

## **Relationship Between ChatGPT Use and EFL Students' Perceived Usefulness, Ease, Dependence, And Creativity**

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### **Abstract**

AI tools like ChatGPT are changing the way we teach and learn English as a foreign language. They make it easier for students to get quick feedback, generate fresh ideas, and dive into fun, creative writing exercises. However, here's the catch: if students lean too heavily on these tools, they might start losing their own sense of independence in learning. This research investigates how the frequency of ChatGPT use relates to EFL students' perceptions of its usefulness, ease of use, dependence, and its role in fostering creativity in learning English. Adopting a quantitative correlational design with an ex post facto approach, the study involved 38 fifth-semester students from an English Education Department at a university in Pekalongan. Data were gathered through a Likert-scale questionnaire and analyzed using Spearman's Rank Correlation. Our findings revealed strong positive relationships between how often students use ChatGPT and their perceptions of its usefulness, ease of use, dependence, and creativity. The tightest link was with usefulness ( $r = 0.811$ ,  $p < 0.05$ ), followed by creativity ( $r = 0.658$ ), dependence ( $r = 0.640$ ), and ease of use ( $r = 0.584$ ). In short, the more students interact with ChatGPT regularly, the more they value it as a practical and user-friendly learning aid; however, this also increases their reliance on AI for help. The study highlights the importance of pedagogical approaches that foster critical awareness and autonomous learning when integrating ChatGPT into language education.

**Keywords:** Artificial Intelligence; ChatGPT; EFL Learning; Students' perception; Technology.

### **Introduction**

In recent years, the development of Artificial Intelligence (AI) has grown rapidly, bringing significant changes to the field of education, including foreign language learning. Artificial intelligence and ChatGPT are transforming the field of EFL instruction by providing tailored language learning experiences, instant opportunities for language practice, and significant support in designing lesson plans (Amin, 2023). ChatGPT helps meet students' needs (Tlili et al., 2023). As one of the most popular and widely used AI-based technologies among English as a Foreign Language (EFL) learners, ChatGPT has become a prominent tool developed by OpenAI. As an intelligent language model, it has been increasingly integrated into educational settings,

particularly in language learning environments. ChatGPT can interact naturally, help improve writing, explain grammar, and stimulate new ideas in English. For many EFL students, ChatGPT is no longer merely a tool but has become a flexible and always-available learning companion (Teng, 2024).

Building on this growing presence of ChatGPT in language learning, the present study draws on three complementary theoretical frameworks that together encompass four key perceptual dimensions: usefulness, ease of use, dependence, and creativity. First, the Technology Acceptance Model (TAM) explains that individuals' willingness to adopt technology is influenced by perceived usefulness and perceived ease of use (Marangunić & Granić, 2015). In the context of ChatGPT, these two dimensions reflect how students evaluate its effectiveness in improving their English skills and how easily they can integrate it into their learning activities. Second, Dependence Theory emphasizes the potential risk of overreliance that may result from excessive exposure to technology and the instant gratification it provides (Kuss & Griffiths, 2011). Third, the Componential Theory of Creativity proposed by Amabile (2012) emphasizes that creativity arises from the interaction of domain-relevant skills, creative thinking processes, intrinsic motivation, and supportive environments. In this regard, ChatGPT has the potential to foster creativity by helping students generate ideas, enrich linguistic expression, and develop divergent thinking skills in English.

Given these theoretical considerations, a growing body of literature has examined ChatGPT's integration into English language teaching and learning. Previous studies, such as Barrot (2023), discussed the other potential benefits and challenges associated with its use in language classrooms. While ChatGPT provides valuable support for students in developing ideas and enhancing the overall quality of their written output, its constant availability may also lead to excessive dependence and diminished originality. Although a growing number of studies have investigated how EFL learners use ChatGPT to improve their writing, most have focused primarily on writing improvement rather than examining learners' perceptions within broader educational contexts, particularly in Indonesian higher education. (Alkamel & Alwagieh, 2024; Li et al., 2024; Lo et al., 2024; Mizumoto et al., 2024; Rezai et al., 2024; Teng, 2024). Only Few have explored in depth EFL students' perceptions of usefulness, ease of use, dependence, and creativity in English learning. Moreover, research examining the relationship between ChatGPT use frequency and these perceptions remains very limited.

To address these research gaps, the present study adopts an integrated framework combining the Technology Acceptance Model (TAM), Dependence Theory, and the Componential Theory of Creativity to comprehensively examine EFL students' perceptions of ChatGPT. Accordingly, the study aims to determine how frequently using ChatGPT influences students' perceptions across the four aspects: usefulness, ease of use, dependence, and creativity. The findings are expected to contribute theoretical insights into AI-based technology acceptance and offer practical guidance for educators in promoting reflective and responsible use of ChatGPT in language learning. Specifically, this study addresses the following research question: How is the relationship between the frequency of ChatGPT use and students' perceptions of usefulness, ease of use, dependence, and creativity in English learning?

## Method

This study employed a quantitative correlational design using a non-experimental ex post facto approach, in which the researcher did not manipulate any variables. Instead, the study aimed to identify the naturally occurring relationships among variables. As noted by Ary et al. (2018), this design is appropriate when the purpose is to examine associations between variables that have already occurred rather than to establish causation. Similarly, Sharma (2019), citing Kerlinger (1964), defines ex post facto research as a study where the independent variables are pre-existing and cannot be controlled by the researcher. This approach has been widely applied in educational and behavioral research to analyze relationships among real-life phenomena. Given these characteristics, the design was suitable for the present study, which investigates how frequently students use ChatGPT and how it relates to their perceptions of its usefulness, ease of use, dependence, and creativity in learning English.

To support this research design, a clearly defined population and sampling procedure were required. The study population consisted of 125 fifth-semester students from the English Education Department at a university in Pekalongan, Central Java, Indonesia, and the data were collected from 29 September to 1 October 2025. According to Arikunto (2017:173), as cited by Sari et al. (2022). If the number of research subjects is less than 100, the entire population should be used as the sample. However, if the number of subjects exceeds 100, the researcher may select approximately 10–15% of the population, or 25–30%, as the sample. Following this guideline, 38 students (approximately 30%) were selected as the sample using purposive sampling. The participants were selected based on specific criteria: they were active fifth-semester EFL students, had prior experience using ChatGPT in their learning activities, could operate ChatGPT independently, and voluntarily agreed to participate in the study. This purposive sampling technique ensured that all participants had direct, meaningful experience with ChatGPT, thereby enhancing the accuracy and relevance of their responses and providing valuable insights into their perceptions of its role in English learning.

Table 1. Data of respondents

<b>Kinds</b>	<b>Respondents</b>	<b>Percentage</b>
Sex		
Male	6	15.79
Female	32	84.21
Semester		
Fifth semester	38	100
Use ChatGPT	38	100

After determining the sample, the next step was to select an appropriate instrument for gathering data. The instrument of this study was a Likert-scale questionnaire that asked participants to indicate their level of agreement with several statements. The scale consisted of five options: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree. There were five main variables: frequency of ChatGPT use, usefulness, ease of use, dependence,

and creativity. Each variable included five statements, yielding a total of 25 items. The questionnaire was adapted from previous studies related to technology acceptance and AI-assisted learning. To ensure accuracy and reliability, a validity and reliability test was conducted before the primary data collection process.

Following instrument preparation, the data collection and analysis procedures were carried out. Data were collected using a Google Form, allowing participants to respond easily and voluntarily. After the responses were collected, the data were analyzed using SPSS version 26. Several tests were conducted to ensure the data were suitable for interpretation. The validity test measured how well each question item represented the concept being studied, while the reliability test checked the consistency of responses across items. Normality and linearity tests were performed to determine whether the data followed a normal distribution and a linear relationship.

Based on the results of these assumption tests, the choice of statistical analysis was determined. Since one of the variables did not fully meet these assumptions, the Spearman's Rank Correlation test was used instead of Pearson's correlation. This non-parametric test was chosen to determine the strength and direction of the relationships between the frequency of ChatGPT use and students' perceptions of its usefulness, ease of use, dependence, and creativity. This analysis helped the researcher understand not only whether relationships existed but also how strong and meaningful those relationships were in authentic learning experiences.

## Results and Discussion

### Results

#### Frequency Using ChatGPT on Students' Perception of Usefulness, Ease of Use, Dependency, and Creativity

Table 2. Validity items

Variable	Item Question	r-value	r-table
Frequency of ChatGPT Use	Xa	.749	.320
	Xb	.753	.320
	Xc	.627	.320
	Xd	.731	.320
	Xe	.764	.320
Usefulness	Ya	.807	.320
	Yb	.764	.320
	Yc	.771	.320
	Yd	.744	.320
	Ye	.875	.320
Ease of use	Ya	.835	.320
	Yb	.554	.320

	Yc	.788	.320
	Yd	.735	.320
	Ye	.889	.320
Dependency	Ya	.827	.320
	Yb	.715	.320
	Yc	.753	.320
	Yd	.711	.320
	Ye	.803	.320
Creativity	Ya	.755	.320
	Yb	.866	.320
	Yc	.651	.320
	Yd	.831	.320
	Ye	.801	.320

Sig. 0.05 (Valid= r-value > r-table)

The results of the validity test in the table above show that all statement items in the variables Frequency of ChatGPT Use, Usefulness, Ease of Use, Dependency, and Creativity have r-count values greater than the r-table value (0.320) at the 5% significance level. This means that all items are valid and can be used as research instruments. Therefore, each statement in the questionnaire can consistently and appropriately measure the intended variables according to the designed constructs.

Table 3. Reliability Item

<b>Reliability Statistic</b>	
<b>Cronbach's Alpha</b>	<b>N of Items</b>
.969	25
Reliable= $\alpha > 0.6$	

The reliability test results in the table above show that Cronbach's Alpha is 0.969, well above the minimum threshold of 0.6, indicating a very high level of reliability. This means that the research instrument, consisting of 25 items, has a firm internal consistency. Therefore, each questionnaire item can yield stable, consistent, and dependable results for accurately measuring the research variables.

Table 4. Normality Test

		Chat GPT	Usefulness	Ease of Use	Dependency	Creativity
N		38	38	38	38	38
Normal Parameters <sup>a,b</sup>	Mean	19.24	18.47	18.95	17.71	18.47
	Std.	4.594	4.941	4.423	4.781	4.695
	Deviation					
Most Extreme Differences	Absolute	.113	.095	.146	.133	.089
	Positive	.105	.093	.090	.068	.082
	Negative	-.113	-.095	-.146	-.133	-.089
Test Statistic		.113	.095	.146	.133	.089
Asymp. Sig. (2-tailed)		.200 <sup>c,d</sup>	200 <sup>c,d</sup>	.041 <sup>c</sup>	.090 <sup>c</sup>	200 <sup>c,d</sup>

The Data is normally distributed with  
Asymp if sig. (2-tailed) > 0.05

The results of the normality test in the table above show that the Asymp. Sig. (2-tailed) values for the variables ChatGPT Use, Usefulness, Dependency, and Creativity are 0.200, 0.200, 0.090, and 0.200, respectively, all of which are greater than 0.05. This indicates that these four variables are normally distributed. However, the Ease-of-Use variable has a p-value of 0.041 < 0.05, indicating that the data are not normally distributed.

Table 5. Linearity Test

**ANOVA Table**

			Sum of Squares	Df	Mean Square	F	sig
usefulness* ChatGPT	Between Groups	(Combined)	776.928	14	55.495	10.086	.000
		Linearity	605.713	1	605.713	110.090	.000
		Deviation from Linearity	171.216	13	13.170	2.394	.033
	Within Groups		126.545	23	5.502		
		Total	903.574	37			
Ease of Use* ChatGPT	Between Groups	(Combined)	489.683	14	34.977	3.435	.004
		Linearity	346.912	1	346.912	34.067	.000
		Deviation from Linearity	142.771	13	10.986	1.078	.421

		Within Groups	234.912	23	10.183			
		Total	723.895	37				
Dependency* ChatGPT	Between Groups	(Combined)	682.518	14	48.751	6.866	.000	
		Linearity	418.422	1	418.422	58.934	.000	
		Deviation from Linearity	264.096	13	20.315	2.861	.013	
		Within Groups	233.667	23	7.100			
		Total	639.983	37				
Creativity* ChatGPT	Between Groups	(Combined)	665.078	14	47.506	7.265	.000	
		Linearity	431.898	1	431.898	66.050	.000	
		Deviation from Linearity	233.181	13	17.937	2.743	.017	
		Within Groups	150.395	23	6.538			
		Total	815.474	37				

The results of the linearity test in the table above show that not all variables have a linear relationship with the frequency of ChatGPT use. This can be seen in the significance values for Deviation from Linearity in several variables, namely Usefulness, with a Sig. value of 0.033, Dependency with 0.013, and Creativity with 0.017, all of which are less than 0.05, indicating that these relationships are not linear. Meanwhile, only the Ease-of-Use variable shows a linear relationship with a Sig. value of 0.421, which is greater than 0.05. Based on these results and given that the normality test also indicated one variable was not normally distributed, this study used the nonparametric Spearman's Rank Correlation test. This test was chosen because it is more appropriate for data that do not fully meet the assumptions of normality and linearity, ensuring that the analysis results remain valid and accurately represent the strength and direction of the relationships between variables.

Table 6. Spearman Correlation ChatGPT on Students' Perception

Model	Perception	r	Sig.
ChatGPT	Usefulness	.811	.000
	Ease of Use	.584	.000
	Dependency	.640	.000
	Creativity	.658	.000

Since the data distribution was not entirely normal, the nonparametric Spearman's Rank Correlation test was used to examine the relationship between the frequency of ChatGPT use and students' perceptions of its usefulness, ease of use, dependency, and creativity in learning English. Unlike Pearson correlation, which assumes data normality and linearity, the Spearman correlation

is more appropriate for ordinal or non-normally distributed data. It measures the strength and direction of monotonic relationships, allowing this analysis to provide reliable insights even under non-normal conditions.

The results reflect that the frequency of use of ChatGPT is strongly and significantly positively related to students' perceptions of usefulness:  $r = .811$ ,  $p = .000$ . It implies that the more frequently students use ChatGPT, the more useful they perceive its benefits for learning English. Besides, the data showed a moderate-to-strong positive association with perceived ease of use,  $r = .584$ ,  $p = .000$ ; dependency,  $r = .640$ ,  $p = .000$ ; and fostering creativity,  $r = .658$ ,  $p = .000$ , meaning that with a rise in usage comes greater perceived convenience, stimulation of creativity, and reliance on ChatGPT in performing learning activities.

## **Discussion**

The findings of this study reveal that the frequency of ChatGPT use is strongly and significantly related to EFL students' perceptions of usefulness, ease of use, dependency, and creativity in English learning. Among the four dimensions, usefulness shows the strongest correlation ( $r = .811$ ,  $p < .000$ ). This indicates that the more often students engage with ChatGPT, the more they perceive it as an effective tool that supports their learning process. This aligns with previous studies, which argue that learners' perception of technological usefulness often reflects their continued adoption behavior (Almassaad et al., 2024; Rahma & Fithriani, 2024). Higher perceived usefulness and ease of use significantly predict ChatGPT adoption and continued use (Sallam et al., 2024). The rise of conversational AI technologies, particularly ChatGPT, has reshaped diverse spheres, including education, careers, social relations, and personal advancement (Maral et al., 2025). This finding supports the Technology Acceptance Model (Davis, 1989) in Marangunić and Granić (2015), which highlights perceived usefulness as a primary factor influencing technology adoption. Similar results were reported by Liu and Ma (2024), who found that continuous use of ChatGPT helped EFL learners improve not only their writing fluency but also their overall confidence in using English. Likewise, Li et al. (2024) found that ChatGPT-assisted learning promotes deeper comprehension, faster feedback cycles, and greater engagement in learning activities. Tram et al. (2024) found that interactivity and enjoyment enhance learners' intention to continue using ChatGPT through perceived usefulness, while self-efficacy and human-likeness improve ease of use. Moreover, Morell-Mengual et al. (2025) noted that students use ChatGPT to better understand complex concepts and manage study time, even though frequent use may increase dependency.

Another key finding concerns creativity, which shows a strong positive correlation ( $r = .658$ ,  $p < .000$ ). This suggests that ChatGPT can catalyze creative thinking by offering students new ways to express ideas and explore language. Based on Amabile's (2012) Componential Theory of Creativity, creativity grows through the interaction between skills, motivation, and a supportive environment. ChatGPT provides such an environment by helping students brainstorm ideas, experiment with word choice, and refine their language output. Similarly, found that moderate and reflective use of AI can inspire students to think more divergently, engage with authentic expressions, and build stronger linguistic creativity (Aksakallı & Daşer, 2025). This finding also aligns with Deng et al. (2025), who, through a systematic review and meta-analysis, concluded that the pedagogical use of ChatGPT can enhance higher-order thinking and creativity when implemented appropriately, particularly by encouraging students to engage in idea

generation and reflective learning. Thus, rather than merely functioning as an answer generator, ChatGPT becomes a learning companion that broadens students' linguistic imagination and motivation to explore English in more flexible ways.

Ease of use also shows a significant relationship ( $r = .584$ ,  $p < .000$ ), indicating that students generally find ChatGPT easy to access and operate. This result aligns with previous studies showing that students' perceived ease of use significantly influences their acceptance and behavioral intention to use ChatGPT (Almogren et al., 2024; Alshammari & Babu, 2025). Similarly, Jo (2024) and Sallam et al. (2024) found that while ease of use contributes to positive attitudes toward ChatGPT, its influence is often mediated through perceived usefulness and satisfaction, indicating that familiarity and confidence in using the tool enhance students' engagement over time. Similarly, Liu and Ma (2024), who noted that usability, interface simplicity, and digital readiness influence students' willingness to adopt ChatGPT for language learning. The more intuitive and accessible the system is, the more it encourages learners to integrate it into their daily study habits. These results reinforce one of TAM's key assumptions: that perceived ease of use indirectly enhances acceptance by increasing learners' comfort and reducing technological anxiety.

The relationship between ChatGPT use and dependency ( $r = .640$ ,  $p < .000$ ) reveals a double-edged phenomenon. On one hand, frequent use can boost learning efficiency and confidence. This finding is supported by Zhang et al. (2024), who observed that the top adverse effects of AI dependency include increased laziness, the spread of misinformation, lower creativity, and reduced critical and independent thinking. Similarly, Zhai et al. (2024) found that over-reliance on AI dialogue systems can reduce students' analytical and reflective capacities by encouraging passive acceptance of AI-generated outputs. In line with these concerns, distinct profiles of students' reliance on ChatGPT were identified, ranging from versatile low-reliance to assignment delegators, and it was emphasized that heavy reliance on AI tools may weaken cognitive engagement and hinder authentic skill development (Stojanov et al., 2024). On the other hand, it may foster a sense of reliance that limits students' independent learning. ChatGPT can appeal to individuals who are motivated by needs for cognitive engagement, problem-solving, and social connection, drivers that are also often linked to problematic gaming and internet behaviors (Yu et al., 2024). This pattern reflects the concerns raised in Dependence Theory, where repeated reliance on technology for instant feedback can gradually diminish self-regulation and critical engagement. Barrot (2023) cautioned that excessive use of ChatGPT might reduce learner autonomy, while Sallam et al. (2024) observed that students who rely too heavily on AI support tend to experience lower confidence when completing independent tasks. The frequency of students' use of technological tools is less significant than the way they utilize them (Wekerle et al., 2022). These findings suggest that although ChatGPT offers tremendous learning support, it should be used mindfully to prevent cognitive dependence and maintain learners' sense of agency.

From a pedagogical standpoint, these results hold important implications for English educators and curriculum designers. ChatGPT can be a powerful supplement to classroom learning, enabling personalized practice, immediate feedback, and creative exploration. However, educators need to guide students in using it critically, encouraging them to verify information, reflect on feedback, and use AI as a learning partner rather than a dependency source. In this way,

ChatGPT can truly enhance autonomy, creativity, and communicative competence in English learning.

This paper also has certain limitations, such as the relatively small sample size, a cross-sectional design, and the use of self-reported data. Further research might use a longitudinal approach, together with a mixed-methods design, to address causal relationships and investigate in detail how continued use of ChatGPT influences the improvement of language proficiency, digital literacy, and self-regulated learning in learners over time. Future researchers might also collect objective measures of performance to supplement the self-reporting measures for a fuller picture of what learners can actually do. In addition, larger and more diverse participant samples across various educational contexts are needed in order to increase the generalizability of findings.

## **Conclusion**

The conclusion of this study, the frequency of using ChatGPT was found to be positively and significantly related to EFL students' perceptions regarding usefulness, ease of use, dependence, and creativity, with usefulness being the strongest. The findings suggest that frequent users perceive ChatGPT as useful for idea generation, language practice, and feedback, though high use may result in over-dependence on AI support. This calls for balanced and responsible integration of ChatGPT into the processes of learning English that would enhance creativity and engagement without the reduction of learner autonomy. Future research is needed with larger samples and longitudinally in order to better understand the long-term effects of ChatGPT on the students' creativity, digital literacy, and self-regulated learning.

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