

Examining the Impacts of ChatGPT on Student Motivation and Engagement

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Abstract

This study aimed to investigate the effects of ChatGPT on student motivation and engagement. The study had two primary objectives: to determine teachers' and students' perceptions of how ChatGPT motivates students' learning process and whether there is a significant correlation between teachers' and students' perceptions of using ChatGPT in the learning process. The information was

gathered via a survey of 350 students and instructors. The data were analyzed statistically using ANOVA and post hoc multiple comparison tests. Students listening skills ($p = 0.006$) and interest in learning ($p = 0.00078103$) were significantly correlated with the teacher's experience level. In addition, the results demonstrated that ChatGPT substantially impacted student motivation and engagement. Highly experienced instructors significantly impacted student motivation in listening skills ($p = 0.006$) and learning interest ($p = 0.001$). The research indicates that ChatGPT helps increase student motivation and engagement in the learning process. Therefore, policymakers should promote the incorporation of ChatGPT into the educational system to improve student learning outcomes.

Keywords: ChatGPT, Students, Education System, Motivation, Engagement, Perception

1. Introduction

Information Technology (IT) has ushered in a new era of innovation and creativity in several disciplines, including education. Its cutting-edge technologies provide tools and applications that can revolutionize conventional teaching and learning methods. AI may benefit the educational sector in various ways, such as increasing productivity, enhancing learning outcomes, customizing training, delivering rapid feedback, and boosting student engagement. AI has numerous educational applications, such as intelligent tutoring systems, technological learning platforms, and automated rating systems (Adiguzel, Kaya, & Cansu, 2023). These programs have a high potential for enhancing academic performance and equip instructors with the resources necessary for individualized instruction. Intelligent tutoring systems, for instance, can adapt lessons to the requirements of particular students by providing individualized feedback and assistance. Additionally, automated grading tools can free up instructors' time to focus on crucial responsibilities such as class preparation and student support. On the other hand, personalized learning platforms can offer unique learning experiences that adapt to each student's specific interests and requirements, thereby increasing their motivation and engagement (Adiguzel et al., 2023).

(Ryan & Deci, 2000, 2019) The development of artificial intelligence (AI) has been phenomenal, impacting numerous aspects of modern life. ChatGPT is one of its recent innovations that affect ESL classrooms. ChatGPT has been shown to improve students' linguistic abilities significantly. ChatGPT is programmed to discern human

speech and respond appropriately and grammatically correct. Using ChatGPT exposes students to high-quality language models that can aid in developing their language skills. ChatGPT is a fun and engaging way for students to pose questions, receive immediate feedback, and increase their vocabulary and grammar skills. Decades of work in artificial intelligence research have contributed to the development of language learning technologies. Earlier research on the topic focused on how technology could be used in English as a Foreign Language (EFL) and English as a Second Language (ESL) classrooms in terms of incorporating ChatGPT, "a big autocomplete machine" (Liang et al., 2021; Ryan & Deci, 2017), into second and foreign language instruction has opened new avenues for study, including English as a Foreign Language (EFL) and English as a Second Language (ESL) classrooms (Aljanabi et al., 2023).

Some have claimed that despite efforts to implement AI in language programs to address current problems, such bots are "incapable of... producing insights or deep analysis" (Kasneci et al., 2023). They suggested comprehensively evaluating all AI-generated results to ensure their accuracy and avoid false or misleading claims (Kasneci et al., 2023). One of the more recent AI developments, ChatGPT, may yield misleading results if the current data is insufficient or outdated. If authors were required to make such disclosures, they might reconsider including ChatGPT as a co-author (Ahmadpour & Yousefi, 2016). There is a need for additional research to discover answers to the complex issues that coexist with AI. It is necessary to disentangle the advantages and disadvantages of ChatGPT and examine its effects on ESL and EF pupils. Before the development of ChatGPT, which resulted from extensive AI research, technology was utilized in language learning and teaching situations for various purposes. One of the earliest research projects on incorporating technology in English programs (Wang & Guthrie, 2004) examined the ease with which language school students could access virtual communication channels. It was demonstrated that students benefited tremendously from using computers and other modern technology because it increased their motivation, engagement, and interest in language acquisition. This concept was reinforced by the book on technological practices, research, and

constraints (Almaktary, 2018), discussing technology integration's benefits and drawbacks. On November 30, 2022, Open AI released ChatGPT, a general-purpose discussion chatbot anticipated to impact several societal aspects significantly. It is unclear how this method of natural language processing will impact education. ChatGPT's potential (Zhai, 2022) could substantially affect educational learning objectives, assessment evaluation procedures, learning activities, and evaluation processes. Before ChatGPT was created, Jain and Jain (2019) investigated the use of AI in higher education teaching and learning. They emphasized how this technology facilitates unparalleled access to higher education services outside the traditional classroom. The research examined the potential impact of AI on universities and how it may have both short-term and long-term ramifications in various areas of higher education. This paper investigates ChatGPT's effect on student motivation and engagement. This study expands on (Ali et al., 2023a) analysis of ChatGPT's benefits and drawbacks by evaluating teacher and student perceptions and identifying significant differences between them. Additionally, it builds upon (Ali et al., 2023a). The study shifts from a broad to a narrow focus, first investigating ChatGPT's potential from a global perspective and then its effects on local motivation. This study is critical because it can provide valuable insight into ChatGPT's ability to enhance educational opportunities for students. If the results demonstrate that ChatGPT can increase student engagement and motivation, the implications for educators, decision-makers, and those who develop educational technology could be significant. It could lead to incorporating ChatGPT and other tools into schools to supplement and enhance conventional teaching methods, thereby improving learning outcomes. The significance of the study can be attributed to its ability to elucidate how ChatGPT affects student engagement and motivation, as well as its capacity to guide the future development of educational technology. This study's primary objective is to investigate the effects of ChatGPT on student motivation and engagement. Using artificial intelligence in education raises several ethical and practical concerns despite its benefits. Problems range from the potential escalation of existing educational disparities to the proneness of AI algorithms to exhibit bias. Teachers must also receive the necessary training and

assistance to effectively incorporate AI into their educational practices. This study will provide policymakers with adequate conclusions and recommendations by examining the main objectives. The study's primary goals are to determine teachers' and students' perceptions of how ChatGPT motivates students' learning process and to determine if there is a significant correlation between teachers' and students' perceptions of ChatGPT's use in the learning process.

1.1 Justification of the study

ChatGPT, a large language model developed by OpenAI, has influenced the educational process and student interaction. ChatGPT has significantly impacted students, from enhancing their linguistic skills to providing them with individualized educational opportunities. In this article, the effects of ChatGPT on students are discussed. Technology in the classroom can be a game-changer when it comes to engaging children in learning. Technology-based learning aids like ChatGPT can increase student motivation and engagement by making the classroom more dynamic and interactive. This paper will examine how implementing ChatGPT altered the encouragement and participation of students. This article will provide a general overview of the technology and discuss the studies investigating its effects. In addition, it will discuss how instructors can utilize ChatGPT effectively in the classroom and the potential repercussions of implementing such technology. Microsoft Research developed ChatGPT, an AI system capable of conducting conversations that sound natural. It is intended to initiate student discussions on the topic at hand. This innovation may motivate students to work harder and be more engaged in their education. ChatGPT can promote in-depth comprehension and affective engagement with a topic by providing a dynamic and interactive learning environment. This article will analyze the impact of ChatGPT on student engagement and participation in class. The effects of ChatGPT on student motivation and engagement will be discussed, along with an overview of the technology and its applications in the classroom. In addition, it will discuss how instructors can utilize ChatGPT effectively in the school and the potential repercussions of implementing such technology.

2. Literature Review

The use of chatbots has surged in recent years, particularly in classrooms. Using these chatbots at the school has increased students' engagement, participation, and comprehension. The ChatGPT is a sophisticated chatbot that simulates human conversation by utilizing NLP and ML techniques to generate conversationally plausible responses to user inquiries. This research synthesis investigates the impact of ChatGPT on student engagement and motivation in the classroom.

2.1 Student Motivation and Engagement

Motivation and interest have a significant impact on how well students learn. According to (Ryan & Deci, 2000), the explanation is "the internal force that initiates, directs, and sustains behavior toward the achievement of a specific goal." Students' levels of engagement are determined by their participation in class and their apparent interest in what they are learning (Fredricks, Blumenfeld, & Paris, 2004; Skinner & Belmont, 1993). Students who are enthusiastic and invested in their studies have a greater chance of achieving their academic objectives. By conducting a literature evaluation on ChatGPT-based motivation, the current study was positioned within the context of related research. According to Dornyei (2020), students' motivation is inextricably linked to their level of class participation; therefore, it is essential to nurture motivation to promote active learning. He argues that the primary goal of any instructional design, whether for face-to-face or online training, should be to maintain students' interest in the subject matter.

In the past three years, there has been a significant increase in research on using AI to enhance language education (Gavilán et al., 2022). Misuse, human oversight, and biased output are problems associated with artificial intelligence. However, if managed properly, these obstacles can be used as teaching tools to prepare students for the societal preferences, complexities, and dangers associated with Kasneci et al. (2023) provide strategies for addressing these concerns and morally integrating these models into the classroom.

Their research on the future of education and the classroom considered the potential of artificial intelligence (Gocen & Aydemir, 2021). Phenomenology, a

qualitative research methodology, was used to investigate the perspectives of study participants from diverse disciplines. They discovered that implementing AI in the classroom would present educational institutions with novel benefits, challenges, and opportunities (Castillo-Acobo et al., 2022). The findings suggest strategies for implementing AI and addressing potential obstacles. Although most respondents favor artificial intelligence, some are concerned about its impact on the teaching and academic fields. Despite its entertainment value, this application may have significant implications for science and education, according to a study that criticized the use of ChatGPT in education (Thorp, 2023). He expressed particular concern regarding ChatGPT's future effects on education. Although it can produce articles on various topics, its academic writing skills are still in their infancy, according to him. Assess the potential benefits of adopting ChatGPT for educational purposes. Academics must now rethink their teaching methods and create complex assessments for AI to manage. They discovered that ChatGPT has advantages, such as personalized learning, promoting interactive learning, and allowing formative evaluation to support teaching and learning by continuously providing feedback. However, the researchers also identified some drawbacks, such as the potential for deceptive information dissemination, bias during data training, and privacy concerns.

2.2 Chatbots, Student Motivation, and Engagement

Chatbots are a potentially beneficial tool for increasing learning interest and engagement. Chatbots are computer programs that can converse verbally or in writing with humans to make them feel more human. The capacity of conversational agents to provide immediate, individualized feedback, guidance, and support can increase students' motivation and engagement (Patel, Yadav, & Gaurav, 2022). This article seeks to broaden the discussion on how chatbots may increase student enthusiasm and classroom participation.

Chatbots have been used to increase pupil engagement and participation in the classroom. The immediate and specific feedback students receive from these chatbots can increase their motivation and interest (Johnson, Rickel, & Lester, 2000; Williams & Deci, 1996). Students can feel at ease asking chatbot queries and receiving assistance

because they will not be judged (Yadav, Kaushik, & Sharma, 2022). Using chatbots in the classroom has increased students' enthusiasm and interest in learning.

A chatbot was utilized by Liang et al. (2021) to provide immediate feedback to students in a programming course. The use of the chatbot significantly increased student motivation and engagement, as demonstrated by the results.

(St-Hilaire et al., 2022; Yoon et al., 2019). These systems use AI technologies to provide personalized assistance to each student to enhance learning outcomes and student engagement. Due to the novelty of this trend in the classroom, additional research is required to investigate the effects of AI technology on students' motivation and engagement (Paricahua et al., 2022; Yoon et al., 2019).

Al-Kadi (2017); Gocen and Aydemir (2021) note that there have been numerous technological applications in language teaching and instruction before ChatGPT due to decades of research in artificial intelligence. Wang and Guthrie (2004) investigated whether language students can access authentic communication experiences in one of the earliest studies of technology's influence on language programs. Using computers and other high-tech equipment significantly facilitates learning (Ramos et al., 2022). Technology made students more engaged, motivated, and interested in learning a foreign language. Al-Kadi's (2017) book, "Technological Practices, Research, and Constraints," which examined the advantages and disadvantages of adopting new technology, offered additional support for this viewpoint. Recent studies have analyzed the advantages and disadvantages of utilizing extensive language models in education, such as ChatGPT. Willems (2023) examined the broader ethical implications of using such models in universities, while Kasneci et al. (2023) reviewed the benefits and hazards of ChatGPT for education. Malinka et al. (2023) analyzed the effects of ChatGPT on education and questioned whether it could lead to a college degree. ChatGPT's future impact on traditional evaluations in higher education was analyzed critically (Halaweh, 2023; Zhai, 2022). emphasized the appropriate use of ChatGPT in education and provided recommendations to ensure its moral and practical application. Crawford, Cowling, and Allen (2023) argued that leadership is necessary to safeguard the ethical use of ChatGPT in education, specifically regarding character, evaluation, and artificial intelligence-based learning.

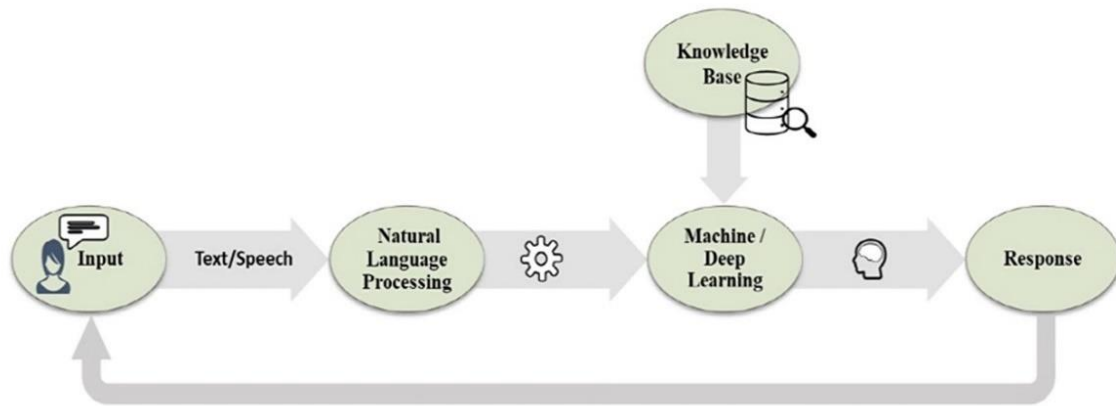


Figure 1: Chatbot functions

Source (Aleedy, Atwell, & Meshoul, 2022)

2.3 ChatGPT and Student Motivation

Accounts from practitioners have also acknowledged ChatGPT's potential to increase student engagement and motivation. According to a study (Liu et al., 2023), teachers could provide more individualized assistance to their pupils using ChatGPT, resulting in increased student engagement and motivation. Similarly, students who utilized ChatGPT on an online learning platform reported being more engaged in their coursework, with many stating that they enjoyed interacting with the software (Liu et al., 2023).

Similarly, Jain and Jain (2019) investigated whether artificial intelligence could summarize literature evaluations. The authors contend that artificial intelligence will revolutionize scholarly publication by relieving academicians of administrative duties so they can devote more time to research. They also used ChatGPT to compose an academic article and analyzed it with plagiarism detection software to ensure originality. ChatGPT was used in a study conducted in the same year by Liu et al. (2023), which found that it assists researchers in writing more coherent, precise, organized, and informative publications. Allowing students to utilize AI tools to complete subject-domain activities was also recommended, as was placing a greater emphasis on creative and critical thinking than on comprehensive skill development (Orwig, 2021; Takeda et al., 2018). ChatGPT allows students to employ someone to take their exams on their behalf. According to the findings, new evaluation methods are required to prioritize creative and critical thinking abilities that artificial

intelligence cannot replicate. [Kaid Mohammed Ali and Rashad Ali Bin-Hady \(2019\)](#) examined ChatGPT in EFL education from a global perspective. The results indicated that ChatGPT would be a welcome addition to the field because it assists students in improving their language skills, facilitates the learning process, and provides immediate feedback on the learner's outcomes and language usage.

It has been demonstrated that ChatGPT has a positive impact on student learning outcomes and has the potential to increase student engagement and motivation. [Yoon et al. \(2019\)](#) found that students who utilized ChatGPT in an online tutoring system outperformed their classmates who did not use ChatGPT in learning outcomes. Similarly, [Takeda et al. \(2018\)](#) found that integrating ChatGPT into a digital classroom improved student performance. Using NLP and ML algorithms, ChatGPT is an advanced chatbot that responds genuinely to user inquiries. ChatGPT has been utilized in the school to increase student engagement and enthusiasm for learning. ChatGPT was used by [Liang et al. \(2021\)](#) to provide immediate feedback to pupils enrolled in a programming course. According to the findings, ChatGPT significantly increased student motivation and engagement.

Similarly, ChatGPT was used as a teaching assistant in a study ([Deng & Yu, 2023](#)) to provide individualized feedback and assistance to online students. According to the findings, ChatGPT significantly increased student motivation and engagement. The use of chatbots, specifically ChatGPT, can dramatically enhance student motivation and engagement. These chatbots can increase students' motivation and attention by providing immediate, personalized feedback ([Kaid Mohammed Ali & Rashad Ali Bin-Hady, 2019](#)). Students can feel comfortable asking chatbot questions and receiving clarification because they will not be judged. According to the studies analyzed, incorporating ChatGPT into classrooms significantly increases student engagement and participation.

2.4 Impact of ChatGPT on Students and Teachers' Perceptions

[Ayдын and Karaarslan \(2022\)](#) investigated the possibility of using artificial intelligence to summarize literature reviews and how it could revolutionize academic publishing by allowing researchers to focus on their research and

requiring less manual labor. They used ChatGPT to compose an academic paper and plagiarism detection software to ensure originality. Similarly, [Zhai \(2022\)](#) conducted a study demonstrating the benefits of utilizing ChatGPT to compose logical, accurate, systematic, and educational papers. The study recommended modifying learning objectives to permit students to use AI tools for subject-domain tasks while emphasizing creativity and critical thinking over general skills development. Students can outsource assessment duties using ChatGPT, but new evaluation criteria emphasize creativity and critical thinking, which artificial intelligence cannot replicate ([Kohnke, Moorhouse, & Zou, 2023](#)). [Ali et al. \(2023b\)](#) conducted a study on ChatGPT's potential to enhance English language education worldwide. According to their findings, ChatGPT can facilitate language acquisition, accelerate learning, and provide timely feedback on language usage. The study proposes a five-dimensional AI-based language learning model. The present study is situated within this network of findings to build upon previous research on ChatGPT-based motivation. According to [Dornyei \(2020\)](#), instructional design for both traditional and online learning should emphasize motivation heavily due to its close relationship with engagement.

Using AI-powered chatbots in education has become beneficial for boosting student engagement and facilitating the learning process. According to studies by [D'Mello et al. \(2012\)](#) and [Winkler and Söllner \(2018\)](#), chatbot technologies can potentially improve student outcomes in higher education, enhance student interaction, and enrich learning experiences.

Moreover, chatbots may increase student motivation and engagement ([Deng & Yu, 2023](#)). There is no consensus among educators regarding the specific use of ChatGPT. Before the development of ChatGPT, [Hu, Laxman, and Lee \(2020\)](#) investigated the potential applications of chatbots in higher education. The study's findings indicated that chatbots could increase student engagement and happiness by answering frequently asked queries while reducing academic staff workload. According to [Firat \(2023\)](#), who examined the impact of a chatbot on student learning outcomes in a computer science course, the use of chatbots significantly enhanced students' performance and retention of information.

Moreover, RudolphA (2023) conducted a study on students' perceptions of chatbots in a language-learning context. The results revealed that students perceived the chatbot as a valuable instrument for language learning and had a positive attitude toward it. Due to the development of GPT-4 and other recent advancements in language AI, the use of chatbots in education has become more feasible. A novel training strategy for GPT-4 that employs extensive semantic discrimination tasks to improve text comprehension has been proposed (Okuyama & Suzuki, 2023), potentially yielding more effective educational chatbots. A content analysis of 100 news articles on the effects of ChatGPT on higher education (Sullivan, Kelly, & McLaughlan, 2023) revealed contradictory perspectives that highlighted concerns regarding academic integrity and the possibility of novel assessment design and enhanced learning outcomes. The study indicates that the opinions of disadvantaged pupils and the potential benefits of chatbots have not been adequately addressed in media discussions.

3. Methods

Participants

This study aimed to investigate the impact of ChatGPT on students' motivation and interest in the English language learning process. This study included a total of 350 participants, including both students and teachers. As instructors, those who are or have been teachers themselves participated. See Table 1 below for details. The cohort consisted of approximately 75% (263) men and 25% (87) women (see Figure 2 below).

Table 1: Participants' experiences

Participants		
Advanced Teaching experience	17.50%	61
limited experience	35%	123
students	47.50%	166

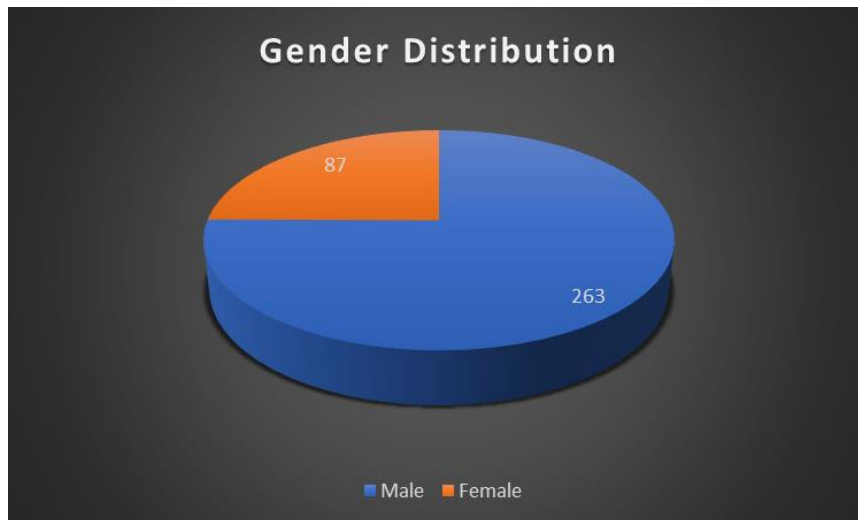


Figure 2: Gender distribution

Research Instrument

A questionnaire based on a five-point Likert scale was used to collect data from study participants. It was based on prior research (Ryan & Deci, 2000, 2017, 2019). It was divided in this manner:

In the first section of the questionnaire, respondents indicate their level of agreement on a scale ranging from "strongly agree" to "strongly disagree." Respondents were asked to assess the veracity of six claims regarding ChatGPT's ability to motivate students to improve their macro- and micro-learning skills in speaking, reading, and listening.

The second section consisted of six statements investigating whether ChatGPT increased students' enjoyment of English class, motivation to learn, confidence in their ability to flourish in the workplace, social skills, and sense of community.

Procedure

The investigation was conducted approximately two months after the introduction of ChatGPT at the start of 2023. Due to the geographical dispersion of the participants, an online questionnaire was distributed via email, Facebook, and WhatsApp. This study's participants were selected based on their knowledge of ChatGPT.

Data analysis

SPSS was used for descriptive and inferential statistical evaluations, including the validity and reliability of the questionnaire and the collected data, during the quantitative data analysis. The participants' demographic data were described by descriptive statistics such as mean and standard deviation. The data was analyzed using inferential statistics such as the t-test, ANOVA, and correlation analysis. The level of significance was set at $p < .05$.

Before any data was collected, Institutional Review Board (IRB) approval was granted. The significance of the participants' voluntary participation was emphasized and made plain. They were also assured of privacy and confidentiality.

4. Result and Discussion

Table 2: Descriptive statistics on learning skills from ChatGPT

		N	Mean	Std. Deviation
Main learning skills	Listening	350	2.22	1.2506
	Translation	350	2.25	1.2544
	Online learning	350	4.02	1.0905
	Writing	350	2.92	1.01601
Microlearning skills	Research	350	2.92	0.9645
	Grammar	350	4.45	0.6421

Students report the highest levels of involvement in online learning, with a mean of 4.02 and a standard deviation of 1.0905, according to survey data examining the effects of ChatGPT on student motivation and engagement. With a mean score of 4.45 and a standard deviation of 0.6421, micro-learning abilities such as grammar rank second. Writing ranks highest in students' interest in learning, with a mean of 2.92 and a standard deviation of 1.01600. The most excellent averages and standard deviations are for listening (2.22) and translation (2.25). The average of the investigations was 2.92, with a standard deviation of 0.9645.

Table 3: Motivation result

Motivation types	Items of the questionnaire	N	Mean	Std. Deviation
Independence	Independent	350	4.035	0.73638
	Self-confidence	350	3.945	0.73638
Internal	Enjoyment	350	4	0.95467
	Interest in learning using AI	350	3.55	1.13396
External	Interaction	350	3.745	0.93374
	Eagerness	350	4	0.74148
	Total	350		

According to the study, ChatGPT increased students' enthusiasm and interest in learning. Independence and intrinsic motivation had the highest mean scores, averaging 4.03 and 4, respectively. This demonstrates that ChatGPT gave students a sense of empowerment and increased engagement. The average score of 3.74 for external motivation indicates that ChatGPT moderately influenced student motivation. This could be because ChatGPT was regarded as a supplementary educational resource and not a replacement for more conventional forms of instruction.

An analysis of variance (ANOVA) was conducted to determine whether there were statistically significant changes in how people felt about ChatGPT's ability to boost motivation to study and improve learning abilities and other forms of motivation based on experience type. The following table compares the opinions of teachers with varying levels of expertise (high, low, and no experience) regarding the effectiveness of ChatGPT in encouraging students to better their listening skills and develop an interest in school.

Table 4: ANOVA result

		Sum of Squares	df	Mean Square	F	Sig.
Listening	Between Groups	14.778	2	7.88403	4.58818	*0.0133331
	Within Groups	114.782	348	1.50377		
	Total	129.44	350			
interest in learning	Between Groups	9.42494	2	4.77398	8.04708	*0.00078103
	Within Groups	44.7241	348	0.58953		
	Total	44.94	350			

There were statistically significant differences between the mean squares for listening ($F(2,348)=4.59, p<0.01$) and interest in learning ($F(2,348)=8.05, p<0.01$), as indicated by the analysis of variance (ANOVA) in the table above. This suggests that teachers' perceptions of ChatGPT's capacity to motivate students to practice their listening skills and cultivate an interest in learning English vary substantially across the three experience levels.

According to the results, educators with more years of classroom experience are more likely to have a favorable opinion of ChatGPT's impact on student motivation and class participation. This suggests that ChatGPT can be beneficial for increasing students' motivation to study and acquire more skills using ChatGPT when used by highly experienced educators.

Tukey's test for post hoc multiple comparisons was utilized to identify the precise sources of variation in the outlook across the three levels of experience. It revealed that those with more experience had a distinct perspective than those with less experience but that no difference existed between those with more experience and students. Low- and no-experience participants were unaware of this prospective advantage. On the other hand, while there was consensus that ChatGPT helps engage students, there were significant differences between those with more and less experience and those with more and fewer students (see [Table 5](#)).

Table 5: Post-HOC test for multiple comparisons in three levels of experience

Dependent Variable	(I) teaching experience	(J) teaching experience	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Upper Bound	Lower Bound
Listening skills	High experience	low experience	1.21426*	0.401	0.006	0.244	2.173
		Students	0.72707	0.373	0.074	-0.076	1.743
	experienced	high experience	-1.21426**	0.401	0.006	-2.173	-0.244
		Students	-0.3772	0.304	0.417	-1.117	0.343
	Students	high experience	-0.7271	0.373	0.074	-1.743	0.076
		low experience	0.37722	0.304	0.417	-0.343	1.117
Interest	high experience	experienced	.62747*	0.246	0.001	0.333	1.424
		Students	.77217*	0.237	0.001	0.303	1.441
	experienced	high experience	-.62747*	0.246	0.001	-1.424	-0.333
		Students	-0.0464	0.177	0.642	-0.406	0.367
	Students	high experience	-.77217*	0.237	0.001	-1.441	-0.303
		low experience	0.04636	0.177	0.642	-0.367	0.406

5. Conclusion

Despite the optimism surrounding ChatGPT, it is essential to remember that a chatbot of this type cannot be held accountable for an ethical breach. It must not impede creativity and critical thinking in the classroom (Liang et al., 2021). Always filter and modify the output of ChatGPT in light of the benefits and drawbacks identified by Liang et al. (2021). Before relying on it, caution should be exercised due to its incompleteness and possible inaccuracy, necessitating constant human intervention.

In addition to ChatGPT, the environment is a significant factor in determining one's level of motivation. When children are exposed to positive influences from their families, institutions, and communities, they are more likely to be optimistic and highly motivated to learn a second language. The responsibility of teachers is to foster in their pupils a positive outlook and intrinsic motivation for language acquisition. According to Liang et al. (2021), ChatGPT assisted participants in maintaining their motivation while studying English. It determined, from the perspectives of educators and students, how much the new language assistant (ChatGPT) affected students' desire to learn English.

The results do not disprove the hypothesis that ChatGPT improves students' academic performance. This study indicates that ChatGPT can increase students' enthusiasm and interest in learning. A between-group analysis revealed that ChatGPT participants had substantially higher scores in both listening ($F(2,347) = 4.58818, p0.01$) and interest in education ($F(2,347) = 8.04708, p0.001$). This indicates that utilizing ChatGPT to increase student engagement and motivation is feasible. Participants agreed that this bot improves students' macro and micro language abilities. It motivates pupils to read and write more than any other skill. Motives within and without the individual are enhanced in this manner. This indicates that English language learners favor ChatGPT as intrinsic motivation.

6. Limitations

Despite the extensive support for AI technology, its limitations must be considered. According to Rapp, Curti, and Boldi (2021), evaluating a chatbot's efficacy, value, and engagement may not be sufficient because it raises ethical concerns

regarding possible deception and misconduct. According to [Adamopoulou and Moussiades \(2020\)](#), users can mistake chatbots for actual people. In addition, the Deputy Director General of the European Consumer Organisation (BEUC) has expressed severe concerns about ChatGPT's potential to mislead and trick consumers ([Adiguzel et al., 2023](#)). Some countries, including Russia, China, Venezuela, Belarus, and Iran, have already outlawed ChatGPT because it distributes US political propaganda ([Garon, 2023](#)). According to ([Okonkwo & Ade-Ibijola, 2020](#)), user privacy is another significant issue. Therefore, Italy is the first Western nation to criminalize ChatGPT ([Adiguzel et al., 2023](#)). Notably, notable proponents of AI, such as Steve Wozniak and Elon Musk, have gone beyond ethical and privacy concerns and signed an open letter warning that AI "can pose profound risks to society and humanity" ([Musk, 2019](#)).

Creating and programming chatbots presents another formidable obstacle ([Rahman, Al Mamun, & Islam, 2017](#)). In addition, [Grosz \(2018\)](#) highlighted the potential problems that computational linguistics and NLP systems present, such as dialogue system failure, the impact of social Chatbots on interpersonal communication, and performance issues. Users want exact responses to their queries, which is only possible with accurate input data ([Cunningham-Nelson et al., 2019](#)). The precision of Chatbots' information depends on the quality of the input data. The findings indicated that incorporating ChatGPT into educational programs can increase students' motivation to study independently and under teacher supervision. There are certain limitations to this investigation. Initially, the small sample size may have affected the results. Second, the study duration was insufficient to determine whether ChatGPT has enduring effects. The study did not assess other student engagement and motivation forms, such as collaboration and persistence.

7. Recommendations

According to ([Guilherme, 2019](#); [Williamson & Eynon, 2020](#)), research on AI in education demonstrates a lack of emphasis on pedagogical perspectives and instructional approaches and a disregard for the numerous challenges and risks associated with using AI for learning and teaching. Equity and accessibility for all pupils must be considered when developing AI-based educational tools, as they must

not compromise user privacy and data security or reinforce biases or inequalities (Adiguzel et al., 2023). Despite concerns that artificial intelligence (AI) tools like ChatGPT could undermine academic integrity, their implementation and integration in educational institutions are hampered by a dearth of knowledge (Hussin, 2018). Therefore, academic institutions should recognize AI's value in research and education (Eke, 2023). Integrating Microsoft 365 Copilot, a version of ChatGPT, into Office applications such as Word, Excel, PowerPoint, and Outlook is likely to increase the educational impact of ChatGPT. ChatGPT employs machine learning to provide proactive recommendations, automated problem resolution, and customized guidance based on data from multiple sources (Adiguzel et al., 2023). Additional research is necessary to maximize emerging technologies in education and determine their potential benefits (Hwang & Chang, 2021; Xia et al., 2022). According to Pedro, Subosa, and Rivas (2019), by integrating AI-based educational technologies into their curricula and policies, we can help prepare the next generation of students for a future in which AI will play an increasingly vital role in their lives. This will differentiate text development and ideas (Halaweh, 2023).

Rather than instilling a healthy fear of ChatGPT in students, it is recommended that educators educate them on the platform's advantages. Observing that the investigation could have benefited from more qualitative data to support its findings is essential. Expand quantitative and qualitative research on ChatGPT and its influence on developing innovative pedagogical approaches.

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