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The Impact of ChatGPT on Language Learners' Motivation

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ABSTRACT

As digital technology advances, its tools and applications are being used both inside and outside the classroom to increase student participation and motivation. One encouraging technology that has freshly seized acceptance is the adoption of artificial intelligence (AI) in language learning (i.e. ChatGPT). As it can engender human-like chat in return to user guidance and based on the gap in the literature regarding the effects and implications of using such a tool as an instructional material, the goal of this study is to explore the effect of integrating ChatGPT-generated dialogues into language teaching materials to determine its effect on the motivation of language learners. The participants were second-year university students from different departments. Within the scope of a study consisting of a total of 10 sessions and 15 min. for each one, in the experimental group, post-lesson activities were implemented with the assistance of ChatGPT, whereas in the control group, assignments were given as specified by the curriculum program. The quasi-experimental design was employed for the research. The students' motivational strategies were measured using the 'Motivational Strategies for Learning Questionnaire' (Pintrinch & De Groot, 1990) and pre- & post-tests were carried out to show the difference, if any. The data was analysed with SPSS. The outcomes showed that there were statistically differences between majors on the motivation test subcategories (self-regulation, intrinsic values, and test anxiety). Also, ChatGPT's role as providing feedback, personalized support, guidance independent of time and place, and increasing motivation is an influential factor that leads to improvement for language learners.

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INTRODUCTION

Language learning has always been a challenging task for many students, especially when it comes to engaging with language teaching materials. Learners often feel bored or uninterested in traditional language learning resources, such as textbooks and lectures, which can negatively affect their motivation to learn (Gürbüz, et al. 2017). As a result, language teachers are constantly seeking innovative ways to enhance learners' motivation and engagement. One promising approach is the use of technology in language teaching. In recent decades, there has been an increasing curiosity towards the utilization of diverse forms of technology such as Computer-Assisted Language Learning (CALL), learning through mobile devices, and education through gaming to enhance language learning outcomes (Palomo-Duarte et al., 2016). These advancements present learners with chances to engage with the language in different settings, obtain instant responses, and partake in self-motivated education.

The technology that has recently gained popularity is the use of artificial intelligence (AI) in language learning. AI systems can generate and deliver personalized learning materials that are tailored to learners' needs and preferences (Raj & Renumol, 2022). One such AI system is ChatGPT, a language model developed by OpenAI that can generate human-like dialogues in response to user input. Among a small number of studies, Zileli's study (2023) covers a wide range of topics, including having conversations, word meanings, sentence meanings, and word meanings within sentences; translating English texts into Turkish; getting feedback; pronunciation; reading texts; giving feedback on written texts; outlining topics with examples; and creating exercises supported by ChatGPT. According to the study, ChatGPT encourages language acquisition and assimilation by offering feedback from a variety of angles to learners who are interested in learning Turkish as a foreign language. Also, by engaging them and presenting them to other languages in a fun way using voicebots and augmented reality, young children's cognitive development can be improved (Topsakal & Topsakal, 2022). In the study of Şenyaman (2023), vocabulary, pronunciation, grammar tests at various levels, translation activities, writing papers on certain subjects, and supplying equivalents for idiomatic idioms have all been requested from ChatGPT. According to the findings of the study, ChatGPT is advantageous in that it offers feedback, individualized help, guidance that is not dependent on location or time, and motivation, the elements that are most important for assisting an individual learn a language.

While there has been limited research on the use of ChatGPT in language teaching, little is known about its impact on learners' motivation to engage with only vocabulary acquisition. Furthermore, motivation is a crucial factor in language learning, as it affects learners' willingness to engage in language learning activities and their persistence in pursuing their language learning goals (Dörnyei & Ushioda, 2013). Therefore, the purpose of this study is to investigate the impact of incorporating ChatGPT-generated dialogues in language teaching materials (specifically vocabulary acquisition) on language learners' motivation to engage with these materials. The research questions are:

1. What is the impact of ChatGPT-generated dialogues on language learners' motivation to engage with language teaching materials?

2. What are the factors that contribute to the effectiveness of ChatGPT-generated dialogues in promoting language learners' motivation?

3. Is there any difference between the students' pre- & post-test results?

This study aims to contribute to the existing literature on technology-mediated language learning and motivation by exploring the potential of ChatGPT-generated dialogues as a means of enhancing learners' motivation to engage with language teaching materials. The findings of this study can provide valuable insights for language teachers and curriculum designers on how to effectively integrate AI-generated materials into their language teaching practices.

Technology-Mediated Language Learning

The concept of technology-mediated language learning entails utilizing diverse technological approaches to boost and improve the results of language education. In recent decades, there has been a mounting attraction towards integrating technology into language learning, with several instructors and scholars (such as Blake, 2013; Brandl, 2002; Chapelle, 2003; Garrett, 1991) examining how it can furnish learners with fresh avenues for practicing and communicating in a language. Diverse technology categories have been implemented in language education, which encompasses CALL, mobile learning, game-based learning, and recently, artificial intelligence-driven approaches, such as language learning applications and chatbots. Technology-mediated language learning has the potential to provide learners with increased access to language materials, opportunities for interaction and feedback, and personalized learning experiences. However, it is important to carefully consider the pedagogical implications of using technology in language learning and to ensure that it is being used in ways that are effective, engaging, and inclusive for all learners. CALL, in particular, has been widely used in language teaching since the 1960s (Warschauer & Healey, 1998). It empowers learners to participate with language learning resources in an interactive and self-guided approach which can enhance their motivation and engagement (Chapelle, 2001). Mobile learning, on the other hand, refers to the use of mobile devices, such as smartphones and tablets, to support language learning (Kukulska-Hulme, 2012). Mobile learning offers learners opportunities to engage with the language in various contexts and settings, such as on the go or in real-life situations. Moreover, mobile learning can enhance learners' motivation and engagement, as it allows them to access learning materials anytime and anywhere (Kukulska-Hulme, 2012).

Game-based learning, meanwhile, refers to the use of games or gamification elements in language teaching (Gee, 2005). Games offer learners a fun and engaging way to learn the language, as they can learn and practice the language in a playful and interactive manner. Moreover, games can enhance learners' motivation and engagement, as they recommend learners immediate feedback and rewards for their progress (Gee, 2005). Incorporating game-based learning into language teaching not only fosters effective language acquisition but also cultivates a dynamic and motivating learning environment for the learners.

The Impact of the Materials on Learners' Motivation

Motivation is a crucial factor in language learning, as it affects learners' willingness to engage in language learning activities and their persistence in pursuing their language learning goals (Ushioda & Dörnyei, 2017). Motivation can be divided into two types: intrinsic motivation, which refers to the learner's internal drive to learn the language, and extrinsic motivation, which refers to external factors that motivate the learner, such as rewards or grades (Dörnyei, 2001).

Internal motivation that stems from a person's identity and sense of fulfillment is known as intrinsic motivation. When learning is a primary objective, learners are naturally motivated. On the other hand, extrinsic motivation originates from sources other than the person. When learning is carried out for rewards like marks or praise that are not intrinsically linked to the learning itself, namely, when learning becomes vital for receiving those benefits, learners are extrinsically motivated (Ng & Ng, 2015). Intrinsic motivation is considered to be more desirable than extrinsic motivation, as it leads to deeper and more long-lasting learning outcomes (Ryan & Deci, 2000). Therefore, language teachers should aim to foster learners' intrinsic motivation to learn the language, as an illustration, by furnishing prospects for independence, proficiency, and connection (Deci & Ryan, 2008).

Research has demonstrated that integrating technology into language instruction can improve learners' drive and involvement (De Souza et al., 2021). Technology-mediated language learning offers learners opportunities to interact with the language in various contexts and receive immediate feedback, which can enhance their intrinsic motivation to learn the language (Chapelle, 2001).

Language teaching materials are designed to facilitate the language learning process by providing

learners with resources that expose them to different aspects of the language. These materials come in various forms, including textbooks, workbooks, audio and video materials, and online resources (Harwood, 2010; Tomlinson, 2023) However, the impact of language teaching materials on learners' motivation to engage with them is still a topic of debate in the field of language education (Sun, 2010). For example, according to Mohseni and Ahmadi (2017), allowing students to choose their own learning materials according to their preferences and needs has been reported to increase motivation for learning. It was aimed to provide an overview of the existing literature on language teaching materials and their impact on learners' motivation in this part Also, language teaching materials play a pivotal role in language learning, given that they offer learners a methodical and organized approach to acquire the language. Materials that are well-designed can enhance learners' motivation and engagement by providing them with interesting and relevant content, opportunities for interaction and practice, and feedback on their progress. Moreover, language teaching materials that are aligned with learners' goals, interests, and proficiency levels can help to increase their sense of autonomy and self-efficacy (Gardner, 1985). However, traditional language teaching materials, such as textbooks and workbooks, have been used in language classrooms for many years. These materials provide with a structured approach to learning the language, which can be helpful for some learners. Nonetheless, they are often criticized for being too dry and boring, which can lead to decreased motivation and engagement (Ellis, 2003). Furthermore, traditional materials may not be relevant or interesting to all learners, and lack motivation and engagement (Peacock, 1997).

The learner's drive constitutes a fundamental factor in the Second Language Acquisition (SLA) procedure, and language instruction resources serve a crucial function in language education and teaching undertakings. Various determinants that could impact learners' enthusiasm towards teaching materials were recognized, including the theme's appeal, complexity, correlation with their current knowledge, and perceived utility (Sun, 2010). Different factors impact students' motivation towards teaching materials, including their interest in the subject, the difficulty level, relevance to their prior knowledge, and perceived usefulness (Dornyei, 1994). Additionally, the study of Stracke (2007) sheds light on the psychological and cognitive factors influencing the decision of three students to drop out of blended language classes. The situations may fluctuate concerning learners' psychological and cognitive attitudes, cultural, social, and academic circumstances, and the extent of technology adoption in the learning environment. However, there are challenges concerning teachers, students, learning environments, and teaching evaluation and management in using multimedia technology. As Chen and Li (2011) stated, one of the significant issues is the inadequate incorporation of multimedia technology in classroom instruction which results in a gap between its potential and the teachers' and students' proficiency and comprehension. The teachers are suggested to have more training and development sessions of technology, ability to inspire students' curiosity and encouraging their initiatives, to perfect the fusion of multimedia teaching and conventional classroom instruction, and to establish a workable and efficient system of teaching evaluation and management. And also, another issue is students' inadequate awareness and ability to learn autonomously, coupled with the obsolete framework for evaluating and managing instruction (Mao, 2010).

The impact of technology on language education is often exaggerated, as novel technologies are occasionally presumed to be more efficient than current ones, without considering disparities in connected teaching approaches (Bax, 2003). Even though technology can provide opportunities for enthusiastic learners, it is improbable to result in drive or self-regulating conduct without fitting pedagogical methods that capitalize on the technologies and include adequate training in their use for language instruction (Reinders, 2018a). In addition, teacher attitudes and classroom pressures may also impact the implementation of technology (Mercer & Kostoulas, 2018).

In language learning, engagement and motivation are widely acknowledged as crucial factors for success. Increased motivation can mobilize students' personal, cognitive, emotional, and behavioural resources, leading to better learning outcomes. With the advancement of digital technology, its tools and

applications are being utilized both inside and outside the classroom to boost student motivation. The role of technology as a motivational factor in foreign language learning was explored (Panagiotidis et al , 2018), examining various tools, methods, or strategies that increase motivation. Extensive research has studied the relationship between technology use, as internet utilities, electronic games, smartphone applications, or communication platforms, and drive in language education environments (Lamy & Hampel, 2007; Mukundan et al., 2014; Son, 2011). Although technology is frequently deemed intrinsically stimulating for pupils and intertwined with independence enhancement, its impact on drive is proving to be more intricate than initially perceived by language instructors and learners (Stockwell, 2013).

In the last three decades, studies on language learning have mostly concentrated on conventional classroom environments (such as; Campbell et al, 2013; Janda, 1990; Lyke & Frank, 2012). Nevertheless, with the incorporation of computer technology, language learning has turned more environmental and the application of technology has become routine in classrooms. This routine integration of technology has swiftly transformed the language learning scene, with the ubiquitous utilization of mobile gadgets and online resources. Therefore, learners of digital languages must comprehend and employ suitable learning strategies for efficient language acquisition, and their instructors must have the capacity and readiness to teach these strategies. What is crucial in every circumstance is forbearance, and both educators and pupils should possess a receptive attitude towards novel methodologies and routines that may favourably transform the aspect of the learning milieu (Zhou & Wei, 2018). At this point, since it will facilitate understanding the purpose and scope of this study, there is a brief mention of the topics of self-regulation and cognition.

Self-regulation is a notion that encompasses cognitive, behavioral, and affective elements of learning, providing considerable potential for examining the learning process in its entirety (Perry et al., 2008). According to Zimmerman (1989), students are self-regulated to the extent that they are metacognitively, intrinsically motivated, and behaviorally engaged participants in their own learning process. The "will" and "skill" of learners are essential for effective learning, and both relate to motivation and the adoption of efficient techniques that are part of self-regulation (Pintrich & De Groot, 1990). So, in addition to cognitive abilities, self-regulation also requires motivational elements like self-efficacy, goal orientations, anxiety, etc. Planning and time management, participation and attention to teaching, organization, recoding, and rehearsal of the material, structuring the study environment, and effective use of social resources are all aspects of academic self-regulated processes (Zimmerman, 1990).

Accordingly, the ability to change the meaning structure of language by recognizing and recognizing differences in word structure that are connected to verb tense, grammatical gender, or plural formation is known as morphological awareness (Cheung et al., 2010). In addition, Robinson (2001) claimed the “Cognition Hypothesis of L2 Development” and offers a ratio-nale for sequencing tasks in language programs. It accomplishes this by utilizing a methodical framework for comprehending task requirements, which is primarily divided into three factors: complexity, conditions, and difficulty.

METHOD

The Participants

The participants of this study were second-year university students in 2022-23 academic year, aged from 18 to 22. They had 56 English lessons in the first year at the intermediate level and they were successful. Totally, 25 females and 35 males participated from different departments such as graphic design, martime and information technologies.

In this study, a pre- & post-test experimental-control group quasi-experimental design has been employed. Experimental designs are used to examine the effect of a variable in two different groups (Büyüköztürk et al, 2012.

The participants were grouped homogenously according to their proficiency level. The control

group consisting of 30 students applied traditional learning methods and the experimental group consisting of 30 applied ChatGPT based learning. The students were majoring in Maritime and Management, Graphic Design and Information Technology Departments.

Instruments & Procedure

Both groups were administered the Oxford English Proficiency Test, ensuring the homogeneity of the groups before overall. According to the results, 3 of the students were subtracted from the study since they were seen to be very successful at advanced level on contrary to the rest of the students who were intermediate level. After that, a demographic information form was provided. One of the main instrument of the study is ChatGPT.

As a large language model, ChatGPT assisted to the students in the experimental group in several ways to integrate language learning into the classes. ChatGPT was utilized according to the following items:

(1) It was used as a language practice tool: to practice writing or listening in English, to give information about how to ask questions or have a conversation in the target language to improve vocabulary learning skills.

(2) It was used to generate language exercises: to generate language exercises that the students can complete to practice. For example, to create vocabulary lists, or reading comprehension passages including the targeted word list.

(3) To provide feedback on writing assignments: feedback on the students' writing assignments with the word list that have been taught in the previous lesson, to check for vocabulary errors, provide suggestions for improvement, and give feedback on the overall quality of their vocabulary usage.

(4) It was used to provide language input: to provide the students with language input in the target language with the word list. For example, to recommend reading aloud exercise websites, to read aloud passages or stories, or to provide audio or video clips in English for the students to listen or to watch.

It is essential to note, here that it only provides assistance and support for language learning, but it cannot replace human interaction and feedback that is essential for language acquisition. So, it is important to use it as a supplement to the students' learning and not a replacement for it. Thus, the instructor took the role of teaching and ChatGPT was profited as a practise or exercise partner.

10 sessions, the subjects for each sessions and the ChatGT assistance can be seen in Table 1.

Table 1. *The ChatGPT role for each subject*

Sessions	Subjects of words	ChatGPT assistance
1. session	Conversation (greeting, introduction etc.)	gives clues about conversations (such as how to start or finish a conversation, how to introduce yourself properly, hobbies, how to take turns etc.)
2. session	The terms and definitions of materials (different materials encountered in the students' professional life, i.e. computer devices, information technology terms for Information Technology Department, or design terms for Graphic Department, or Ship and Port Management terms for Maritime and Management Department)	Language exercises, word lists, translating, word-chunks, how to use a word in a sentence, giving examples for formal and informal usage of the words etc.

3.session	The terms and definitions of materials (different materials encountered in the students' professional life, i.e. computer devices, information technology terms for Information Technology Department, or design terms for Graphic Department, or Ship and Port Management terms for Maritime and Management Department)	Language exercises, word lists, translating, word-chunks, how to use a word in a sentence, giving examples for formal and informal usage of the words etc.
4. session	The terms and definitions of materials (different materials encountered in the students' professional life, i.e. computer devices, information technology terms for Information Technology Department, or design terms for Graphic Department, or Ship and Port Management terms for Maritime and Management Department)	Language exercises, word lists, translating, word-chunks, how to use a word in a sentence, giving examples for formal and informal usage of the words etc.
5. session	The terms and definitions of materials (different materials encountered in the students' professional life, i.e. computer devices, information technology terms for Information Technology Department, or design terms for Graphic Department, or Ship and Port Management terms for Maritime and Management Department)	Gives links on websites in order to make the students see the words in real life usage.
6. session	Filing and writing for each department	Gives assignments (i.e. writing a paragraph or conversation with using the words previously learned)
7. session	Filing and writing for each department	Feedback on the assignments
8. session	Reading and comprehension of the formal letters	Gives examples of the letters or files that can be useful for the professional life of students)
9. session	Media support	Gives audio-visual video clip links in order to provide pronounciation and listening learning materials.
10. session	Media support & Suggestions	Gives more links and suggestions to make sudents continue their vocabulary learning.

After the online English lessons included in the second-grade curriculum, the experimental group was provided with support from ChatGPT, as mentioned in the above points, in addition to the traditional course materials. These activities lasted for 15 minutes as post-lesson activities and were implemented in a total of 10 sessions for the vocabularies to be learned each week. Students were free to ask questions to ChatGPT in order to learn the words and all sessions were conducted online under the supervision of a teacher.

In this study, the students' motivational strategies were measured using the 'Motivational Strategies for Learning Questionnaire' adapted into Turkish by Uredi (2005), which covers 44 items, and was originally developed by Pintrinch and De Groot (1990). The measurement tool was a 3-point Likert-type scale, scored based on the range from 'completely fits me' to 'does not fit me at all'. Additionally, 10 fill-in-the-blank questions with a total score of 10 were designed. To evaluate the students' proficiency in the target vocabulary, a pre-test was administered before the lesson, and a post-

test was conducted afterwards to measure their knowledge acquisition and mastery.

Table 2. *Structural model of motivational strategies for learning questionnaire*

Self-Regulated Learning Strategies			Motivational Beliefs		
The sub-scales	Cognitive Strategy Use	Self-Regulation	Self-Efficacy	Intrinsic Value	Test Anxiety
The sub-dimensions	Rehearsal Elaboration Organization	Planning Monitoring Evaluation	Perceived Competence and Confidence in Classroom Performance	Intrinsic Interest Perceived Importance of Schoolwork Intrinsic Goal Orientation	Level of Test Anxiety

Table 2 shows that the items 33, 32, 27, 43, 35, 25, 38, 37, and 40 are used to measure the self-regulation dimension, while items 39, 44, 28, 24, 36, 41, 23, 31, 26, 34, 30, 42, 29, and 11 measure the cognitive strategy dimension. Items 11, 16, 18, 9, 8, 13, 2, 19, and 6 are used to measure self-efficacy, items 1, 5, 4, 7, 10, 14, 15, 17, and 21 measure intrinsic value, and items 3, 12, 20, and 22 measure test anxiety. Additionally, items 26, 27, 37, and 38 are reverse-scored. According to Üredi's (2005) study, the internal consistency of each sub-scale was measured using Cronbach's alpha values, which were found to be 0.84 for self-regulation, 0.92 for self-efficacy, 0.88 for intrinsic value, and 0.81 for test anxiety. Cronbach's alpha is a measure of internal consistency, indicating the reliability of the items within each sub-scale. These values suggest that the Turkish adaptation of the measurement tool has good internal consistency, indicating that the items are measuring the same construct reliably.

Ethic

It has been found to comply with the Ethical Rules by Zonguldak Bülent Ecevit University Human Research Ethics Committee, as documented in the file with the Institution Registration Date and Number: 10.05.2023-302058.

RESULTS

According to the analysis results used to determine whether the data was normally distributed or not, it can be said that all test results show a normal distribution (pre-achievement test skewness=-.001, kurtosis=-1.185, post-achievement test skewness=-.67, kurtosis=-.44, pre-motivation test skewnesss=-.07, kurtosis=-.401, and post-motivation test skewness=1.46, kurtosis=1.43). The results of the normality tests (Skewness and Kurtosis) being between -1.5 and +1.5 are evidence that the data is normally distributed (Tabachnick & Fidell, 2013).

Table 3. *The mean scores of the control group*

		Mean	N	Std. Deviation	Std. Error Mean	t	p	df
Pair 1	pre-achievement	.1167	30	.10199	.01862	-6.372	.000	29
	post-achievement	.3500	30	.22089	.04033			
Pair 2	Pre-selfregulation	1.9333	30	.28079	.05126	1.856	.074	29
	Post-selfregulation	1.8519	30	.22286	.04069			
Pair 3	Pre-cognitive	1.8357	30	.25662	.04685	4.273	.000	29
	Post-cognitive	1.6905	30	.23678	.04323			
Pair 4	Pre-selfeficacy	1.7708	30	.25656	.04684	6.257	.000	29

	Post-selfeficacy	1.5500	30	.25129	.04588			
Pair 5	Pre-intrinsic value	1.7370	30	.26177	.04779	4.289	.000	29
	Post-intrinsic value	1.6667	30	.28590	.05220			
Pair 6	Pre-test anxiety	1.6083	30	.40302	.07358	-4.350	.000	29
	Post-test anxiety	2.1667	30	.78601	.14351			

Looking at the means in Table 3, it was found that there was a significant difference (t(29)=-6.37, p<.05) between the control group's pre-achievement test (M=.11, SE=.01) and post-achievement test (M=.35, SE=.04). Additionally, there was not any significant difference (t(29)=1.85, p>.05) between the subcategories of the pre-selfregulation (M=1.93, SE=.05) and post-selfregulation (M=1.85, SE=.04) sections of the motivation questionnaire, which were divided into 5 different categories. However, significant differences were found in all other subcategories, such as the pre-cognitive test (M=1.83, SE=.046) and post-cognitive test (M=1.69, SE=.04), t(29)=4.27, p<.05; between the pre-selfefficacy test (M=1.77, SE=.25) and post-selfefficacy test (M=1.55, SE=.046), t(29)=6.25, p<.05; between the pre-intrinsic value test (M=1.73, SE=.26) and post-intrinsic value test (M=1.66, SE=.28), t(29)=4.28, p<.05; and between the pre-test anxiety (M=1.60, SE=.40) and post-test anxiety (M=2.16, SE=.14), t(29)=-4.35, p<.05.

Table 4. T*he mean scores of the experimental group*

		Mean	N	Std. Deviation	Std. Error Mean	t	p	df
Pair 1	Pre-achievement	.1667	30	.10283	.01877			
	Post-achievement	.7067	30	.13374	.02442	-18.616	.000	29
Pair 2	Pre-selfregulation	1.8037	30	.21774	.03975			
	Post-selfregulation	1.5333	30	.22489	.04106	6.992	.000	29
Pair 3	Pre-cognitive	1.7262	30	.18291	.03339			
	Post-cognitive	1.5976	30	.21753	.03972	5.699	.000	29
Pair 4	Pre-selfeficacy	1.8417	30	.30430	.05556			
	Post-selfeficacy	1.4667	30	.31645	.05778	6.268	.000	29
Pair 5	Pre-intrinsic value	1.7963	30	.25284	.04616			
	Post-intrinsic value	1.4963	30	.28550	.05212	7.874	.000	29
Pair 6	Pre-test anxiety	1.6583	30	.35039	.06397			
	Post-test anxiety	2.5417	30	.41044	.07494	-9.699	.000	29

According to Table 4, there was a significant difference between the experimental group's pre-achievement test (M=0.11, SE=0.01) and post-achievement test (M=0.76, SE=0.02) scores, with t(29)=-18.61, p<0.05. Additionally, significant differences were found in all five subcategories of the motivation questionnaire; pre-selfregulation (M=1.83, SE=0.03) and post-selfregulation (M=1.53, SE=0.04) with t(29)=6.99, p<0.05, pre-cognitive test (M=1.72, SE=0.03) and post-cognitive test (M=1.59, SE=0.03) with t(29)=5.69, p<0.05, pre-selfefficacy test (M=1.84, SE=0.55) and post-selfefficacy test (M=1.46, SE=0.05) with t(29)=6.26, p<0.05, pre-intrinsic value test (M=1.79, SE=0.04) and post-intrinsic value test (M=1.49, SE=0.05) with t(29)=7.87, p<0.05, and pre-test anxiety (M=1.65, SE=0.06) and post-test anxiety (M=2.54,

SE=0.07) with t(29)=-9.69, p<0.05.

Table 5. *The results of pre- and post-achievement tests between groups*

	groups	N	Mean	Std. Deviation	Std. Error Mean	t	df	p
Pre-achievement test	control	30	.1167	.10199	.01862	-1.891	58	.064
	experiment	30	.1667	.10283	.01877			
Post-achievement test	control	30	.3500	.22089	.04033	-7.565	47.742	.000
	experiment	30	.7067	.13374	.02442			

When examining Table 5, a significant difference was not observed between the control and experimental groups in terms of pre-test results, t(58)= -1.89, p> .05, however, a significant difference was found in the post-test results, t(58)= -7.56, p< .05.

Table 6. *Pre-Post motivation test results*

	groups	N	Mean	Std. Deviation	Std. Error Mean	t	df	p
Pre-motivation	control	30	1.7771	.18161	.03316			
	experiment	30	1.7652	.15410	.02814	.272	58	.787
Post-motivation	control	30	1.7851	.21286	.03886			
	experiment	30	1.7271	.11901	.02173	1.303	58	.198

As can be understood from Table 6, there was not any significant difference between overall scores of pre-motivation and post-motivation tests. However, the motivation scale consists of 5 subcategories, which means that it is more reliable to present the findings of each sub-cetagories. After examining and analyzing each of these 5 categories individually, it was determined that there may be significant differences. The necessary analysis results are shown in the Table 7 below.

Table 7. *The results of the pre-motivation subcategory tests*

	groups	N	Mean	Std. Deviation	Std. Error Mean	t	df	p
Pre-selfregulation	control	30	1.9333	.28079	.05126			
	experiment	30	1.8037	.21774	.03975	1.998	58	.050
Pre-cognitive	control	30	1.8357	.25662	.04685			
	experiment	30	1.7262	.18291	.03339	1.904	58	.062
Pre-selfeficacy	control	30	1.7708	.25656	.04684			
	experiment	30	1.8417	.30430	.05556	1.998	58	.050
Pre-intrinsic value	control	30	1.7370	.26177	.04779			
	experiment	30	1.7963	.25284	.04616	-.892	58	.376
Pre-test anxiety	control	30	1.6083	.40302	.07358			
	experiment	30	1.6583	.35039	.06397	-.513	58	.610

Results before administering the motivation test are as follows: self-regulation (control group M=1.93, SE=0.051, experimental group M=1.80, SE=0.03), cognitive test (control group M=1.83, SE=0.04,

experimental group M=1.72, SE=0.03), self-efficacy test (control group M=1.77, SE=0.04, experimental group M=1.84, SE=0.055), intrinsic value test (control group M=1.73, SE=0.04, experimental group M=1.79, SE=0.04), and test anxiety test (control group M=1.60, SE=0.07, experimental group M=1.6583, SE=0.06), did not show any significant difference between the control and experimental groups. The t-scores and p-values for self-regulation ($t(58)=1.99$, $p>0.05$), cognitive test ($t(58)=1.90$, $p>0.05$), self-efficacy test ($t(58)=1.99$, $p>0.05$), intrinsic value test ($t(58)=-0.89$, $p>0.05$), and test anxiety test ($t(58)=-0.51$, $p>0.05$) all indicated non-significant differences between the groups.

Table 8. *The results of the post-motivation subcategory tests*

	groups	N	Mean	Std. Deviation	Std. Error Mean	t	df	p
Post-selfregulation	control	30	1.8519	.22286	.04069			
	experiment	30	1.5333	.22489	.04106	5.510	58	.000
Post-cognitive	control	30	1.6905	.23678	.04323			
	experiment	30	1.5976	.21753	.03972	1.582	58	.119
Post-selfeficacy	control	30	1.5500	.25129	.04588			
	experiment	30	1.4667	.31645	.05778	1.130	58	.263
Post-intrinsic value	control	30	1.6667	.28590	.05220			
	experiment	30	1.4963	.28550	.05212	2.310	58	.024
Post-test anxiety	control	30	2.1667	.78601	.14351			
	experiment	30	2.5417	.41044	.07494	-2.316	58	.024

The distribution of the results after the application of the motivation test and according to the groups (i.e. Table 8) can be summarized as follows: for self-regulation (control group M=1.85, SE=0.04, experimental group M=1.53, SE=0.04), there was a significant difference between the groups with $t(58)=5.51$, $p<0.05$; for cognitive test (control group M=1.69, SE=0.04, experimental group M=1.59, SE=0.03), there was no significant difference between the groups with $t(58)=1.58$, $p>0.05$; for self-efficacy test (control group M=1.55, SE=0.04, experimental group M=1.46, SE=0.05), there was no significant difference between the groups with $t(58)=1.13$, $p>0.05$; for intrinsic value test (control group M=1.66, SE=0.05, experimental group M=1.49, SE=0.05), there was a significant difference between the groups with $t(58)=-2.31$, $p<0.05$; for test anxiety test (control group M=2.16, SE=0.14, experimental group M=2.54, SE=0.07), there was a significant difference between the groups with $t(58)=-2.31$, $p<0.05$. To sum up, the results showed that there was no notable discrepancy between the groups regarding cognitive and self-efficacy assessments. However, there was a significant distinction between the groups concerning the self-regulation, intrinsic value, and test anxiety dimensions.

DISCUSSION AND CONCLUSION

The objective of this research was to assess the motivation of participants towards ChatGPT, which was designed based on the online vocabulary sessions of the online language lessons, and to establish a correlation between academic achievement and motivation level towards this material. The study included two different participant groups.

The results of the analysis indicate that all test results, including the pre- & post-achievement, pre- & post-motivation tests, showed normal distribution. According to the findings of the pre-achievement test, there was not any difference between control and experimental groups, but post-achievement test scores

indicated difference that the experimental group rated more accurate responses. Like pre-achievement test results, the findings of the pre-motivation test were almost similar. Nevertheless, post-motivation test subcategories revealed that experimental group was more motivated after the ChatGPT integration to the post-lesson activies (especially from the perspective of self-regulation, intrinsic value, and test anxiety). The perceived AI integration has a substantial association with intrinsic motivation (Martín-Núñez et al., 2023; Rajeswari & Madhusudan, 2022). Moreover, the employing of chatbots powered by AI could enhance students' academic achievement, self-efficacy and motivation (Lee et al. 2022) as shown in the current study.

ChatGPT (openAI) was found out to be positively effective in vocabulary learning in language learning. From this perspective, it is clearly evident that it supports previous studies. For instance, it is evident that using technological materials in language learning environments has positive effect on learners' process (Ahmed et al., 2022; Jianfeng et al., 2018; Lai & Tai, 2021; Liu et al., 2018; Woodrow, 2017) It is also known that technological learning tools have positive effects on learners' motivation (Cai et al., 2020; Lai & Gu, 2011; Lewis, 2010; Alamer & Al Khateeb, 2023). Ibanez et al, (2011) has the similar results that using technological materials such as AI in language learning raised students' motivation and learning outcomes. Providing more inspiring environment for learners promotes motivation (Mahadzir & Phung, 2013). The findings, also, support the studies which exhibited the factors that motivated satisfaction and attention were evaluated higher by participants with the latest technological tools (Di Serio et al. 2013). The study provides valuable insights as exhibiting into the effectiveness of ChatGPT as probably one of the newest vocabulary teaching material and offers practical implications for educators and instructional designers looking to implement AI in their learning environments as integrating ChatGPT into vocabulary learning besides the other Web2.0 and digital tools into the curriculum as discussed below.

There are some concerns about the negative impact of technology in learners' motivation. The results of this study demonstrated that the experimental group for whom ChatGPT supported vocabulary sessions were designed, were more motivated than the control group as they informed the instructor after the sessions while having chat that they were having fun and never wanted to continue in traditional way. While technology can present opportunities for enthusiastic learners, it is improbable to result in self-motivated or autonomous behaviour in a majority of learners unless suitable teaching practices take advantage of the benefits of technology and incorporate adequate instruction on the utilization of technology for language learning objectives (Reinders, 2018). This post-lesson plan can incorporate technologically assisted learning activities and use a leading and encouraging style to promote students' independent conduct. Thus, one of the major implications of this study is that it is strongly recommended for teachers to have a view by; a) enhancing the education and professional development of teachers, b) stimulating the learning potential and initiative of students, c) refining the incorporation of multimedia teaching with traditional classroom instruction, d) devising practical solutions (Chen & Li, 2011). Since it is not adapted in any LL curriculum yet, the teachers, individually, should take part in designing the post-lesson exercises with ChatGPT in a more comprehensive and suitable manner in order to promote students' self-motivated and autonomous behaviour and make vocabulary learning process more effective as shown in the current study.

Overall, the findings suggest that the experimental group which had post-lesson activities with the assistance of ChatGPT, showed significant improvement in their achievement test scores and motivation. Thus, the outcomes demonstrated that the tool is equally beneficial in terms terms of knowledge gain as a generally established method of learning, and that students considerably favor employing the tools over conventional modes of instruction (Amershi et al., 2005). Hence, these results indicate that the use of an AI such as ChatGPT in language learning environment positively impacts students' academic performance and motivation, as in the same line with the studies of Şenyaman (2023), Topsakal and Topsakal (2022), and Zileli (2022). Furthermore, the findings support that there is a notable correlation between academic success and the motivation to use technology in the language classroom (Munoz et al., 2023; Solak & Cakır, 2015).

SUGGESTIONS

For forther studies it is recommended to investigate different relations such as ChatGPT and anxiety

by adating it in different skills of the language (i.e. listening and writing). Moreover, teachers' view can be examined through the use of ChatGPT in LL environment from different aspects whether it has positive effect on the teachers' role or classroom management, and whether it is an advantage to adapt ChatGPT into lesson plans or not.

LIMITATIONS

The study includes 10 sessions of online vocabulary learning designed with using ChatGPT as a supporter. It can be more objective if the teacher observes the students' interaction with ChatGPT in offline lessons with more than 10 sessions.

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