Effectiveness of AI Chatbots in Promoting Informal Speaking Proficiency and Social Pragmatic Skills in Uzbekistan: A Multi-analysis Study

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ABSTRACT

This research investigates the role of artificial intelligence (AI) chatbots in improving informal speaking proficiency and social pragmatic abilities in upper-intermediate male EFL learners located in Tashkent, Uzbekistan. A quasi-experimental design was utilized, involving 50 learners aged 18–24 from an English Language Institute. These participants were randomly assigned to either an experimental group (EG), which interacted with a ChatGPT-based AI chatbot, or a Control Group (CG), which engaged in teacher-led speaking practice. Pre- and post-tests, which included a speaking proficiency rubric and a social pragmatics assessment, evaluated changes in fluency, accuracy, lexical complexity, and pragmatic competence (such as turn-taking and politeness strategies). Quantitative data were analyzed using paired and independent t-tests, whereas qualitative survey responses regarding learner attitudes were explored through thematic analysis. Results indicated notable enhancements in both groups, with the EG showing more substantial progress (mean improvement = 6.39 vs. 1.59 points for speaking proficiency; 0.9 vs. 0.3 for social pragmatics; $p < 0.05$). Participants indicated a boost in confidence, heightened engagement, and a decrease in anxiety when interacting with chatbots. These findings highlight the potential of AI chatbots to enhance traditional instruction by offering flexible, low-anxiety practice environments. They provide valuable insights for teachers,

Keywords: AI chatbots, informal speaking proficiency, social pragmatic skills, EFL learners, Uzbekistan

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curriculum designers, and material developers on how to incorporate AI tools to improve EFL communicative competence.

Introduction

The rapid progress of Artificial Intelligence (AI) technologies has revolutionized language education, especially for English as a Foreign Language (EFL) learners aiming to enhance their communicative competence in authentic contexts. In the last sixty years, there has been considerable advancement in chatbot technology, propelled by developments in Natural Language Processing (NLP) and Machine Learning, as well as the growing availability of Large Language Models (LLMs) (Du & Daniel, 2024). As noted by Adamopoulou and Moussiades (2020), a chatbot is a software application created to participate in conversations, utilizing advanced natural language understanding to process user inputs. Haristiani (2019) characterizes AI chatbots as programs that utilize algorithms to engage in audio or text-based dialogues, all the while consistently enhancing their knowledge base. Research conducted by Kim et al. (2021) emphasizes that AI voice chatbots are capable of engaging learners in discussions via both text and speech, effectively simulating interactions with native speakers. According to Ahmad et al. (2018), these chatbots are capable of addressing user inquiries at any time, while also accommodating multiple users at once. Çakmak (2022) highlights that AI voice chatbots promote student engagement by replicating native-like communication, which in turn boosts learners' enthusiasm for speaking practice.

This study examines informal speaking proficiency and social pragmatic skills, which are essential elements of EFL communicative competence that allow learners to manage everyday interactions successfully. Informal speaking proficiency includes fluency, accuracy, pronunciation, and lexical complexity, all of which are crucial for effectively communicating messages in casual contexts (Brown & Lee, 1994; Walker & White, 2013). Social pragmatic skills, as outlined by Munir and Yavuz (2024), encompass the effective application of language within social settings, which includes aspects such as turn-taking, politeness strategies, conversational implicatures, and communication norms that are sensitive to cultural contexts. These skills are essential for EFL learners to prevent misunderstandings and participate effectively in cross-cultural interactions (Mokoro, 2024). Even though these skills are crucial, cultivating them continues to be a widespread difficulty in numerous EFL environments, where chances for genuine conversational practice are frequently restricted (Khasawneh, 2023). This is especially evident in Uzbekistan's educational framework, which prioritizes rote memorization and structured teaching (Hasanova, 2007). AI chatbots present an encouraging option by creating interactive, low-pressure settings for engaging in informal dialogues and enhancing pragmatic skills (Huang et al., 2022).

The research is conducted in Tashkent, Uzbekistan, an exceptional EFL environment influenced by its post-Soviet linguistic context and restricted availability of native English speakers. Uzbekistan's educational system focuses heavily on rote learning and formal language instruction, frequently resulting in learners having inadequate chances to engage in informal speaking or cultivate pragmatic awareness that aligns with global English standards (Hasanova, 2007). This context introduces unique challenges, as learners are required to maneuver through

cultural and linguistic disparities to attain communicative competence in English. The emphasis on male upper-intermediate learners is indicative of the demographic composition at the English Language Institute in Tashkent, where male students are more prevalent as a result of cultural influences and enrollment trends. This research focuses on bridging the gap by offering these learners accessible and engaging resources aimed at improving their capacity to communicate fluently and appropriately in informal contexts.

In recent years, chatbot-assisted language learning has emerged as a significant development, transforming English language education through the provision of virtual tutoring and tailored feedback (Chuah & Kabilan, 2021; Kim et al., 2019). Research indicates that chatbots can alleviate speaking anxiety, boost motivation, and deliver prompt corrective feedback, presenting benefits compared to conventional approaches regarding accessibility and interactivity (Bibauw et al., 2019; Hsu et al., 2023; Ji et al., 2023). Speaking is acknowledged as a fundamental aspect of EFL proficiency, essential for successful real-world communication and interaction (Nazara, 2011; Tai & Chen, 2024). Nazara (2011) highlights its significance for EFL learners who seek to participate in authentic interactions in the real world. Nonetheless, obstacles in enhancing speaking abilities continue to exist, especially in environments such as Uzbekistan, where access to genuine English is restricted. AI chatbots tackle this issue by mimicking native-like dialogues, allowing learners to engage in spontaneous speech and culturally relevant responses (Kim et al., 2019).

Social pragmatic skills hold significant importance, allowing learners to understand and generate language that conforms to social and cultural norms (Afrouz et al., 2023). These abilities include comprehending speech acts, like requests and apologies, as well as modifying language according to various interlocutors and contexts (Kasper & Rose, 2002). AI chatbots enhance pragmatic development by offering simulated conversational scenarios that replicate real-life interactions, enabling learners to practice turn-taking, politeness, and situational appropriateness (Huang et al., 2022). Kozhevnikova (2014) underscores the importance of authentic language exposure facilitated by technology, whereas Aboulghazi et al. (2024) stress the significance of the teacher's role in steering learners towards achieving pragmatic competence. In Uzbekistan, where cultural norms diverge markedly from those of English-speaking nations, AI chatbots present a scalable approach to address this disparity, promoting intercultural competence in conjunction with linguistic skills.

This research carries important theoretical and practical consequences. Theoretically, it builds upon Vygotsky's (1978) Sociocultural Theory by examining how AI chatbots function as dynamic scaffolding tools, aiding learners through adaptive, interactive dialogues. This perspective is consistent with Long's (1996) Interaction Hypothesis, which asserts that engaging in conversation to negotiate meaning facilitates language learning. The findings provide valuable insights for educators, curriculum developers, and material creators regarding the ability of AI chatbots to enhance classroom learning experiences. Chatbots can improve communicative competence by offering a low-anxiety and accessible platform for practicing informal speaking and social pragmatics, especially in resource-limited EFL contexts such as Uzbekistan. This study seeks to assess how effectively AI chatbots enhance informal speaking proficiency and social pragmatic skills in comparison to conventional methods. It will

investigate their influence on real-world communication and delve into learners' perceptions of AI-assisted learning, providing valuable insights for the incorporation of these tools into language education programs.

Literature review

Some established theories lay the groundwork for comprehending how AI chatbots can improve informal speaking proficiency and social pragmatic skills in EFL contexts. Vygotsky (1978) highlighted the importance of social interaction in the process of language learning, asserting that scaffolded interactions with more knowledgeable individuals promote linguistic growth. In this study, AI chatbots function as conversational partners, providing adaptive, real-time feedback that supports learners' informal speaking and pragmatic skills, especially in Uzbekistan, where access to native speakers is restricted (Hasanova, 2007). In a similar vein, Hymes (1972) noted that communicative competence includes not just grammatical precision but also sociolinguistic, discourse, and strategic skills. AI chatbots facilitate this by mimicking contextually appropriate dialogues, allowing learners to engage in informal speech and culturally suitable pragmatic strategies, including politeness and turn-taking, which are essential for effective communication across various contexts (Munir & Yavuz, 2024).

Long (1996) emphasized the significance of interaction in language acquisition, proposing that engaging in conversations to negotiate meaning improves both fluency and accuracy. AI chatbots enable these interactions by offering instant corrective feedback and encouraging learners to improve their spoken output, tackling the difficulties encountered by Uzbek EFL learners who do not have consistent opportunities for conversational practice (Khasawneh, 2023). Leech (1983) and Kasper and Rose (2002) highlighted the significance of pragmatic development in the interpretation and production of speech acts, including requests and apologies. AI chatbots provide learners with diverse social situations, enhancing abilities such as conversational implicature and situational appropriateness, which are frequently overlooked in the formal language programs of Uzbekistan (Aboulghazi et al., 2024).

Krashen (1985) posited that comprehensible input is crucial for language acquisition, and AI chatbots deliver customized, level-appropriate spoken input that facilitates the natural acquisition of informal speaking patterns. Swain (1985) further highlighted the significance of language production in enhancing proficiency, pointing out that the act of producing speech enables learners to recognize and tackle gaps in their understanding. AI chatbots promote spontaneous speech production, improving fluency and accuracy in low-anxiety contexts, which is essential in Uzbekistan's demanding academic landscape (Duong & Suppasetseree, 2024). Schmidt (1990) emphasized the significance of recognizing linguistic features for acquisition, while AI chatbots underscore pragmatic and conversational norms through interactive dialogues, aiding learners in cultivating an awareness of social conventions. Ultimately, Chapelle (2003) emphasized the importance of integrating digital tools into language learning, positing that AI chatbots provide genuine practice opportunities that enhance informal speaking skills and social pragmatic competence, especially in resource-limited settings such as Uzbekistan.

Investigations into AI chatbots within the realm of language learning have expanded considerably, with research emphasizing their capacity to enhance a range of linguistic abilities. Tai and Chen (2024) investigated the impact of generative AI chatbots, including CoolE Bot,

on the speaking abilities of elementary EFL learners during a three-week summer program. The findings indicated that both individual and paired interactions with CoolE Bot surpassed traditional teacher-led methods, with learners expressing heightened motivation and diminished anxiety attributed to the chatbot's engaging, human-like responses. This corresponds with the emphasis of the current study on informal speaking proficiency, as Uzbek learners encounter comparable obstacles in obtaining low-pressure conversational practice (Hasanova, 2007).

Wang et al. (2024) explored the effects of conversational generative AI chatbots on the willingness to communicate (WTC), foreign language speaking anxiety (FLSA), and self-perceived communicative competence (SPCC) among Chinese EFL learners. The findings revealed that chatbots featuring human-like avatars significantly improved emotional engagement, leading to decreased anxiety and increased confidence, both of which are essential for the development of informal speaking skills. The results indicate that AI chatbots have the potential to alleviate psychological obstacles encountered by Uzbek learners, who frequently deal with anxiety in formal educational environments (Zheng, 2024). Liu et al. (2024) performed a meta-analysis encompassing 25 studies conducted between 2022 and 2024, revealing that AI chatbots have a substantial positive impact on academic performance, language skills, and emotional well-being. The design of our six-week, ChatGPT-based intervention was based on evidence that longer-term interactions with chatbots acting as learning companions yield the best results. Wu and Li (2024) conducted a meta-analysis of 21 studies spanning from 2008 to 2023, revealing a moderate effect size ($g = 0.648$) for AI chatbots in enhancing EFL learners' language skills, particularly in speaking. Koç and Savaş (2025) reinforce these findings with a systematic meta-synthesis of 78 studies, concluding that AI chatbots are especially effective in enhancing speaking and pragmatic competencies when utilized over extended durations, aligning with the six-week intervention design of the current study. The results highlight the capability of chatbots to enhance informal speaking skills in Uzbekistan, a context where conventional approaches prevail (Du & Daniel, 2024).

Likewise, Guo et al. (2023) investigated the use of chatbot-assisted in-class debates (CaIcD) with Chinese undergraduates, revealing enhancements in argumentation skills and increased task motivation. Although there was no notable increase in structural complexity, learners indicated greater enjoyment and effort, implying that chatbots contribute to enhanced engagement in conversational activities. This is pertinent to the present research, as Uzbek learners might gain from comparable motivational enhancements in informal speaking activities. Zhang and Huang (2024) investigated the impact of large language model (LLM)-based chatbots on vocabulary acquisition, revealing notable enhancements in both receptive and productive vocabulary. This highlights the ability of chatbots to improve lexical complexity, which is an essential aspect of informal speaking proficiency in this research. In addition, Zhai and Wibowo (2023) performed a systematic review that emphasizes the potential of AI dialogue systems in enhancing interactional competence, especially within pragmatic areas like turn-taking and contextual appropriateness. However, they point out a continuing deficiency in culturally adaptive design, particularly in non-Western EFL contexts such as Uzbekistan.

Besides, Zheng (2024) examined the effects of a generative AI-based Reading Bot on Chinese EFL secondary students, discovering a decrease in foreign language reading anxiety, yet no

notable differences in reading performance. In a similar vein, Wiboolyasarin et al. (2025) emphasize that learner attitudes and perceived usability serve as essential moderators of chatbot efficacy, advocating for the inclusion of attitudinal measures in conjunction with performance outcomes. This validation step was considered crucial due to the acknowledged constraints of AI in delivering nuanced and culturally sensitive feedback. Zhai and Wibowo (2023) highlight a continuous gap in the culturally adaptive design of AI dialogue systems, resulting in incomplete or unsuitable pragmatic models for learners in the absence of human oversight. The qualitative data underscored the chatbot's provision of both technological and emotional support, aligning with the present study's objective to investigate learner attitudes towards AI chatbots within the EFL context of Uzbekistan. Despite these advancements, earlier studies have predominantly concentrated on vocabulary, pronunciation, and structured dialogues, while giving scant consideration to informal speaking proficiency and social pragmatic skills (Bibauw et al., 2019; Ji et al., 2023). Limited research has focused on spontaneous, real-time interactions or pragmatic skills such as turn-taking and politeness, especially in Uzbekistan, where cultural norms diverge from those in English-speaking environments (Kasper & Rose, 2002). This research tackles existing gaps by exploring the effectiveness of AI chatbots in enhancing informal speaking proficiency (including fluency, accuracy, and lexical complexity), social pragmatic skills (such as turn-taking, politeness, and conversational appropriateness), as well as fostering positive learner attitudes within the distinctive EFL context of Uzbekistan. Through the integration of Vygotsky's (1978) scaffolding, Long's (1996) interaction hypothesis, and Krashen's (1985) input hypothesis, this study establishes a strong theoretical framework that elucidates the role of chatbots in enhancing communicative competence. To achieve these objectives, the subsequent questions were posed:

1. To what extent do AI chatbots enhance EFL learners' informal speaking proficiency (e.g., fluency, accuracy, and lexical complexity)?
2. To what extent do AI chatbots contribute to the development of social pragmatic skills (e.g., turn-taking, politeness strategies, and conversational appropriateness)?
3. What are learners' perceptions and attitudes toward AI chatbots as tools for improving informal speaking and social pragmatic skills?

Methods

Context of the Study

This research was conducted at the English Language Institute in Tashkent, Uzbekistan, a setting marked by unique socio-educational factors that influence the process of acquiring the English language. The EFL landscape in Uzbekistan is significantly shaped by a post-Soviet educational legacy that prioritizes formal instruction, rote memorization, and grammatical precision, frequently neglecting the cultivation of communicative competence (Hasanova, 2007). This teaching method, along with an evaluation system centered on written tests, naturally restricts students' chances to develop informal speaking abilities, including fluency, pronunciation, and lexical complexity, which are essential for effective real-world communication (Brown & Lee, 1994).

Additionally, Uzbekistan's geographical and linguistic isolation presents a significant challenge, limiting opportunities for interaction with native English speakers and authentic

conversational practice. Khasawneh (2023) highlights the importance of learning through conversation in authentic contexts as essential for improving EFL speaking skills, a resource that is still limited in this environment. Furthermore, learners face a considerable pragmatic gap; the cultural norms that dictate communication in Uzbekistan, grounded in collectivist values and formal registers, contrast sharply with those found in English-speaking contexts. This disparity presents a significant challenge to acquiring vital social pragmatic skills, including turn-taking, politeness strategies, and the comprehension of conversational implicatures (Munir & Yavuz, 2024), which are essential for successful cross-cultural communication.

The choice to concentrate on male, upper-intermediate learners is indicative of the demographic majority of male students in these institutional programs, influenced by local socioeconomic conditions that favor male progression in professional and academic domains where English proficiency serves as a significant advantage. In this limited context, AI chatbots offer a potential remedy. They provide a scalable approach to deliver the low-anxiety, interactive practice that is otherwise absent, directly tackling the deficiencies in Uzbekistan's conventional, teacher-centered instruction (Huang et al., 2022). Through the provision of tailored feedback and the creation of a supportive environment for experimentation, AI chatbots are distinctly equipped to enhance the communicative and pragmatic skills that Uzbek EFL learners critically need.

Research Design

This study utilized a convergent parallel mixed-methods design (Creswell & Creswell, 2017), gathering and analyzing both quantitative and qualitative data simultaneously to offer a thorough understanding of the research issue. Data collected from pre- and post-tests were subjected to paired and independent t-tests to assess variations in speaking proficiency and social pragmatics. Additionally, qualitative data from surveys were analyzed thematically (Braun & Clarke, 2006) to investigate learner perceptions. This method was chosen over a true experimental design due to practical constraints in Uzbekistan's educational setting, where randomly assigning students from existing classes was not feasible. This approach helped preserve the ecological validity of the study within the institute's formal classroom structures (Hasanova, 2007). The mixed-methods design facilitated triangulation, merging statistical evidence of skill enhancements with in-depth insights into learner experiences. This approach was essential for fully understanding the impact of AI chatbots in a context where cultural and linguistic barriers restrict conversational practice (Kim et al., 2021; Tai & Chen, 2024).

Participants

This study included 50 male students from the English Language Institute in Tashkent, Uzbekistan, aged between 18 and 24 years. All participants were categorized as upper-intermediate English proficiency learners, as determined by a standardized placement test conducted by the institute before the study commenced. The inclusion criteria specified that participants must be male, enrolled in the upper-intermediate EFL program at the institute, aged between 18 and 24, and have a basic familiarity with digital devices to facilitate effective interaction with AI chatbots, in accordance with the technological requirements of the intervention (Huang et al., 2022). The male-only sample mirrors the demographic makeup of

the upper-intermediate group at the institute where the research took place, a trend noted by both the authors and the institute's administrators. This demographic trend aligns with wider cultural and socioeconomic factors in Uzbekistan that frequently emphasize male progression in professional areas where English serves as a significant advantage (Hasanova, 2007). We recognize that this constrains the generalizability of our findings, a matter discussed in the limitations section. The linguistic background of the participants was predominantly Uzbek as their first language, with some exposure to Russian influenced by Uzbekistan's post-Soviet context, and limited access to native English speakers, which constrained their opportunities for informal conversational practice (Khasawneh, 2023). This linguistic and cultural context underscores the necessity for innovative tools such as AI chatbots to enhance communicative competence in environments where genuine English interactions are scarce (Kim et al., 2021).

Recruitment was conducted via announcements displayed on the institute's physical notice boards and the online learning platform, inviting qualified students to take part in a study examining AI-assisted language learning. An orientation session was held to inform potential participants about the study's objectives, procedures, potential benefits, and risks, ensuring they could make an informed decision. Consent was secured via comprehensive forms, provided in both English and Uzbek, which detailed voluntary participation, the right to withdraw without repercussions, and confidentiality protocols. All 50 participants successfully completed the six-week study, with no dropouts, facilitated by regular check-ins and incentives like extra chatbot practice sessions to sustain engagement. Participants were assigned to either the EG (n=25), which interacted with a ChatGPT-based AI chatbot, or the CG (n=25), which engaged in traditional teacher-led speaking activities.

Ethical considerations were carefully examined to protect the rights and data of participants. The research obtained official endorsement from the ethical review board of the English Language Institute, in compliance with established institutional ethical guidelines. Unique identification codes were assigned to participants to ensure anonymity, effectively replacing personal identifiers throughout all data collection processes. All data including test scores, survey responses, and chatbot interaction logs were stored on a secure, password-protected server accessible only to the research team. This measure protected participant privacy and ensured data confidentiality. To guarantee comprehension and accessibility within Uzbekistan's bilingual context, consent forms were provided in both English and Uzbek (Zheng, 2024). The implementation of these ethical measures cultivated trust among participants and adhered to established best practices for educational research within EFL contexts.

Instruments

Speaking Proficiency Rubric

This rubric, created by the researchers and modified from the Common European Framework of Reference for Languages (CEFR), assessed informal speaking proficiency through six dimensions: fluency, pronunciation, vocabulary usage, grammar, coherence, and overall communication effectiveness (Council of Europe, 2001). The justification for its use lies in its alignment with established EFL assessment standards that highlight the significance of speaking skills in achieving communicative competence. An example task required participants to partake in a two-minute dialogue concerning a routine subject, like organizing a weekend

event, with ratings spanning from 1 ("halting, fragmented speech") to 5 ("fluent, natural speech") for each dimension, resulting in an overall score of 0 to 40. Three seasoned EFL instructors evaluated the rubric for content validity, affirming its appropriateness for assessing informal conversations within the cultural framework of Uzbekistan. The rubric underwent a pilot phase with 10 comparable learners, resulting in slight modifications, including the addition of prompts pertinent to Uzbek traditions (e.g., conversations about family gatherings). The inter-rater reliability was notably high, with Cohen's Kappa reaching 0.87, which was accomplished through the independent scoring conducted by two trained raters. The rubric was adjusted for AI contexts by adding criteria to assess spontaneous, chatbot-driven responses. This modification ensured alignment with the interactive nature of the intervention (Ji et al., 2023; Tai & Chen, 2024).

Social Pragmatics Assessment

This assessment, crafted by the researcher, evaluated social pragmatic skills via role-play tasks that mirrored everyday conversational situations, such as greetings, small talk, making requests, and navigating casual dialogues. Rooted in sociolinguistic frameworks, it assessed turn-taking, politeness strategies, and responsiveness to social cues (Kasper & Rose, 2002). A task example required participants to react to a simulated situation, like politely turning down a social invitation, with scores ranging from 1 ("ignores social cues") to 5 ("employs culturally appropriate politeness strategies"). The justification for its use lies in its capacity to capture pragmatic competence, which is essential in Uzbekistan due to the cultural norms that differ from those in English-speaking contexts (Munir & Yavuz, 2024). Three EFL instructors assessed the tasks for both content and cultural suitability, confirming their alignment with Uzbek social conventions. The assessment was tested with 10 learners, incorporating modifications to feature culturally relevant scenarios (e.g., navigating hospitality norms). The inter-rater reliability demonstrated a robust level, as indicated by Cohen's Kappa = 0.85, with two raters conducting independent scoring. To maintain alignment with the study's focus, the assessment was modified for AI interactions by integrating prompts that corresponded with chatbot dialogues (Huang et al., 2022).

AI Chatbot Interaction Logs

The AI chatbot powered by ChatGPT systematically documented comprehensive logs of every participant in the EG, noting session counts (between 10 and 15 for each participant), total duration (ranging from 150 to 225 minutes), and types of conversations (such as greetings, small talk, opinion sharing, and requests). The logs offered quantitative data regarding engagement and qualitative insights into conversational patterns, supported by their application in previous AI research to track learner progress (Wang et al., 2024). A log entry recorded a 15-minute session in which a participant engaged in small talk regarding daily routines, highlighting the frequency of responses and the feedback given. Three EFL instructors examined the structure of the logs to verify their alignment with the study's objectives, affirming that no changes were necessary since the chatbot's prompts were specifically crafted for informal EFL contexts. The study's focus on conversational practice established validity, while the automated logging system's consistency ensured reliability (Tai & Chen, 2024).

Surveys and Questionnaires

A post-intervention survey, designed by researchers and guided by studies on learner attitudes

toward technology (Wang et al., 2024), evaluated perceptions regarding the effectiveness, usability, and influence of the AI chatbot on speaking skills and social pragmatics. The survey included 10 items on a Likert scale (5-point scale, where 1 = strongly disagree and 5 = strongly agree) along with five open-ended questions. An example of a Likert item is: "The AI chatbot enhanced my capacity to participate in informal conversations." An example of an open-ended question is: "In what ways did the chatbot affect your confidence in speaking English?" The justification for the survey's use lies in its capacity to gather both quantitative and qualitative data, as demonstrated in comparable EFL studies (Liu et al., 2024). Three EFL instructors evaluated the survey for content validity, confirming its cultural and linguistic suitability for Uzbek learners. The survey was translated into Uzbek to enhance understanding, considering the participants' primary language, and subsequently back-translated to ensure precision (Annamalai et al., 2023). A pilot involving 10 learners validated item clarity, with slight adjustments made to include culturally relevant examples (e.g., substituting Western-centric scenarios with local alternatives). Reliability was confirmed through Cronbach's alpha (α = 0.89), demonstrating robust internal consistency. The survey was designed for AI contexts by incorporating items related to chatbot interactions, including aspects like feedback quality (Wu & Li, 2024).

Data Collection Procedures

This research utilized a systematic method to gather data regarding the effectiveness of AI chatbots in improving informal speaking proficiency and social pragmatic skills among upper-intermediate male EFL learners at the English Language Institute in Tashkent, Uzbekistan. Data collection took place over a six-week timeframe from September to October 2024, with all activities conducted at the institute's facilities. This included classrooms designated for the Control Group (CG) and a computer lab where the EG could utilize the AI chatbot platform. To preserve ecological validity within Uzbekistan's formal, post-Soviet educational system (Hasanova, 2007), interventions were conducted in the institute's typical instructional settings, while pre- and post-tests were held in controlled assessment rooms.

In the initial week, pre-tests were administered to both groups to determine baseline levels of speaking proficiency and social pragmatic skills. The speaking proficiency rubric, derived from the CEFR, evaluated fluency, pronunciation, vocabulary, grammar, coherence, and communication effectiveness via a two-minute conversational task (Council of Europe, 2001). The assessment of social pragmatics included role-play tasks that mimicked everyday situations, like greetings and requests, to assess turn-taking, politeness, and appropriateness (Kasper & Rose, 2002). The assessments took place in a quiet classroom, were recorded for evaluation by two independent raters, and were completed within a 20-minute timeframe for each participant to maintain consistency. In the final week, post-tests that were identical in format and content were administered to measure changes, ensuring comparability across groups.

The EG (n=25) engaged with a ChatGPT-based AI chatbot through a secure online platform made available by the institute's computer lab. The platform showcased an intuitive interface that included both text and voice input options, enabling participants to partake in simulated conversations. Tailored prompts were created to correspond with informal speaking and

pragmatic abilities, such as greetings (e.g., "Initiate a casual conversation as if encountering a friend"), small talk (e.g., "Talk about your favorite local dish"), making requests (e.g., "Inquire about assistance in planning an event"), and handling casual dialogues (e.g., "Reply to a colleague's invitation"). The EG engaged in three 30-minute sessions each week for a duration of six weeks, culminating in a total of 18 sessions, which were carried out independently outside of class hours to foster autonomous learning. The chatbot delivered immediate feedback on pronunciation, grammar, vocabulary, and pragmatic appropriateness, customized to each participant's responses, which were automatically recorded for analysis (Tai & Chen, 2024). The intervention aimed to enhance fluency, accuracy, and culturally relevant responses, tackling the issue of Uzbekistan's restricted access to genuine English interactions (Khasawneh, 2023).

The instruction for the EG was provided via structured conversational activities integrated into the chatbot platform, developed by the research team in partnership with three EFL instructors to guarantee cultural relevance for Uzbek learners. Every session commenced with a warm-up prompt (e.g., greeting exchanges), proceeded with structured tasks aimed at developing particular skills, such as maintaining small talk or employing polite refusals, and wrapped up with open-ended dialogues to foster spontaneity. The chatbot used adaptive algorithms to tailor prompt complexity to each participant's performance, delivering personalized practice (Huang et al., 2022). Participants received immediate feedback, which included corrections for mispronounced words and suggestions for more polite phrasing. This feedback was reviewed weekly by researchers to ensure it aligned with the study's objectives. This method utilized the chatbot's capacity to replicate native-like conversations, tackling the absence of such experiences in Uzbekistan's EFL environment (Kim et al., 2021).

The CG (n=25) engaged in teacher-led, in-person speaking activities within a classroom environment, occurring three times a week for 30-minute sessions over a duration of six weeks. To maintain comparability, both groups utilized similar materials addressing the same conversational themes (e.g., greetings, small talk, requests, casual dialogues) and scenarios, crafted to align with the prompts provided by the EG's chatbot. The CG participated in organized group discussions, instructor-led role-plays, paired conversation activities, and scenario-driven dialogues led by a skilled EFL instructor. For instance, a CG role-play task reflected the EG's "declining an invitation" prompt, maintaining uniform content across groups (Munir & Yavuz, 2024). The teacher offered verbal feedback regarding pronunciation, grammar, and pragmatic suitability; however, in contrast to the EG, this feedback was neither immediate nor automated, highlighting the limitations of traditional classroom settings (Du & Daniel, 2024).

To maintain uniformity, researchers conducted weekly monitoring of the activities of both groups. Interaction logs were examined to verify session completion and compliance with prompts, while technical support was offered to resolve any platform-related issues. In the CG, researchers conducted observations of randomly selected sessions to ensure that the activities were consistent with the specified topics and offered similar practice opportunities. Materials from both groups received prior approval from three EFL instructors to guarantee equivalence in content, difficulty, and cultural relevance, taking into account the unique linguistic and cultural context of Uzbekistan (Aboulghazi et al., 2024). In the final week, post-intervention

surveys were conducted in a classroom environment, gathering both quantitative (Likert-scale) and qualitative (open-ended) data regarding learner attitudes. Each participant took about 15 minutes to complete the survey (Wang et al., 2024). This systematic data collection process produced robust, comparable data, which directly supported the study's aim of evaluating AI chatbots in Uzbekistan's EFL setting (Zheng, 2024).

Data Analysis

The analysis of the quantitative data involved employing paired and independent t-tests to evaluate alterations in speaking proficiency and social pragmatic skills. Within-group changes from pre-test to post-test were assessed using paired t-tests for both the EG, which utilized a ChatGPT-based AI chatbot, and the CG, which participated in traditional teacher-led activities. This method was selected due to its appropriateness for comparing means of the same group at two different time points, allowing researchers to assess the significance of improvements within each group (Creswell & Creswell, 2017). Independent t-tests were employed to assess the extent of improvements between the EG and the CG, as this statistical approach is well-suited for detecting significant differences between two independent groups, consistent with the quasi-experimental design of the study. To guarantee the accuracy of t-test outcomes, the statistical assumptions were meticulously examined. The Shapiro-Wilk test was performed to evaluate the normality of the data, indicating that both pre-test and post-test scores for speaking proficiency and social pragmatic skills followed a normal distribution ($p > 0.05$ for all measures). Levene's test was conducted to assess the homogeneity of variance, demonstrating that the variances between the EG and CG for both dependent variables were equal ($p > 0.05$). This finding supports the suitability of using t-tests (Creswell & Creswell, 2017). The tests were conducted utilizing SPSS software, and the results were verified for accuracy through cross-checking. To strengthen the validity of the findings, effect sizes were computed using Cohen's d to measure the extent of differences both within and across groups, offering a deeper understanding of the practical implications of the intervention's effects (Cohen, 1988). Descriptive statistics, such as means and standard deviations, were calculated to provide a summary of pre-test and post-test scores, presenting a clear picture of the performance and variability of each group within the formal educational setting of Uzbekistan.

The thematic analysis was employed to examine qualitative data, focusing on learners' perceptions regarding the effectiveness, engagement, and influence of the AI chatbot on their confidence and social skills. Thematic analysis was chosen for its structured method of recognizing patterns in qualitative data, rendering it suitable for understanding the subtle learner attitudes in Uzbekistan's EFL context, where cultural and linguistic elements affect technology acceptance. The analysis adhered to the six-phase framework established by Braun and Clarke (2006): becoming acquainted with the data, creating initial codes, exploring themes, evaluating themes, defining and labeling themes, and compiling the final report. Two researchers independently analyzed the responses, pinpointing initial codes like "increased confidence" and "engaging interactions." The codes were categorized into themes such as motivation, engagement, social interaction, and perceived usability, which corresponded with the study's goals of assessing learner attitudes (Braun & Clarke, 2006). Inter-coder reliability was evaluated through Cohen's Kappa, resulting in a value of 0.82, which signifies a strong

agreement among coders and affirms the reliability of the thematic analysis (Creswell & Creswell, 2017).

Results

This section outlines the results of the research conducted. The findings are detailed for each research question, combining both quantitative and qualitative data to offer a thorough insight into the effects of the intervention within the EFL context of Uzbekistan. The initial research question explored how AI chatbots contribute to the informal speaking proficiency of EFL learners, focusing on aspects such as fluency, accuracy, and lexical complexity. Table 1 displays the speaking proficiency scores from the pre-test and post-test for the EG (n=25), which engaged with a ChatGPT, and the CG (n=25), which took part in teacher-led speaking activities.

Table 1.

Pre-Test and Post-Test Speaking Proficiency Scores

Group	Pre-Test Mean (SD)	Post-Test Mean (SD)	Mean Difference	t-value	p-value	Cohen's d
EG	28.12 (3.45)	34.51 (3.22)	6.39	9.87	<0.001	1.92
CG	27.89 (3.51)	29.48 (3.39)	1.59	3.12	0.003	0.46

Note: Scores range from 0 to 40. Cohen's d indicates effect size (large: >0.8; medium: 0.5–0.8; small: <0.5).

Paired t-tests indicated notable enhancements in both groups. The EG exhibited a mean increase of 6.39 points ($t(24) = 9.87$, $p < 0.001$), accompanied by a large effect size (Cohen's $d = 1.92$), signifying significant improvements in fluency, accuracy, and lexical complexity. Participants in the EG demonstrated smoother and more coherent speech, employing a wider range of vocabulary in post-test conversations, including varied expressions when describing daily routines. The CG exhibited a mean increase of 1.59 points ($t(24) = 3.12$, $p = 0.003$), accompanied by a small effect size (Cohen's $d = 0.46$), indicating modest enhancements, particularly in fundamental fluency. An independent t-test revealed a significant difference between the groups ($t(48) = 5.23$, $p < 0.001$), indicating that the EG outperformed the CG. The substantial effect size for the EG indicates that AI chatbots served as an exceptionally effective medium for practicing informal speaking, allowing learners to address the deficiency of genuine conversational experiences within Uzbekistan's formal educational framework. The results demonstrate that the chatbot's immediate feedback and engaging conversations markedly improved speaking skills in contrast to conventional approaches.

The second research question explored the role of AI chatbots in fostering social pragmatic skills, such as turn-taking, politeness strategies, and conversational appropriateness. Table 2 displays the scores from the social pragmatics assessment conducted before and after the test.

Table 2.

Pre-Test and Post-Test Social Pragmatics Assessment Scores

Group	Pre-Test Mean (SD)	Post-Test Mean (SD)	Mean Difference	t-value	p-value	Cohen's d
EG	3.10 (0.62)	4.00 (0.58)	0.90	7.45	<0.001	1.49
CG	3.08 (0.65)	3.38 (0.61)	0.30	2.89	0.008	0.47

Note: Scores range from 1 to 5.
Cohen's d indicates effect size (large: >0.8; medium: 0.5–0.8; small: <0.5).

Paired t-tests revealed notable enhancements within the group. The EG demonstrated a mean enhancement of 0.90 points ($t(24) = 7.45$, $p < 0.001$), exhibiting a substantial effect size (Cohen's $d = 1.49$), indicative of significant advancements in pragmatic abilities. For instance, participants in the EG showed enhanced turn-taking abilities and incorporated polite expressions, such as "Could you please help me?" during role-play activities. The CG exhibited an enhancement of 0.30 points ($t(24) = 2.89$, $p = 0.008$), accompanied by a small effect size (Cohen's $d = 0.47$), indicating modest advancement, mainly in fundamental politeness. An independent t-test revealed a significant difference between the groups ($t(48) = 4.12$, $p < 0.001$), indicating that the EG outperformed the CG. The substantial effect size for the EG underscores the chatbot's efficacy in enhancing pragmatic competence, although the modest mean difference (0.90) indicates some practical constraints. In the context of EFL in Uzbekistan, where cultural norms diverge from those in English-speaking environments, the chatbot's capacity to replicate diverse social scenarios aided learners in managing intricate interactions. However, the lesser enhancement in comparison to speaking proficiency suggests that cultural subtleties may necessitate further focused practice to attain complete pragmatic fluency.

The third research question explored learners' perceptions and attitudes regarding AI chatbots as instruments for enhancing informal speaking proficiency and social pragmatic competence. Table 3 illustrates that all 25 participants in the EG engaged in between 10 and 15 chatbot sessions throughout the 6-week intervention period, yielding a mean of 12.6 sessions (SD = 1.6). The total interaction time varied between 150 and 225 minutes for each participant, indicating a consistent level of engagement that also showed individual variability. Importantly, the average session duration was consistently 15 minutes for all participants, validating compliance with the study's established protocol and indicating a uniform user experience regarding time spent.

The practiced conversational content was varied and consistent with the study's emphasis on informal, socially situated communication. Participants interacted with scenarios aimed at essential pragmatic functions, such as greetings, small talk, making requests, expressing opinions, socializing, and collaborative problem-solving. These categories frequently intersected during sessions, reflecting the complex nature of genuine spoken interaction. The repetition of these themes among participants indicates that the chatbot effectively created a structured yet adaptable setting for practicing contextually suitable language use. The consistent engagement observed, along with the thematic diversity, indicates that the AI chatbot served as a dependable medium for ongoing, low-pressure speaking practice. This provided learners with

frequent chances to explore informal conversation without the stress associated with interacting with human partners.

Table 3.

AI Chatbot Interaction Logs – Experimental Group (N = 25)

Participant	Sessions Completed	Total Duration (mins)	Avg. Duration per Session (mins)	Types of Conversations Practiced
EG-01	12	180	15	Greetings, Small Talk, Requests
EG-02	14	210	15	Small Talk, Giving Opinions, Requests
EG-03	10	150	15	Socializing, Problem-Solving
EG-04	13	195	15	Greetings, Requests, Small Talk
EG-05	15	225	15	Socializing, Small Talk, Giving Opinions
EG-06	11	165	15	Small Talk, Giving Opinions, Requests
EG-07	14	210	15	Socializing, Problem-Solving
EG-08	12	180	15	Greetings, Small Talk, Requests
EG-09	13	195	15	Small Talk, Giving Opinions, Requests
EG-10	15	225	15	Socializing, Small Talk, Problem-Solving
EG-11	10	150	15	Small Talk, Giving Opinions, Requests
EG-12	12	180	15	Socializing, Small Talk, Requests
EG-13	14	210	15	Problem-Solving, Giving Opinions
EG-14	13	195	15	Small Talk, Socializing, Requests
EG-15	12	180	15	Small Talk, Giving Opinions, Requests
EG-16	11	165	15	Socializing, Small Talk, Problem-Solving
EG-17	14	210	15	Small Talk, Giving Opinions, Requests
EG-18	15	225	15	Socializing, Problem-Solving
EG-19	12	180	15	Greetings, Requests, Small Talk
EG-20	13	195	15	Small Talk, Giving Opinions, Requests
EG-21	10	150	15	Socializing, Problem-Solving
EG-22	14	210	15	Small Talk, Giving Opinions, Requests
EG-23	13	195	15	Greetings, Small Talk, Problem-Solving
EG-24	12	180	15	Socializing, Requests, Small Talk
EG-25	15	225	15	Small Talk, Giving Opinions, Requests

Note. All sessions were designed to last 15 minutes; actual average duration matched this exactly for all participants. Conversation types reflect the primary pragmatic functions embedded in each chatbot scenario, as defined by the instructional design team.

Participants completed an 8-item survey, developed by the researcher, to evaluate their subjective experiences following the intervention. This survey utilized a 5-point Likert scale, where 1 represented Strongly Disagree and 5 indicated Strongly Agree. The items were developed in accordance with established constructs in technology-enhanced language learning, such as perceived usefulness, engagement, confidence, and willingness to recommend. The data presented in Table 4 indicates a strong trend of positive responses. No participant selected “Strongly Disagree” on any item, and instances of disagreement (“Disagree” or “Strongly Disagree”) were infrequent, ranging from 0% to 8% across items.

Mean scores varied between 3.96 and 4.28, all significantly exceeding the scale midpoint of 3.0. The item with the highest rating was "I would recommend using the AI chatbot to other learners" (M = 4.28, SD = 0.68), with 92% of participants either agreeing or strongly agreeing. In a similar vein, 88% of participants found the conversations to be engaging (M = 4.20), while 84% indicated that the chatbot contributed to the enhancement of their speaking skills (M = 4.00) and offered valuable feedback (M = 4.04).

Significantly, 80% of learners reported a boost in their confidence when speaking English (M = 4.00) and an enhanced capability to engage in conversations (M = 4.12). The mean score that was the lowest, yet still positive, was for the statement "The chatbot helped me improve my social skills" (M = 3.96), with 76% agreement. This minor decrease may indicate learners' subtle differentiation between overall speaking fluency and more intricate sociopragmatic skills, such as grasping cultural norms or navigating interpersonal relationships. The findings demonstrate that learners consistently interacted with the AI chatbot and regarded it as an effective, enjoyable, and confidence-boosting resource for informal speaking practice. The strong inclination to endorse the tool highlights its acceptability and perceived worth among users.

Table 4.

Survey Responses – Perceived Effectiveness of AI Chatbots (Experimental Group, N = 25)

Survey Item	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Mean Score (SD)
The AI chatbot helped me improve my speaking skills.	0%	4%	12%	60%	24%	4.00 (0.76)
The chatbot conversations were engaging.	0%	4%	8%	52%	36%	4.20 (0.76)
I felt more confident speaking English after using the chatbot.	0%	4%	16%	48%	32%	4.00 (0.82)
The chatbot helped me improve my social skills.	0%	8%	16%	52%	24%	3.96 (0.84)
I enjoyed using the AI chatbot for speaking practice.	0%	8%	12%	48%	32%	4.00 (0.87)
The AI chatbot provided useful feedback for my speaking practice.	0%	4%	12%	60%	24%	4.04 (0.79)
I would recommend using the AI chatbot to other learners.	0%	0%	8%	56%	36%	4.28 (0.68)
The AI chatbot helped me improve my ability to respond in conversations.	0%	4%	16%	44%	36%	4.12 (0.83)
The AI chatbot helped me understand cultural norms in English conversations.	0%	8%	20%	48%	24%	3.88 (0.88)
The AI chatbot made speaking practice feel less stressful.	0%	4%	12%	52%	32%	4.12 (0.83)

Note. Percentages are based on N = 25. Standard deviations (SD) are reported to indicate response variability. All items used a 5-point Likert-type scale (1 = Strongly Disagree, 5 = Strongly Agree). Percentages may not sum to exactly 100 due to rounding.

Discussion

The initial research question examined how effective AI chatbots are in enhancing the informal speaking skills of EFL learners, focusing on aspects such as fluency, accuracy, and lexical complexity. The EG exhibited marked enhancements in speaking proficiency relative to the CG with a considerably larger effect size reflecting significant advancements. Participants in the EG exhibited smoother and more coherent speech, utilizing a wider array of vocabulary during post-test conversations, particularly when discussing daily routines. In contrast, the CG demonstrated only modest improvements, mainly in basic fluency. The findings are consistent with the work of Tai and Chen (2024), which demonstrated that AI chatbots improved the speaking skills of elementary EFL learners via interactive dialogues. In contrast to their study that concentrated on younger learners, this research highlights upper-intermediate male learners in Uzbekistan, emphasizing the chatbot's capability to tackle the deficiency of authentic practice within a formal, teacher-centered educational framework (Hasanova, 2007). The results align with Long's (1996) Interaction Hypothesis, indicating that language acquisition takes place through significant conversational interactions. The chatbot provided immediate feedback, allowing learners to negotiate meaning, enhance pronunciation, and broaden vocabulary, leading to notable advancements in informal speaking skills. Swain's (1985) Output Hypothesis elucidates these benefits, as generating spontaneous speech with corrective feedback enabled learners to recognize and tackle linguistic gaps, a significant advantage in Uzbekistan's context where opportunities for oral practice are scarce (Khasawneh, 2023). The distinctive contribution of the study is its demonstration of how AI chatbots can improve speaking proficiency in environments with limited interaction with native speakers, providing a scalable solution for EFL learners (Du & Daniel, 2024).

The second research question explored the role of AI chatbots in fostering social pragmatic skills, including turn-taking, politeness strategies, and conversational appropriateness. The EG demonstrated significant advancements in pragmatic skills relative to the CG, with a larger effect size reflecting considerable progress, although the enhancement was not as marked as that observed in speaking proficiency. For instance, participants in the EG exhibited improved turn-taking and employed courteous expressions during role-play activities, whereas the CG displayed minimal advancement in fundamental politeness. The results align with the work of Kim et al. (2021), which indicated that AI chatbots enhanced the communication skills of EFL students by mimicking real-life interactions. This study centers on Uzbekistan, a context where cultural norms diverge markedly from those in English-speaking environments. It underscores the chatbot's capacity to tackle distinct pragmatic challenges, including the navigation of collectivist communication styles (Munir & Yavuz, 2024). The framework of communicative competence proposed by Hymes (1972) elucidates these findings, as the chatbot offered chances to enhance sociolinguistic and discourse competencies via simulated social situations. Vygotsky's (1978) Sociocultural Theory further supports the enhancement of the EG, as the

chatbot acted as a dynamic scaffold, providing adaptive feedback to assist learners in mastering social cues, which is particularly essential in Uzbekistan where formal instruction seldom covers pragmatics (Aboulghazi et al., 2024). The slight enhancement in pragmatics, in contrast to speaking proficiency, indicates that cultural intricacies might necessitate further focused practice, offering a distinctive perspective for EFL contexts characterized by specific social norms. This study contributes by illustrating how chatbots can effectively address the need for pragmatic instruction within the resource-limited environment of Uzbekistan (Duong & Suppasetseree, 2024).

The third research question explored learners' perceptions and attitudes regarding AI chatbots as instruments for enhancing informal speaking and social pragmatic skills. Survey results revealed overwhelmingly positive attitudes, with the majority of EG participants affirming that the chatbot enhanced their speaking skills, found the conversations engaging, reported a boost in confidence, and expressed willingness to recommend its use. The qualitative themes identified encompassed motivation, engagement, confidence, and usability. Participants reported a decrease in anxiety and an increase in practice opportunities; however, some pointed out difficulties in mastering social pragmatics attributed to cultural differences. For instance, participants valued the chatbot's impartial feedback and authentic conversations, yet encountered challenges with culturally specific expressions. The results are consistent with the findings of Wang et al. (2024), which indicated that AI chatbots enhanced EFL learners' willingness to communicate while also decreasing anxiety levels. This study's focus on male learners in Uzbekistan provides a distinctive viewpoint, as cultural and socioeconomic factors play a significant role in technology adoption within this demanding academic environment (Zheng, 2024). The Affective Filter Hypothesis proposed by Krashen (1982) aligns with these observations, indicating that the chatbot's low-anxiety setting boosted motivation and engagement. Schmidt's (1990) Noticing Hypothesis elaborates on the beneficial attitudes, as the feedback from the chatbot enabled learners to consciously recognize linguistic and pragmatic features, enhancing their confidence and conversational abilities. The moderate perceived impact on social skills highlights the difficulty of adjusting to English pragmatic norms within Uzbekistan's collectivist culture, providing a unique perspective for EFL contexts (Hasanova, 2007). The study emphasizes the chatbot's function as an additional resource that promotes independent and interactive practice, catering to the requirements of Uzbek learners in an environment with restricted conversational chances.

Conclusion

This research assessed the impact of a ChatGPT-based AI chatbot on improving informal speaking proficiency, social pragmatic skills, and learner attitudes among 50 upper-intermediate male EFL learners at the English Language Institute in Tashkent, Uzbekistan. The results indicated that the EG, which interacted with the AI chatbot, showed a notable advantage over the CG, which took part in conventional teacher-led activities, in enhancing fluency, accuracy, lexical complexity, and pragmatic skills, including turn-taking and politeness strategies. Students demonstrated significant motivation, engagement, and confidence, emphasizing the chatbot's effectiveness in creating a low-anxiety practice setting. The distinctiveness of this study is rooted in its examination of Uzbekistan's post-Soviet EFL

environment, characterized by formal instruction and restricted access to native English speakers, which limits genuine conversational experiences (Hasanova, 2007). This research addresses informal speaking and social pragmatics, filling a crucial gap in EFL education and providing valuable insights for resource-constrained settings that are looking for innovative ways to enhance communicative competence.

Theoretically, the study expands on Vygotsky's (1978) Sociocultural Theory by demonstrating how AI chatbots serve as dynamic scaffolding tools, providing adaptive feedback to assist learners in enhancing their speaking and pragmatic skills. The chatbot's customized prompts and corrections correspond with Swain's (1985) Output Hypothesis, which asserts that language production aids acquisition by enabling learners to recognize and rectify linguistic shortcomings. Similarly, Long's (1996) Interaction Hypothesis explains the observed gains: the chatbot's interactive dialogues enabled learners to negotiate meaning, which enhanced fluency—a critical advantage in Uzbekistan's context, where such interactions are otherwise scarce (Khasawneh, 2023). Krashen's (1982) Affective Filter Hypothesis reinforces the importance of positive learner attitudes. The chatbot's non-judgmental environment alleviated anxiety, which in turn enhanced motivation and engagement. Theoretical contributions emphasize the alignment of AI chatbots with established language learning frameworks, presenting a novel application within Uzbekistan's EFL context, where cultural and linguistic barriers require alternative practice opportunities (Qiao & Zhao, 2023).

The findings offer practical implications that can be utilized by stakeholders in EFL education. Educators can incorporate AI chatbots as additional resources to improve classroom teaching, especially for developing informal speaking abilities. For instance, they can create activities using chatbots, like role-plays that mimic informal discussions about Uzbek cultural events, to enhance fluency and ensure cultural relevance. Curriculum designers have the opportunity to integrate AI chatbots into their syllabi by creating modules that emphasize pragmatic skills, like making polite requests in professional contexts. This approach ensures that the content aligns with learning objectives and supports both classroom engagement and independent practice. Learners can utilize chatbots for self-directed practice, participating in conversations about daily routines or social interactions at their own pace, which is especially beneficial in Uzbekistan's demanding academic setting. Material developers can design AI-supported resources with culturally relevant prompts, such as scenarios reflecting Uzbek hospitality norms, to enhance both linguistic and pragmatic outcomes (Demir, 2024). These specific applications illustrate the chatbot's ability to enhance conventional approaches, meeting Uzbekistan's demand for accessible and engaging language practice while promoting communicative competence in authentic situations.

Limitations and Suggestions

While this study offers valuable insights, it is important to acknowledge several limitations that warrant consideration. The sample consisted of 50 upper-intermediate male learners, which restricts the generalizability to female learners, other proficiency levels, or various regional contexts within Uzbekistan, where access to education differs. The six-week intervention period might not have been adequate to fully cultivate complex pragmatic competencies, as these necessitate prolonged practice to conform to English-speaking norms, especially within the context of Uzbekistan's collectivist culture. Self-reported survey data can be influenced by

social desirability bias, as participants may have exaggerated their positive attitudes toward the chatbot due to its novelty or perceived expectations, which is a frequent issue in studies involving technology. The lack of follow-up assessments limits our understanding of the long-term retention of speaking and pragmatic skills, which is particularly important in Uzbekistan, where opportunities for sustained practice are scarce. Furthermore, the emphasis on structured conversational tasks in the study might not adequately reflect the spontaneity found in real-world interactions, which could restrict the transferability of skills to genuine contexts.

Future research ought to explore novel avenues to address these limitations and enhance AI-assisted EFL learning. Exploring AI chatbots that incorporate multimodal features, like voice recognition paired with visual avatars, has the potential to improve engagement and practical development, especially in Uzbekistan where cultural visual cues play an important role (Wang et al., 2024). Investigating the incorporation of chatbots within blended learning frameworks, merging AI with in-person teaching, may offer a harmonious method to utilize both technological advancements and personal engagement, responding to the formal educational system in Uzbekistan (Duong & Suppasetseree, 2024). Investigating the impact of cultural factors on the development of pragmatic skills in AI interactions may provide insights for creating culturally appropriate chatbot prompts. For instance, incorporating Uzbek social norms, such as hospitality, could improve the relevance of these prompts in various EFL contexts (Fitria, 2023). Longitudinal studies incorporating delayed post-tests could assess the retention of speaking and pragmatic skills, ensuring these outcomes are lasting, even in resource-limited environments (Qiao & Zhao, 2023). Future studies should incorporate more diverse participant groups, including female learners and individuals from rural Uzbekistan. This would enhance the generalizability of the findings, address gender-specific learning needs, and provide a more comprehensive understanding of AI chatbot applications in EFL education.

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