

Applying AI Tools to Enhance Argumentation Skills in Debate Activities for EFL Students

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ABSTRACT

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This study examines the impact of artificial intelligence (AI) tools on the development of argumentation skills through debates among third-year English majors at a public university in Vietnam. The study combines quantitative and qualitative methods, utilizing a questionnaire with 150 students, semi-structured interviews with 3 teachers, and reports on the AI tool usage of 63 students. The quantitative data from the questionnaires were analyzed using SPSS 26, while the qualitative data from the interviews and reports were thematically analyzed. The findings indicate that the perceived positive impacts of AI tool integration include enhanced idea and evidence generation, argument structuring, interaction, feedback, and overall performance in debates. However, participants report several challenges related to the AI's interpretation of students' ideas, the provision of high-quality and relevant responses, and students' independent and critical thinking. Finally, the study provides suggestions to enhance the effectiveness of integrating AI tools in developing argumentation skills for EFL students.

Introduction

Recent years have witnessed the drastic development and significant impact of artificial intelligence (AI) on education. Many educational institutions worldwide are incorporating AI into traditional teaching to improve learning efficiency and accessibility. Research has demonstrated AI's beneficial impact on learners' critical thinking (Darwin et al., 2023; Guo & Lee, 2023; Law, 2024; Muniandy & Selvanathan, 2024), problem-solving (Kuswiyanti et al., 2023; Law, 2024), and communication abilities (Muniandy & Selvanathan, 2024). Conversational chatbots, such as ChatGPT and Character AI, can mimic authentic communication, provide immediate feedback, and actively engage learners. Therefore, they have become more prevalent in language education (Fryer et al., 2020; Ray, 2023; Son et al., 2023), creating opportunities for students to enhance their communication skills. They are considered excellent partners in language learning because they can generate continuous interactions with learners, encourage them to ask questions more effectively, and enable them

to apply newly learned grammar and vocabulary (Fryer et al., 2020; Javaid et al., 2023).

In language education, debate is an effective activity for teaching speaking, allowing students to construct, present, and defend arguments in interactive scenarios (Majidi et al., 2021). It helps develop speaking skills, particularly fluency, lexis, grammar, and pronunciation (Syamdianita & Maharia, 2020; Truong et al., 2022), and enhances learners' logical thinking (Putri & Rodliyah, 2020; Syamdianita & Maharia, 2020). AI chatbots can enhance the effectiveness of this activity by enabling students to construct well-structured arguments, thereby improving their logical thinking and teamwork (Darmawansah et al., 2024; Guo et al., 2023). However, much of previous research has focused on the impact of AI on teaching and learning in general (Law, 2024), how AI helps enhance interactions through endless conversations (Javaid et al., 2023), or improving speaking skills (Kim et al., 2021; Kuswiyanti et al., 2023; Shazly, 2021). Limited attention has been given to its use in developing argumentation skills through debates. This study, therefore, aims to narrow the gap by exploring the benefits and challenges of applying AI tools, specifically ChatGPT and Character AI, in debates to develop argumentation skills in a speaking course perceived by third-year English majors at a public university in Vietnam.

Literature Review

Argumentation Skills and Debate as a Technique for Teaching Argumentation

Argumentation is a fundamental component of scientific reasoning (Kuhn et al., 2008) and has been applied in various fields. Van Eemeren (2009) defined argumentation as a process through which individuals verbally present logical arguments that either support or refute a given claim to persuade an opponent. According to Toulmin (2003), an effective argument should comprise six components of claim, data, warrant, backing, rebuttal, and qualifiers. First, the claim is the point that the speaker or writer wants to make. Second, data refer to the evidence used to support the claim. Third, warrant is the assumption that connects the data to the claim. The fourth component is backing, which comprises the specific examples that support the warrant. The fifth component is rebuttal, which refers to the counterarguments or refutations of opposing claims. Qualifiers are the last components which mean the words that show how often the claim is applicable.

In language education, argumentation skills have become a topic of interest to researchers. Regarding writing skills, Nejmaoui (2019) demonstrated that integrating critical thinking into a writing course significantly improved students' argumentative writing. Jumariati et al. (2021) indicated that students could make good claims and evidence but demonstrated weaknesses in presenting opposition and refutation in their argumentative essays. Saputra et al. (2021) highlighted several problems in students' argumentative essays related to cognitive, linguistic, and psychological aspects. Concerning argumentation, they pointed out that students have insufficient knowledge of the main features of an argumentative essay, as well as problems with grammar and vocabulary, and challenges in organizing, presenting arguments, and providing evidence.

In speaking training, debate is one of the most common techniques used to help students improve their argumentative skills. As defined by Freeley and Steinberg (2014), debate is the exchange of ideas where individuals explore different viewpoints and argue their points to reach a well-reasoned conclusion about a topic. Therefore, in this activity, the arguments supporting and opposing a proposition are actively presented and challenged by the opposing sides. According to Freeley and Steinberg (2014), debate can be classified into two main types:

applied debate and academic debate. While applied debates commonly occur in legal or formal settings, academic debates typically take place in educational contexts. The purpose of academic debates is to train students to construct logical arguments and refute their opponents' arguments. In this study, academic debates were conducted by pairs of opposing groups on a particular topic. This technique has demonstrated its effectiveness in improving EFL students' speaking skills. Majidi et al. (2021) indicated that debate enhanced both the structure and quality of students' argumentation. In particular, debate improved students' use of various arguments and rebuttals as well as the way they elaborated their arguments and persuaded their opponents. Syamdianita and Maharia (2020) and Truong et al. (2022) reported that EFL students have a positive perception of debate in speaking lessons. They perceived an enhancement in fluency, vocabulary, grammar, and pronunciation. Moreover, engaging in classroom debates helped students develop their negotiation skills, improve comprehension, boost confidence, and reduce speaking anxiety (Putri & Rodliyah, 2020; Syamdianita & Maharia, 2020).

AI in English Language Education

The terms 'Artificial Intelligence' (AI) was first introduced by John McCarthy and colleagues (McCarthy et al., 2006). It refers to computer systems that can carry out cognitive functions common to human minds (Baker & Smith, 2019). Among these functions, learning and problem-solving are typical. After its introduction, AI has been widely applied in language learning for various purposes, such as exchanging ideas, translating documents, summarizing information, and creating texts. Studies have demonstrated that AI tools and apps contribute to students' achievement of learning outcomes, personalized experiences, and motivation (Law, 2024; Sumakul et al., 2022), as well as critical thinking (Darwin et al., 2023; Guo & Lee, 2023; Susanto et al., 2023). Alshumaimeri and Alshememry (2023) noted that AI facilitates the development of learners' fluency through comfortable human-AI interaction. Nguyen (2025) in her review of the effects of TALKPAL.AI demonstrated that this tool has a positive impact on adult learners' speaking proficiency. Chatbots like D-ID Agent and Character AI provide psychological benefits in language learning, particularly in reducing speaking anxiety (Wang et al., 2024; Kuswiyanti et al., 2023). Shazly (2021), on the other hand, discovered that students' speaking anxiety was slightly higher while interacting with AI chatbots. However, the improvements in their language were still demonstrated as a result of the study. Wang et al. (2024) also indicated that the use of D-ID Agent chatbot significantly promoted students' willingness to communicate and enhanced their self-perceived communicative competence. In their study on the effects of face-to-face, AI text-chatting and AI voice-chatting interactions on speaking skills, Kim et al. (2021) found that both AI groups showed improved speaking performance. More interestingly, AI voice-chatting students were found to perform better than other groups in their ability to express an opinion. According to Kuswiyanti et al. (2023), Character AI increased students' interest and motivation in learning English. Students reported that Character AI helped increase their confidence in communication and reduce their embarrassment about making mistakes because they perceived it as a non-judgmental tool. In terms of assessment, AI tools like ChatGPT can support grading and enhancing students' learning outcomes by offering helpful feedback, identifying both strengths and weaknesses of students' work (Kasneci et al., 2023; Üstünbaş, 2024).

Alongside the advantages, AI also poses multiple challenges regarding reliability, accuracy, contextual understanding, over-reliance (Gill & Kaur, 2023; Kasneci et al., 2023; Ray, 2023; Sok & Heng, 2023), autonomy, problem-solving (Gill and Kaur, 2023; Kasneci et al., 2023), and ethical issues (Ray, 2023; Sok & Heng, 2023; Zong, 2024). ChatGPT has been found to generate inaccurate information, cite invalid articles, or provide unreliable sources. It can also produce poor-quality or unsuitable responses due to a limited understanding of the situation or

difficulty maintaining consistency throughout long conversations (Gill & Kaur, 2023; Ray, 2023). Moreover, depending on ChatGPT can negatively affect learners' autonomy and deep learning capacity, especially when they work on tight deadlines and consequently do assignments without using their critical thinking skills (Zong, 2024). Besides, due to its inability to fully interpret human communication and give feedback tailored to learners' needs, students cannot experience personalized learning (Zong, 2024). Nguyen and Pham (2024) also identified the challenge of AI chatbots in adapting to different levels of expertise. These bots proved to benefit advanced learners rather than lower-level ones, as the grammatical and typological errors might hinder their ability to decipher meanings. Additionally, AI chatbots are limited in developing oral interactions because they are primarily programmed for text-based communication.

AI Tools and Argumentation Skills Development

Recent research has examined the effects of AI tools on the development of argumentation skills in language learning. According to Javaid et al. (2023), ChatGPT assisted students in generating arguments and refutations on a specific topic. Guo et al.'s (2023) study on the impact of chatbot-assisted in-class debates (CaICD) on students' argumentative abilities revealed that they employed more claims, data, and warrants and produced more structured and comprehensive arguments. They also showed increased motivation and enjoyment in debating tasks. In another study, Darmawansah et al. (2024) found that applying the ChatGPT-CA approach led to enhanced oral argumentation, critical thinking, and collaboration among EFL students. Furthermore, it helped improve the students' argument quality though their English were at different levels. Similarly, Susanto et al. (2023) confirmed that AI positively impacted students' reasoning and argumentation skills.

In short, research has proven AI's potential in supporting various aspects of students' language learning, as well as the significance of debates in enhancing their argumentative abilities. However, the application of AI chatbots like ChatGPT in debate activities to enhance students' argumentation skills remains limited (Guo et al., 2023) as previous studies have primarily delved into the effects of AI on speaking skills and its different aspects such as fluency and speaking performance (Alshumaimeri & Alshememry, 2023; Kim et al., 2021; Kuswiyanti et al., 2023; Shazly, 2021). This study, therefore, aims to investigate the perceived impact of applying AI tools, including ChatGPT and Character AI, on students' argumentation skills through debates in a speaking course for third-year English majors at a public university.

Research Questions

The study sought answers for the following research questions:

1. What are the positive impacts of integrating ChatGPT and Character AI on developing argumentation skills through debates for third-year English majors?
2. What are the difficulties of integrating ChatGPT and Character AI in developing argumentation skills through debates for third-year English majors?

Methods

Pedagogical Setting & Participants

The study was carried out during the 2024–2025 academic year in the English-Speaking Skills 5 course at a public university in Vietnam. Among a series of five speaking courses designed for English majors, this is an advanced speaking course that aligns with Level 5 of the Vietnam

6-level Foreign Language Proficiency Framework. Therefore, one of the course objectives is to enhance students' argumentation skills on various topics. To achieve this objective, debate was integrated into the course as both a learning activity and a formative assessment method. To modernize teaching as well as provide students with rewarding experiences in the digital age, ChatGPT and Character AI were incorporated into debate activities in the course. In particular, students were required to work in groups and utilize these AI tools to help prepare for their in-class debates. Students are recommended to use ChatGPT for argument generation and Character AI for conducting mock debates using the arguments refined from ChatGPT. During their preparation, they were asked to complete an AI tool usage report, which reflects how they prepare for their debates, what feedback they received from AI tools for their mock debates, and their reflections on the positive impact and challenges of using these tools for debate preparation.

The participants were 150 third-year English-majored students, including 36 males and 114 females, aged between 20 and 21. At the time of the study, their English proficiency was estimated at Level 4 of the Vietnam 6-level Foreign Language Proficiency Framework. The interviewees were three subject teachers who have been teaching English for over 9 years and hold a Master's degree. During the interviews, Vietnamese was used to avoid misunderstanding and ensure clarity of the questions and answers. Both students and teachers participated in the study on a voluntary basis, with consent forms signed prior to their participation.

Design of the Study

This study adopted quantitative and qualitative methods. The data were collected through a survey questionnaire for students, semi-structured interviews with teachers, and reports on students' AI tool usage. The survey questionnaire was adapted from the study by Truong et al. (2022), with modifications and additions made to fit the current research context. The questionnaire consisted of 18 closed-ended questions, each based on a 5-point Likert scale (1: strongly disagree, 2: disagree, 3: neutral, 4: agree, and 5: strongly agree). The first 10 questions focus on the positive effects and the other 8 questions address the difficulties of using AI tools in preparation for debates. The reliability test was conducted to confirm internal consistency with the Cronbach's Alpha coefficient of 0.801. The semi-structured interviews were conducted online with three teachers via Google Meet platform. Each interview was individually scheduled and recorded, focusing on the advantages and challenges of using AI tools for debate preparation. Finally, 63 AI tool usage reports, which show four stages of the preparation process (research and initial argument, refining arguments and evidence, practice and feedback, and reflections on AI usage), were collected to track students' use of AI tools for their preparation.

Data collection & analysis

The survey questionnaire was distributed to 173 third-year English-majored students. To ensure a sufficient number of responses, the questionnaire was initially delivered offline at the end of the course. It was then delivered online to collect answers from students who were absent from class. After one week, 150 valid responses were collected for analysis. Following the survey, semi-structured interviews were conducted with three teachers at their convenience. Each interview lasted approximately 30 minutes and was recorded for further analysis. For the AI tool usage reports, students were required to complete and submit their reports to teachers one week before the in-class debates, starting from the third week of the semester. Subsequently, 63 valid reports were collected from subject teachers during the final week of the course for analysis.

The survey data were analysed using SPSS 26 and presented in tables for descriptive statistics. The data from teacher interviews were transcribed and coded for thematic analysis. Similarly, students' reflections on AI tool usage reports were thematically analysed, primarily focusing on the positive aspects and the difficulties they experienced while using the tools to prepare for their debates. To ensure confidentiality for the study, the subject teachers were assigned codes T1 through T3, and the AI tool usage reports were designated R1 through R63.

Findings

The positive impacts of integrating ChatGPT and Character AI on developing argumentation skills through debates for third-year English majors

Table 1

The positive impacts of ChatGPT and Character AI during debate preparation (Questions 1-3)

Items	Questions	1	2	3	4	5	Mean	Std
1	I know how to interact effectively with AI tools.	1.3%	4.7%	44.7%	39.3%	10%	3.52	0.79
2	AI tools help me generate more ideas for debate topics.	0.7%	0.7%	14.7%	50.7%	33.3%	4.15	0.74
3	AI tools help me select the most relevant evidence to support my claims.	1.3%	4%	24%	50.7%	20%	3.84	0.83

Table 1 reveals that 39.33% of students agreed and 10% strongly agreed that they knew how to have effective interaction with AI tools. Conversely, smaller proportions disagreed and strongly disagreed (4.7% and 1.3% respectively), and 44.7% of respondents remained neutral. These results indicate that while a large proportion of participants felt somewhat confident in their ability to use AI tools, the high rate of neutral responses suggests that they may be hesitant or require more assistance and training in interacting with these tools. Regarding the generation of ideas for debate topics, a high mean score of 4.15 indicates that AI tools help enhance brainstorming processes for debate preparation. More than half of the students (50.7%) agreed and 33.3% strongly agreed that AI tools contribute to idea generation. The percentages of participants who remained neutral and disagreed are limited (14.7% and 0.7%, respectively). In terms of AI tools' support in selecting relevant evidence for arguments, a majority (70.7%) showed agreement, 24% selected neutral, and 5.3% disagreed and strongly disagreed (mean score = 3.84), highlighting the usefulness of AI tools for evidence curation and filtering.

The findings from teachers' interviews show that all three teachers agreed that AI helped their students explore different aspects of a topic, such as examining the pros and cons, summarizing information from multiple sources, and improving vocabulary and argument development. As T1 stated, *"When a debate topic is assigned in class, students can use AI to explore various dimensions of the topic. First, AI can provide idea suggestions, such as pros and cons for the topic. Second, in terms of language, students can also learn new vocabulary while reading AI-generated responses."* Similarly, T3 noted that AI provides diverse ideas, helping students gain a well-rounded understanding. T2 added that AI helps outline ideas and fosters diversity in thinking, while T3 emphasized that AI broadens students' analytical capabilities by presenting new viewpoints.

Additionally, in students' AI tool usage reports for debate preparation, half of the reports stated that AI tools, particularly through simulated debates with chatbots, helped students practice and

improve debate skills such as critical thinking and responsiveness before real sessions. As R5 and R6 noted, Character AI allows them to prepare for real-life discussions through mock debates. The tool provided them with opportunities to practice spontaneous responses, present their ideas, and refute the simulated opponents' viewpoints. Additionally, 53 reports indicated that these two AI tools generated diverse, logically coherent, and practical ideas for their debate topics. For example, R43 and R45 confirmed AI's important role in helping them generate arguments for and against the topic with relevant supporting information.

- How AI tools (ChatGPT & CharacterAI) helped:
 - Quickly generating arguments and counterarguments to refute points
 - Providing relevant evidence to prove its viewpoints
 - Analyzing my counterarguments and identifying weaknesses or gaps

(Report R43)

- How AI tools (ChatGPT & CharacterAI) helped:
 - AI helped me find many ideas for the debate with convincing arguments and easy-to-read, easy-to-understand evidence.
 - AI also helped me expand vocabulary and structures that I don't know.
 - Talking to AI is also a way to increase my reflexes in case a problem arises.

(Report R45)

Table 2

The positive impacts of ChatGPT and Character AI during debate preparation (Questions 4-6)

Items	Questions	1	2	3	4	5	Mean	Std
4	AI tools improve my ability to structure arguments logically.	1.3%	4%	38%	42.7%	14%	3.64	0.82
5	Using AI helps me anticipate and prepare counterarguments effectively.	0.7%	2.7%	28%	53.3%	15.3%	3.80	0.75
6	AI tools give me useful feedback on the quality of my arguments.	2.7%	11.3%	24%	42%	20%	3.65	1.01

As shown in Table 2, 42.7% of participants agreed and 14% strongly agreed that AI tools positively supported their logical organization of arguments (mean score = 3.64). The number of neutral responses is lower at 38%, and the rate of disagreement is low. Regarding the effective anticipation and preparation for counterarguments, 53.3% agreed and 15.3% strongly agreed, while the proportion of neutrality and disagreement is approximately one third (mean score = 3.80). These findings suggest that AI tools significantly aid students in identifying potential counterarguments, preparing them for both mock debates and real debates in class. Finally, a majority of students (62%) positively perceived AI feedback on argument quality, with 42% agreeing and 20% strongly agreeing. However, the high standard deviation (1.01) and 13.3% disagreement indicate mixed experiences. Overall, while AI tools are generally seen as helpful for improving arguments, their feedback may not be consistently useful for all students.

In the teacher interviews, the findings share similarities regarding idea generation, argument structure, and argument presentation: *"I think the structure of arguments is likely to improve*

the most. The structure of arguments has significantly improved compared to last year. Confidence might also increase because students already have their preparation done, which helps boost self-assurance,” stated T3. Besides, teachers also highlight the importance of AI tools’ feedback that helps detect and improve weaknesses in students’ arguments, and the increased opportunities for practice to prepare for their in-class debates. According to T1, *“AI can assist students in recognizing and addressing their weaknesses. For students who practice regularly, their argument quality and confidence in class presentations certainly improve.”*

Similarly, in the AI tool usage reports, students acknowledged the role of AI in helping them develop and refine ideas logically and persuasively. Thirteen reports noted that AI enhanced vocabulary and sentence structures for debate topics. The other fifteen highlighted AI's support in improving arguments with examples, studies, and statistics that could be incorporated into debates. Additionally, a total of 41 reports confirmed that AI tools provided instant feedback on their argument in simulated debates. For example, R59 and R61 stated that AI tools helped them identify what to improve, broaden their perspectives, and expand their language repertoire.

- How AI tools (ChatGPT & CharacterAI) helped:
 - AI tools like ChatGPT and CharacterAI helped me practice my debate skills by pointing out logical inconsistencies and offering suggestions for improvement.
 - They provided valuable ideas and perspectives I hadn’t thought about, helping me broaden my argument pool.

(Report R59)

- How AI tools (ChatGPT & CharacterAI) helped:
 - Provide informative and compelling explanations with specific examples.
 - It functions as a debate partner, assisting me in learning how to conduct a real debate. Thanks to AI, I feel more confident before our real debates.
 - Correct my grammar mistakes, language use, and suggest what I should do to perform better.

(Report R61)

The “Feedback from ChatGPT/Character AI” section in the AI tool usage reports revealed that AI feedback spanned multiple key areas. In terms of argumentation, AI provided input on structure, organization, coherence, reasoning, counterarguments, and use of evidence and examples. Regarding language quality, feedback addressed grammar, vocabulary precision, fluency, and clarity. In terms of delivery and engagement, the tools also offered suggestions on pronunciation and audience engagement. This range of feedback indicates that AI tools supported not only the logical and linguistic components of debate preparation but also aspects related to expression and delivery.

As illustrated in Table 3, regarding confidence building, 39.3% agreed or strongly agreed that AI tools helped, while 42.7% were neutral, and 18% disagreed, indicating their uncertainty or dissatisfaction with the capability of AI tools. In terms of enhancing responsiveness, 46.7% expressed positive views, while 44.7% remained neutral, suggesting a mixed experience. When evaluating AI’s support in helping them stay focused during debates, 48% agreed while 41.3% gave neutral responses, indicating moderate effectiveness. The most positive responses were related to using AI-generated content to address opposing viewpoints, with 53.3% agreeing or strongly agreeing. Despite these encouraging numbers, the consistently high rates of neutral responses suggest that many students may not fully understand or utilize the capabilities of AI tools in debate contexts, highlighting a need for improved guidance and support.

Table 3

The positive impacts of ChatGPT and Character AI during debate preparation (Questions 7-10)

Items	Questions	1	2	3	4	5	Mean	Std
7	AI tools help boost my confidence during debates.	4%	14%	42.7%	29.3%	10%	3.27	0.96
8	AI tools help improve my responsiveness during debates.	2%	6.7%	44.7%	34.7%	12%	3.48	0.86
9	AI tools help me stay focused on the main points during debates.	2%	8.7%	41.3%	34.7%	13.3%	3.48	0.90
10	AI-generated content improves my ability to address opposing viewpoints with sound reasoning.	1.3%	7.3%	38%	41.3%	12%	3.55	0.85

The findings from students' reports show that 14 reports confirmed feeling more assured with the support of AI tools during preparation process as they helped enhance the way they presented their arguments. Thanks to the detailed information provided, the adjustments made, and mock debates with Character AI, students perceived an increased readiness to participate in official class debates.

Based on the integrated results from the questionnaire, teacher interviews, and students' AI tool usage reports, five key benefits of AI tools in supporting students' debate preparation have been identified. These include (1) diverse ideas and evidence generation for debate topics, (2) logical argument structuring enhancement, (3) enhanced interaction, (4) quality feedback, and (5) improved overall debate performance.

The difficulties of integrating ChatGPT and Character AI in developing argumentation skills through debates for third-year English majors

Table 4

The difficulties of using ChatGPT and Character AI during debate preparation (Questions 1-4)

Items	Questions	1	2	3	4	5	Mean	Std
1	AI-generated content sometimes lacks accuracy or relevance.	1.3%	13.3%	32%	40%	13.3%	3.50	0.93
2	I find it challenging to rely on AI tools for nuanced or complex argumentation.	2.7%	12.7%	40.7%	36.7%	7.3%	3.33	0.89
3	AI tools don't provide diverse ideas during mock debates.	6.7%	18.7%	37.3%	28%	9.3%	3.14	1.04
4	AI tools sometimes misunderstand my ideas during mock debates.	2%	5.3%	32%	38%	22.7%	3.74	0.94

As can be seen in Table 4, 40% agreed and 13.3% strongly agreed that AI responses were sometimes inaccurate or irrelevant. When it comes to handling complex or nuanced arguments, 44% of students acknowledged difficulties, while 40.7% remaining neutral and 15.4% showing disagreement. This suggests a mixed experience with relying on AI for higher-level reasoning.

Regarding the diversity of ideas produced during mock debates, student perceptions were again varied: 37.3% responded neutrally, while only 37.3% expressed satisfaction, and the data showed a high standard deviation (1.04), reflecting inconsistent experiences among students. While some students found the information adequately varied, others might have received repetitive or limited ideas from AI. With a mean score of 3.74, a majority (60.7%) agreed or strongly agreed that AI tools often misinterpret what they are trying to express. The percentage of neutral responses is 32%, while 7.3% opted for disagreeing options.

The findings from teacher interviews indicated that students had difficulty using AI tools effectively due to a limited understanding of AI-generated responses, and this might lead to misunderstandings. T1 explained, *“Students struggled with using AI may be because they didn’t invest enough time and effort into preparation. Even though AI can generate questions and answers, without deep understanding or application of the ideas, they wouldn’t be able to debate effectively.”* Furthermore, Character AI’s misinterpretation of students’ ideas during mock debates was attributed to students’ insufficient language proficiency. This consequently hindered them from expressing themselves clearly. Teacher T3 observed, *“Some students’ language skills were not advanced enough for AI to fully understand them, especially when their pronunciation was not good. Additionally, many students didn’t know how to rephrase or clarify their ideas effectively.”* This means that students’ difficulties regarding their language competence prevented them from effective communication with the tools.

In the AI tool usage reports, students confirmed the challenges they encountered when debating with Character AI, stating that this tool was unable to convey their arguments effectively. Sometimes, the tool even agreed with opposing points or ended debates prematurely. Report R55 noted:

○ Challenges from AI tools (ChatGPT & CharacterAI):

Sometimes, it agrees with our point and wants to end the debate too early. CharacterAI does not seem too clever for debating. I’m not sure, but although I created a bot that is a master debater, sometimes it doesn’t understand what it has to do in a debate, or maybe I’m not clever enough to debate with it.

Students also raised concerns about the clarity, depth, and contextual relevance of AI-generated responses during debate preparation. For example, R23 stated that Character AI did not fully understand the context or the subtle meanings in their arguments. Consequently, their responses became irrelevant or confusing. Similarly, 13 reports showed that Character AI frequently missed context, went off-topic, or misunderstood its role, leading to confusion and ineffectiveness of mock debates. The following are some reflections from R43 and R56.

○ Challenges from AI tools (ChatGPT & CharacterAI):

- One challenge is that these tools might prioritize providing information without fully considering the context of the debate or the specific points being discussed.
- Additionally, the responses generated by these tools may sometimes lack nuanced arguments or fail to address counterarguments effectively.
- This tool only gave a few counterarguments and eventually agreed and reiterated our point of view. This left us unable to make any further arguments.

(Report 43)

- Challenges from AI tools (ChatGPT & CharacterAI):

In our simulated debate with Character AI, the bot sometimes gets off topic and confused about its role in the debate.

(Report R56)

Meanwhile, 31 reports stated that AI often used overly complex or abstract language, making content hard to understand or trust. As a result, students had to rephrase their arguments more clearly and managed to communicate with the tool during the mock debates. Other reports also indicated that Character AI characters occasionally spoke at a fast speed during voice interactions, making it challenging for students to follow and maintain the flow of the mock debates. Regarding ChatGPT, reports revealed that despite relevant evidence being generated, students were skeptical about the reliability of the references provided. Therefore, they had to refine the information by verifying and adding more trustworthy sources from the Internet.

Table 5

The difficulties of using ChatGPT and Character AI during debate preparation (Questions 5-8)

Items	Questions	1	2	3	4	5	Mean	Std
5	I struggle to apply AI-generated suggestions to mock debates.	2.7%	14%	47.3%	30%	6%	3.22	0.86
6	Relying too much on AI tools limits my independent thinking.	1.3%	11.3%	23.3%	44.7%	19.3%	3.69	0.95
7	Relying on AI tools makes it harder for me to think critically about my arguments.	4.7%	14.7%	35.3%	34%	11.3%	3.32	1.01
8	I face technical difficulties when using AI tools.	7.3%	28.7%	28.7%	28%	7.3%	2.99	1.08

As shown in Table 5, a major issue is the difficulty in applying AI-generated suggestions, with nearly half of the respondents (47.3%) choosing a neutral response, indicating uncertainty or a lack of confidence in integrating AI input into their arguments. Another concern is the risk of over-reliance on AI, with 64% of students (mean score = 3.69) agreeing or strongly agreeing that this could hinder their independent thinking. Similarly, 45.3% felt that relying on AI makes it harder to think critically, though 35.3% remained neutral. This shows mixed perceptions of AI's impact on cognitive development. On the technical front, the challenge seems less prominent overall, with the average response (mean score = 2.99) leaning slightly below neutral (28.7%). However, the wide range of responses (as evidenced by a high standard deviation of 1.08) indicates that some students still face technical barriers that may affect their interaction with AI tools.

The findings from teachers' interviews show that how AI helps foster critical thinking and creativity depends on the way students process its responses. Teacher T1 noted, *"When I give AI a prompt, the answers are often very creative and show good thinking. I believe AI only provides information, but it's really up to students to decide how they use it to develop further. The issue is how students process the information."* However, teacher T3 was concerned about students' over-dependence on these tools, *"AI offers different viewpoints, but students need to be critical when using it. If they don't know about AI's 'hallucination' issue, they may trust incorrect information without checking."* She also noted that easy access to AI-provided

information can prevent students from engaging in deep thinking or critical analysis of the debate topics.

In summary, the findings from the questionnaire, teacher interviews, and AI tool usage reports, reveal three key challenges of applying AI tools in preparing for debates. These include difficulties in (1) interpreting students' ideas, (2) providing high-quality and relevant responses, and (3) developing students' independent and critical thinking.

Discussion

The positive impacts of ChatGPT and Character AI on developing argumentation skills through debates

The findings showed that ChatGPT supported students in brainstorming ideas and selecting relevant evidence. Students also confirmed its positive effects on the way they structured their arguments and predicted counterarguments. These findings align with previous studies, which have found AI's significant contribution to organizing, elaborating arguments, and improving students' argumentative abilities (Darmawansah et al., 2024; Guo et al., 2023; Susanto et al., 2023).

Another advantage found in this study is increased interaction with AI tools. During preparation, students used ChatGPT to ask questions, generate ideas, refine arguments, and Character AI to conduct mock debates. This created opportunities for students to practice their speaking skills and enhance their real-time responsiveness. This finding is consistent with the findings by Alshumaimeri and Alshememry (2023) and Kuswiyanti et al. (2023), in that AI offers an interactive environment for students' practice without making them feel anxious or under pressure of judgment. However, a considerable proportion of neutrality in this study suggests that students may simply retrieve ideas rather than attempt to adjust prompts, modify their responses, and engage in deeper discussion. These findings suggest that the interactive benefits of AI depend largely on how actively and flexibly students utilize the tools.

In terms of AI feedback, while some students felt it lacked depth and personalization, many others confirmed that it helped them identify weaknesses in their performances. These findings are partly in line with Kasneci et al. (2023) and Üstünbaş (2024), who indicated that giving feedback on students' practice is one typical advantage of ChatGPT. However, in this study, most students opted for Character AI for feedback on their performance after completing mock debates with this tool. Therefore, the reason why some students were not satisfied with Character AI's feedback is likely due to their inefficient interaction with the tool or the inappropriate nature of their queries for feedback. This means that despite AI's feedback being reported on a wide range of elements, such as grammar, structure, evidence, clarity, reasoning, and persuasiveness, the quality depends on how effectively students engage with the tools and how the feedback is prompted.

The findings additionally showed that AI tools contributed positively to students' overall debate performance, particularly in enhancing their confidence, responsiveness, and ability to address opposing viewpoints. Many students reported feeling better prepared and confident after engaging with ChatGPT and Character AI during their preparation process. This is because the tools provided multiple ideas, suggested relevant counterarguments, and supported language refinement. These benefits likely helped reduce their anxiety, promote their confidence, and increase their readiness for real-time debates, which was previously reinforced by Kuswiyanti et al. (2023) and Wang et al. (2024). However, the neutral responses indicate that not all students

utilized these tools effectively, emphasizing a need for better guidance.

The difficulties of integrating ChatGPT and Character AI in developing argumentation skills through debates

The findings indicated that Character AI demonstrated limitations in interpreting student arguments. This resulted in irrelevant or confusing responses and disrupted the flow of their mock debates. Students reported that Character AI occasionally agreed with their points or was unable to provide rebuttals. These issues likely stem from AI's difficulty in maintaining consistency across long conversations, as noted by Gill and Kaur (2023). Additionally, this misinterpretation could be attributed to students' limited language proficiency and interaction skills. Vague or unstructured arguments, unclear articulation of ideas, inaccurate pronunciation or grammar could hinder effective communication with AI. This aligns with Nguyen and Pham (2024), who indicated that AI chatbots have difficulty deciphering the meanings due to errors in language use. In addition, students reported that Character AI's fast speed and complex language made it difficult for them to follow and respond during mock debates. This problem was reinforced by teachers who observed that weak language skills and poor preparation habits reduced students' ability to utilize AI tools effectively. They also found AI-generated responses lack depth or connection with their arguments. This reflects AI's struggle to match human reasoning and aligns with studies by Ray (2023) and Zong (2024). Moreover, a large number of students reported that AI-generated content is sometimes inaccurate or irrelevant, which a teacher mentioned as a 'hallucination' issue in the interview. This aligns with Gill and Kaur (2023) and Ray (2023), who confirmed that AI sometimes provides inaccurate or misleading information due to limitations in training algorithms. These findings suggest that students need to improve their language use and learn to provide more effective prompts when practicing debates with AI.

The study also revealed a challenge regarding critical and independent thinking. While students agreed on AI's negative impact on their independent thinking, teachers emphasized that students should be active and critical about AI-generated information. This aligns with the findings of Sok and Heng (2023) and Son et al. (2023), which suggest that AI hinders the development of critical skills essential for learning. In contrast, Susanto et al. (2023) found that AI tools developed analytical and problem-solving skills in debates. Guo and Lee (2023) also highlighted their role in encouraging questioning and presenting diverse perspectives. These differences are likely caused by students' autonomy, digital literacy, teacher guidance, and the purpose for which AI is used. When used without proper guidance, AI can foster dependency; however, for proactive learners, it can become a supportive tool for enhancing their critical and independent thinking.

Conclusion

Summary of the findings

This study investigates the impact of AI tools on the development of argumentation skills through debates among third-year English majors in an EFL speaking course at a public university. By employing a mixed-methods approach, the research combines quantitative data from a survey of 150 students with qualitative insights from semi-structured interviews with three subject teachers and 63 reports on the usage of AI tools. The findings reveal that ChatGPT and Character AI positively support students' debate preparation by generating ideas and evidence for debate topics, improving logical argument structuring, enhancing interaction, providing quality feedback, and enhancing overall debate performance. However, the use of

these tools still posed challenges in interpreting students' ideas, providing high-quality and relevant responses, and developing students' independent and critical thinking.

Contributions to the field

To the best of the authors' knowledge, this is the first study to examine the impact of AI tools on oral argumentation skills by employing a dual-tool approach (ChatGPT and Character AI) in the context of EFL debate preparation in Vietnam. The study also reveals new empirical evidence on paradoxical effects of current GenAI in real-time communicative activities.

Pedagogical implications

The findings of the study suggest practical implications for schools, teachers, and students seeking to integrate AI tools more effectively into debate preparation to develop argumentation skills. It is recommended that schools organize training workshops to equip students with the skills to use AI effectively in learning. For teachers, it is essential to provide students with specific guidance on using chatbots to develop and refine their arguments, as well as critically evaluate AI-generated content. Additionally, they can consider making some adjustments regarding the preparation process. In particular, instead of letting students use AI for idea brainstorming, they should be required to do the brainstorming themselves, working in pairs or groups to draft and exchange their ideas before using AI for improvement or elaboration. This will encourage students to develop their independent and critical thinking. Moreover, teachers should consider integrating debate preparation into the assessment of students' in-class debate performance as it is one stage of the whole process. Therefore, part of the debate grade should be allocated to research and planning. This shows a balanced approach that values both preparation and spontaneous speaking. For students, AI tools should be used with critical engagement rather than over-reliance. Therefore, students should think independently and critically evaluate the content and structure of arguments to ensure the authenticity of their arguments. It's essential to adopt a step-by-step approach to preparing for in-class debates to develop coherent arguments and enhance critical thinking, beginning with research, prompting AI, verifying responses, and organizing final arguments and anticipated counterarguments. Moreover, students are recommended to using a combination of AI tools for different stages of idea generation, language refinement, and debate simulation for a more comprehensive preparation. Ultimately, students should be proactive in developing their language skills and AI literacy to enhance their learning experiences and academic progress.

Limitations and suggestions for future studies

Several limitations must be acknowledged in this study. First, although data were collected from three instruments, including a survey questionnaire, semi-structured interviews, and AI tool usage reports, the research did not utilize quantitative measures, such as pre-tests and post-tests, to examine improvements in students' argumentation skills. Second, while students conducted mock debates as rehearsal before in-class debates, the study did not analyze video recordings of these performances, which could have offered deeper insights into students' language use, logical structure, delivery, and interaction with the tools. Finally, this study is limited to ChatGPT and Character AI, while more advanced tools may be applicable in this speaking course to further develop students' argumentation skills.

Future research is encouraged to incorporate pre-tests and post-tests to quantitatively assess the effectiveness of AI tools in developing students' argumentation skills. Additionally, video-recorded mock debates could be analyzed to provide richer, qualitative insights into students' argumentative abilities. Finally, further studies should consider exploring a wider range of AI tools beyond ChatGPT and Character AI to examine whether more specialized technologies can

offer greater support in developing argumentation skills in EFL speaking courses.

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