RESEARCH ARTICLE
published: 24th October 2025
doi: 10.21070/jees.v10i2.1941

The influence of AI-Generated feedback on university students' debate skills

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The use of Artificial Intelligence (AI) in higher education is increasing, especially through AI-assisted feedback tools such as ChatGPT. These tools provide feedback not only on language use but also on reasoning and argument quality. This study examined the effect of ChatGPT-assisted feedback on students' debate performance using a one-group pretest-and-post-test pre-experimental design. Eight undergraduate students participated in simulated British Parliamentary debates, each debating two motions on the same topic. Their performance was assessed using an expert-validated debate rubric. Quantitative data were analyzed with SPSS version 29. The results showed that the average pretest score was 75.75 (SD = 1.282) and the post-test score was also 75.75 (SD = 1.282). A paired-samples t-test confirmed no significant improvement, t (7) = 0.00, p = 1.00, Cohen's d = 0.00, 95% CI [-0.63, 0.63]. However, a strong correlation between the two tests was found, r = 0.826, p = 0.011, showing that consistent student performance. Semi-structured interviews further revealed that many students relied passively on ChatGPT, often copying its suggestions directly instead of adapting them, with limited the possible benefits of the tool. These findings suggest that AI-assisted feedback alone does not guarantee performance gains; its effectiveness depends on students' critical engagement and integration of feedback into their debating practice. The study highlights the importance of teacher guidance in supporting effective use of AI feedback and suggests future studies with larger samples and extended training periods.

Keywords: Artificial Intelligence, argument, ChatGPT, debate, feedback

OPEN ACCESS
ISSN 2503 3492 (online)
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Received: 26th May 2025
Accepted: 8th September 2025
Published: 24th October 2025

Citation:
Daniswara, L.D. (2025). The influence of AI-Generated feedback on university students' debate skills. JEES (Journal of English Educators Society), 10(2). https://doi.org/10.21070/jees.v10i2.1941

INTRODUCTION

Debate has become a key part of education because it helps students develop critical thinking skills (Baziganya, 2024; Chen et al., 2022; Chew et al., 2021; Ko & Mezuk, 2021; Pahmi & Niah, 2021). As a result, improving students' debate performance has been increasingly significant. Debating activities are now integrated into many subjects, especially in English language learning, where they serve as an effective teaching method. In universities, student debate clubs and specialized speaking courses further support this goal. At Universitas Negeri Surabaya (well-known as UNESA), for example, a debate community provides students from various academic backgrounds with opportunities to strengthen their critical thinking and communication skills. The community regularly organizes sessions, conduct expert workshops on argument construction, and encourages participation in debate competitions. However, despite these activities, limited research has examined how AI feedback can improve debate performance, especially for EFL students. Most studies focus on debate as a method to enhance language learning but do not investigate the specific impact of AI feedback on debating

This seeks to address this gap by examining students' debate performance in such an environment.

The problem of this study arises when students face several challenges in debating, particularly in producing language in English. Many Englishers as a Foreign Language (EFL) learners struggle with vocabulary and fluency, which hinder their ability to express arguments clearly and persuasively (Alasmari & Ahmed, 2012; Astuti et al., 2022). These language barriers often reduce their confidence, making them feel insufficient for meaningful participation (Ban et al., 2023; Sanonguthai, 2011). Another challenge is understanding the debate motion themselves. Debate topics can be complex and students with limited background knowledge or unfamiliarity with specialized vocabulary may find it hard to fully engage (Ban et al., 2023; Nurakhir et al., 2020). This lack of preparation can cause frustration and anxiety, which negatively impacts debate performance (Hernawan & Yusuf, 2021; Wariyati, 2023).

Critical thinking also plays a crucial role in debate quality. Students are expected to quickly develop well-reasoned arguments and counterarguments which can be mentally demanding (Sawyer, 2015; Ali et al., 2020). This pressure intensifies when they must engage critically with opposing views that they initially find intimidating (Lestari, 2018; Sen et al., 2023). According to Daniswara and Cahyono (2023), strong arguments should include Assertion, Reasoning, Evidence, and Link Back. When students fail to meet these criteria, it reveals gaps in their critical thinking skills.

To improve students' debate skills, educators use various teaching strategies. Spaska et al. (2021) note that methods such as modeling, guided practice, and collaborative learning can significantly enhance debate abilities. Regular practice builds students' confidence, sharpens their argumentation skills, and deepens their understanding of debate topics or motions. Recently, AI-powered tools have emerged as valuable resources in debate education. These tools provide access to vast information, curate relevant content, suggest reading materials, and even stimulate debate scenarios for practice in controlled environments (Tjahyaningtijas, 2023; Munir et al., 2022). Such application not only boosts critical thinking and analytical skills but also improve students' comprehension of debate topics. Additionally, AI can evaluate performances by identifying strengths and weaknesses, thereby helping students prepare more effectively (Ivanova & Petrova, 2023; Yang et al., 2021).

AI tools extend beyond supplying information. They generate diverse perspectives and counterarguments, encouraging students to critically evaluate their own positions. Research highlights the value of engaging with multiple viewpoints to build well-rounded arguments (Rahmi & Jamaluddin, 2021; Aisyah, 2024). Integrating AI systematically into debate exercises fosters deeper evidence analysis, clearer expression of ideas, and constructive discussions, skills that are essential both academically and in real-world contexts (Sugianti, 2024; Idroes, 2023). While existing studies have explored AI feedback in writing and language learning, few have examined how AI-generated feedback directly improve debating skills. This gap underscores the need for further research, and the present study seeks to contributes to this underexplored area.

Although earlier versions of ChatGPT faced challenges with accuracy and content quality (Liu et al., 2024), most recent versions, such as ChatGPT-4 and later, show significant improvements, providing more precise and reliable responses (Didonna et al., 2024; Pang et al., 2024). Research has shown ChatGPT's usefulness in English learning, providing study materials, acting as a conversational partner, and delivering instant feedback (Nugroho et al., 2023). Moreover, some studies suggest that ChatGPT can support improvement in overall language proficiency (Akopiants, 2023; Barabad & Anwar, 2024).

Due to its versatile capabilities, ChatGPT has been increasingly adopted in debate education (Wang et al., 2023). The introduction of ChatGPT-4 offers a valuable opportunity to enhance students' argumentative skills. As a generative AI model, ChatGPT-4 can assist learners at various stages of debate preparation, from idea generation and argument organization to providing constructive feedback on written work. This support is especially beneficial for EFL students, who often struggle to clearly express and structure their arguments in a second language. Recent studies indicate that ChatGPT positively impacts students' writing development, particularly in argumentative essay writing, which is a critical aspect of debating (Esmaeil et al., 2023; Nguyen et al., 2024; Wang, 2024). The theoretical foundation for using AI feedback in this research draws on formative assessment, where learning improves through continuous and supportive feedback (Prompiengchai, Narreddy, & Joordens, 2025), and sociocultural theory, which sees learning as something socially mediated through interaction and scaffolding (Li, 2025). In this study, ChatGPT is viewed as a feedback partner that provides comments for reflection, helps students refine their reasoning, and guides them in organizing their arguments more clearly.

Using ChatGPT in English learning and debating can lead to two possible outcomes. On one hand, ChatGPT offers diverse perspectives that encourage critical thinking (Jiang & Hyland, 2024; Halaweh, 2023; Oon et al., 2023). In this case, students are inspired by ChatGPT input, which improve their debating skills. On the other hand, there is a risk of overreliance, where students depend too heavily on ChatGPT and limit their own critical engagement (Esmaeil et al., 2023; Ruff et al., 2024). Therefore, thoughtful use of ChatGPT with proper guidance and moderation is essential to maximize its benefits while minimizing potential downsides.

Integrating AI in education serves several purposes. It can enhance classroom debates by providing real-time feedback and personalized learning experiences tailored to student's needs. AI can assess arguments, identify strengths and weaknesses, and offer constructive critiques to strengthen reasoning and presentation skills. Studies show that AI use in education promotes academic performance and engagement by supporting individualized learning (Onesi-Ozigagun, 2024; Trisnawati, 2023). Furthermore, AI helps students develop self-awareness of their strengths and areas for growth, fostering a growth mindset and resilience (Abbas et al., 2023; Xu, 2023).

Although many studies have examined AI's role in supporting debate, such as supplying information, helping with argument development, and providing feedback, there

remains limited evidence on how AI-generated feedback directly influences students' actual debate performance, especially among EFL university students. This study addresses this gap by testing the effect of ChatGPT feedback on students' debating skills in a real university setting.

METHODS

This study employed a mixed-methods exploratory design, combining a one group pretest-post-test pre-experimental design with interviews to strengthen and validate the findings through qualitative triangulation (Creswell & Creswell, 2018). A pre-experimental design was chosen because no control group was available, allowing for a comparison of participants' performance before and after the intervention. To gain a deeper understanding of the students' experiences and perspectives, semi-structured interviews were also conducted.

The participants were eight undergraduate students from UNESA, all active members of the university's debating union and representing diverse academic majors. Purposive sampling was used, as these students already had debating experience and familiarity with the British Parliamentary format. This ensured that they could engage meaningfully with the intervention and provide reliable reflections on their use of ChatGPT. The small sample size reflects the exploratory nature of the research, which aimed not to generalize findings but to capture insights into how trained debaters interact with AI-assisted feedback during debate preparation.

Data Collection

Quantitative Data Collection Process

The quantitative data consisted of pretest and post-test scores from the debate simulations. In both tests, eight students were assigned different motions to debate. The use of different motions for the pretest and post-test was justified on several grounds. First, both motions were selected from the same theme, education, to ensure thematic consistency. Second, using different motions helped prevent memorization bias, as repeating the same motion could lead participants to rely on prior preparation rather than demonstrating skill development. Third, the focus of the study was not solely on debate content but on complexity of argument traits, including argument structure, logical reasoning, elaboration, and responsiveness.

The motions used for the pretest and post-test simulations are presented below.

TABLE 1 | Debate motion for pretest and post-test

	Motion
Pretest	This House Would glorify the success of online learning
Post-test	This House Would bring back national exam

During pretest, students were not allowed to use ChatGPT and had to prepare their cases independently. The motion was either provided before the simulation or delivered impromptu. Following the British Parliamentary format, students were given 15 minutes for case-building. After the pretest scores were recorded, the intervention phase began. Participants then attended three training sessions on how to use ChatGPT effectively for British Parliamentary debate preparation. Each session focused on different debating skills. The first session trained students to interpret motion types, parameters, and core clashes. The second meeting guided them in constructing arguments, developing extensions, and identifying relevant examples. The third session emphasized elaboration and rebuttals. Across these sessions, students practiced with guided prompts, reflected on useful outputs, and learned to critically evaluate ChatGPT's feedback. After the training, students were given one week to independently apply the same strategies when preparing for the post-test motion. This design aimed to discourage passive copying and ensure that ChatGPT was used as a feedback tool to strengthen argument quality.

In this study, feedback was provided through ChatGPT (GPT-4). Rather than focusing on grammar correction or language accuracy, the tool mainly supported students in the process of building arguments. The feedback addressed three main areas. First, it supported debate strategy, for example, by helping students interpret the motion and decide their team's position. Second, it assisted in argument development, such as creating points, adding extensions, and suggesting relevant examples. Third, it contributed to the integration of information, allowing ChatGPT's ideas to be adapted and applied in different ways. In this sense, ChatGPT functioned as a feedback partner, providing material that students could use to prepare their strategy and engage more actively in debates.

ChatGPT was selected for this study because of its practical benefits, particularly its capacity to enable active interaction through real-time question-and-answer exchanges. This immediate responsiveness was expected to enhance students' understanding by encouraging deeper engagement with dynamically accessible content (Gupta et al., 2024; Ifraheem et al., 2024).

TABLE 2 | Students' score of debate simulation

Student	Team	Pretest	Post-test
Prime Minister (PM)	Opening Government	76	76
Deputy Prime Minister (DPM)		74	75
Leader of Opposition (LO)	Opening Opposition	77	76
Deputy Leader of Opposition (DLO)		76	77
Member of Government (MG)	Closing Government	77	77
Government Whip (GW)		77	77
Member of Opposition (MO)	Closing Opposition	75	74
Opposition Whip (OW)		74	74

For the post-test, students were permitted to use ChatGPT to assist in constructing their arguments within the same 15 minutes preparation time. After the post-test, individual scores were assigned using marking scheme adapted from the Indonesia National University Debate Championship

(NUDC) guidebook, with scores ranging from 50 to 100 (see Appendix). The rubric was validated by two debate experts who confirmed its relevance for assessing argumentation, reasoning, evidence, and style. Both experts also had extensive experience adjudicating debate competitions.

The following section presents the results of the pretest and post-test assessments of the eight students who participated in the British Parliamentary debate simulation.

Qualitative Data Collection Process

After the post-test simulation, semi-structured interviews were conducted individually with each student to capture their experiences and reflections on using ChatGPT. The interview focused primarily on the kinds of information students sought from ChatGPT and how they applied it in debate preparation. Only two key questions were used, as the purpose was not to collect a wide range of responses but to provide triangulation for the quantitative data. Keeping the questions focused allowed students to give more detailed and meaningful reflections without unnecessary repetition. The questions were: (1) What kinds of information did you look for when using ChatGPT? (2) How did you use and integrate the information provided by ChatGPT? These two questions were deliberately chosen to capture both the input (the information students sought) and the processing (how they integrated it into their debating strategy). The insights gained from these interviews proved valuable for interpreting the pretest and post-test results, particularly in assessing whether students' performance showed measurable improvement.

Data Analysis

Quantitative Data Analysis

The pretest and post-test data were analyzed using SPSS version 29 to examine whether the use of ChatGPT in the post-test led to a statistically significant improvement in students' performance compared to their pretest results. Three primary outputs were utilized for interpretation: paired sample statistics, paired sample correlations, and paired sample t-tests. These outputs provided insights into the descriptive statistics, the mean differences between the two tests, the correlation between them, and the statistical significance of any observed differences.

Qualitative Data Analysis

The semi-structure interview data were analyzed using content analysis to uncover key insights and themes regarding students' use of ChatGPT. The process followed three main stages: inductive coding, code analysis, and interpretation. Specifically, the steps included: (1) collecting the interview data, (2) transcribing the recordings, (3) carefully reviewing the transcripts, (4) labeling relevant sections with codes and organizing them, and (5) interpreting the codes to identify descriptive themes, which were then presented in the study's findings.

RESULTS AND DISCUSSION

Test of Normality

Before conducting the paired-samples test, the normality of the data was assessed.

TABLE 3 | Test of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Pretest	.210	8	.200*	.843	8	.082
Post-test	.210	8	.200*	.843	8	.082

To test the assumption of normality, the Kolmogorov–Smirnov test with Lilliefors correction and the Shapiro–Wilk test was applied. The results showed that the pretest scores (Shapiro–Wilk, p = 0.082) and the post-test scores (Shapiro–Wilk, p = 0.082) followed a normal distribution (p > 0.05). The Kolmogorov–Smirnov test also supported this result (p = 0.200). Given the small sample size (n = 8), the Shapiro–Wilk test was used as the main reference. As the normality assumption was satisfied, a paired-samples t-test was chosen to analyze difference between pretest and post-test scores.

Quantitative Data Result based on Pretest and Post-Test

TABLE 4 | Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	75.75	8	1.282	.453
	Post-test	75.75	8	1.282	.453

Table 4 presents the descriptive statistics for the pretest and post-test debate simulation scores. Both tests produced an identical mean score of 75.75, indicating no noticeable improvement in participants' performance following the intervention. The standard deviation for both tests was 1.282, suggesting that the variability in scores remained consistent across the two stages. Similarly, the standard error of the mean was 0.453 in both tests, reflecting a comparable level of precision in estimating the sample mean.

In the pretest, students completed a debate without external assistance. In the post-test, ChatGPT was introduced as an intervention to support their argument development. The aim was to determine whether the integration of ChatGPT would enhance students' debate performance. However, the results showed no improvement, as reflected by the unchanged mean scores of 75.75 in both the pretest and post-test.

TABLE 5 | Paired Samples Correlations

		N	Correlation	Significance One-Sided p	Significance Two-Sided p
Pair 1	Pretest & Post-test	8	.826	.006	.011

Table 5 shows a fairly strong positive correlation (r=0.826) the pretest and post-test scores. This indicates that students who performed well in the pretest also tended to perform well in the post-test, while those who scored lower in the pretest showed similar outcomes in the post-test. In other words, students' debating skill remained relatively consistent across the two tests. The correlation was statistically significant (p=0.006 for the one-tailed test and p = 0.011 for the two-tailed test), suggesting that the relationship was unlikely to have occurred by chance.

However, despite this strong correlation, the mean score for both tests was identical (75.75). This indicates that the use of ChatGPT did not lead to any measurable improvement in students' debating performance. In short, students' skills remained unchanged before and after the ChatGPT intervention.

TABLE 6 | Paired Samples Test

		Paired Differences					t	df	Significance	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			One-Sided p	Two-Sided p
Pair 1	Pretest - Post-test	.000	.756	.267	-.632	.632	.000	7	.500	1.000

Table 6 shows the results of the paired samples t-test comparing students' scores in the pretest and post-test debate simulations. The t-value was 0.000, indicating no measurable difference between the two sets of scores. The two-tailed p-value was 1.000, which is far above the conventional threshold of 0.05 for statistical significance. This result confirms that the difference in scores between the pretest and post-test was not statistically significant.

TABLE 7 | Paired Samples Effect Sizes

			Standardizer [a]	Point Estimate	95% Confidence Interval Lower	Upper
Pair 1	Pretest - Post-test	Cohen's d	.756	.000	-.693	.693
		Hedges' correction	.851	.000	-.615	.615

a. The denominator used in estimating the effect sizes.
Cohen's *d* uses the sample standard deviation of the mean difference, while Hedges' correction applies the sample standard deviation with an added correction factor.

Table 7 presents the effect size statistics for the pretest and post-test scores. The Cohen's d value was 0.000, and the Hedges' correction was also 0.000. Both values fall within the 95% confidence interval, which ranged from -0.693 to 0.693 for Cohen's d, and -0.615 to 0.615 for Hedges' correction. Since these intervals include zero, the true effect could be negative, positive, or essentially nonexistent.

In other words, there was no measurable effect of the ChatGPT intervention on students' debate performance. Normally, Cohen's d values of 0.2, 0.5, and 0.8 are interpreted as small, medium, and large effects, respectively. In this study, the value of 0.000 shows the complete absence of an effect. The identical mean scores in the pretest and post-test (75.75) further confirm this result, showing that ChatGPT neither improved nor reduced performance.

At the same time, the relatively wide confidence intervals show the small sample size (n = 8), which makes the results less certain. This means that a larger study might reveal a small positive or negative effect. However, based on the current findings, it is reasonable to conclude that ChatGPT made no real difference to students' debating skills in this context.

The finding is important as the purpose of the study was to test whether ChatGPT could influence debate performance, and the results clearly showed that under the given conditions, it did not. The effect size outcome reflects how students interacted with ChatGPT: AI cannot automatically improve debating skills, especially when students rely on copying its output. Genuine improvement may require more training sessions, stronger guidance on how to craft prompts, and greater encouragement to critically engage with AI-generated responses.

Qualitative Data Results based on Semi-Structured Interviews

The semi-structured interviews focused on two main questions: (1) what kinds of information did the students seek when using ChatGPT? (2) How did they use and integrate the information provided by ChatGPT? The codes, categories, and themes that emerged from their responses are summarized in Table 8 below. These two questions were deliberately chosen to capture both the input (what information students looked for) and the processing (how they integrated and applied the information) aspects of AI-supported argumentation in debate. The first question highlights how students searched for information, while the second focuses the strategies they used to combine and make sense of it. This approach makes it possible to examine not only the material students obtained from ChatGPT but also how they absorbed and applied it in practice.

The thematic coding (see Table 8) revealed two overarching themes: matter in debate and integration of information. The first theme consisted of two categories: Debate strategy, which reflected students' responses about how they interpreted the motion and defined their team identity, and Argumentation Process, which included how students constructed arguments, added extensions, and supported them with relevant examples. The second theme, Integration of Information, demonstrated whether students engaged critically with ChatGPT's output (e.g., elaborating on their own ideas, consulting other sources, or constructing rebuttals) or relied on it more passively (e.g., copying arguments or depending too heavily on AI suggestions).

TABLE 8 | Codes, categories, and themes from students' responses

Code	Category	Theme
Interpretation of the motion	Debate Strategy	Matter in Debate
Identity of a team		
Argument Extension	Argumentation Process	
Example of argument		
Self-elaboration	No reliance	Integration of Information
Making self-rebuttals		
Using other credible sources		
ChatGPT suggestion	AI reliance	
Copying argument		

(1) What type of information did you look for when using ChatGPT?

PM: "*I was looking for the interpretation of the motion. Even though it was easy to understand, I just wanted to make sure the meaning of "national exam". It turned out to be focusing on the score rather than the process*." (motion interpretation)

DPM: "*I was trying to find the possible arguments. I don't want to sound repetitive from my first speaker. Extension is quite hard to find. At least I get the main idea*." (argument development)

LO: "*I don't know what to ask at first, but I finally ask ChatGPT regarding a strategic identity for opening opposition*." (motion interpretation)

DLO: "*I am always not good at preventing opponent's argument. So, I really want to predict it and make preventive arguments, especially for my next opponent, Closing Government*." (argument development)

MG: "*As closing government, I want to simulate the opening debate. I asked ChatGPT the arguments both government and opposition. Then, I made alternative arguments to differentiate*." (argument development)

GW: "*The power of a whip relies on scenarios and examples in real life context. I am trying to predict the best and worst scenario of the motion, particularly in opposition team*." (argument development)

MO: "*I just asked ChatGPT to provide arguments for opposition. I think I need to anticipate it by asking the extension or the closing opposition arguments. So, I'm not trapped and repetitive*." (argument development)

OW: "*I am just helping my member to find arguments. I should not bring new arguments*." (argument development)

(2) How did you use and integrate the information provided by ChatGPT?

PM: "The parameter given by ChatGPT makes me easier to contextualize the motion better. However, I still use my own description to elaborate the motion." (self-elaboration)

DPM: "*I used the suggestions from ChatGPT on the main idea. I elaborate the points by myself*." (self-elaboration)

LO: "*I take the answer from ChatGPT. So, my team's identity was made by ChatGPT. It is hard for me because I don't have much time to understand it and immediately arrange my arguments*." (ChatGPT elaboration)

DLO: "*When I simulate the opponent's argument, especially Closing Government, I immediately make the rebuttals and modify it into my extension. I do not use ChatGPT to find my rebuttals, I like to search the information in credible sources. Yet, it helps me*." (self-elaboration)

MG: "*As prediction matters for Closing Government, I make the identity of Closing Government from the common answers of ChatGPT. It is faster as previously I need to memorize what arguments are possibly used. Now, I can elaborate my own argument faster. I don't use the extension from ChatGPT because it is still too common*." (self-elaboration)

GW: "*I do not take any suggestion from ChatGPT. I need to focus on my opponents' argument*." (self-elaboration)

MO: "*I almost copy all the arguments from ChatGPT. That's why I am a bit surprised when Opening Opposition has brough it. I find it hard to make a new identity for Closing Opposition*." (ChatGPT elaboration)

OW: "*I am taking some examples from ChatGPT for my case. I think it is still not enough. It is hard to see the case deeper only from the examples*." (ChatGPT elaboration)

Theme 1: Matter in Debate

This theme shows how students used ChatGPT to engage directly with debate content. Two main categories emerged: *debate strategy* and *argumentation process*.

- Debate strategy included codes such as *motion interpretation* and *team identity*. Some students relied on ChatGPT to verify their understanding of the motion or to establish the strategic identity of their team. For example, the Prime Minister (PM) said, "*I was looking for the interpretation of the motion. Even though it was easy to understand, I just wanted to make sure the meaning of 'national exam'*." Similarly, the Leader of the Opposition (LO) reported using ChatGPT to shape the identity for the opposition bench.
- Argumentation process included *argument development*, *extensions*, and *examples*. Many students turned to ChatGPT for possible arguments or extensions to avoid repetition. For instance, the Deputy Prime Minister (DPM) admitted, "*Extension is quite hard to find. At least I get the main idea*." Meanwhile, the Government Whip (GW) focused on finding scenarios and real-life examples to strengthen their speech, while members of the opposition (MO, OW) also drew on ChatGPT for arguments or supporting examples.

Theme 2: Integration of Information

This theme highlights how students processed and applied the output provided by ChatGPT. Two distinct patterns emerged, *no reliance* and *AI reliance*.

- *No reliance* referred to students who critically engaged with ChatGPT's suggestions, often modifying them or cross-checking with other sources. For example, the Deputy Leader of the Opposition (DLO) shared, "*I immediately make the rebuttals and modify it into my extension. I do not use ChatGPT to find my rebuttals, I like to search the information in credible sources*." Similarly, the Closing Government Member (MG) explained that while ChatGPT saved time in predicting common arguments, they still developed their own unique points.
- *AI reliance* described students who depended heavily on ChatGPT without much critical engagement. For example, the LO admitted that their team identity was taken directly from ChatGPT, saying, "*It is hard for me because I don't have much time to understand it." Likewise, the MO confessed, "I almost copy all the arguments from ChatGPT. That's why I am a bit surprised when Opening Opposition has brought it*."

The interview findings show that students used ChatGPT primarily to understand concepts and build arguments. While all participants actively engaged with the tool during the post-test debate simulations, their approaches varied. Some treated ChatGPT's suggestions as starting points, strengthening their arguments by adding personal insights and cross-checking with reliable sources. Others, however, relied almost entirely on ChatGPT's direct responses, seeking ready-made arguments to support their positions.

A clear performance gap emerged between these two groups. Students who relied too heavily on ChatGPT showed little to no improvement in their post-test scores, and in some cases, their scores declined compared to the pretest. This likely occurred because they tended to copy ChatGPT's responses without fully developing their own arguments. By contrast, students who used ChatGPT more critically and strategically demonstrated stable or slightly improved performance, reflecting deeper engagement with the material.

These findings align with the results of the paired sample t-test, which indicated minimal improvement in overall post-test performance. This suggests that while ChatGPT provided accessible information, many students lacked effective strategy to critically evaluate and integrate AI-generated content, leading to over-reliance and limited analytical engagement.

This study investigates the impact of AI-generated responses, specifically from ChatGPT, on students' debate performance. It examines how students used ChatGPT to build cases and gathering information to support their arguments. The findings indicate that ChatGPT provided clear support in retrieving information, which helped students organize their debate points more effectively. This aligns with Ba et al. (2025), who reported that ChatGPT-assisted feedback in online learning discussions improved students' ability to develop and structure their reasoning. Similarly, students in this study used ChatGPT to clarify motions, shape arguments, and identify relevant examples.

Despite these advantages, the study found that ChatGPT did not significantly improve students' debate performance. Although a moderate correlation appeared between pretest and post-test scores, the paired samples t-test showed no statistically meaningful difference ($p = 1.000$). The effect size (Cohen's $d = 0.000$) further confirmed that the intervention had no measurable impact. In other words, the small changes observed in students' score were most likely due to chance rather than the direct influence of ChatGPT. This outcome contrasts with earlier studies that reported positive effects of ChatGPT and similar AI tools on students' speaking and debating skills (Alanzi et al., 2023; Almazyad et al., 2023; Karakose & Tülübaş, 2023). However, it aligns with research by Han et al. (2022), which also found no significant improvement in reasoning skills from AI support. These differences suggest that the effectiveness of ChatGPT depends on the learning context, the duration of the intervention, and the extent of guidance students receive in using AI for academic tasks.

Although ChatGPT did not lead to significant gains in debate scores, it appeared to support growth in critical thinking. Interview data revealed that students often treated ChatGPT's responses as prompts to develop their own arguments, showing evidence of analysis and reflection. This echoes findings from other studies (Minh, 2024; Ruff et al., 2024; Xiao & Zhi, 2023), which showed that students enhanced their critical and analytical thinking by recognizing the limitations of AI-generated content and expanding upon it independently.

A key reason for the lack of score improvement was students' over-reliance on ChatGPT. Interview data indicated that some students copied answers directly from ChatGPT or failed to critically assess the information, resulting in weaker arguments and, in some cases, lower post-test scores. This finding echoes previous research (Guleria et al., 2023; Petrič, 2024; Shehri et al., 2023), which shows that excessive dependence on AI can hinder critical thinking by bypassing deeper research and synthesis.

In addition to over-reliance, students faced challenges in using ChatGPT effectively. Many felt confused when they received repetitive answers, often similar to those given to other groups, and struggled to create prompts that could generate diverse and useful responses. Nugroho (2023) also highlighted that students risk misunderstanding or being misled by AI when they fail to critically evaluate its outputs. Supporting this, several studies (Liu, 2023; Liu et al., 2023; Miyazaki, 2024; Rashid et al., 2024; Seniwati et al., 2024) have found that ChatGPT responses, while often appearing credible, can be inaccurate or misleading. The findings underscore the need for clearer strategies and stronger guidance to ensure students rely on trustworthy information when using ChatGPT or similar AI tools.

Overall, these findings highlight the important role of educators in guiding students' engagement with AI-generated content. Teachers need to help students avoid pitfalls such as over-reliance, confusion, and misinformation while fostering critical engagement with AI outputs. Đoàn (2023) emphasized that educators can reduce students' cognitive load, enabling more effective learning. Therefore, educators should not only introduce students to ChatGPT but also train them to critically analyze and integrate AI-generated information. Additionally, structured curricula that thoughtfully incorporate AI tools are urgently needed to ensure their use enhances, rather than detracts from, learning

outcomes.

It is also important to recognize the limitations of this study. The sample size was very small (n = 8), which limits how much the findings can be generalized. The design was a one-group pre-experimental study without a control group, limiting the ability to isolate the effects of ChatGPT from other factors. The treatment period was short (three meetings), which may not have been sufficient for students to develop stronger debate strategies or learn to use ChatGPT effectively. Limitations also arose from ChatGPT itself: its responses were sometimes generic or repetitive, and students with weaker prompting skills struggled to refine them. Finally, individual variation likely played a role. Some students, especially those who were more confident, tended to use ChatGPT critically, while others relied on it passively.

CONCLUSION

This study examines the impact of AI-generated responses, specifically from ChatGPT, on the debate performance of university students. The findings indicate that using ChatGPT use did not lead to any significant improvement in students' debating skills. Despite a strong correlation between pretest and post-test scores, the identical mean score of 75.75 for both assessment suggests that the intervention had no measurable effect. This consistency implies that students' abilities remained stable throughout the study, with ChatGPT failing to produce any substantial change. The t-test results (p = 1.000) further support this conclusion, indicating that any observed differences in performance were likely due to chance rather than the influence of ChatGPT. In relation to the research question, the study concludes that ChatGPT, when used as a feedback tool in a short intervention does not significantly enhance students' debate performance. Future research could explore alternative strategies or investigate other aspects of debate simulation to better support student learning.

The lack of performance is largely attributed to students limited critical engagement with AI-generated responses. Many struggled to evaluate the information critically, often copying or relying entirely on ChatGPT's content without deeper analysis. This underscores the vital role of educators in supporting students' effective use of AI tools. A key implication is that teachers should provide explicit instruction on how to engage critically with ChatGPT outputs, for example, by training students in effective prompting, encouraging them to cross-check AI responses with credible sources, and guiding them to elaborate on ideas independently. Such strategies could help prevent over-reliance and support deeper learning.

As AI use in education continues to expand, further research on how to best leverage AI-generated responses is crucial. This study has several limitations that must be considered, such as the small sample size (n = 8), the short duration of the intervention (three sessions), the absence of a control group, and the context-specific nature of debating, which may not generalize to other disciplines. These limitations suggest that the findings should be interpreted with caution. Nevertheless, they highlight opportunities for future research to test AI-assisted debate practice with larger and more diverse samples, over longer time frames, and with comparisons to traditional methods.

In conclusion, while this study found no measurable effect of ChatGPT on debate performance, it provides valuable insights into how students interact with AI tools, sometimes engaging with them critically, but at other times relying on them passively. This suggests that more structured guidance is needed to help students maximize the educational benefits of AI. Future studies should not only explore the long-term impacts of AI-based feedback but also examine how sustained training with AI can foster critical thinking and assess its effectiveness across different disciplines and educational contexts.

ACKNOWLEDGEMENTS

The researchers sincerely thank the volunteers who participated in this study. They are also grateful for the valuable and constructive feedback provided by the journal's reviewers, which greatly improved the quality of this paper.

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Conflict of Interest Statement: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.