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# ChatGPT's Motivational Effects on Japanese University EFL Learners: A Qualitative Analysis

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Received: 25 April, 2024/Accepted: 5 June, 2024/Published: 26 June, 2024

## Abstract

ChatGPT, a natural language-processing tool that is trained with a vast number of human languages, allows users to engage in human-to-human-like conversations. To date, the motivational effects of sophisticated AI-powered and multifunctional chatbots on English as a foreign language (EFL) learners have not been fully explored. This study included 10 EFL students at a Japanese university who enrolled in massive open online courses (MOOCs) and used ChatGPT. The students' comments on ChatGPT regarding its use and effects on their motivational aspects were qualitatively examined through open coding procedures, and the findings suggested that students were motivated and experienced decreased anxiety. Furthermore, the students showed that although ChatGPT could motivate them through private learning assistance, it could also reduce students' confidence if not used appropriately.

## Keywords

Motivation, ChatGPT, MOOCs, qualitative analysis

## 1. Introduction

Currently, the use of artificial intelligence (AI) in language learning is prevalent both inside and outside classrooms. AI-powered language learning applications (e.g., Duolingo and Google Translate) are specific examples (Hockly, 2023). Another notable development in this field is the generative pre-trained transformer, ChatGPT. Released in November 2022 by Open AI, ChatGPT is a sophisticated AI chatbot powered by a large language model (LLM) (Jeon & Lee, 2023; Kohnke et al., 2023) that enables users to engage in human-like conversations by typing questions and obtaining immediate responses in multiple languages.

Studies on the possibility of using ChatGPT for second language (L2) learning and teaching are emerging. Kohnke et al. (2023) suggested specific ways to use ChatGPT in language learning and teaching, including creating texts/quizzes. Kasneci et al. (2023) claimed that it could also be used in conversational practice. Mizumoto and Eguchi (2023) found that ChatGPT has a certain level of accuracy and reliability as an automated essay-scoring tool. Although the influence of chatbots on L2 learners'

motivation has been discussed (Ebadi & Amini, 2022; Fryer & Carpenter, 2006; Fryer et al., 2019; Yin et al., 2021), ChatGPT's influence on L2 learners' motivation remains largely unknown (Ali et al., 2023; Yilmaz & Karaoglan Yilmaz, 2023). According to Ushioda and Dörnyei (2011), motivation is “the *direction* and *magnitude* of human behavior, that is: the *choice* of a particular action, the *persistence* with it, and the *effort* expended on it” (4; emphasis in the original). Undoubtedly, motivation is paramount to successful L2 acquisition. More importantly, Annamalai et al. (2023) highlighted the importance of motivation in L2 learning using chatbots, explaining that if motivated, learners who use chatbots become more active and autonomous L2 learners. In an English as a foreign language (EFL) setting like Japan, where opportunities for the actual use of English are severely restricted, being active and autonomous is particularly important for successful language learning. Therefore, it is necessary to investigate how ChatGPT influences L2 learners' motivation and how it can be effectively used to enhance it.

To investigate the influence of ChatGPT on learners' motivation, this study allowed tertiary-level students to choose learning materials from massive open online courses (MOOCs) and proceed at their own pace within the allocated time. Integrating English language courses with MOOCs is not unusual nowadays (Chang, 2023), but there are few studies that have allowed students to choose learning materials from MOOCs (De Waard & Demeulenaere, 2017). Throughout the learning process, the instructor (author) permitted students to use online or offline tools to assist their learning. Hence, each student learned various things using diverse tools. This study qualitatively examined ChatGPT's motivational influence and how it can be used efficiently in foreign language classrooms. Because AI-based language models are here to stay (Mizumoto & Eguchi, 2023), the findings would contribute to the practical use of AI tools, such as ChatGPT, in EFL classrooms from a motivational perspective.

## 2. Literature Review

### 2.1 Rise of chatbot and ChatGPT in education

Chatbots first emerged in the early 1960s, and improvements in natural language processing since the 1990s have helped them advance (Ebadi & Amini, 2022; Fryer & Carpenter, 2006). Although chatbots have been used in learning since the 1970s (Kohnke et al., 2023), their use in education remains limited (Kasneji et al., 2023). Currently, most chatbots operate within restricted and predetermined interactional courses (Hockly, 2023), and their educational roles, apart from those of conversation practice partners, have been underexplored (Jeon & Lee, 2023). However, ChatGPT overcomes these limitations. Trained on an extensive collection of human languages, ChatGPT enables open-ended interaction in multiple languages and remembers the chain of conversation with users, which resembles human-human interactions (Jeon & Lee, 2023). The utility of ChatGPT in allowing learners to type questions and obtain human-like responses immediately in multiple languages has significantly lowered the barriers to its use by practitioners and researchers, launching a new era of language teaching with the help of AI to begin (Mizumoto & Eguchi, 2023). As an increasing number of researchers, practitioners, and students have started using generative AI tools such as ChatGPT, controversies regarding their use in higher education are also emerging, including plagiarism, reliance on inaccurate, biased data, and decreased opportunities for students to practice critical thinking (Michel-Villarreal et al., 2023). In order to tackle these issues and use the tools effectively, learners need to be aware of these limitations and need to possess the skills to construct effective prompts (Javier & Moorhouse, 2023)

### 2.2 Motivational impacts of chatbot and ChatGPT

The motivational effects of chatbots in educational settings have been discussed, including enhanced intrinsic motivation (Yin et al., 2021) and the provision of personalized and customized learning materials that enrich students' learning experiences (Chen et al., 2020).

In L2 learning settings in particular, chatbots have been most commonly used as conversational partners (Kasneci et al., 2023). Conversing with chatbots is motivating because it frees students from anxiety about receiving negative feedback from their peers and being judged for making mistakes (Annamalai et al., 2023; Tai & Chen, 2023). Chatbots allow learners to feel relaxed (Fryer & Carpenter, 2006), assist students with foreign language learning anxiety (Kasneci et al., 2023), allow learners to use English for real and meaningful purposes, and help reduce their anxiety about speaking English (Tai & Chen, 2023). Furthermore, readily available aspects of chatbots, such as instant feedback, increase learners' motivation, active participation, and interest in language learning (Annamalai et al., 2023; Ebadi & Amini, 2022; Kohnke, 2023; Tai & Chen, 2023). Kohnke (2023) also noted that its assisting function in student writing had a motivating impact. In addition to usability, Ebadi and Amini (2022) pointed out that chatbots' human-likeness has a positive psychological impact on L2 students.

As per ChatGPT's motivational influence on learners, Yilmaz and Karaoglan Yilmaz (2023) found that students who used ChatGPT in their programming class had greater self-efficacy and significantly more motivation than those who did not use ChatGPT. In contrast, when assignments were challenging, ChatGPT did not significantly increase students' motivation. In the field of L2 learning, although the preliminary focus was on descriptions of its motivational possibilities (Ali et al., 2023; Kohnke et al., 2023), empirical studies on its motivational impacts have been increasing. For instance, Qu and Wu (2024) found that Chinese EFL learners' engagement was heightened when ChatGPT was perceived as easy to control and enhanced their enjoyment. Ho and Nguyen (2024) stated that tertiary level Vietnamese EFL students evaluated ChatGPT as a tool that made learning enjoyable. While empirical studies indicate the positive impacts of ChatGPT, comparative studies also suggest that ChatGPT positively influences on learners' motivation over other resources. Song and Song (2023) compared Chinese EFL students' writing skills and writing motivation between a ChatGPT-assisted group and a traditional instruction (non-ChatGPT) group. They found that the ChatGPT group showed significant improvements in writing skills and writing motivation. Another comparative study by Hayashi and Sato (2024) indicated that Japanese EFL learners' speaking anxiety in the ChatGPT-assisted group significantly decreased, whereas the control group that did not receive ChatGPT assistance also showed a significant decrease in anxiety.

Although motivational effects of chatbots have been explored, studies on the use of ChatGPT in language classrooms and its motivational impact remain scarce (Ali et al., 2023; Yilmaz & Karaoglan Yilmaz, 2023). Moreover, empirical studies conducted at the Japanese tertiary level are extremely limited. Hence, it is vital to fill these gaps by exploring how EFL learners' motivation is influenced after learning using ChatGPT. Furthermore, Liu and Huang (2011) found a significant negative correlation between motivation and anxiety in second and foreign language learning settings. Therefore, this study investigated motivation and anxiety.

### 3. Research Questions

To empirically investigate university EFL learners' motivation regarding the use of ChatGPT in classrooms, the research question in the current study is as follows: How do EFL learners perceive their motivation and anxiety after learning with ChatGPT?

### 4. Method

To address the research question above, a questionnaire was used to collect data, which were qualitatively analyzed using open coding procedures (Corbin & Strauss, 2015). This enabled the researcher to gain fine-grained insights into EFL learners' complex pictures of their language learning experiences.

### 4.1 Participants

Thirty-three tertiary-level Law and Economics learners attended a compulsory English class taught by the researcher (author). After data collection, a total of 10 student participated in the study. Among the 10 participants, 9 were sophomores (7 male, 2 female), and one was a junior male participant. Of the 9 sophomores, one male participant was an international student who entered the university as a regular student and not as an exchange student. This student had learned English as a foreign language and had a fairly high level of English proficiency. He was included in the study because various students offered diverse insights into the use of AI tools, which could deepen our understanding of their effective use.

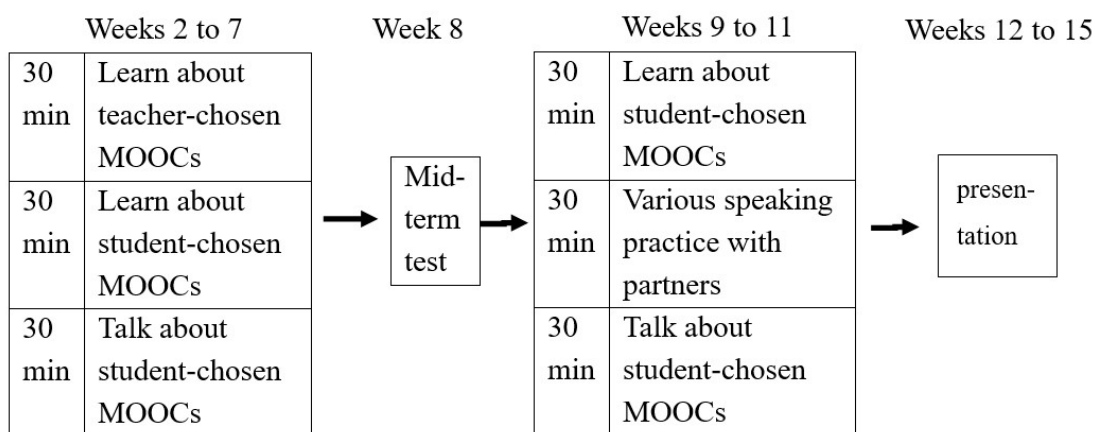
The participants’ English proficiency level was B1, according to the Common European Framework of Reference for Languages (CEFR). Based on the author’s in-class observations, it should be noted that one international student’s English ability, particularly speaking skills, was clearly higher than that of the Japanese students. He appeared to fall somewhere between B2 and C1 on the CEFR. None of the participants had any prior experience with ChatGPT.

### 4.2 Class description

This semester-long course comprised 15 classes, each lasting 90 minutes. The students brought their laptops to the classroom, which were connected to the university’s free Wi-Fi network. In the first class, the students registered with edX, a platform that offers MOOCs (edX, n.d.). Figure 1 illustrates the semester’s class procedure. In the first half of the semester, participants chose the MOOC course that interested them the most and learned about the course at their own pace for 30 minutes after learning the teacher-selected MOOC courses. Subsequently, in pairs, the learners discussed in English what they had learned from the MOOCs they chose. In the latter half of the semester, teacher-led MOOC learning was replaced with speaking practice to prepare students for presentations on the MOOCs they had chosen. During the presentation, each student was given three minutes to discuss the selected MOOC course.

At the end of each class during Weeks 2 and 7, learners were required to submit a brief report that answered the following questions: 1) explain the new content you learned in today’s class, 2) explain new English expressions/words you learned, and 3) explain what you learned from your partner during the final 30-minute session. In Weeks 9–11, learners were required to submit brief reports on what they were going to talk about in the presentation, which was aimed at helping them clarify the points they would present.

Figure1  
*Class Flow During the Semester*



In the first class, as the students had never used ChatGPT, the instructor introduced ChatGPT and explained its usage using the transcripts of MOOC lectures. For example, the instructor input several sentences from MOOC lecture transcripts into ChatGPT, allowing it to generate Japanese translations. Subsequently, she posed linguistic questions about the content and received responses from ChatGPT. Although the university allowed students to use ChatGPT, they were told to proceed with caution because sharing personal information with ChatGPT was prohibited by the university's guidelines.

### 4.3 Instruments

A four-item questionnaire was used for data collection. The questions were derived from a study by Ebadi and Amini (2022), who created questions to examine the motivational effects of a chatbot known as Computer Simulation in Educational Communication. The questions were modified to meet the aims of this study and translated into Japanese. A native-English-speaking researcher with native Japanese language proficiency cross-checked the validity of the translations. The questionnaire consisted of the following questions.

- 1) Please write down the websites and web applications used in the course of learning.
- 2) Please describe how you used each tool you wrote in 1).
- 3) Can the tools you wrote about in 1) motivate you to become more active and decrease anxiety? If you have written about multiple tools in 1), please indicate each tool.
- 4) Please provide reasons for not using ChatGPT in the course of learning.
  - a) registration was troublesome
  - b) there was no need to use it
  - c) I had a sense of resistance to generative AI such as ChatGPT
  - d) it might offer inaccurate information
  - e) others (students provided specific reasons)

### 4.4 Data collection

The questionnaire was distributed via *Google Forms* in July 2023 during the last class of the semester. The link to the questionnaire was sent to students through the university's learning management system, and approximately 10 minutes of class time was allocated to complete the form. Students completed the form in Japanese on their own laptops. Therefore, data were collected online for the participants' and researcher's convenience. As a result, data were collected from 10 out of 33 learners, excluding 23 who did not use ChatGPT or provided incomplete answers. Ethical consent was obtained from all participants after explaining the purpose of the study. Participation in the survey was voluntary, and participants were informed that their answers would not affect their grades, that they could quit answering questions if they did not feel like continuing, that the collected data would never be used except for research purposes, and that personal information would never be leaked externally. In addition, in the first class, the students were informed that the instructor would ask them about their use of various educational tools in class at the end of the semester.

### 4.5 Data analysis

The collected data were analyzed using open coding procedures (Corbin & Strauss, 2015), through which data were segmented (broken down into meaningful pieces), coded (delineating concepts for segmented data), and categorized (similar codes were bundled together and a theme was created).

First, students who used ChatGPT were separated from those who did not based on their responses to Question 1. Second, the participants' answers to Questions 2 and 3 were reviewed. MAXQDA, a qualitative analysis software, was used to segment and code the data in each group and categorize them. For instance, a student's comment, "I used it to translate the parts I could not understand." was categorized as belonging to the "Translation". Finally, after coding and categorization, the discernible patterns in terms of their use of the tool and motivational impact were analyzed. The author translated the comments into English, and a native English-speaking researcher with native Japanese language abilities verified the accuracy of the translation.

## 5. Results

### 5.1 Usage of ChatGPT

Ten students used ChatGPT throughout the course of learning. Tables 1 describes that the participants also used other AI-powered translation tools, such as DeepL (DeepL, n.d.) along with ChatGPT.

Table 1

*ChatGPT Group*

Online tools	Number of students
ChatGPT	7
ChatGPT & DeepL	2
ChatGPT & Google Translate	1

Students' comments for Question 2 *Please describe how you used each tool you wrote in 1)* were screened, and comments regarding DeepL and Google Translate were excluded from the analysis. Data were divided into 16 segments and coded. Codes with similar themes were bundled and categorized. These five categories are listed in Table 2. Examples of text data used to create each code are as follows: Translation (e.g., "I used it to translate the parts I could not understand."), Learn about expressions and vocabulary (e.g., "I asked about an easier expression for 'climate change'."), summarize content (e.g., "I used it to summarize some content."), Proofreading (e.g., "I mainly used it to proofread what I wrote, like checking spelling mistakes and screening if there were grammatical errors or not."), and obtain supplementary knowledge ("I also obtained supplementary knowledge.")

Table 2

*Qualitative Outcomes*

Name of category	Number of codes
Translation	5
Learn about expressions and vocabulary	5
Summarize content	3
Proofreading	2
Obtain supplementary knowledge	1

As the Table 2 shows, students used ChatGPT in diverse ways to assist and streamline their learning processes.

## 5.2 ChatGPT's motivational effects

Twelve responses to Question 3 *Can the tools you wrote about in 1) motivate you to become more active and decrease anxiety? If you have written about multiple tools in 1), please indicate each tool.*) were coded and classified into six categories (Table 3). Examples of text data used to create each code are as follows: Effective supporter for learning (e.g., "I think it would be difficult to deeply understand the content without some kind of support, so ChatGPT was very helpful."), decreased anxiety (e.g., "ChatGPT surely decreases anxiety."), increased motivation and decreased anxiety (One student simply wrote "Yes." to question 1), therefore, the student's answer was coded as "Increased motivation and decreased anxiety"), and increased motivation ("I was motivated.").

Table 3

### *Motivational influences*

Name of category	Number of codes
Effective supporter for learning	3
ChatGPT's positive motivational effects	3
Decreased anxiety	2
ChatGPT's negative motivational effects	2
Increased motivation and decreased anxiety	1
Increased motivation	1

"ChatGPT's positive motivational effects" consisted of two codes: "increased motivation due to ChatGPT's usability" and "reassurance stemming from ChatGPT's usability". For instance, the latter code is based on one student's comment: "I get a sense of reassurance more when I get advice from ChatGPT than when I think only by myself". "ChatGPT's negative motivational effects" also comprised two codes: "sense of insecurity that ChatGPT might provide inaccurate information" and "loss of self-confidence due to ChatGPT's high-quality proofreading". The second code was created based on Student A's comments:

To be honest, I think I became unable to have confidence in my English writing ability. This does not mean that I made many mistakes, but every time ChatGPT proofread my English, it suggested far better sentences than I wrote. Many times, I wondered why I could not have written those quality sentences by myself.

While most students positively evaluated ChatGPT as a tool which motivates them, it is important to mention that some students evaluated it negatively, stating a sense of insecurity or loss of self-confidence.

## 6. Discussion

### 6.1 Effects on motivational aspects

The research question was addressed by qualitatively analyzing learners' comments. The outcomes indicated that students were motivated, had decreased anxiety, and felt that ChatGPT effectively supported their learning. The first category (effective support for learning) does not specifically describe motivational elements. However, this was an important motivational phase; the students regarded ChatGPT as providing effective support for their learning; that is, they were scaffolded. Through scaffolding, learners can lower their affective filters, feel motivated, and reduce anxiety (Krashen, 1982).

Song and Song (2023) also pointed out that AI tools function as scaffolds to help learners personalize their learning content and enhance their motivation.

## 6.2 ChatGPT's positive and negative motivational impacts on L2 learners

As mentioned previously, ChatGPT's positive motivational effects consisted of two codes: "increased motivation due to ChatGPT's usability" and "reassurance stemming from ChatGPT's usability". "Usability" in each code refers to a function of being able to answer students' questions and give them advice. Thus, ChatGPT can serve as a reliable instructor for students in managing and controlling their learning.

The former code is consistent with previous findings (Hockly, 2023; Kasneci et al., 2023). In the present study, students were permitted to learn the information in the course they had chosen and proceed at their own pace. In this individualized/self-paced class, each student has their own materials and problems. For some students, the situation may be overwhelming or demotivating if they do not receive sufficient support. Dörnyei and Ushioda (2013) argued that students are not motivated to perform tasks if they feel incapable of successfully accomplishing them. Therefore, teachers can increase their success expectancy by providing them with sufficient assistance or by removing obstacles to success (Dörnyei & Ushioda, 2013). As the student's comment suggests, ChatGPT increased their motivation by providing sufficient assistance. Hmoud et al. (2024) supported this, arguing that students had a stronger sense of value in the learning processes after gaining effective support from ChatGPT to augment their task completion weaknesses. Additionally, ChatGPT's usefulness enhances learners' sense of control over the learning process and increases their joy (Qu & Wu, 2024), and self-confidence (Hmoud et al., 2024). In summary, obtaining individualized and effective support from ChatGPT enhances learners' sense of control over their learning, leading to increased motivation.

The latter code is based on the following comment from a student: "I get a sense of reassurance more when I get advice from ChatGPT than when I think only by myself". This suggests that learners perceived ChatGPT as a reliable learning partner. Regarding this point, students in Hmoud et al.'s (2024) study described ChatGPT as "a magic lamp" or "a treasure trove". These perceptions indicate that ChatGPT's usability diminishes students' sense of being solitary in the learning process, providing them with the feeling that they are accompanied by something (or someone) that is reliable, thereby fostering a sense of reassurance.

Its negative motivational effects were also captured with two codes: "sense of insecurity that ChatGPT might provide inaccurate information" and "loss of self-confidence against ChatGPT's high-quality proofreading". The former is a commonly addressed concern (Kasneci et al., 2023; Kohnke et al., 2023; Michel-Villarreal et al., 2023). Albayati (2024) found a statistically positive relationship between users' positive attitudes towards ChatGPT and their trust in its ability to provide accurate information. This finding also implies that distrust of ChatGPT negatively impacts learners' attitude toward it, which in turn influences students' motivation. To counteract this vicious circle, instructing users to utilize the tool critically and checking the credibility of information through other resources is vital not only to deepen their learning but also to decrease anxiety.

As mentioned previously, the latter code was created based on comments by an international student with outstandingly high English proficiency in this class. Although using ChatGPT to evaluate EFL learners' writing is perceived as an effective way to utilize ChatGPT (Mizumoto & Eguchi, 2023), the findings of this study suggest that using it to proofread writing can cause a loss of confidence in students with a high level of English proficiency. Therefore, teachers should be aware of the potential demotivating effects of using ChatGPT and remember that ChatGPT may not have the same level of interpersonal skills as human instructors (Michel-Villarreal et al., 2023). Specifically, teachers need to instruct EFL learners to use it appropriately to maintain psychological well-being, for example, by



narrowing the parts to be proofread or instructing learners on how to make effective prompts to obtain optimal responses.

### 6.3 Overwhelming number of choices

Regardless of its versatility and positive motivational influences, more than half the participants did not use ChatGPT, mostly because they did not feel it was necessary ( $n = 9$ ) or were reluctant to register for it ( $n = 5$ ). This indicates that many thought it was sufficient to use other available AI-powered tools or websites. As Kohnke (2023) pointed out, teachers should acknowledge that students can feel “overwhelmed by the technological tools already available and consider that adding another could lead to decision paralysis” (p. 222). Hence, it is important to teach students about the possibilities of using ChatGPT and how to effectively enhance their learning. It is also noteworthy that the intelligence of ChatGPT’s may hamper students from using it. One student noted that ChatGPT might automatically correct users’ mistakes by guessing their intentions, which would deprive them of the opportunity to notice their mistakes. His concerns could be resolved by instructing students to create sophisticated prompts that cater to their needs.

### 6.4 Pedagogical implications

This study’s findings suggest that ChatGPT can serve as a personalized teaching assistant, helping students streamline task-solving processes. Moreover, it makes learning tasks accomplishable, thereby enhancing students’ motivation and decreasing anxiety in individualized/self-paced classes. Even if a class consists of more than 20 students, which is common in many EFL classrooms, teachers can allow each student to pursue their own interests and learn the L2 from different materials. For EFL learners to learn the target language effectively and smoothly, teachers recommend that they use ChatGPT as a scaffolding tool, explaining that it would motivate them because they can control their learning. For instance, when students find reading materials difficult, teachers can instruct them to create summaries of the content written in easier English and grasp the overall meaning of the original texts. If the language level used in the summary is difficult, students can use ChatGPT to simplify it, serving as a bridge to enhance their understanding of the original reading materials. Being able to learn what EFL learners are interested in and being able to obtain optimal scaffolding can boost students’ motivation because they can attain a sense of accomplishment (Dörnyei & Ushioda, 2013). However, as Javier and Moorhouse (2023) pointed out, teachers should explicitly teach students how to use ChatGPT appropriately and how to create optimal and clear prompts. Not doing so might adversely affect learners’ motivation, causing them to lose confidence. In other words, teachers’ understanding of its negative effects on learners’ motivation, ample human-teacher support, and interactions with students will maximize the effects of ChatGPT in L2 classrooms. Another notable point is that students must decide on the use of a chatbot powered by LLMs. Otherwise, students may become overwhelmed by the already abundant choices at their hands, confused, or demotivated.

## 7. Conclusion

Future research should address the following limitations of the present study. First, the duration of this type of research project should be longer to eliminate the possibility of novelty effects (Fryer et al., 2019), which refers to increased effort on the part of students and the attention they show when they learn through a new type of medium. That is, their efforts and attention diminish as they become more familiar with the medium (Clark, 1983). Second, the data collected were limited. Future studies should include larger numbers of students from more diverse backgrounds and more data such as follow-up interviews.

Despite these limitations, this study revealed important insights into EFL learners' use of ChatGPT and its motivational impact from learners' perspectives. Consequently, ChatGPT's role as a private assistant can promote learners' motivation. However, careful use with sufficient teacher support and guidance is required, as some students claim that the risk of receiving false information increases anxiety, and corrections can cause a loss of confidence.

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