy

Although the strategy is implemented through the preceding stages, its effectiveness depends on reciprocal interaction among the teacher, the student, and the generative AI application. The teacher designs and supervises speaking tasks, the student engages in oral practice and applies the feedback received, while the AI application simulates conversations, corrects language errors, and provides immediate feedback. This interaction is illustrated in Figure (3).

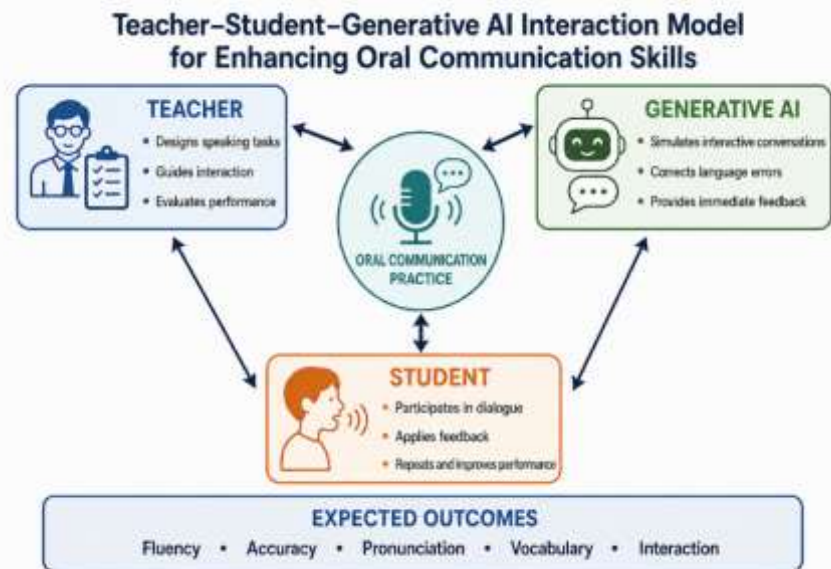


Figure 3. Teacher-Student-Generative AI Interaction Model for Enhancing Oral Communication Skills

As shown in Figure (3), generative AI functions as a supportive instructional tool rather than a replacement for the teacher. The continuous interaction among the three elements creates a cycle of practice, feedback, revision, and assessment that supports the development of fluency, accuracy, pronunciation, vocabulary, and interaction in oral communication.

The teacher's role is not just about conveying knowledge; it is about being a facilitator of learning, an organizer of learning activities, an AI application usage guide, as well as a monitor of student performance, evaluating their learning and ensuring that students ethically use artificial intelligence applications while participating in the learning process.

Kasneci et al. [3]

Study Title: ChatGPT for Good? On Opportunities and Challenges of Large Language Models for Education.

The purpose of this study was to explore the possibility of using LLMs (Large Language Models) such as ChatGPT to create education, especially foreign language learning and skills development in communication.

The researchers adopted an analytical approach by reviewing recent studies related to the use of ChatGPT in educational institutions.

The results showed that generative artificial intelligence contributes to improving the interaction between the learner and educational content, increases opportunities to practice the foreign language, and provides immediate feedback. However, it requires educational supervision to ensure its correct use.

Tlili et al. [16]

Study Title: What if the Devil is My Guardian Angel: ChatGPT as a Case Study of Using AI in Higher Education.

This study aimed to analyze the impact of using ChatGPT in the educational process and its contribution to developing language learning and communication skills.

The study adopted a descriptive-analytical approach, reviewing various educational applications of generative artificial intelligence and analyzing the experiences of several students and teachers.

The results showed that ChatGPT helps develop English writing and speaking skills, increases interaction and motivation, and promotes self-directed learning. However, its success depends on its effective implementation within the educational environment.

2. Materials and Methods

The researcher adopted the experimental method, as it is the most suitable approach for the nature of this research. The study aims to reveal the effectiveness of a teaching strategy based on generative artificial intelligence in developing oral communication skills among second-year middle school students. This approach is distinguished by allowing the researcher to control the independent variable and measure its effect on the dependent variable under controlled conditions, thus contributing to highly accurate and objective results.

The researcher used a quasi-experimental design (Two Independent Groups Design), consisting of two equivalent groups: an experimental group taught using a generative artificial intelligence-based teaching strategy, and a control group taught using the traditional method. The results of the two groups were then compared in a post-test of oral communication skills.

Second: The Experimental Design: - The research adopted the following experimental design:

Table 1. Experimental Design

Group	Independent Variable	Post-test
Experimental Group	A Generative Artificial Intelligence-Based Strategy	Oral Communication Skills Test
Control Group	Conventional Method	Oral Communication Skills Test

This design is one of the most widely used in teaching methods research because of its ability to determine the effect of the independent variable on the dependent variable after controlling for external factors.

Third: Research Population and Sample: The research population consisted of second-year intermediate school students in daytime intermediate schools affiliated with the General Directorate of Education in Salah al-Din Governorate/Tikrit Education Department for the academic year (2025-2026). Al-Maysaloon Secondary School for Girls was intentionally chosen to implement the experiment due to its availability of the necessary resources to implement the teaching strategy based on generative artificial intelligence, and the school administration's cooperation with the researcher.

The research sample consisted of (64) students, distributed as (32) students in the experimental group and (32) students in the control group. Classes were randomly assigned between the two groups.

Fourth: Equivalence of the Research Groups: The researcher ensured equivalence between the students in the experimental and control groups before starting the experiment in several variables that could affect the research results, namely:

1. Chronological age, calculated in months.
2. English language grades in the previous academic year.
3. Intelligence level.
4. Parents' educational attainment.
5. Pre-test of oral communication skills.

The researcher used appropriate statistical tests to verify the absence of statistically significant differences between the two groups in these variables.

1. Identifying the Scientific Material

The researcher identified the topics covered in the second-grade intermediate English textbook for the first semester, which were included in the experiment.

2. Formulating Behavioral Objectives

The researcher formulated the behavioral objectives for the experimental topics according to the levels of the cognitive domain, in line with the curriculum objectives.

These objectives numbered approximately 60) behavioral objectives distributed across the levels of recall, comprehension, and application.

3. Preparing Lesson Plans

The researcher prepared lesson plans for the experimental group using a generative artificial intelligence-based teaching strategy, and other plans for the control group using the traditional method. These plans were presented to a group of experts and specialists in English language teaching methodologies to ensure their scientific validity.

To achieve the research objective, the researcher developed an oral communication skills test to measure the students' performance level after the experiment. The test included a set of dialogue situations and oral activities that measure the following skills:

1. Fluency
2. Accuracy of pronunciation
3. Correctness of grammatical structures
4. Vocabulary use
5. Dialogue management
6. Appropriate response to communicative situations

The researcher used a rubric to evaluate the students' performance, which includes specific performance levels to ensure objectivity and accuracy in scoring.

The researcher verified face validity by presenting the test and rubric to a number of experts and referees in English language teaching methods and measurement and evaluation, and made the necessary modifications based on their feedback. She also verified the test's reliability using an appropriate reliability coefficient, and the results showed that the test has a good degree of reliability, making it suitable for application.

The researcher began implementing the experiment at the start of the first semester, and it continued for eight weeks, with three sessions per week for each group. The experimental group studied using a generative artificial intelligence-based teaching strategy, while the control group studied using the traditional method. Care was taken to ensure uniformity in the educational conditions between the two groups in terms of time, content, number of sessions, and classroom environment.

The researcher used the Statistical Package for the Social Sciences (SPSS) to process the research data and employed the following statistical methods:

1. Independent samples t-test.
2. Chi-square test.
3. Pearson correlation coefficient.
4. Cronbach's alpha coefficient for calculating reliability.
5. Difficulty and discrimination indices for the test items.
6. Cohen's d-value to measure the impact of the generative artificial intelligence-based teaching strategy on developing oral communication skills.

3. Results

Main Hypothesis

Hypothesis Statement: "There is no statistically significant difference at the (0.05) level between the mean scores of the experimental group students and the mean scores of the control group students in the post-test of oral communication skills." As shown in Table (2)

Table 2. Results of the Independent Samples T-Test in the Oral Communication Skills Test

Group	N	Mean	Standard Deviation	Calculated t-value	Tabulated t-value	Significance
Experimental Group	32	25.81	2.63	5.47	2.00	Significant
Control Group	32	20.94	3.84			

Table (2) shows that the calculated t-value was (5.47), which is greater than the critical value of (2.00) at a degree of freedom of (62) and a significance level of (0.05). This indicates a statistically significant difference in favor of the students in the experimental group. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted.

4. Discussion

The higher post-test performance of the experimental group suggests that the structured cycle of AI-mediated dialogue, immediate feedback, revision, and teacher-guided application provided more intensive opportunities for oral practice than the conventional method. This interpretation is consistent with Kasneci et al. [3], who emphasized the potential of large language models to support interaction and immediate feedback, and with Tlili et al. [16], who reported that ChatGPT can promote motivation, self-directed learning, and language practice when it is pedagogically supervised. The findings also align with UNESCO guidance that generative AI should complement rather than replace teachers and should be implemented with attention to ethical use, privacy, and clear pedagogical purposes [4]. Thus, the observed improvement is attributable not merely to access to technology, but to the integration of repeated speaking practice, responsive feedback, and teacher oversight within a coherent instructional strategy.

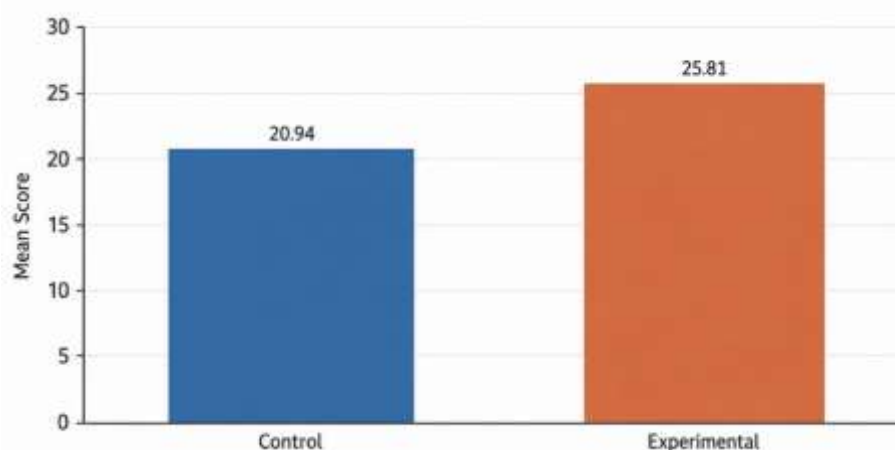


Figure 4. Average scores of the students in the two groups on the post-test.

5. Conclusion

This study demonstrated that the generative AI-based teaching strategy effectively improved the oral communication skills of second-year middle school students. The experimental group achieved a higher post-test mean score ($M = 25.81$, $SD = 2.63$) than the control group ($M = 20.94$, $SD = 3.84$), and the difference was statistically significant, $t(62) = 5.47$, $p < 0.05$. These findings indicate that structured AI-supported dialogue, immediate feedback, repeated practice, and teacher guidance can strengthen fluency, pronunciation, grammatical accuracy, vocabulary use, and interaction. Accordingly, generative AI should be integrated as a teacher-supervised supplementary tool in middle-school English instruction, supported by teacher training, adequate technological infrastructure, ethical-use guidelines, and safeguards for student privacy. Future research should involve larger and more diverse samples, examine other educational levels and language skills, compare multiple AI-based strategies, and assess the sustainability of learning outcomes over time.

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