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Investigating the role of ChatGPT in learners' self-confidence and foreign language anxiety

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The integration of AI tools such as ChatGPT into language learning has attracted growing interest. With features like audio chat, these tools offer more opportunities for learners to practice speaking outside the classroom, which may contribute to building learners' confidence and relieving foreign language anxiety (FLA) caused by limited exposure to the target language. This study examines the effectiveness of using ChatGPT as a language partner outside the classroom to enhance self-confidence and reduce FLA among 90 undergraduate students in Japan. Over a 15-week semester, participants engaged in three-minute audio conversations with ChatGPT. Pre-and post-intervention questionnaires were administered to assess learners' anxiety and confidence levels, as well as their perceptions of ChatGPT in language learning. Results showed that learners' anxiety and confidence levels remained unchanged. However, participants reported positive attitudes toward the use of GenAI in language learning. These findings suggest that although ChatGPT has limited impact on reducing classroom anxiety and boosting confidence, learners' positive attitudes and motivation indicate its potential as a valuable supplementary tool for speaking practice outside the classroom.

Keywords: GenAI, ChatGPT, foreign language anxiety, speaking

Introduction

Foreign language anxiety (FLA) is a "feeling of tension and apprehension" (MacIntyre & Gardner, 1994, p.284) that arises in foreign language learning contexts and is common among language learners, particularly students in Asian countries (Gao, 2023; Shen et al., 2023). It not only impedes language performance (Teimouri et al., 2019), but also negatively affects learners' overall language learning experience, including their motivation (Zhou et al., 2024) and attitude towards language classes (Chen et al., 2022). Anxious learners tend to have lower willingness to communicate (WTC)

(Alberth et al., 2023) and self-confidence (Mulyono & Saskia, 2021), which often leads to less active participation in classroom speaking activities due to their fear of negative evaluation. This, in turn, creates a vicious circle in which anxiety may become more severe as a result of unsatisfactory performance caused by limited practice.

With the rapid advancement of Generative Artificial Intelligence (GenAI), it now offers more powerful functions through enhanced voice recognition and language processing capabilities, providing greater possibilities and opportunities for speaking practice. Recent research has suggested positive effects of integrating GenAI in language learning. For example, interacting with ChatGPT in essay writing has been shown to improve learners' motivation (Zare et al., 2025). Similarly, improvement in motivation was also found in Almineei et al.'s (2025) research integrating ChatGPT in speaking, and they found students' speaking performance improved as well. Their interviews revealed that participants felt less anxiety during conversations with ChatGPT. Findings from another study by Choi (2025) suggested that the personalized feedback from ChatGPT helped learners improve their pronunciation and had a positive influence on reducing anxiety and increasing confidence. Despite these encouraging results, most existing research on GenAI focused on writing (Yang & Li, 2024), leaving its effectiveness in speaking practice, particularly in contexts outside the classroom, largely underexplored. Therefore, the present study aims to investigate the efficacy of ChatGPT in reducing learners' anxiety and enhancing their confidence by addressing the following two research questions:

RQ 1. How does the use of ChatGPT as a language partner affect students' self-confidence and anxiety levels?

RQ 2. What are students' perceptions on using ChatGPT in speaking practice?

Methodology

Participants

A total of 90 undergraduates from a university in Japan participated in this study. They were enrolled in three compulsory 15-week English courses focusing on speaking and communication. Their English proficiency levels ranged from pre-intermediate to intermediate.

Data collection and analysis

Pre-and post-tests were conducted in the first and final weeks of the semester to examine students' experience using GenAI tools, as well as their levels of anxiety and confidence levels. Both the pre- and post-questionnaire included multiple-choice questions on learners' background, such as gender and English proficiency level, as well as eight five-point items (1 = strongly disagree, 5 = strongly agree) from the Foreign Language Classroom Anxiety (FLCA) Scale (Dewaele & MacIntyre, 2014) to measure FLA, and three items adapted from the Motivational Factors Questionnaire (MFQ) (Ryan, 2009) to measure confidence. The average score computed from the relevant items were used to indicate the levels of anxiety and confidence. Higher scores indicated higher levels of anxiety and stronger confidence (e.g. scores from 3

to 4 indicated moderate anxiety, while scores from 4 to 5 indicated extreme anxiety). Botes et al. (2022) validated the 5-point Likert FLCA Scale, demonstrating robust reliability and validity. The reliability of the questionnaire was assessed using Cronbach's alpha. For the FLA items, Cronbach's alpha was .834 for the pre-questionnaire and .839 for the post-questionnaire. For the confidence items, Cronbach's alpha was .824 for the pre-questionnaire and .779 for the post-questionnaire, indicating acceptable internal consistency. In the post-questionnaire, open-ended questions were included to gather participants' opinions about using ChatGPT for speaking practice.

In the first week, students completed the pre-questionnaire in class, and then they were introduced to the live mode of ChatGPT and instructed on how to conduct conversations using it. During the semester, every two to three weeks, students were instructed to have at least a three-minute conversation with ChatGPT after class, discussing topics covered in lessons (e.g. last summer vacation), and to submit screenshots of the conversation transcripts as homework. The total number of assigned conversations ranged from five to six across different classes. As these tasks were intended to encourage students to practice conversation outside the classroom, the submitted transcripts were checked only for completion, and no specific comments or feedback were provided by the instructors. In the final week, the post-questionnaire was administered. All participants were informed about the purpose of the study in the first week. The speaking tasks were required homework, while answering the questionnaires and consenting to the use of task data for research purposes were entirely voluntary and had no effect on students' course grades. Students who agreed to participate gave their consent before answering the questionnaire. In total, 80 responses were collected for the pre-test, and 79 for the post-test. A total of 71 students completed both the pre-and post-tests.

To address the first research question concerning ChatGPT's effectiveness in reducing anxiety and building confidence, responses from students who completed both the pre-and post-questionnaires ($n = 71$) were analyzed using IBM SPSS Statistics. Descriptive statistics were calculated for FLA and confidence, and pair-sample t-tests were conducted to examine whether there were statistically significant changes in these constructs between the two measurements. For the second research question regarding students' perceptions towards ChatGPT, participants' responses to the open-ended question ("What do you think about using ChatGPT as a language partner?") ($n = 79$) were coded by the author into three categories: positive, negative and neutral. Responses expressing positive attitudes (e.g. "good", "helpful" or "exciting") were classified as positive, those expressing negative attitudes (e.g. "difficult" or "not fun") were classified as negative, and response that did not indicate a clear emotional stance were classified as neutral.

Results

Learners' self-confidence and FLA

The results of learners' FLA and confidence in the pre- and post-tests are presented in Table 1.

Table 1. Learners' anxiety and confidence levels in pre- and post-tests

	N	Mean	SD	Variance	Min	Max
FLA_Pre	71	3.62	.793	.629	1.25	5.00
FLA_Post	71	3.70	.778	.606	1.00	5.00
Confidence_Pre	71	3.08	.541	.293	1.67	4.67
Confidence_Post	71	3.01	.542	.293	1.67	5.00

As shown in Table 1, the results of the pre-test indicated that generally the students experienced anxiety when learning English. However, the large gap between the minimum and maximum scores suggests that anxiety is a highly individual experience that while some students were not anxious at all, others felt extremely nervous in English class. After a semester of interacting with ChatGPT for conversational practice outside the classroom, students' anxiety level did not change significantly. A paired-samples t-test ($t = -1.540, p = .128$) indicated that there was no significant difference in FLA between the pre- and post- tests. The observed effect size was small (Cohen's $d = -.183$, 95% CI $[-.417, .052]$), suggesting that the change in FLA was limited in magnitude. Similar results were observed in students' confidence level. The mean confidence scores before and after the intervention showed little variation, which was further confirmed by the results of paired-sample t-test ($t = .994, p = .324$). The effect size for confidence was also small (Cohen's $d = .118$, 95% CI $[-.116, .351]$). These findings show that no statistically significant pre-post changes in learners' FLA and confidence can be observed in the current study.

Learners' attitude towards ChatGPT as a language partner

In the post-survey, open-ended questions were included to get more detailed information about participants' perceptions of using ChatGPT for speaking practice. The majority of students ($n = 64$) reported a positive attitude, while some students ($n = 14$) expressed their concerns and apprehension about using ChatGPT in English learning. One student reported a neutral attitude.

Among the students who provided positive feedback, some gave general comments, such as "I think it is a very good idea" (Student 8), and "ChatGPT is a useful tool" (Student 63). Others elaborated on why they found it helpful, mentioning reasons such as increased practice opportunities, convenience, and reduced anxiety. Student 79 shared that "it is really helpful because I don't have opportunities to talk with someone by using English, and there aren't any friends who can find my mistakes and point them out." As most students in Japan have their own smartphones, GenAI tools could become a new and easily accessible option for practicing English. Some students also emphasized ChatGPT is "very convenient" (Student 24) and they can "talk anywhere" (Student 75). Consistent with the findings of Almineei et al. (2025) that learners' anxiety is reduced by interacting with ChatGPT, several students also commented on the positive emotional effects of using the tool. Students mentioned they were "not nervous speaking English when I talk with ChatGPT" (Student 4) and they can "speak without being nervous" (Student 30). Many felt less anxiety

because they were “not worried about mistakes” (Student 7), and as “it is not human so (I am) unstressed to use it” (Student 17).

Students also reported several issues and concerns when they used ChatGPT. Some mentioned technical problems, such as ChatGPT often interrupts students’ speech (Student 54) or it speaks “too fast”, making it difficult for them to understand its questions (Student 12). Others commented that “it is difficult to use” (Student 47) or they “don’t know how to use it” (Student 53). In contrast to the benefits noted by students who appreciated the absence of a human interlocutor, a few students perceived conversations with ChatGPT as “not natural (Student 69)” and stated that “ChatGPT is less of feeling, so it’s not fun to talk with it” (Student 15).

Discussion

The quantitative results from pre- and post- tests did not demonstrate that using ChatGPT outside the classroom effectively reduced learners’ anxiety or enhanced their confidence as reported in other studies (Almineeai et al., 2025; Choi, 2025). Students’ anxiety and confidence levels remained unchanged after the intervention, which might be attributed to the following two main factors. First, the duration of each ChatGPT speaking practice was relatively short (approximately three minutes in the present study) compared with the study by Choi (2025) (30 minutes per session). Therefore, although some students indicated in the post-survey that they felt less anxious when speaking with ChatGPT, the limited amount of practice may not have been sufficient to produce significant changes in their anxiety and confidence levels. Second, most previous studies were conducted in the classroom (Wang et al., 2024), and students were able to use ChatGPT under the guidance of instructors. In contrast, this study was designed to examine the effectiveness of using ChatGPT outside the classroom. Despite the initial training session on how to conduct conversations with ChatGPT, the instructor did not provide further support or guidance during the intervention. As a result, some students were unable to fully utilize the tool or benefit from it, with several reporting that they “don’t know how to use it” (Student 53). Also, the scale used in this study measured students’ classroom anxiety, and the practice outside the classroom may not have been sufficient to address classroom-specific sources of anxiety, such as fear of negative evaluation from teachers and comparison with peers. These findings highlight that we should not assume students can automatically benefit from new technologies or learning methods simply by being exposed to them. Even when practice occurs outside the classroom, teacher guidance remains essential to help students adjust their learning strategies when difficulties arise, for example, in giving more effective prompts that help ChatGPT adapt to their proficiency levels.

The qualitative results from open-ended questions suggested that students generally held a positive attitude towards using ChatGPT for speaking practice, and many mentioned the affective benefits they experienced. For those students who easily get nervous when speaking in front of classmates or teachers, GenAI tools provide them a more comfortable environment where they are less afraid of making mistakes or being judged. However, the negative responses also indicated that using ChatGPT for conversation practices does not fit everyone, as some students perceived the

conversations are not natural, which might negatively affect their motivation and willingness to communicate.

Conclusion

This study explored the effectiveness of employing ChatGPT for speaking practice outside the classroom to reduce learners' anxiety and enhance their confidence. After a semester's interaction with ChatGPT, students' anxiety and confidence levels did not change significantly, suggesting that the efficacy of ChatGPT should be investigated in more diverse contexts and over longer period of engagement. However, learners generally expressed positive attitudes towards using ChatGPT, indicating that it is still a promising tool for supporting language learning. At the same time, some students reported negative attitudes towards the use of ChatGPT. To achieve better learning outcomes with GenAI tools, teachers should take individual learner differences, such as preference and acceptance of these tools, into account and provide continuous guidance throughout the learning process.

References

- Alberth, A., Mursalim, M., Rahim, A., Gege, M. Y. A. R., & Tambunan, T. (2023). Sense of classroom community, foreign language enjoyment, foreign language anxiety, and self-confidence as predictors of willingness to communicate in English as a foreign language. *Journal of Teaching of English*, 8(2), 22–40. <https://doi.org/10.36709/jte.v8i2.255>
- Almineeai, A. M., Alrashed, M. A., Hezam, T. A., Alharthi, A. F., & Alharthi, S. F. (2025). The impact of ChatGPT on EFL medical track students' affective filter. *Journal of Language Teaching and Research*, 16(1), 158–167. <https://doi.org/10.17507/jltr.1601.17>
- Botes, E., van der Westhuizen, L., Dewaele, J., MacIntyre, P., & Greiff, S. (2022). Validating the short-form foreign language classroom anxiety scale. *Applied Linguistics*, 43(5), 1006–1033. <https://doi.org/10.1093/applin/amac018>
- Chen, S., Du, H., Wang, S., & Yang, L. (2022). Understanding EFL reading anxiety in relation to learning motivation, attitudes and strategies for Chinese and Spanish undergraduates. *System*, 108, 102842. <https://doi.org/10.1016/j.system.2022.102842>
- Choi, W. (2025). The role of changes in pronunciation ability and anxiety through Gen-AI on EFL learners' self-directed speaking motivation and social interaction confidence - A CHAT perspective. *System*, 133, 103788. <https://doi.org/10.1016/j.system.2025.103788>
- Dewaele, J., & MacIntyre, P. D. (2014). The two faces of Janus? Anxiety and enjoyment in the foreign language classroom. *Studies in Second Language Learning and Teaching*, 4(2), 237–274. <https://doi.org/10.14746/ssl.2014.4.2.5>
- Gao, X. (2023). Mindfulness and foreign language learners' self-perceived proficiency: the mediating roles of anxiety and burnout. *Journal of Multilingual and Multicultural Development*, 1–18. <https://doi.org/10.1080/01434632.2022.2150196>

- MacIntyre, P. D., & Gardner, R. C. (1994). The subtle effects of language anxiety on cognitive processing in the second language. *Language Learning*, 44(2), 283–305. <https://doi.org/10.1111/j.1467-1770.1994.tb01103.x>
- Mulyono, H., & Saskia, R. (2021). Affective variables contributing to Indonesian EFL students' willingness to communicate within face-to-face and digital environments. *Cogent Education*, 8(1). <https://doi.org/10.1080/2331186X.2021.1911282>
- Ryan, S. (2009). 6. Self and Identity in L2 Motivation in Japan: The ideal L2 self and Japanese learners of English. *Motivation, Language Identity and the L2 Self*, 120–143. <https://doi.org/10.21832/9781847691293-007>
- Shen, B., Wang, Y., Yang, Y., & Yu, X. (2023). Relationships between Chinese university EFL learners' academic emotions and self-regulated learning strategies: A structural equation model. *Language Teaching Research*, 136216882211448. <https://doi.org/10.1177/13621688221144832>
- Teimouri, Y., Goetze, J., & Plonsky, L. (2019). Second language anxiety and achievement: A meta-analysis. *Studies in Second Language Acquisition*, 41(2), 363–387. <https://doi.org/10.1017/S0272263118000311>
- Yang, L., & Li, R. (2024). ChatGPT for L2 learning: Current status and implications. *System*, 124, 103351. <https://doi.org/10.1016/j.system.2024.103351>
- Wang, C., Zou, B., Du, Y., & Wang, Z. (2024). The impact of different conversational generative AI chatbots on EFL learners: An analysis of willingness to communicate, foreign language speaking anxiety, and self-perceived communicative competence. *System*, 127, 103533. <https://doi.org/10.1016/j.system.2024.103533>
- Zare, J., Al-Issa, A., & Madiseh, F. R. (2025). Interacting with ChatGPT in essay writing: A study of L2 learners' task motivation. *ReCALL*, 1–18. <https://doi.org/10.1017/S0958344025000035>
- Zhou, S., Chiu, M. M., & Dong, Z. (2024). Second language pupils' anxiety and motivation: a meta-analysis. *Current Psychology*, 43(10), 9404–9421. <https://doi.org/10.1007/s12144-023-05066-2>

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