Generative AI as a Virtual Conversation Partner in Language Learning

Ji-Young Seo*, Seon-Ah, Kim**

*Associate Professor, Dept. of English Education, Graduate School of Education,
Kookmin University, Seoul, Korea
**Master's Course, Dept. of English Education, Graduate School of Education,
Kookmin University, Seoul, Korea
sjy@kookmin.ac.kr, seonahkim@kookmin.ac.kr

Abstract

Despite a recent surge in multifaceted research on AI-integrated language learning, empirical studies in this area remain limited. This study adopts a Human-Generative AI parallel processing model to examine students' perceptions, asking 182 college students to independently construct knowledge and then compare their efforts with the results generated through in-classroom conversations with ChatGPT 3.5. In questionnaire responses, most students indicated that they found these activities useful and expressed a keen interest in learning various ways to utilize generative AI for language learning with instructor guidance. The findings confirm that ChatGPT's potential as a virtual conversation partner. Identifying specific reasons for the perceived usefulness of conversation activities and drawbacks of ChatGPT, this study emphasizes the importance of teachers staying informed about both the latest advances in technology and their limitations. We recommend that teachers endeavor to creatively design various classroom activities using AI technology.

Keywords: Generative AI, AI-Integrated Language Learning, Human-Generative AI Parallel Processing Model, Virtual Conversation Partner, ChatGPT

1. INTRODUCTION

ChatGPT is here to stay, and other AI-powered tools such as Bing Chat, Bard, Dall-e, Midjourney, Stable Diffusion, and Craiyon are becoming parts of our daily lives. The field of foreign language learning is increasingly incorporating Generative AI into education, leveraging its capabilities as a language model. Universities in Korea have begun providing guidelines for the use of Generative AI and are actively exploring ways to enhance learning outcomes through AI, seeking to make it a useful educational tool for both professors and students. Concerns about academic integrity and fostering overreliance on AI and drawbacks such as hallucinations, potential biases, and inconsistency do not justify avoiding the use of AI. Continuous updates and advancements are expected to alleviate current limitations. Indeed, it is imperative to acknowledge the inevitability of the forthcoming AI era. The trial-and-error process of using of ChatGPT can cultivate students' critical thinking abilities [1]. ChatGPT can encourage students to think critically as they navigate various responses and evaluate the relevance and coherence of the information provided. In this situation, educators must find ways to incorporate Generative AI into their curricula, recognizing both its advantages and limitations and guiding learners to engage with these tools responsibly while fostering a sense of autonomy.

The fact that Generative AI is still in its developmental stages means that these tools can be further refined through interaction with humans [2, 3]. Human language acquisition also develops through interaction. Indeed, interaction hypothesis identifies interaction and input as two major players in language acquisition [4]. The modified interactions through which native speakers adjust their speech for foreigners are particularly crucial. Therefore, as sites for practicing language, English language classrooms position conversation and interaction as the bases for language development. The power of interaction in the language classroom was strongly endorsed as well, according to [5].

However, opportunities for students to interact with English native speakers in English as a Foreign Language (EFL) contexts such as Korea remain very limited. It is even harder to experience modified interaction. Generative AI, like ChatGPT can help address this issue. ChatGPT are showing a good performance adjusting the level of difficulty, tone and formality when requested. Unlike conventional pre-trained answer-based chatbots, ChatGPT facilitates interaction when users provide proper prompts or instructions. For example, prompts allow ChatGPT to simulate the role of a conversational partner. Despite these advantages, however, empirical studies integrating Generative AI into actual language classes are still quite scarce. Therefore, this study aims to incorporate ChatGPT into an English-speaking classroom. To this end, this study utilizes Human-Generative AI parallel processing model to examine students' perceptions [2]. This model encourages students to construct knowledge independently and then compare it with the results generated by AI. The results of this study are expected to provide valuable insights into the field of Generative AI-based language education.

2. LITERATURE REVIEW

Generative AI facilitates engaging language learning experiences. Students found that ChatGPT was helpful for paraphrasing and correcting sentences [6]. AI-powered chatbots can serve as virtual conversation partners, enabling students to engage in turn-by-turn interactions and receive real-time feedback [7]. ChatGPT can act as a conversation companion, allowing learners to actively practice and refine their productive skills, such as speaking and writing, through interactive exchanges [8]. It is said that ChatGPT enables students to initiate conversations, ask questions, and engage in language exploration at their own pace [9]. In this way, ChatGPT allows students to immerse themselves in language use and interactions. Moreover, it enables students to practice speaking repeatedly with flexibility in time and space [10]. Practicing with AI creates a low-anxiety environment, encouraging students to communicate in the target language [11].

Examining theoretical frameworks for integrating ChatGPT into language classrooms, a study conducted interviews with 10 English education professionals in Indonesia [12]. They concluded that the inclusion of ChatGPT conversation is consistent with constructivist learning principles, communicative language teaching, task-based learning, and both personalized and differentiated instruction. In addition, they found that ChatGPT can promote active engagement, learner autonomy, knowledge production, authentic language use, and collaborative learning.

Two frameworks for collaboration between generative AI and human intelligence were introduced: a combined intelligence model and a parallel intelligence model [2]. The former involves using generative AI to construct data, information, and knowledge scaffolded by ChatGPT. The latter requires users to independently produce outcomes and then compare and analyze them with Generative AI-produced results. This parallel intelligence model is suitable for learning environments like language classrooms.

At a public secondary school in the Philippines, 49 intermediate learners in English classes were recruited for an empirical study. They were asked to engage in a conversation with ChatGPT on the topic of travel [13]. Finding ChatGPT to be very responsive and beneficial while also observing that it occasionally provides inaccurate information, they concluded that ChatGPT can play the role of an interlocutor and maintain interactions with EFL learners. Similarly, spoken dialogue system-based speaking practice with 22 Swedish seventh-grade students during English class was conducted [14]. The results found that speaking

practice with AI offers additional opportunities for interaction in English and enhances speaking skills. Results were more positive for female students (compared to their male counterparts) and those with lower proficiency levels, highlighting the tool's ability to increase participation in asking and answering questions.

In another study, the impact of interacting with an AI chatbot on speaking performance using a sample of 110 Korean university students was investigated [15]. The participants were divided into three groups: Face-To-Face Group, AI Text-Chatting Group, and AI Voice-Chatting Group. The researchers evaluated students' speaking abilities using TOEIC Speaking tests. The results showed that the AI Voice-Chatting Group scored higher (at a statistically significant level) on expressing opinions questions than the other two groups. Regarding their interactions with the AI chatbot, the participants identified comfort and patience as advantages of ChatGPT because it does not require quick responses.

3. METHOD

This study used an exploratory methodology to investigate students' perceptions of ChatGPT in language education.

3.1 Participants

The study was conducted 2023 fall semester. A total of 182 students enrolled in a General English course at a university in Seoul participated in the research. The course was designed to improve college students' communicative skills using multimedia. Focusing on themes such as online games, baseball, superheroes, and retro, students watched relevant videos, read articles, wrote and delivered opinion-based presentations, and engaged in discussions in English with ChatGPT. The class was conducted twice a week for one hour each over 15 weeks. Table 1 shows the participants' demographic data including gender, year, major, ChatGPT use, and preferred activity.

Table 1. Participants demographic data

Category	Items	N (%)
Gender	Male	111 (61%)
	Female	71 (39%)
Year	1	167 (91.8%)
	2	4 (2.2%)
	3	10 (5.5%)
	4	1 (0.5%)
Major	Business & Accounting	80 (44%)
	Engineering	73 (40.1%)
	Science	19 (10.4%)
	Humanities	10 (5.5%)
ChatGPT Use	Always	11 (6%)
	Frequently	26 (14.3%)
	Sometimes	93 (51.1%)
	Almost never	52 (28.6%)
Preferred Activity	Lecture-style without activities	48 (26.5%)
	Individual	56 (30.9%)
	Pair work	53 (29.3%)
	Group Work	24 (13.3%)

Out of 182 students, 71 (39%) were female and 111 (61%) were male. Most participants were freshmen (n = 167, 91.8%), 4 were sophomores (2.2%), 10 were juniors (5.5%), and 1 was a senior (0.5%). Their scores on the Test of English for International Communication (TOEIC) test ranged from 320 to 785 points, with an average score of 485, meaning they fell into the pre-intermediate level according to the Common European Framework of Reference (CEFR) standards. The students' majors included Business & Accounting (n = 80, 44%), Engineering (n = 73, 40.1%), Science (n = 19, 10.4%), and Humanities (n = 10, 5.5%).

To the preliminary questionnaire, 11 (6%) students responded that they use ChatGPT every day, 26 (14.3%) indicated that they use it frequently, 93 (51.1%) claimed to use it sometimes (5 times or fewer per week), and 52 (28.6%) said they hardly use it. Nearly half of the students said they prefer not to do pair-work and group work. Students preferring individual activities constituted 30.9% of the sample, while those preferring lecture-style classes without activities accounted for 26.5%.

3.2 Procedure

Table 2 summarizes the class procedures.

Table 2. Procedures

Week No.	Description
Week 1	Course Orientation, Preliminary questionnaire
Week 2	Sign up for ChatGPT, Instructions on how to write prompts, Get familiar with ChatGPT
Weeks 3–10	Students study textbook content, reading passages, learning vocabulary, and watching videos. Subsequently, students engage in conversations with ChatGPT using pre-set prompts.
Week 11	Post Questionnaire

In the first week, the researcher/instructor conducted an orientation session explaining the course procedures and ChatGPT, and then administered a preliminary questionnaire.

In the second week, all students logged into the Google business accounts provided to them by the school and used the free version of ChatGPT 3.5. Students received instructions on how to write prompts and engaged in conversations with ChatGPT, asking various questions to familiarize themselves with the tool.

From weeks 2 to 10, students learned textbook content covering various topics including Korean culture, games, and the retro craze. They read textbook passages, learned vocabulary, and watched related videos and movies. Next, they engaged in conversation with ChatGPT. Based on preliminary questionnaire responses from some students expressing concern about initiating conversations with ChatGPT, the instructor implemented pre-set prompts. These prompts were adjusted in advance to facilitate interaction with ChatGPT. For example, the prompt used was as follows:

> Hey there! I'm currently studying English and would like to engage in a discussion with you. So, here's the plan: Let's take turns discussing the topic of whether game shutdown policy is necessary. I'll present my argument first. Afterward, please provide feedback on both grammar and content. Then, it'll be your turn to present your argument. Are you ready?

Sharing their opinions and receiving feedback from ChatGPT enabled students to identify their mistakes and receive instantly revised versions of their responses. This process also gave them opportunities to listen to ChatGPT's perspectives. Finally, the students submitted their conversation record URLs to the instructor.

In week 11, the instructor administered post-questionnaire to learn about students' experiences with

ChatGPT.

3.3 Data Collection Instrument and Method of Analysis

The questionnaire was designed by the researcher to investigate the students' perceptions of using ChatGPT in the English language classroom based on the previous studies [16, 17]. It consisted of both closed- and open-ended questions. Items were rated using a four-point Likert-type scale (ranging from 1 = strongly disagree to 4 = strongly agree). Six open-ended questions were used to gather additional perspectives from participants. They were asked to explain why they considered the ChatGPT activity useful or not and to identify the advantages and disadvantages of utilizing ChatGPT. They were also asked if they were interested in using ChatGPT for self-study.

The survey was administered online at the end of the treatment. The survey participants were from the researcher's class and only included those who provided consent for research participation. Out of 199 students, 182 agreed to participate and completed the survey.

The data gathered were analyzed using SPSS for frequency. Data from open-ended questions were counted and categorized into groups based on frequency of topics and then presented descriptively by two raters. Raters first worked individually to identify recurring patterns before engaging in joint discussion and review. When they encountered discrepancies, they reached mutual agreement through discussion. The interrater reliability test resulted in a Kappa value of 0.80, which indicates substantial agreement beyond chance.

4. RESULTS

The post-questionnaire asked students about the usefulness of conversation activities with ChatGPT. As Table 3 shows, the majority of students (n= 152, 83.6%) found them useful.

Table 3. The usefulness of conversation activities with ChatGPT

Scale	n (%)
Not at all useful	5 (2.7%)
Not useful	25 (13.7%)
Useful	105 (57.8%)
Very useful	47 (25.8%)

Table 4 lists the specific reasons students found interactions with ChatGPT either useful or not useful. Among the 152 students who found the interactions useful, 56 (36.8%) stated that conversations with ChatGPT felt as natural as real dialogue. Additionally, 32 students (21.1%) rated the quality of ChatGPT's responses as highly professional, while 26 (17.1%) claimed that the conversations reduced their anxiety and increased their enjoyment, thereby improving their speaking skills. A total of 15 students (9.9%) responded that the conversations enhanced enhance English proficiency. Finally, respondents highlighted flexibility in time and space (12 students, 7.9%) and receiving immediate feedback (11 students, 7.2%) as benefits these conversations.

Meanwhile, 30 students (16.4%) responded that conversations with ChatGPT were not useful. Among these 30 students, 19 (63%) mentioned that the "Lack of human-like interaction" made it difficult to have a smooth turn-taking. In addition, they were unable to engage in discussions of recent issues. Lastly, 11 (37%) students found ChatGPT's responses either too difficult, irrelevant, lengthy, or predictable, which made their conversations less enjoyable.

Table 4. Reasons for students' perceptions of ChatGPT interaction

Category	Comments	n (%)
	Reasons for usefulness	
Human-like conversation	• It felt like chatting with a real foreigner, not AI. • I rarely have the opportunity to speak in English, but I could chat as if it were a real conversation. • I could set up scenarios as I wanted.	56 (36.8%)
Quality of responses	• Very informative and knowledgeable in various fields • Smarter and more entertaining than expected. • It even provided good recommendations such as lunch menus or travel plans. • ChatGPT understood even when I mixed English and Korean. • It adjusted the answers according to my level.	32 (21.1%)
Affective factors	• The conversation with ChatGPT was enjoyable. • It was not as scary as talking to face-to-face, so I wasn't nervous. • It helped me to keep the conversation going and ask me interesting questions making me think more deeply.	26 (17.1%)
English proficiency	• It broadened my thinking with appropriate questions. • Even when my sentences were incomplete, it understood me well and corrected my mistakes. • This could be helpful for speaking tests like OPIc or TOEIC Speaking.	15 (9.9%)
Convenience	• I can chat in English anytime, even when I am alone. • I can practice speaking English without spending much money.	12 (7.9%)
Immediate feedback	• It provided immediate feedback and responses. • I could get the answers faster than from Google. • It spotted my errors and gave me suggestions.	11 (7.2%)
	Total	152 (100%)
	Reasons for lack of usefulness	
Lack of Human-like interaction	• The conversation didn't flow well after I responded briefly. • It didn't seem like a human. • I couldn't discuss recent events.	19 (63%)
ChatGPT Response Issues	• ChatGPT used too complex sentences and vocabulary. • It asked me questions that were too difficult and profound. • It gave me irrelevant answers. • Its answers were too obvious and bookish.	11 (37%)
	Total	30 (100%)

Table 5 shows students' intentions about the future use of ChatGPT for self-study. 128 students (84.2%) expressed a keen interest in learning various ways to utilize ChatGPT effectively for their language learning. In addition, 171 students (94%) responded that they intend to practice English conversation with ChatGPT as they learned in this study into their own English learning.

Table 5. Students' intentions about utilizing ChatGPT for self-study

Questions	Responses	n (%)
Do you want to learn more about English learning methods using ChatGPT?	Strongly disagree	3 (2%)
	Disagree	21 (13.8%)

	Agree	91 (60%)
	Strongly agree	37 (24.2%)
Do you intend to use ChatGPT for individual conversation practice in the future?	No	11 (6%)
	Yes	171 (94%)

Table 6 highlights the areas for improvement that students identified in ChatGPT conversation activities. Students expressed uncertainty regarding response reliability due to issues like hallucinations. They also expressed a desire to discuss more recent issues, as the free version is limited to pre-2021 data. Additionally, students pointed out inconveniences such as Wi-Fi connection and battery issues and the difficulty of typing in English on small mobile screens—a practice which they had little experience. Meanwhile, some students who were unfamiliar with ChatGPT felt that the allotted time was insufficient. It should be note that technical issues during interactions with AI can quickly turn enjoyable experiences into irritating ones [14]. Teachers should be aware of both potential technical problems and the limitations of AI technology, and they may need to act as mediators in such situations [11].

Table 6. Areas for improvement

Category	Comments
Response reliability	• I was not sure if it gave me trustworthy information, so I had to Google again. • The responses should be more up to date.
Errors	• I encountered error codes during authentication and/or login.
Electronic devices	• Wi-Fi disconnected in the classroom when multiple people were using it simultaneously. • I constantly got a "timeout occurred" message. • I felt anxious when participating in activities with a low battery. • Typing English on a small phone screen was not easy. It would be more convenient to have a laptop.
Activity duration	• I was not used to ChatGPT, so I felt the time for conversation was insufficient.

5. CONCLUSION

This study employs a Human-Generative AI parallel processing model to investigate students' perspectives following their interaction with ChatGPT. The findings of the current study confirm ChatGPT's potential as a virtual conversation partner and have pedagogical implications for AI-integrated language learning. Educators should endeavor to identify students' needs and understand the benefits and limitations of AI. Furthermore, they continuously strive to creatively design a variety of classroom activities using AI technology to enhance the learning experience for students. In environments like EFL settings where opportunities for practicing with native speakers are limited, conversations with Generative AI such as ChatGPT can have learning, economic, and equity benefits for students. Students can engage in conversations on desired topics free of charge, overcome embarrassment and fear of speaking, and receive immediate personalized feedback. Such experiences can reduce anxiety and increase confidence, facilitating spontaneous language use in unrehearsed situations. A limitation of this study is that it did not examine the impact of ChatGPT interactions on students' actual speaking performance. In November 2023, OpenAI introduced GPT-4 Turbo, which features text-to-speech conversion. Thus, presumably, voice conversations will soon be possible. Future research should investigate the effectiveness of interventions in AI-integrated English speaking classes by comparing experimental and control groups. We hope that the results of this study can inspire future educational endeavors involving Generative AI as conversation partners.

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