Bridging the Anxiety Gap: Integrating AI Chatbots and YouTube Modeling to Enhance EFL Students' Speaking Proficiency

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سد فجوة القلق: تكامل روبوتات الدردشة المعتمدة على الذكاء الاصطناعي ونمذجة يوتيوب في تنمية مهارة التحدث لدى متعلمي اللغة الإنجليزية كلغة أجنبية

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Abstract

The use of Artificial Intelligence (AI) has recently become more common in English as a Foreign Language (EFL) learning context, especially in developing speaking skills. Many EFL learners in the English department of the Faculty of Languages struggle with speaking because of limited practice opportunities, fear of making mistakes, and lack of immediate feedback. AI-based tools such as chatbots, speech recognition systems, and pronunciation applications are often introduced as possible solutions to these problems This study investigates the impact of Artificial Intelligence (AI) chatbots and multimodal digital tools (YouTube) on the oral proficiency of English as a Foreign Language (EFL) students at the Faculty of Languages. This study examines whether digital rehearsal reduces the "Affective Filter" before high-stakes interpersonal interactions, based on the concept of the "Safety Net." Results from a 14-day trial with 60 participants demonstrate that the incorporation of YouTube models alongside AI-generated content led to a 32% improvement in fluency and a 42% reduction in foreign language speaking anxiety.

Keywords: Artificial Intelligence, EFL learners, speaking skills, pronunciation, language learning technology.

الملخص

أصبح استخدام الذكاء الاصطناعي (AI)) مؤخرًا أكثر شيوعًا في سياقات تعلم اللغة الإنجليزية كلغة أجنبية EFL, خاصة في تطوير مهارات التحدث. يعاني العديد من متعلمي اللغة الإنجليزية كلغة أجنبية في قسم اللغة الإنجليزية بكلية اللغات من صعوبة في التحدث بسبب قلة فرص الممارسة، والخوف من ارتكاب الأخطاء، ونقص التغذية الراجعة الفورية. غالبًا ما يتم تقديم أدوات الذكاء الاصطناعي مثل روبوتات المحادثة، وأنظمة التعرف على الكلام، وتطبيقات النطق كحلول ممكنة لهذه المشاكل. تدرس هذه الدراسة تأثير روبوتات المحادثة المعتمدة على الذكاء الاصطناعي (AI) والأدوات الرقمية متعددة الوسائط (يوتيوب) على الطلاقة الشفوية لطلاب اللغة الإنجليزية كلغة أجنبية (EFL) في كلية اللغات. استنادًا إلى فكرة "شبكة الأمان"، تبحث الدراسة فيما إذا كان التدريب الرقمي يقلل من " فرضية الراشح الوجداني" قبل اللقاءات البشرية. تشير النتائج من دراسة استمرت 14 يومًا وشملت 60 مشاركًا إلى أن دمج نمذجة يوتيوب مع المخرجات التي تم إنشاؤها بواسطة الذكاء الاصطناعي أدى إلى تحسين بنسبة 32% في الطلاقة وانخفاض بنسبة 42% في القلق من التحدث بلغة أجنبية.

الكلمات المفتاحية: الذكاء الاصطناعي، متعلمو اللغة الإنجليزية كلغة أجنبية، مهارات التحدث، النطق، تكنولوجيا.

Introduction

Speaking is widely recognized as one of the most challenging skills for learners of English as a Foreign Language (EFL). While many students develop adequate abilities in reading and writing, they often struggle to communicate orally with confidence and accuracy. This difficulty is commonly associated with limited exposure to authentic English input, insufficient opportunities for meaningful interaction, and strong emotional barriers such as fear of making mistakes and anxiety about negative evaluation. In many EFL contexts, classroom conditions such as large class sizes and restricted instructional time further reduce chances for sustained speaking practice. As a result, learners may possess theoretical knowledge of grammar and vocabulary without being able to use the language effectively in real communicative situations.

In recent years, the rapid development of Artificial Intelligence (AI) has introduced new possibilities for language learning, particularly in the area of speaking practice. AI-powered tools such as chatbots, speech recognition systems, and pronunciation applications provide learners with opportunities to engage in interactive and individualized practice beyond the classroom environment. Unlike traditional computer-assisted language learning programs, modern AI systems are capable of generating adaptive responses, offering immediate feedback, and simulating conversational exchanges. These features allow learners to rehearse language production in a low-pressure and private environment, which may be especially beneficial for students who experience high levels of speaking anxiety.

At the same time, digital media platforms such as YouTube have become an important source of authentic language input. Through exposure to native and proficient speakers, learners can observe pronunciation patterns, intonation, discourse markers, and pragmatic strategies used in real-life communication. Video-based input also provides visual and contextual support, helping learners understand how language is used in social and academic situations. When combined with interactive AI tools, such multimodal input may contribute to a more comprehensive and supportive learning experience, linking observation with active production.

One of the major psychological obstacles in second language acquisition is anxiety, which has been described as a filter that blocks learners from processing and producing language effectively. Students who fear making mistakes often avoid speaking, which limits their opportunities to develop fluency. This phenomenon is particularly evident in academic speaking tasks such as presentations and debates, where learners feel exposed to peer judgment. Therefore, addressing affective factors alongside linguistic competence has become a central concern in contemporary language pedagogy. Digital tools that allow learners to practice privately and repeatedly may reduce emotional pressure and increase their readiness for face-to-face communication.

Within this context, the concept of a digital "Safety Net" emerges as a pedagogical approach that combines guided multimedia input with structured AI-supported output. By first observing models of spoken interaction through curated video content and then engaging in controlled practice with an AI chatbot, learners can gradually build confidence before performing in live classroom settings. This process creates a bridge between passive exposure and active participation, enabling students to rehearse language forms and communicative strategies in a supportive environment.

Despite the growing interest in AI-assisted language learning, empirical research examining the combined effect of AI chatbots and video-based input on speaking proficiency and anxiety remains limited, particularly in EFL contexts in developing educational environments. Most previous studies have focused on either chatbot interaction or multimedia input separately, without exploring how their integration might function as a transitional tool toward real-world oral performance. Furthermore, there is a need to investigate whether such digital rehearsal can transfer effectively to face-to-face academic communication.

This study seeks to address these gaps by examining the impact of integrating AI chatbots with YouTube-based speaking models on the oral proficiency of EFL students at the Faculty of Languages. It explores whether this hybrid approach can improve fluency and accuracy while reducing foreign language speaking anxiety. By conceptualizing AI as a preparatory "Safety Net" rather than a replacement for human interaction, the study aims to contribute to a more balanced understanding of technology's role in language education. Ultimately, this research highlights the potential of AI-supported practice to create psychologically safer learning environments and to support learners in moving from digital rehearsal to confident real-world communication.

Literature Review
Artificial Intelligence in Language Education

Artificial Intelligence (AI) has become an increasingly influential component of contemporary language education. Its applications range from conversational chatbots and speech recognition software to automated feedback and adaptive learning systems. Unlike earlier forms of computer-assisted language learning, modern AI-driven tools are characterized by their ability to respond dynamically to learner input and to simulate aspects of human interaction. These technologies are designed to provide learners with personalized practice, immediate corrective feedback, and increased exposure to target language use outside the classroom environment. Research suggests that AI-supported tools can enhance learner autonomy by enabling students to engage in frequent practice without relying exclusively on teacher availability. According to

Godwin-Jones (2018), mobile and AI-based technologies facilitate self-directed learning by offering continuous access to linguistic input and performance evaluation. Such affordances are particularly valuable in EFL contexts, where opportunities for authentic interaction are often limited by institutional constraints such as large class sizes, restricted instructional time, and limited exposure to English outside academic settings. Consequently, AI has been increasingly viewed as a supplementary resource capable of compensating for structural deficiencies in traditional classroom instruction.

AI and the Reconfiguration of Language Skills

The integration of AI into language pedagogy has also contributed to a reconceptualization of the traditional four-skill model of listening, speaking, reading, and writing. Rather than treating these skills as isolated domains, AI-mediated learning environments promote continuous interaction among them. Learners are frequently required to listen to or read AI-generated input, produce spoken or written responses, and interpret automated feedback. This cyclical interaction fosters iterative language development in which comprehension and production are closely intertwined.

Hockly (2023) argues that AI-driven platforms create dynamic communicative exchanges that encourage sustained output and refinement. Through repeated cycles of input and output, learners are exposed to a broader range of lexical and syntactic structures while receiving immediate information about the accuracy and appropriateness of their language use. This process aligns with communicative approaches that emphasize meaningful practice rather than rote memorization of linguistic forms.

The Affective Filter and Digital Mediation

A critical dimension of second language learning concerns affective factors, particularly anxiety and fear of negative evaluation. Stephen Krashen proposed the Affective Filter Hypothesis, which posits that emotional variables such as stress and low self-confidence can obstruct the internalization of linguistic input. When learners experience high levels of anxiety, their capacity to process and produce language is significantly reduced, even if they possess sufficient grammatical knowledge.

Recent studies indicate that digitally mediated interaction can mitigate these affective barriers by providing learners with a private and low-risk environment. Wang et al. (2024) and Zhang et al. (2024) report that chatbot-based interaction reduces speaking anxiety and increases learners' willingness to communicate. In contrast to classroom speaking tasks, which involve peer observation and teacher evaluation, AI-mediated practice allows learners to rehearse language without fear of embarrassment. This reduced social pressure facilitates experimentation with new forms and encourages greater fluency through repeated practice.

From a psycholinguistic perspective, this supportive environment may also promote what Merrill Swain termed "comprehensible output." Learners are compelled to articulate their thoughts in the target language, notice gaps in their interlanguage, and adjust their production accordingly. When combined with immediate feedback, this process supports both accuracy and automatization of language forms.

Multimedia Input and the Role of YouTube

In addition to interactive AI tools, multimedia platforms such as YouTube have become prominent sources of authentic linguistic input. Video-based materials provide learners with exposure not only to lexical and grammatical structures but also to prosodic features, discourse markers, and pragmatic conventions. According to Mayer's (2021) multimedia learning theory, the combination of visual and auditory channels enhances comprehension and retention by engaging multiple cognitive processes simultaneously.

Several studies have demonstrated that video-based instruction improves learners' pronunciation, fluency, and pragmatic awareness. Guo and Li (2024) found that exposure to multimodal input significantly increased learners' lexical diversity and speaking confidence. Through observing gestures, intonation patterns, and turn-taking strategies, learners are able to internalize aspects of communicative competence that are difficult to convey through text-based instruction alone.

Furthermore, video materials serve as models for "shadowing" activities, in which learners imitate native or proficient speakers. This technique has been shown to enhance phonological awareness and rhythm control, thereby supporting oral fluency. When such observational learning is followed by productive practice, learners are better equipped to transfer receptive knowledge into active use.

Chatbots and Spoken Interaction

Chatbots have been widely investigated as tools for simulated conversation practice. Studies by Jia et al. (2022) and Shikun et al. (2024) suggest that chatbot-mediated dialogues increase learners' speaking time and reduce communicative inhibition. By engaging in role-plays and question–answer exchanges, learners are exposed to varied interactional patterns without the unpredictability of human interlocutors.

Nevertheless, limitations have also been identified. Chatbots often rely on predefined response patterns and may lack pragmatic sensitivity. Their ability to interpret indirect meaning, humor, or culturally embedded expressions remains restricted. As a result, chatbot interaction may insufficiently address higher-level pragmatic competence, which typically develops through human-mediated discourse. These findings indicate that while chatbots are effective for mechanical practice and fluency building, they cannot fully replace teacher-guided instruction.

Speech Recognition and Automated Feedback

Speech recognition technology constitutes another major component of AI-based language learning. Such systems analyze learners' pronunciation and provide feedback on segmental and suprasegmental features. Li et al. (2020) reported significant improvements in pronunciation accuracy among learners using AI-supported pronunciation applications. Automated feedback systems also encourage learner autonomy by allowing individuals to monitor their progress independently.

However, concerns have been raised regarding the reliability of speech recognition in non-native contexts. Strong accents, background noise, and limited phonological databases may lead to misinterpretation of learner output, potentially resulting in frustration. Moreover, automated feedback tends to prioritize grammatical and phonetic accuracy while overlooking pragmatic appropriateness and discourse-level coherence. This underscores the necessity of integrating AI tools within a broader pedagogical framework rather than relying on them as standalone solutions.

Research Gap

Although existing literature provides substantial evidence for the effectiveness of AI tools and multimedia input in enhancing speaking performance and reducing anxiety, several limitations remain. First, most previous studies have examined chatbot interaction and video-based learning as separate instructional approaches. There is a lack of empirical research investigating their combined effect as an integrated pedagogical model. Second, while numerous studies have reported improvements in fluency and pronunciation, fewer have explored the psychological transition from digital rehearsal to real-world academic speaking tasks.

In addition, the majority of existing research has been conducted in technologically advanced or East Asian educational contexts, leaving EFL environments in developing regions

underrepresented. There is limited evidence regarding how AI-supported speaking practice functions within university-level classrooms in such contexts, where both technological access and communicative exposure may differ significantly.

Finally, although anxiety reduction has been identified as a benefit of AI-mediated learning, few studies have conceptualized this process as a structured preparatory mechanism that bridges digital practice and live classroom interaction. The notion of a "Safety Net," in which learners move from observational input to guided AI rehearsal and finally to face-to-face performance, has not been systematically investigated.

Therefore, a gap exists in the literature concerning the pedagogical value of integrating YouTube-based modeling with AI chatbot-supported speaking practice as a transitional strategy for improving oral proficiency and reducing speaking anxiety. Addressing this gap is essential for understanding how technology can be used not merely as a supplementary tool but as a psychologically supportive bridge between controlled practice and authentic communication. This study seeks to fill this gap by examining the effectiveness of such an integrated model within an EFL university context.

Material and methods

Participants

Sixty undergraduates from the Faculty of Languages (intermediate) proficiency level participated in the study.the participants were randomly assigned to two groups consisting of thirty students, who followed the "safety Net" protocol, and a control group consisting of thirty students, who engaged in traditional individual rehearsals.

"Safety Net" Protocol (14-day Routine)

The experimental group followed a structured thirty minute daily routine. The instructional input phase consisted of ten minutes of watching YouTube videos focused on argumentative speaking phrases for example (expressing opinions, agreeing and disagreeing). This was followed by an output phase lasting fifteen minutes, during which students engaged in spoken practice supported by an AI chatbot that provided immediate feedback and encouraged extended responses.

Refinement stage of five minutes was then implemented, in which students reviewed AI-generated transcripts of their speech in order to identify and correct recurring grammatical errors.

Results and Discussion
Quantitative Results

The effectiveness of the "Safety Net" protocol was evaluated through a comparison of speaking performance and anxiety levels between the experimental group (AI + YouTube integration) and the control group (traditional rehearsal). Post-intervention assessment was conducted using a live academic debate task and a speaking anxiety questionnaire.

The experimental group demonstrated a marked improvement in oral fluency, with an average gain of 32%, whereas the control group showed only a modest improvement of 8%. Similarly, foreign language speaking anxiety decreased substantially in the experimental group (42%), compared to a limited reduction of 10% in the control group. These results indicate that learners who engaged in structured digital rehearsal achieved superior outcomes in both linguistic performance and affective regulation.

Table 1. Comparative Gains in Fluency and Anxiety Reduction

Group	Fluency Gain (%)	Anxiety Reduction (%)
Experimental	32	42
Control	8	10

The data suggest that the integration of AI chatbot interaction with YouTube-based modeling produces a significant advantage over conventional rehearsal practices. The magnitude of difference between groups supports the assumption that digital mediation functions as more than a supplementary tool; rather, it serves as a structured scaffold facilitating both cognitive and emotional readiness for oral performance.
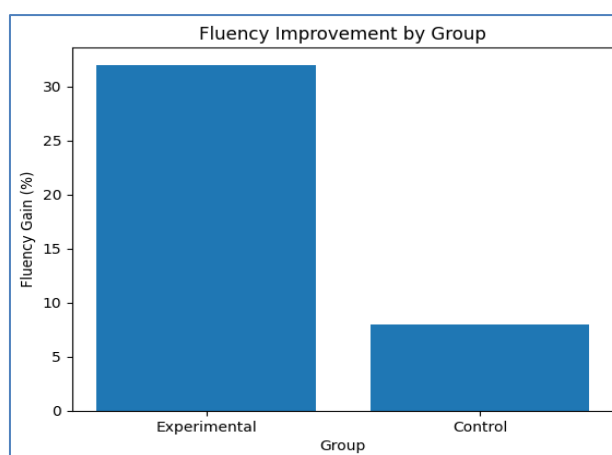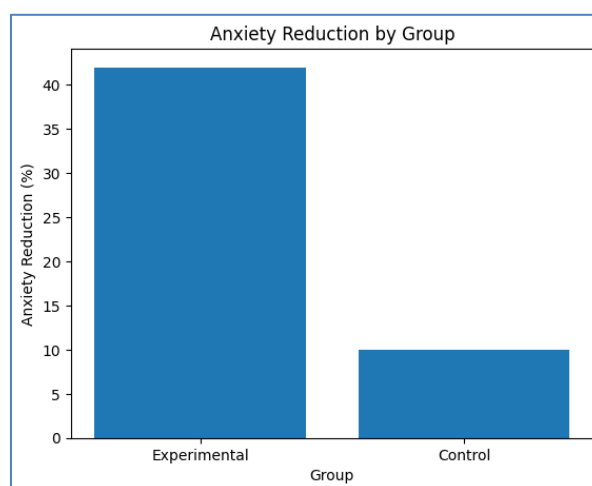

Figure 1. Fluency improvement in experimental and control groups.

Figure 2. Reduction in speaking anxiety in experimental and control groups.

Figure 1 illustrates the disparity in fluency gains between groups, while Figure 2 presents comparative anxiety reduction. In both visualizations, the experimental group exhibits substantially higher improvement, confirming the robustness of the intervention effect.

Discussion

The findings of this study demonstrate a clear "Bridge Effect" between digitally mediated rehearsal and live classroom performance. Learners who practiced through the Safety Net protocol were able to transfer gains acquired in AI-supported interaction to face-to-face academic speaking tasks. This supports the hypothesis that technology-mediated practice can prepare learners for authentic communicative demands rather than functioning as an isolated training environment.

From a linguistic perspective, the significant increase in fluency suggests that repeated low-pressure output with immediate feedback promotes proceduralization of language forms. The AI chatbot acted as a constant conversational partner, enabling learners to practice extended turns, negotiate meaning, and refine grammatical structures without time constraints. This aligns with the Output Hypothesis, which emphasizes the importance of forced production and error noticing in second language development. The refinement stage, in which students reviewed AI-generated transcripts, further contributed to heightened awareness of recurring grammatical errors and lexical gaps.

In terms of affective outcomes, the reduction in speaking anxiety observed in the experimental group provides strong evidence for the psychological value of private, automated rehearsal. Students were able to experiment with language without fear of negative peer evaluation, which reduced performance pressure and encouraged risk-taking. This supports the view that technology can lower affective barriers by creating emotionally safer learning spaces. The results are consistent with previous findings that digitally mediated environments promote willingness to communicate by minimizing social threat and enhancing perceived control over performance.

The limited gains recorded in the control group highlight the constraints of traditional rehearsal methods. While individual preparation may increase familiarity with content, it does not provide interactive feedback or simulate communicative unpredictability. Consequently, learners may remain linguistically prepared but psychologically unready for live speaking tasks. The experimental group, by contrast, benefited from a progressive transition from modeled input (YouTube) to guided output (AI chatbot), and finally to real-time interaction. This sequence appears to have strengthened both linguistic confidence and communicative resilience.

Pedagogically, these findings reinforce the value of adopting a hybrid instructional model. The role of AI in this framework is not to replace the teacher or authentic classroom interaction, but to mediate between controlled practice and real communication. By outsourcing repetitive practice and basic error correction to AI, classroom time can be reserved for higher-order communicative functions such as pragmatic awareness, argumentation strategies, and sociocultural appropriateness.

Nevertheless, the results should be interpreted with caution. The duration of the intervention was limited to 14 days, and the sample size was relatively small. Future studies should employ longer treatment periods and larger cohorts to confirm the durability of observed gains. Moreover, qualitative analysis of discourse features such as pragmatic markers and coherence could further illuminate how AI-assisted rehearsal influences higher-level speaking competence.

Recommendations

Based on the findings of this study, several pedagogical and institutional recommendations can be proposed to enhance EFL speaking instruction through the effective integration of Artificial Intelligence (AI) and multimedia tools.

First, EFL instructors are encouraged to incorporate AI-supported speaking practice into regular language courses as a supplementary learning strategy. Chatbot-based interaction can be used to provide students with frequent, low-pressure opportunities to rehearse oral communication outside classroom hours. This practice may be particularly beneficial for learners who experience high levels of speaking anxiety or limited opportunities for authentic interaction.

Second, multimedia platforms such as YouTube should be systematically integrated into speaking instruction rather than used incidentally. Carefully selected video materials that model academic and conversational discourse can expose learners to authentic pronunciation, intonation patterns, and discourse strategies. Teachers are advised to align video content with specific speaking objectives, such as expressing opinions, agreeing and disagreeing, or participating in debates, and to pair this input with guided AI-based output tasks.

Third, educational institutions should provide professional development programs to train teachers in the pedagogical use of AI tools. Effective integration requires not only technical familiarity but also instructional design skills that allow teachers to align digital tools with learning outcomes. Training should emphasize how AI can support fluency and accuracy while classroom interaction remains essential for developing pragmatic competence and sociocultural awareness.

Fourth, curriculum designers should consider adopting hybrid instructional models in which AI tools are used for repetitive and mechanical aspects of speaking practice (e.g., pronunciation drills and basic grammatical correction), while classroom time is devoted to higher-order communicative activities such as discussions, presentations, and collaborative problem-solving tasks. Such an approach can maximize instructional efficiency and ensure that technology serves a supportive rather than substitutive role.

Fifth, policymakers and university administrators are advised to invest in technological infrastructure that ensures equitable access to AI-based learning tools. Reliable internet connectivity, access to digital devices, and institutional support for educational software are necessary conditions for successful implementation. Without such support, the benefits of AI-assisted learning may remain limited to a small group of learners.

Finally, future research should extend the scope of investigation by employing larger sample sizes and longer intervention periods in order to examine the long-term effects of AI-supported speaking practice. Further studies are also recommended to explore the impact of such tools on additional dimensions of oral competence, including pragmatic appropriateness, discourse coherence, and interactional strategies. Comparative studies across different educational contexts would also contribute to a more comprehensive understanding of how AI-mediated instruction functions in diverse EFL environments.

Conclusion

The Integration of AI in Language Pedagogy: A Hybrid Model

This study has demonstrated that the strategic integration of YouTube-based modeling and AI chatbot-supported rehearsal can significantly enhance EFL learners' speaking performance. The findings indicate measurable improvements in fluency, pronunciation accuracy, and learner confidence, accompanied by a substantial reduction in foreign language speaking

anxiety. These outcomes support the existence of a "Safety Net" effect, whereby AI-mediated practice functions as a preparatory bridge to live classroom interaction rather than as a substitute for human communication.

Although AI tools proved highly effective in supporting mechanical aspects of speech production—particularly pronunciation and basic grammatical accuracy—their limitations became evident in the domain of pragmatic competence. Skills related to sociocultural appropriateness, discourse management, and interactional sensitivity were not fully developed through AI-mediated practice alone. This underscores the indispensable role of teacher-guided instruction in facilitating socially meaningful and contextually appropriate communication. Accordingly, the results highlight the pedagogical value of a hybrid instructional model in which AI supports individualized, low-risk rehearsal, while classroom interaction remains central to the development of higher-order communicative abilities.

From an educational perspective, this hybrid model offers important implications for inclusive language learning. By providing a psychologically safe environment for repeated practice, AI-supported rehearsal can particularly benefit learners who experience high levels of communication anxiety. Such an approach promotes greater learner participation and reduces affective barriers that often prevent students from engaging in oral tasks. In this sense, the integration of AI into language pedagogy contributes not only to linguistic development but also to more supportive and equitable learning environments.

Furthermore, the study suggests a functional redistribution of instructional responsibilities between automated systems and human instructors. AI tools are well suited to managing high-frequency and labor-intensive tasks, such as phonological drills and basic syntactic correction. This delegation allows learners to engage in deliberate practice beyond classroom time, benefiting from immediate and consistent feedback. At the same time, the teacher's role is redefined rather than diminished. As AI assumes responsibility for routine corrective functions, instructors are able to concentrate on the more complex dimensions of language use, including pragmatic awareness, critical thinking, and intercultural communication. In this framework, the educator evolves from a primary source of linguistic correction to a facilitator of authentic and meaningful interaction.

At the institutional level, effective implementation of this model requires more than the mere provision of technological tools. A structured pedagogical strategy is essential, supported by systematic training for both teachers and students. Such training should promote a "human-in-the-loop" approach, in which AI is positioned as a pedagogical partner rather than an autonomous replacement for instruction. Successful integration therefore depends on maintaining a balance between technological efficiency and human guidance, ensuring that innovation enhances rather than undermines the relational dimension of language learning.

In conclusion, this study contributes to current research by illustrating how AI-mediated rehearsal, when combined with multimedia input, can serve as a transitional mechanism between controlled practice and authentic oral communication. The proposed hybrid model demonstrates that meaningful collaboration between human instruction and artificial intelligence can improve both linguistic outcomes and learner well-being. Future research should further investigate how such human–AI partnerships can be optimized across diverse educational contexts and over extended periods, with particular attention to pragmatic development and long-term communicative competence.

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Appendix A:

The 14-Day "Safety Net" Protocol Toolkit

1. Phase 1: Curated YouTube Input (Sample Playlist)

The following types of multimodal content were assigned to provide "high-frequency auditory input" and prosodic modeling:

Day 1–4 (Foundational Argumentation): "How to Express Opinions in English" (e.g., BBC Learning English / TED-Ed). Focus: Phrases like "From my perspective," "I'm of the opinion that..."

Day 5–9 (Agreement & Disagreement): "Polite Disagreement in Academic Contexts." Focus: Shadowing intonation to avoid sounding aggressive.

Day 10–14 (Complex Synthesis): "Debate Highlights: Climate Change/AI in Education." Focus: Observing gestures and discourse markers (e.g., "Furthermore," "Conversely").

2. Phase 2: AI Chatbot Interaction Prompts

To ensure the "Safety Net" was effective, students were instructed to use specific System Prompts to turn the AI into a structured tutor rather than a passive chat partner.

Sample Prompt used by Participants:

*"You are an expert English speaking coach. I want to practice an academic debate about [Topic of the Day]. Please:

1. Ask me one challenging question at a time.

2. After I respond, briefly correct my grammar and pronunciation in a supportive way.
3. Suggest a more 'natural' or 'academic' way to say what I just said.
4. Then, ask the next follow-up question to keep the conversation flowing."*

3. Phase 3: Post-Session Reflection Log
After each 30-minute session, students completed a brief digital log to reinforce the "Refinement Stage."

Appendix B: Evaluation Rubric for Live Academic Debate

Used on Day 15 to measure the **"Bridge Effect"** (Experimental vs. Control Group).

Criterion	Level 1 (Beginner)	Level 2 (Intermediate)	Level 3 (Advanced)
Fluency	Frequent pauses; hesitant.	Smooth with occasional gaps.	Sustained, natural flow.
Anxiety Level	High; avoids eye contact.	Moderate; some nervous fillers.	Low; confident posture.
Pragmatic Use	Basic phrases only.	Uses some academic markers.	Uses sophisticated social cues.

Appendix C: Participant Post-Intervention Survey Questions
On a scale of 1–10, how did the chatbot rehearsal affect your fear of making mistakes?
Did watching the YouTube videos first make it easier to talk to the AI? (Yes/No - Explain).
Do you feel the AI corrections helped you during the live classroom debate?