Impact of ChatGPT on Learning Motivation:
Teachers and Students' Voices

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Abstract

Motivation drives most human activities, including foreign language learning, and it is affected by several intrinsic and extrinsic factors. This study investigated how ChatGPT impacts learning English. A quantitative research design was used to collect data from 80 teachers and students who had access to the ChatGPT in its very beginning phase in early 2023. The sample, selected in a non-probability sampling technique, responded to an online questionnaire. Findings showed that ChatGPT generally motivates learners to develop reading and writing skills. The respondents had neutral attitudes towards the effect of ChatGPT on developing listening and speaking skills. The findings suggest that ChatGPT-based teaching is motivational. ChatGPT should be used as a learning tool instead of fearing its negative impacts, which require further detailed investigations. Further research is required to explore more advantages of ChatGPT for other aspects of the language and illuminate its negative effects to help educators reduce them in English programs.

Keywords: artificial intelligence (AI), autonomous learning, ChatGPT, motivation

Introduction

Artificial Intelligence (AI) has grown incredibly, giving new forms and transformations in many facets of today's life (Gocen & Aydemir, 2021; Jain & Jain, 2019; Jillian et al., 2023). ChatGPT is one of its recent innovations that influence English language teaching and learning. It resulted from a long history of research on AI that technology-based language education drew on throughout the past decades. Early technology integration studies focused on learning strategies, motivation, attitudes, and integration into EFL and ESL programs (Ali, 2022; Al-Kadi, 2018; Ali & Bin-Hady, 2019; Zhao et al., 2002). The emergence of ChatGPT, which is "a giant autocomplete machine" (Jillian et al., 2023, p. 1), has given new areas of research on technology integration in second and foreign language education, including English (Aljanabi et al., 2023).

Despite attempts to adopt AI in language programs as a healer of existing problems, some voices contend that AI-language bots as "incapable of ... generating insights or deep analysis" (Buriak et al., 2023, p. 1). A team of 44 authors, starting with Jillian Buriak, argued that "the output of the AI model cannot be taken at face value. They advised that all AI-based outputs must be critically reviewed to prevent errors, missing key information, or making unrelated claims. ChatGPT, one of the recent AI inventions, might generate incorrect information if the available data needs to be completed or updated" (Buriak et al., 2023, p. 2). Such statements would perhaps allow authors to re-think before going too much to the extent that some acknowledge ChatGPT as a co-author (Bin-Hady et al., 2023). Research is needed to resolve relevant controversial issues that co-exist with AI. In the case of ChatGPT, there is a need to set apart its pros and cons and uncover its effects on learning English as a second and foreign language.

Before ChatGPT, which has ascended from a long history of research on AI, technology is used in language learning and teaching situations for many purposes (Al-Kadi, 2018; Zhao et al., 2002). One of the earliest studies on technology integration in English programs was Wang and Guthrie (2004), who investigated language school students' access to authentic means of communication. Students benefit significantly from computers and other modern devices. The study showed students could be more engaged, motivated, and involved in language learning with technology. This was strengthened in Al-Kadi's (2018) book on technological practices, research, and limitations, which weighed the advantages and disadvantages of technology integration.

Artificial intelligence and ELT

Over the last three years, research on technology in language teaching and learning in light of AI has increased remarkably. AI in education faces other issues, such as output bias, human monitoring, and misuse. However, if managed properly, these problems provide insights and opportunities in education to familiarise students with possible social preferences, criticalities, and risks of AI applications. They provide solutions to these issues and ethically employ such models in teaching (Kasneci et al., 2023).

Göçen and Aydemir (2020) looked into possibilities that AI could open up in education and the future of schools. The study used the qualitative research method of phenomenology, which looked at the views of participants from different sectors. They found that when AI is used in education, new advantages will be available for schools and teachers, drawbacks, and good points. The results give some suggestions for how to use AI and how to deal with possible problems. Even though most participants seem to like AI, some are concerned about the future of education, especially teachers and academics.

Emergence of ChatGPT

On November 30, 2022, Open AI launched ChatGPT, a general-purpose conversation chatbot expected to impact all aspects of our society significantly. However, possible educational implications of this natural language processing technique are

uncertain. Zhai (2022) argued that the potential of ChatGPT may significantly influence educational learning objectives, assessment evaluation processes, learning activities, and evaluation processes. Before the booming emergence of ChatGPT, Jain and Jain (2019) examined AI in higher education teaching and learning, showing how AI makes higher education services accessible outside the classroom at an unprecedented pace. The study discussed how AI may become a significant part of universities and its immediate and long-term effects on numerous higher education sectors.

Likewise, Aydin and Karaarslan (2022) examined the feasibility of summarizing literature review papers using AI. According to the authors, AI can change academic publishing by reducing the work that humans must do and freeing up academics to concentrate on their research. Additionally, they utilized ChatGPT to write an academic paper and employed plagiarism detection tools to ensure that ChatGPT's material was unique. In the same year, Zhai (2022) conducted a study using ChatGPT and the results indicated that ChatGPT benefit researchers in writing logical, accurate, systematic, and informative papers. The study proposed revising learning objectives, including allowing students to utilize AI tools to carry out subject-domain activities and highlighting creativity and critical thinking rather than general skill development. With ChatGPT, students may outsource assessment assignments. The study suggested that new evaluation forms are required to focus on creativity and critical thinking, which AI cannot replace. In a relevant study, Bin-Hady et al. (2023) approached ChatGPT in English learning from a global standpoint. Findings showed that it is highly anticipated that ChatGPT will be an addition to the field in terms of enhancing learners' language skills, scaffolding the learning process and providing timely feedback on the learning outcomes and language use. The study suggested a model based on AI of five dimensions to assisted language learning (AIALL).

Relevant studies on ChatGPT-based motivation were reviewed to slot the present investigation within the network of previous findings. Dörnyei (2020) suggested that the idea of motivation is directly connected to the notion of engagement, and it is essential to ensure motivation to establish student involvement. He suggests that any instructional design's goal, whether for conventional or online learning, should be to maintain students' interest in the subject matter.

With these studies, it is important to go from general to specific, from global to local. Drawing on Jillian et al. (2023) who illuminated the strengths and weaknesses of ChatGPT, this study explores its impact on students' motivation from the teachers' and students' perceptions and examines significant differences, if any, between their perceptions.

Research questions

The questions to be examined in this paper are twofold:
1. What is the impact of ChatGPT on English students' motivation from teachers' and students' perceptions?
2. Are there any significant differences between students' and teachers' perceptions on using ChatGPT in language learning?

Method

An obvious starting point is exploring the impacts of ChatGPT on learners of English and then exploring if differences exist between the perceptions of learners and teachers. This situates the study in the quantitative research paradigm that, in Creswell's (2013) words, "represents a legitimate mode of social and human science exploration" (p. 6). Although motivation lies somewhere on a continuum between quantitative and qualitative research, using quantitative measures enables statistical analysis to find out about general perceptions and a diversity of opinions about the effects of ChatGPT on learners' motivation for learning English.

Participants

The participants of this study were all students and instructors of the English language, whose total number was 80. The instructor participants are those who are currently teaching or have taught before. Fourteen of the participants, representing 17.5%, have high teaching experience (more than five years); twenty-eight, representing 35%, have low teaching experience (less than five years); and the others, thirty-eight (47.5%), are all students with no teaching experience. The sample also included male and female participants corresponding to 75% and 25%, respectively. The questionnaire was sent to participants who already had a clear idea of the recently launched natural language processing (NLP) chatbot, Chat Generative Pre-Trained Transformer (ChatGPT).

Instrument

The instrument adopted to collect data from the participants in the study was a five-point Likert scale questionnaire. It was developed based on previous studies (e.g., Williams & Deci, 1996; Ryan & Deci, 2017; Ryan & Deci, 2019; Ali & Bin-Hady, 2019; Ali, 2022). It was divided into two sections: the first section is based on a five-point Likert scale ranging from "strongly agree" to "strongly disagree". The questionnaire included six statements about the participants' views on whether ChatGPT motivates students to learn micro language skills (vocabulary and grammar) and macro language skills (listening, speaking, reading and writing). The other section consisted of six statements that also sought to determine whether ChatGPT increases students' interest in learning English, independent learning, self-confidence, ambition to get a job, interaction with other people, and fun and enjoyment while learning English. The questionnaire was sent to expert referees in applied linguistics to be reviewed and based on their comments and suggestions, and the questionnaire was modified.

Data Collection & Analysis

The study was conducted about two months after ChatGPT was launched in early 2023. Because the participants were not available in the same geographic area, i.e., they were geographically dispersed, they were asked to respond to an online questionnaire via email and WhatsApp. Data were analysed quantitatively. The SPSS (version 23) was used to operate descriptive and inferential statistical tests, including the validity and reliability of the questionnaire and the collected data.

Results and Discussion

Guided by the objectives of the study, the findings are arranged in two sequential parts. The first is about the impacts of ChatGPT on learners' motivation and the other is about statistical differences in the participants' responses. Both parts are based primarily on statistics. The former, using descriptive data, outlined mean scores and standard deviations and the latter used ANOVA for comparative analysis. As per determination theory pertains to the motivation behind people's choices in the absence of external influences and distractions. This paper inspects the attitudes of the practitioners and ELT experts towards the effect of using ChatGPT by English language learners on the way they learn English. In general, the results showed positive expectations at the motivational aspect to learn more and create greater interest, as shown in Figure 1.

The questionnaire included four questions about the effect of using GPT from the ELT practitioners' perspective on motivation to learn and develop the language skills of EFL students. Table 1 displays the mean and standard deviations of the participants' attitudes concerning ChatGPT-based activities to improve their language skills. Most of the participants thought that using ChatGPT could motivate EFL learners to develop their reading and writing skills with a (Mean 4.02, SD 1.28 and mean 3.92, SD 1.016) respectively. On the other hand, most participants showed a neutral attitude towards the effect of ChatGPT on developing listening and speaking skills with a mean and standard deviation of (M. 3.32, SD 1.28 and M. 3.25, SD 1.28) respectively.
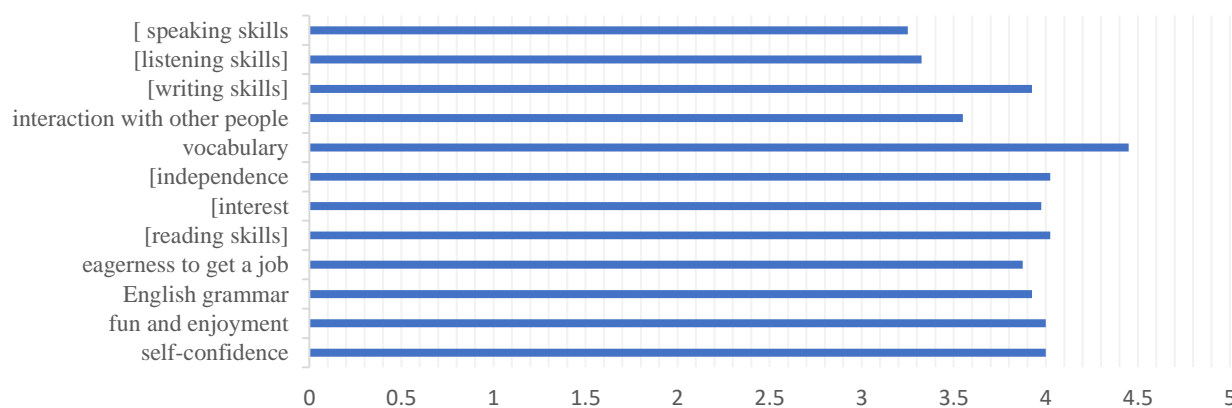
Figure 1. The mean of individual items of the questionnaire

Concerning the micro skills, the participants thought that grammar and vocabulary could be expanded and enhanced when the EFL learners use ChatGPT. Table 1 shows a Mean of 3.9 and SD. 0.9648 in favour of motivation to learn grammar and a Mean of 4.45 and SD 6731 to learn vocabulary. In addition, this paper sought to inspect the attitudes of the ELT experts towards the expected effect of using ChatGPT on motivating learners autonomously, intrinsically and extrinsically. Clearly, the analysis of the attitude questionnaire showed that most of the educators and ELT practitioners agreed on the positive effect of ChatGPT on motivating learners.

Table 1. Mean and standard deviation of the main language skills and micro skills

		N	Mean	Std. Deviation
Main language skills	Listening	80	3.32	1.2806
	Speaking	80	3.25	1.2877
	Reading	80	4.02	1.0905
	Writing	80	3.92	1.01601
Micro- language skills	Grammar	80	3.92	0.9648
	Vocabulary	80	4.45	0.6731

Table 2 displays the means and the standard deviations of the views of participants towards the triggering of the various types of motivation, namely: to manage their learning independently (M4.025, SD 0.8263), gain self-confidence (M3.97, SD 0.8263), get fun and enjoyment (M 4, SD 0.9546), create interest (M 3.55, SD 0.9328), interactive with speakers of the language (M 3.8, SD 0.9328) and eagerness to get a job in future (M 4, SD 0.8714).

Table 2. Mean and standard deviation of the different types of motivation

Motivation types	Items of the questionnaire	N	Mean	Std. Deviation
Autonomy	Independent	80	4.025	0.826385
	Self-confidence	80	3.975	0.826385
Intrinsic	Fun and enjoyment	80	4	0.954669
	Interest in learning English	80	3.55	1.123962
Extrinsic	Interaction with other people	80	3.875	0.932874
	Eagerness to get a job	80	4	0.871489
Total		80		

Finally, ANOVA was used to answer the question about significant differences among the different types of experiences in their attitudes towards the effect of ChatGPT on increasing motivation to learn and enhance EFLs' language skills and other different types of motivation. Table 3 shows that there are significant differences among the three levels of teaching experience (high experience, low experience and students) regarding their attitudes toward the effect of ChatGPT on motivating learners to develop their listening and creating interest in learning English.

Table 3. (ANOVA) The difference in the attitudes of the different types of experiences

		Sum of Squares	df	Mean Square	F	Sig.
Listening	Between Groups	13.76805	2	6.884023	4.57817	*0.0132231
	Within Groups	115.782	77	1.503662		
	Total	129.55	79			
interest in learning	Between Groups	9.32594	2	4.66297	8.04608	*0.00067103
	Within Groups	44.62406	77	0.579533		
	Total	53.95	79			

As shown in Table 4, the Post hoc multiple comparisons test "Tukey" was used to assign where the differences in the attitude among the three levels of experience lay. It revealed that the attitude of high experience significantly differed from low experience but no difference between high and students. The high experience participants believed that listening skills might be developed by using ChatGPT while both low and students were unaware of the presumed effect. On the other hand, though all participants agreed on the positive effect of ChatGPT on creating interest within learners, there were significant differences between high and low experience from one side and high and students from another.

Table 4. Multiple comparisons of Tukey HSD post hoc test for the 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	1.21429(*)	0.40138	0.009	0.255	2.1735
		Students	0.82707	0.38337	0.085	-0.0891	1.7433
	experienced	high experience	-1.21429(*)	0.40138	0.009	-2.1735	-0.255
		Students	-0.38722	0.30541	0.418	-1.1171	0.3427
	Students	high experience	-0.82707	0.38337	0.085	-1.7433	0.0891
		low experience	0.38722	0.30541	0.418	-0.3427	1.1171
interest	high experience	experienced	.92857(*)	0.24918	0.001	0.3331	1.5241
		Students	.87218(*)	0.238	0.001	0.3034	1.441
	experienced	high experience	-.92857(*)	0.24918	0.001	-1.5241	-0.3331
		Students	-0.05639	0.1896	0.952	-0.5095	0.3967
	Students	high experience	-.87218(*)	0.238	0.001	-1.441	-0.3034
		low experience	0.05639	0.1896	0.952	-0.3967	0.5095

*The mean difference is significant at the .05 level.

With these positive attitudinal findings on ChatGPT, it is worthwhile to note that such a chatbot cannot be held accountable for the ethical breach. It should not hinder learners' creativity and critical thinking (Jillian et al., 2023). Drawing on Jillian et al.'s (2023) strengths and weaknesses of ChatGPT, the output of ChatGPT should always be filtered and revised. It should not be taken for granted because it is not complete and final and may contain incorrect output that always requires human intervention.

Apart from ChatGPT, motivation is generally affected by the surroundings. According to Yunus et al. (2011), when students are subjected to positive influences from their families, schools, and communities, they are more inclined to adopt an optimistic attitude and be highly motivated to acquire a second language. The teachers have the obligation, as one of the factors, to guarantee that their learners have a positive attitude towards the target language and are motivated to learn it. The study discussed that ChatGPT enabled motivation for learning English. It assessed the extent the new language bot (ChatGPT) impacted learners' motivation to learn English from the point stand of teachers and students.

The findings do not counter the expectations that ChatGPT's impacts students' learning. The participants collectively showed positive views that this bot impacts students' language macro and micro skills. It motivates students to read and write more than other skills. It increases their intrinsic, extrinsic and autonomous motivation. This indicates that English students positively perceive ChatGPT as a motivational tool for learning English.

Conclusion

Although the paper offers little in the way of a long research journey on ChatGPT regarding its impacts on learning English in general, the findings are essential for the growth of research on these newly introduced technological advances in L2 pedagogy. Based on the findings, ChatGPT is recommended to be integrated into English language programs to promote learners; motivation to learn autonomously and under teachers' supervision. Teachers are suggested to show students how to benefit positively from ChatGPT instead of fearing its negative impacts. A limitation that should be stated is the lack of supportive qualitative data that would have enriched the investigation. More about ChatGPT and how it shapes new learning styles and strategies need to be explored quantitatively and qualitatively that other research projects may take as a point of departure in their further research.

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