CORRELATION BETWEEN MOTIVATION AND STUDENT INVOLVEMENT IN LEARNING ACTIVITIES USING ChatGPT

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ABSTRACT

This study explores the correlation between motivation and student engagement in learning activities using ChatGPT, an AI-based interactive tool. It focuses on how ChatGPT affects students' intrinsic and extrinsic motivations, as well as their behavioral, emotional, and cognitive engagement. A quantitative correlation design was used, involving 385 students of the University of Muhammadiyah East Kalimantan who were selected through simple random sampling. Data were collected using a Likert scale questionnaire validated based on the Self-Determination Theory and Fredricks engagement framework. The results showed that students showed a fairly high level of motivation (M = 29.65) and a high level of engagement (M = 32.52) when learning with ChatGPT. Spearman's rho analysis revealed a moderate and statistically significant correlation ($\rho = 0.559$, $p < 0.01$) between motivation and engagement. These findings suggest that higher levels of motivation are associated with increased engagement in AI-powered learning activities. The study concludes that ChatGPT can effectively increase motivation and engagement, offering practical insights for educators and curriculum designers in developing more interactive, personalized, and student-centered learning experiences. Integrating ChatGPT into educational contexts supports the advancement of digital pedagogy and promotes more meaningful learning in 21st-century classrooms.

INTRODUCTION

The ability to engage in meaningful learning activities across academic, professional, and social contexts has made the development of motivation and learning engagement an important aspect of global education. It is recognized that student engagement and motivation are essential components of a successful learning process (Dörnyei & Ryan, 2015). However, many students face challenges such as lack of interest, monotonous instructional methods, and limited access to interactive learning resources. In this context, digital technology, especially artificial intelligence (AI), has emerged as an innovative solution to improve students' learning experiences. One such development is ChatGPT, an

AI-based language model that is able to interact with users in real time. According to Kohnke (2023), Kohnke said the use of ChatGPT is increasing in educational contexts due to its ability to provide instant feedback, personalized content, and realistic conversational simulations and problem-solving.

The evolution of AI technology has introduced new trends in learning approaches, offering dynamic tools to support and transform traditional educational practices. HolonIQ's 2022 analysis projects that the global education technology industry will reach $404 billion by 2025, with AI being a major contributor. Since its launch by OpenAI in late 2022, millions of users including students have incorporated ChatGPT into their learning routines. Preliminary study by Kasneci et al. (2023) revealed that 65% of students use ChatGPT to support their understanding of complex topics. However, despite its widespread adoption, few studies have explored ChatGPT's impact on student motivation and engagement in cross-disciplinary learning activities. Understanding how AI tools interact with students' psychological variables is essential to maximize their potential for meaningful educational development.

Existing research has mostly focused on the technical or functional aspects of integrating ChatGPT into the learning environment, often ignoring the psychological dimension. For example Zhou & Li (2023) reported increased motivation to learn through the use of AI, but failed to explore relationships with other psychological constructs. Other studies, such as those conducted by Guhan & Chandramohan (2024), mainly using qualitative methods, does not have quantitative validation of ChatGPT's effects on learning outcomes. While researchers such as (Alamer, 2022) Having emphasized the capacity of AI technology to meet the psychological needs of students, specific investigations into how ChatGPT meets these needs in the context of general learning remain limited.

In addition, research examining the link between motivation and engagement is relatively rare. Study by Afkarin & Romance (2024) and Suciati et al. (2024) tend to isolate motivation or engagement, without analyzing it as an interconnected construct. The main gap is in empirical data that examines how tools like ChatGPT affect motivation and engagement simultaneously, especially within the broader scope of learning activities. This is often overlooked in the literature that focuses heavily on the functional usefulness of the technology (Zawacki-Richter et al., 2019). Although studies such as Sun et al. (2021) underscoring the potential of AI to foster intrinsic motivation, they did not specifically assess ChatGPT's role in this.

Therefore, this study aims to address this gap by investigating the correlation between ChatGPT use and student motivation and engagement in learning activities, paying attention to mediating factors such as perceived usability and ease of use. The findings of this study are expected to contribute both theoretically and practically. From a theoretical perspective, this study will provide empirical evidence about the psychological impact of ChatGPT in the context of learning. Practically, it will offer educators, instructional designers, and policymakers insights on how to effectively integrate AI tools like ChatGPT to increase student motivation and engagement. Ultimately, this research seeks to support the development of more interactive, personalized, and effective learning strategies in the digital era.

Motivation

Motivation is an important factor in motivating individuals to achieve certain goals, and various theories provide valuable insights into its nature. Schunk & DiBenedetto (2020) Define motivation as the process that initiates and sustains goal-oriented activities. In Bandura's social cognitive theory, motivation is not only influenced by external factors but also by an individual's belief in his abilities, or his self-efficacy. Herzberg's two-factor theory distinguishes between motivating factors that increase job satisfaction and hygiene factors that prevent dissatisfaction, emphasizing the importance of intrinsic motivation in achieving high levels of satisfaction. Eccles & Wigfield (2020), from the perspective of expectation value theory, explains that motivation is driven by the expectation that the effort will produce the desired outcome, as well as the value placed on that outcome. In the context of language learning, Alizadeh (2016) emphasizes that motivation involves both intrinsic and extrinsic factors that encourage individuals to be actively involved in the learning process. Eventually Ryan & Deci (2020) Distinguish between intrinsic motivation, which is driven by internal satisfaction, and extrinsic motivation, which is influenced by external rewards, with both playing an important role in achieving long-term goals and individual well-being.

Based on the theory of Self-Determination proposed by Ryan & Deci (2020), motivation in the context of education can be defined as an internal drive that encourages individuals to learn and develop, which is divided into two types, namely intrinsic and extrinsic motivation. Intrinsic motivation focuses on personal satisfaction gained through the activity itself, such as the sense of pleasure or challenge that comes with the learning process. Meanwhile, extrinsic motivation has to do with external rewards, such as recognition or rewards, that encourage individuals to achieve specific goals. These two types of motivation influence each other in increasing student engagement in learning, where intrinsic motivation tends to be more profound and sustainable, while extrinsic motivation is more concerned with the achievement of external goals. This definition of motivation is relevant in understanding how students can engage more deeply in the process of learning English, either with the internal or external impulses they experience.

Based on the above theories, it can be concluded that Motivation in learning is defined as an internal drive consisting of intrinsic motivation, which focuses on personal satisfaction in learning, and extrinsic motivation, which is influenced by external factors such as reward or recognition. These two types of motivation interact to influence student engagement in learning, with intrinsic motivation tending to be more sustainable, while extrinsic motivation focuses more on achieving external goals. However, although many studies have discussed intrinsic and extrinsic motivation, there is still a lack of research that specifically explores how these motivations influence student engagement in English language learning in diverse educational contexts. This study aims to fill that gap by examining the specific roles of intrinsic and extrinsic motivation in enhancing student engagement in English learning.

Motivational Factors for Learning

Motivation is the main factor that affects students' success in learning, which can be divided into intrinsic and extrinsic motivations. Intrinsic motivation arises from internal drives, such as curiosity, while extrinsic motivation is influenced by external factors, such as appreciation (Ryan & Deci, 2020). In learning English using ChatGPT, both types of motivation can be significantly influenced. Deci and Ryan's theory of self-determination (SDT) distinguishes motivation into being intrinsic, which relates to self-interest, and extrinsic, which is driven by external factors such as reward (Ryan & Deci, 2020). In the context of ChatGPT, students can develop intrinsic motivation through fun interactions Khup & Bantugan (2025), while extrinsic motivation arises through concrete assessments or feedback (Hwang et al., 2025).

ChatGPT has proven to be effective in boosting student motivation with personalization and interactivity, allowing them to learn at their own pace and get immediate feedback, which boosts their confidence (Ifadloh, 2025). In addition to technological factors, social and environmental support is also important, with adequate access to technology such as the internet and support devices (Mohamad Ali Saeedirad, 2025).

Overall, motivation in learning English is influenced by internal and external factors. ChatGPT can influence both types of motivation, increase student engagement in learning, and demonstrate the importance of technology in English language learning supported by social and environmental factors.

Promise

Involvement in learning English using ChatGPT can be understood from various complementary perspectives. Engagement reflects the level and quality of student interaction with the platform, such as how often students respond, reflect on answers, and interact with content, which is positively correlated with academic achievement and motivation (Hu & Škultéty, 2024). In addition, engagement also arises through collaborative learning facilitated by ChatGPT, which encourages students to actively discuss and solve problems together, thereby increasing learning motivation (Suciati et al., 2024). Engagement is also understood as a form of intrinsic motivation that arises when students have autonomy in learning and views ChatGPT as an interactive and useful tool (Ali et al., 2023). Finally, engagement can be seen as active learning that involves focus, critical thinking, and problem-solving with direct feedback from ChatGPT (Afkarin & Asmara, 2024). All of these views are in line with Jianjuan & Zin (2025),

the theory that engagement in language learning includes emotional and behavioral dimensions, in line with Fredricks (2004) a framework that emphasizes the importance of motivation and participation in supporting academic achievement. Therefore, this theory is relevant to support this study, as it allows the measurement of student engagement in all three dimensions that can be analyzed through their interactions with ChatGPT, thus supporting the understanding of the correlation between students' motivation and their involvement in English learning using the platform.

Based on the theory and definitions that have been described, student involvement in learning is defined as active participation that includes three dimensions, namely cognitive, emotional, and behavioral. The cognitive dimension focuses on the understanding of the material, the emotional dimension on students' feelings and motivations, and the behavioral dimension on participation in activities. This engagement can be measured through students' interactions with platforms like ChatGPT in all three dimensions.

Engagement Factors for Learning English

The factors that influence student engagement in English learning are strongly influenced by motivation, which in this context can be strengthened by the use of advanced technologies such as ChatGPT. Recent research has shown that these artificial intelligence (AI)-based tools can significantly increase student engagement in the learning process (Songsiengchai et al., 2023). ChatGPT, which is an interactive language model, not only provides hands-on feedback but also creates a more personalized and enjoyable learning experience, which contributes to increased student motivation. As a research established by Monika & Suganthan (2024) shows that students who use ChatGPT in English classes experience increased motivation thanks to the nature of the tool that supports interactive learning and provides opportunities to practice the language at any time. This results in increased student participation in language assignments compared to traditional methods.

In addition Zhou & Li (2023) emphasizing that the use of ChatGPT in learning can increase students' sense of autonomy, which further boosts their intrinsic motivation in learning. ChatGPT's ability to adapt to an individual's learning pace makes students feel more competent and engaged in   learning activities. Study by Du & Alm (2024) also added that interactions created through ChatGPT, such as text-based conversations, help students connect theoretical knowledge with practical skills, maintaining their interest in continuing learning. In addition, research by Wu & Ho (2025) revealed that the real-time feedback feature that ChatGPT has in place helps improve student engagement, especially for those who struggle with independent learning. These overall findings suggest that the integration of ChatGPT in English learning has the potential not only to improve language proficiency, but also to strengthen students' overall motivation and engagement, creating a more dynamic and student-centered learning experience.

Learn

Learning in the modern era encompasses a variety of approaches that utilize technology to enhance students' learning experiences. In the context of mobile education, learning is described as interacting with educational content through mobile devices, providing greater flexibility and enabling access from anywhere, as well as supporting the specific needs of students with disabilities (Genç et al., 2019). In addition, scientific learning, driven by platforms such as Scopus, emphasizes the importance of a continuous process to acquire deeper knowledge and skills, through access to scientific articles that enrich research learning (Suyo-Vega et al., 2022). In college, e-learning is changing the way students interact with learning materials, by providing a more personalized and interactive experience that supports the development of students' independence in managing their learning (Gao et al., 2022). Artificial Intelligence (AI) technology is also increasingly playing a role in supporting personalized learning, where AI-based systems can adapt to students' learning styles and improve their learning outcomes (Aravantinos et al., 2024). Finally, 21st-century learning emphasizes the importance of developing critical, creative, and collaborative thinking skills, as well as the ability to solve problems and apply knowledge in real-world contexts (Izhar et al., 2023).

Based on the above definition, modern learning integrates technology to enhance the student learning experience. Mobile learning offers flexibility through mobile devices, and supports students with disabilities. E-learning changes the way students interact with material, making it more personalized and interactive. AI technology plays a role in adapting learning to individual learning styles. In addition, 21st-century learning emphasizes critical, creative and collaborative thinking skills, as well as the ability to solve problems and apply knowledge in real-world contexts.

ChatGPT

Suharmawan (2023) extensively discusses the application of ChatGPT in education, explaining that this technology can help in compiling the right prompts to produce more accurate and useful results in the learning process. ChatGPT, as an artificial intelligence (AI) tool, uses machine learning to generate text in response to user input, excels at contextual understanding and provides relevant answers. Haleem et al. (2022) explains that ChatGPT has infiltrated various industries, such as education, writing, and customer service, by offering effective solutions to overcome difficulties in these domains. Next Retkowsky et al. (2024) confirms that ChatGPT can increase productivity in routine tasks, although it is cautious of the dangers of depersonalization and reliance on algorithms, which can reduce the quality of creative production. ChatGPT uses transformer-based language models trained on extensive datasets to predict and generate coherent and relevant text, however, Kocoń et al. (2023) Establish that these technologies remain limited in addressing complex problems that require a deep understanding. In scientific research, ChatGPT has been used to generate hypotheses, analyze data, and propose references, however, Shine (2023) underscores the need for ethical considerations due to potential inaccuracies and biases that can jeopardize the validity of research results. Next Heidari et al. (2024) emphasizing the importance of risk management in utilizing ChatGPT, particularly with data privacy and information security, to prevent misuse or adverse breaches.

Based on the findings of a number of studies, it can be concluded that ChatGPT plays an important role in education and employment through its ability to understand context and provide relevant responses. Despite the benefits, its use needs to be accompanied by caution against risks such as bias, dependence, and ethical issues. Wise and responsible use is the key to optimal benefits.

ChatGPT in Language Learning

ChatGPT, an AI-based language model developed by OpenAI, has the ability to generate text, answer questions, and interact with users in natural language (Kasneci et al., 2023). In language learning, ChatGPT can be used for conversation exercises, grammar correction, and vocabulary development, providing a more interactive and personalized learning experience(Kohnke, 2023). Empirical studies by Kasneci et al. (2023) suggests that ChatGPT can increase student motivation through personalized and responsive interactions, although the research is still limited to exploratory and qualitative contexts. ChatGPT's potential to increase motivation and engagement lies in its ability to meet the needs of autonomy, competence, and interconnectedness in Self-Determination Theory, as described by (Ryan & Deci (2020), therefore encouraging active participation, positive affective responses, and greater mental effort.

Correlation between Motivation, Engagement, and ChatGPT

The relationship between motivation and engagement in learning has been proven by various studies. According to Mingoia et al. (2025), high motivation tends to increase student engagement in learning, while high engagement can also strengthen student motivation to continue learning. In the context of learning English using ChatGPT, this relationship can be strengthened through the features provided by ChatGPT. ChatGPT can meet the needs of autonomy, competence and connectedness (SDT), thereby increasing students' intrinsic motivation. Additionally, ChatGPT's personalized and responsive interactions can improve students' behavioral, emotional, and

cognitive engagement. Thus, the use of ChatGPT is hypothesized to be positively correlated with increased motivation and student engagement in English learning. This study aims to test this correlation empirically.

The use of ChatGPT in language learning has a strong theoretical relationship with motivation, especially in meeting the needs of autonomy (freedom of learning), competence (instant feedback), and connectedness (human-like interaction) (Kohnke, 2023). It can increase behavioral engagement through active participation in interactive exercises, emotional engagement by reducing anxiety and increasing interest, and cognitive engagement through instant feedback that encourages critical thinking and reflection (Sun et al., 2021). However, despite some research on the use of ChatGPT, Zawacki-Richter et al. (2019) note that there is still little quantitative research examining the correlation between ChatGPT use and students' motivation and engagement in English language learning.

Motivation and Engagement in Language Learning

Motivation, as an internal or external drive that influences a person's desire to learn, plays an important role in language learning because it determines the extent to which students are willing to actively participate in the learning process (Dörnyei & Ryan, 2015). Ryan & Deci (2020) Self-Determination Theory (SDT) explains that intrinsic motivation, driven by the need for autonomy, competence and connectedness, tends to result in greater engagement and better learning outcomes. The involvement itself, according to Fredricks et al. (2004) It includes three dimensions: behavioral (active participation), emotional (affective response), and cognitive (mental effort). The relationship between motivation and engagement has been shown to be significant, where motivated students tend to be more engaged in learning, both behaviorally, emotionally, and cognitively.

The Role of Technology in Language Learning

Technology-enhanced language learning (TELL) has become a major trend in modern education, leveraging digital tools such as online platforms, mobile apps, and artificial intelligence (AI) to create more interactive and personalized learning experiences (Zawacki-Richter et al., 2019). AI, in particular, has revolutionized education by providing adaptive and personalized solutions, such as chatbots and virtual tutors, capable of providing instant feedback, tailoring learning materials to individual needs, and creating a more interactive learning environment (Holmes et al., 2019). While AI tools offer benefits such as personalization, instant feedback, and interactivity Kohnke (2023), their integration into language education also presents challenges, including reliance on technological infrastructure, inadequate teacher training, and potential reduced human interaction.

Previous Studies

Previous studies have shown that while ChatGPT positively influences students' motivation and engagement in English language acquisition, most studies point to shortcomings in their approach and methodology. Zhou & Li (2023) The study investigated the impact of ChatGPT on students' learning motivation through a quantitative methodology based on self-determination theory. These findings show a link between ChatGPT utilization and an increase in the desire to learn, albeit weakly. This study was limited to assessing motivation without examining students' direct involvement in learning. While Du & Alm (2024) conduct a qualitative study by interviewing EAP students to investigate their experiences of ChatGPT in academic English learning. The findings show that ChatGPT improves engagement and learning experience; However, this study did not statistically assess its effect on motivation. The sample size is relatively small, so the results cannot be generalized. Next Hu & Škultéty (2024) The study used an experimental methodology to assess the impact of ChatGPT in improving student interaction and engagement in English language acquisition. The results of the experiments show that ChatGPT effectively increases motivation and engagement; Nevertheless, the study was limited by a low sample size and exclusively examined student interaction, ignoring its broader impact on overall motivation.

Rahimi et al. (2025) using a hybrid quantitative approach that leverages PLS-SEM and ANN to examine the influence of ChatGPT on motivation and self-regulation in second language acquisition. Although their findings

suggest that ChatGPT improves self-regulation and motivation, the study primarily emphasizes self-regulation and has not assessed a direct correlation between motivation and engagement in English language acquisition. A study conducted by Suciati et al. (2024), showing that the application of ChatGPT in collaborative English writing education increases student engagement and motivation. The study was limited to the writing aspect, ignoring its impact on overall English language acquisition.

The findings of this study suggest that, despite the evidence supporting the use of ChatGPT in increasing motivation and engagement, most studies show limitations in both technique and scope. The gap observed was the absence of quantitative studies investigating the direct correlation between motivation and engagement in English language acquisition using ChatGPT, in addition to constraints regarding the sample size used. The study seeks to address this gap by using a comprehensive quantitative methodology to assess the correlation between motivation and engagement in English learning facilitated by ChatGPT. The study aims to shed light on ChatGPT's impact on these two elements within the broader framework of English language learning, while also improving understanding of the role of technology in education. This gap emphasizes the need for further research to understand the impact of ChatGPT empirically and comprehensively.

Theoretical Framework for Studies

This research is based on the main motivation theory, namely Deci and Ryan's Theory of Self-Determination (SDT) in 2020. SDT emphasizes three basic psychological needs – autonomy, competence and connectedness – which if met can increase students' motivation and intrinsic engagement. In addition, the engagement framework from Fredricks in 2004 was used to analyze three dimensions of engagement: behavioral (active participation), emotional (affective response), and cognitive (mental effort). The conceptual model of this study links the use of ChatGPT as an independent variable with motivation and engagement as dependent variables, assuming that ChatGPT can meet the needs of autonomy, competence, and connectedness, thereby increasing student motivation and engagement.

Hypothesis Development

Based on the theoretical framework and the existing literature, this study proposes two hypotheses.

The Zero Hypothesis (H_0) states that there is no significant correlation between students' motivation and their engagement in English language learning using ChatGPT.

The Alternative Hypothesis (H_1) states that there is a significant correlation between students' motivation and their involvement in learning English using ChatGPT.

RESEARCH METHODS

Research Design

This study uses a quantitative approach with a correlational design to investigate the relationship between ChatGPT use and students' motivation and engagement in English language learning. The quantitative approach was chosen because it allows the collection of statistically analyzeable numerical data to identify trends, relationships, and test proposed hypotheses (Watson, 2015). Correlation design is used to explore the extent to which two or more variables are interrelated within a single population or among different populations, without manipulating independent variables (Curtis et al., 2015).

The main objective of this study was to examine whether there is a positive correlation between the use of ChatGPT and increased motivation and student engagement in the English learning process. Thus, this study is expected to provide insight into the potential use of ChatGPT in supporting student engagement and motivation.

The sample in this study was selected from students who had previously taken General English courses. This decision is based on the consideration that English is a compulsory foundation subject that is usually offered in the initial semester. By selecting students who have been exposed to basic English language teaching, the study aims to ensure basic knowledge is shared, which is important to accurately examine their motivation and involvement in

learning activities involving the use of ChatGPT. Because the study focuses on how students interact with AI tools like ChatGPT in language learning, it's important to engage students who have at least a basic understanding of English to more reliably assess the correlation between their motivation and engagement.

Population and Sample

This study involved a total population of 9,576 students of the University of Muhammadiyah East Kalimantan. To determine the representative sample size, the researcher applied the Slovin formula with a margin of error of 5% (0.05). The Slovin formula was chosen because it provides an easy and effective method for calculating sample sizes when the total population is known and a certain level of precision is required. Therefore, the sample size for this study was 385 respondents. To ensure that every member of the population has an equal chance of being selected, researchers used simple random sampling. This sampling technique helps to minimize bias and ensure that the sample accurately represents a broader population. A simple random sampling technique is a probability sampling technique in which every individual in the population has an equal chance of being selected (Noor et al. (2022). The criteria for sample inclusion are: (1) students who are registered at the University of Muhammadiyah East Kalimantan; (2) students who have used ChatGPT to support their learning activities; and (3) students who have previously taken a General English course. This sampling method ensures that the selected sample can be representative of the student population as a whole and allows the research results to be generalized to the entire population.

Research Instruments

The instrument used in this study is a Likert scale questionnaire designed to measure two main variables: student motivation and engagement. The learning motivation questionnaire is adapted from an instrument developed based on Self-Determination Theory (SDT), which includes questions about students' motivation in learning English. Meanwhile, the student engagement questionnaire was adapted from the framework Fredricks (2004), which covers general aspects of student engagement in learning. Each item in the questionnaire uses a 4-point Likert scale (1 = Disagree with 4 = Strongly Agree).

Data Collection Procedure

Data was collected through the distribution of online questionnaires using Google Forms. The questionnaire link is distributed through online platforms such as WhatsApp groups and emails to students who meet the research criteria. Participants are informed of the purpose of the research, the confidentiality of the data, and their right to withdraw at any time. Informed consent was obtained before participants filled out the questionnaire to ensure research ethics were adhered to.

Data Analysis

To examine the relationship between motivation and student engagement in learning using ChatGPT, this study will use Pearson's correlation analysis. This method was chosen because the two variables measured, namely motivation and engagement, are interval or ratio data, which allows the use of Pearson correlation analysis to measure the strength and direction of the linear relationship between the two variables (Yang et al., 2021). Data analysis will be carried out using SPSS (Social Science Statistical Package), which allows for accurate calculation and visualization of correlation results. The Pearson correlation coefficient (r) will be used to determine the strength of the relationship between variables: if $r > 0.7$, the relationship is considered to be very strong; If r falls between 0.3 to 0.7, the relationship is considered moderate; and if the $R < 0.3$, the relationship is considered weak or insignificant. This Pearson correlation test will help identify the effect of using ChatGPT on students' motivation and engagement in English learning.

RESULTS AND DISCUSSION

Instrument Validity and Reliability

Before data collection, the validity and reliability of the questionnaire were tested. The validity test, using Pearson's Product Moment analysis, showed that all 20 items (M1–M20) had an r-value greater than the critical r-table value (0.100) at a significance level of 5% (N = 385). Therefore, all items are considered legitimate.

In terms of reliability, the Alpha Cronbach coefficient is 0.882, exceeding the acceptable threshold of 0.6 (Sujerweni, 2014), indicating high internal consistency. Thus, the questionnaire is considered valid and reliable to measure the variables investigated.

Table 1, Validity of the Questionnaire

	R-Fur	Table R	Decision
M1	0.48	0.10	Legitimate
M2	0.56	0.10	Legitimate
M3	0.57	0.10	Legitimate
M4	0.51	0.10	Legitimate
M5	0.68	0.10	Legitimate
M6	0.45	0.10	Legitimate
M7	0.47	0.10	Legitimate
M8	0.60	0.10	Legitimate
M9	0.60	0.10	Legitimate
M10	0.62	0.10	Legitimate
E11	0.71	0.10	Legitimate
E12	0.76	0.10	Legitimate
E13	0.74	0.10	Legitimate
E14	0.76	0.10	Legitimate
E15	0.66	0.10	Legitimate
E16	0.61	0.10	Legitimate
E17	0.70	0.10	Legitimate
E18	0.73	0.10	Legitimate
E19	0.67	0.10	Legitimate
E20	0.63	0.10	Legitimate

The validity test aims to determine whether each item in the questionnaire is able to accurately measure the variables being studied. The method used in this test is Pearson Product Moment, by comparing the r-count value (R-Value) with the r-table. In this study, the number of respondents was 385 people, so the r-table value at the significance level of 5% was 0.100.

Based on the validity test table, all statement items from M1 to M20 have a r-count value greater than the r-table (0.100). For example, item M1 has a count value of r 0.49, item M2 is 0.56, and other items also show values higher than 0.100. Since all the values calculated r > the r table, it can be concluded that all the items in the questionnaire are valid.

Thus, the questionnaire used in this study has met the validity requirements, meaning that each question item is appropriate and suitable for measuring the variables being studied.

This manuscript is written in a Time New Roman font size 10, single spaces, left and right aligned, on one side of the page and on A4 paper (210mm x 297 mm) with an upper margin of 3.5 cm, bottom 2.5 cm, left and right 2 cm each. Manuscripts including graphic content and tables should not be more than 15 pages, including images and tables. If it far exceeds the specified length, it is recommended to break it into two separate manuscripts. This manuscript was

written in English. Standard English grammar must be observed. The title of the article should be short and informative and should not exceed 20 words. Keywords are written after the abstract.

Table 2, Questionnaire Reliability Statistics

Alpha Cronbach	N item
0.882	20

Based on the results of the reliability test shown in the table, it is known that the value of Alpha Cronbach is 0.882 with a total of 20 items. This reliability test was conducted to determine the extent to which the questionnaire used in the study had internal consistency, i.e. whether the instrument could provide stable and consistent results when used in repeated measurements. Referring to the opinion of Wiratna Sujerweni (2014), the questionnaire can be said to be reliable if it has an Alpha Cronbach value of more than 0.6. Thus, the value of 0.882 obtained indicates that this questionnaire has excellent reliability. This means that the instrument used in this study can be trusted and consistent in measuring the variables in question.

Student Motivation and Engagement in ChatGPT-Assisted Learning

To answer the first research question, *"What is the level of motivation students are in learning using ChatGPT?"*and the second question, *"What is the level of student engagement in learning using ChatGPT?"*, descriptive statistical analysis was performed. This analysis aims to summarize central trends and variability in student responses related to motivation and engagement in AI-assisted learning environments. The following section presents statistical findings that illustrate the general level of student motivation and engagement while learning with ChatGPT's support.

Descriptive statistics were conducted to test student motivation. The results showed that the motivation score ranged from 10 to 40, with an average score (M) of 29.65 and a standard deviation (SD) of 3.79. These values show that students generally show a fairly high level of motivation for learning activities through ChatGPT.

Table 3, Descriptive Statistics of Variables M and E

Variable	N	Minimum	Maximum	Mean	Std. Error	Std. Deviation
M	385	10	40	29.65	0.193	3.791
E	385	10	40	32.52	0.264	5.189
Valid N (in the direction of the list)	385					

In terms of engagement, student scores also range from 10 to 40. The average score was M = 32.52, with a standard deviation of 5.19, indicating a high level of engagement in ChatGPT-powered learning activities. Slightly higher elementary school compared to motivation indicates that student engagement levels are more varied (see Table 1).

To investigate the relationship between motivation and engagement, a rho Spearman correlation test was performed. The results revealed a moderate positive and statistically significant correlation between the two variables, with a correlation coefficient $\rho = 0.559$, a significance level of $p < 0.01$, and a sample size of N = 385. These findings suggest that more motivated students tend to be more engaged in learning Activities using ChatGPT (see table 3).

Correlation Between Motivation and Engagement

To answer the third research question, which investigated whether there was a significant correlation between students' motivation and their engagement in learning using ChatGPT, a Spearman rho correlation test was performed.

The analysis revealed a moderate, positive, and statistically significant correlation between student motivation and engagement (r = 0.559, p < 0.01). These results suggest that higher levels of motivation are associated with increased student engagement in learning activities involving ChatGPT. The strength and significance of this correlation underscores the role of motivation in increasing student participation when utilizing AI-assisted learning tools like ChatGPT.

Table 4, Analysis of the Correlation between Motivation and Engagement

			M	E
Rho Spearman	M	Correlation Coefficients	1.000	.559**
		Sig. (2 tails)	.	.000
		N	385	385
	E	Correlation Coefficients	.559**	1.000
		Sig. (2 tails)	.000	.
		N	385	385

Discussion

   The discussion below is structured according to three research questions and incorporates interpretation of the findings, comparisons with previous studies, and implications for language teaching activities.

Students' Motivation in Learning Activities Using ChatGPT

   The descriptive findings show that students show a fairly high level of motivation in learning activities using ChatGPT, with an average score of 29.65 out of 40. This shows that students generally find ChatGPT to be a useful, engaging, and supportive tool in their learning process. The interactive nature of ChatGPT, which provides instant feedback, opportunities for independent learning, and reduces fear of making mistakes, can contribute to a student's sense of autonomy and competence two core elements of intrinsic motivation as proposed in the Theory of Self-Determination (Deci & Ryan, 1985). These results are consistent with previous research that found AI-based tools can foster student motivation by improving personalization and interactivity of learning experiences (Yaseen et al. 2025 ; Almasri, 2024). In particular, ChatGPT's ability to simulate natural conversations, explain grammar rules, and generate contextual practice opportunities can lead learners to perceive it as a motivating alternative to conventional classroom approaches.

   Further reinforcing this interpretation, Bai and Wang (2023) observed that students using ChatGPT in English language learning reported increased intrinsic motivation due to the platform's conversational style and responsiveness, which gave them a sense of linguistic competence and control. Similarly, Su and Yang (2023) found that motivation in technology-enhanced environments is closely tied to the perception of autonomy support an element that ChatGPT appears to fulfill through its learner-centered, on-demand assistance.

   However, it is worth noting that motivation levels can also be influenced by students' prior exposure to AI tools and their level of digital literacy. Almutairi (2023) reported that students with limited experience using technology for academic purposes showed lower motivation when using AI tools, likely due to cognitive overload or lack of confidence in navigating digital platforms. This suggests that while ChatGPT has the potential to foster motivation, its impact may vary depending on individual learner characteristics. Overall, these findings highlight the importance of not only integrating AI tools like ChatGPT into language classrooms but also providing appropriate scaffolding and digital orientation to ensure that all students, regardless of their starting point, can benefit from the motivational affordances of such tools.

Student Engagement in Learning Activities Using ChatGPT

   With an average engagement score of 32.52, the results also show a high level of student involvement in activities involving ChatGPT. These findings reflect that students are not only motivated but also actively engaged in

learning, including behaviors such as sustained attention, participation in learning tasks, and consistent interaction with tools. Higher standard deviations in engagement compared to motivation indicate some variation in the way students interact with ChatGPT, perhaps due to different levels of digital literacy or familiarity with AI.

These findings align with the engagement framework proposed by Fredricks, Blumenfeld, and Paris (2004), which conceptualizes engagement as comprising behavioral, emotional, and cognitive dimensions. Motivation and engagement are often interrelated, with increases in intrinsic motivation contributing to more persistent, focused, and enthusiastic learning behavior. In the context of AI-assisted learning environments, this study echoes the observations of Huang and Hew (2022), who emphasized that chatbots and conversational agents can increase student engagement by providing real-time feedback, simulating human interaction, and personalizing instructional content. Similarly, Lee and Lee (2024) found that engagement in EFL classrooms was significantly improved when AI tools offered dialogic interaction, adaptive scaffolding, and a sense of immediacy that traditional materials often lack.

However, the variability in engagement observed in this study may also reflect learners' differing levels of comfort and familiarity with AI technologies. Liu et al. (2023) note that students with limited digital experience may struggle to stay focused or use the full range of interactive features available in AI platforms, potentially leading to disengagement or frustration. From a pedagogical standpoint, these findings suggest that while ChatGPT can significantly enhance engagement, its integration should be accompanied by structured guidance and teacher facilitation. Engagement is most effectively fostered not solely by tool availability, but by the way technology is embedded within meaningful, student-centered learning activities (Rahimi & Zhang, 2023). Educators should consider pairing AI tools with instructional strategies that promote reflective interaction, peer collaboration, and digital fluency development.

The Relationship Between Motivation and Engagement

Spearman's rho correlation analysis revealed a statistically significant moderate positive relationship between student motivation and engagement ($\rho = 0.559$, $p < 0.01$). This shows that more motivated students tend to be more engaged in learning activities using ChatGPT. While this relationship is not perfect, it suggests a meaningful association that aligns with broader research in second language acquisition and educational psychology.

These findings reinforce the well-documented view that motivation is a critical predictor of engagement (Dörnyei, 2001) ; Skinner & Belmont, 1993). In the context of AI integration, the more motivated a student is, the more likely they are to actively explore and utilize the tool's features, leading to higher engagement. However, the moderate correlation power also implies that engagement can be influenced by other factors, such as ease of access to technology, previous learning experiences, or external classroom support. Students who are intrinsically motivated are more likely to demonstrate behavioral persistence, attention, and enthusiasm—core components of engagement. Within the framework of Self-Determination Theory (Deci & Ryan, 1985), motivation, particularly when self-driven, fosters not only participation but also deeper cognitive involvement in learning tasks.

This study's results are consistent with those of Fredricks et al. (2004), who identified a strong interdependence between motivational and engagement constructs, particularly in technology-mediated environments. Similarly, You and Kang (2014) found that intrinsic motivation in EFL contexts positively predicted academic engagement, particularly when learners had access to adaptive learning technologies. In the context of AI integration, this relationship may be enhanced by the interactive, feedback-rich environment that ChatGPT provides. As Su and Yang (2023) noted, students who feel autonomous and supported by technology tend to invest more effort and time, thus demonstrating higher engagement. However, the moderate strength of the correlation ($\rho = 0.559$) also suggests that other variables may influence engagement. These include factors such as digital literacy (Liu et al., 2023), ease of access to technology (Almutairi, 2023), peer or teacher support (Rahimi & Zhang, 2023), and prior exposure to AI tools. Therefore, while motivation is a significant predictor of engagement, it should be viewed as part of a more complex interplay of personal, contextual, and technological factors. Educators should consider these dynamics when designing AI-integrated learning environments to ensure that both motivation and engagement are equally supported.

CONCLUSION

Based on the findings of this study, it can be concluded that the integration of ChatGPT in English learning activities has a positive impact on both student motivation and engagement. The results of the descriptive statistical analysis showed that students showed a fairly high level of motivation (M = 29.65) and a high level of engagement (M = 32.52) when using ChatGPT as a learning tool. These results show that ChatGPT contributes positively to the learning environment by providing interactive, personalized, and supportive features that increase students' intrinsic motivation and encourage active participation in learning tasks.

Furthermore, correlation analysis using Spearman's rho revealed a statistically significant moderate positive relationship between motivation and engagement (ρ = 0.559, p < 0.01). These findings highlight the important role of motivation in driving student engagement, supporting existing educational theories that emphasize the interdependence of these two constructs. It also underscores the potential of AI-assisted tools like ChatGPT to serve as effective educational resources that foster the emotional and behavioral aspects of student engagement in the learning process.

Suggestion

Based on the conclusions drawn from this study, several suggestions can be put forward for future educational practice and research. First, educators are encouraged to integrate AI-based tools like ChatGPT into classroom teaching as additional resources to increase student motivation and engagement. By leveraging ChatGPT's interactivity and proximity, teachers can provide more personalized feedback, encourage autonomous learning, and reduce students' anxiety in language use.

Second, it is important to provide training and support for students and teachers to ensure optimal use of such technology. Differences in digital literacy levels can affect how effectively learners engage with AI tools, so ensuring equitable access and guidance can help maximize benefits across diverse student populations.

Finally, further research is recommended to explore other variables that may influence engagement, such as previous learners' experiences with technology, learning styles, or the quality of AI integration in instructional design. Longitudinal studies can also be conducted to assess the long-term effects of ChatGPT use on language acquisition outcomes, providing deeper insights into the value of ongoing AI education in language learning.

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