



THE INFLUENCE OF UTILIZING CHATGPT AS A DIGITAL LEARNING MEDIA ON STUDENTS' LEARNING MOTIVATION AND ACHIEVEMENT IN LEARNING ENGLISH

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Abstract

This study aims to examine the influence of ChatGPT as a digital learning media on students' learning motivation and achievement in English towards eleventh-grade students at MAN 1 Surakarta in the 2024/2025 academic year. The research employed a quantitative approach with a One-Group Pretest-Posttest design. The sample consists of 34 students selected through a random sampling technique. Data collection instruments include test and questionnaires to measure the impact of ChatGPT on students' motivation and achievement in English. Data analysis is conducted using a paired sample t-test with the assistance of the IBM SPSS Statistics 25 software. The findings reveal a statistically significant influence of ChatGPT on students' learning motivation and achievement in English. Based on the paired sample t-test analysis, the t-count value for the questionnaire is 8.879, while for the test, it is 16.062. When compared to the t-table value at a degree of freedom (df) of 33 (n-1) with a 5% significance level (2.035), both t-count values exceed the t-table value ($8.879 > 2.035$ and $16.062 > 2.035$). These results lead to the rejection of H_0 and the acceptance of H_a , indicating that ChatGPT has a significant influence on students' motivation and academic achievement in English learning.

Keywords: *Digital, Learning, ChatGPT, Motivation, Achievement*

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Introduction

Indonesia, as a developing country, continues to enhance its education system, recognizing its crucial role in shaping high-quality human resources. The integration of technology in education has become increasingly essential. According to Ki Hajar Dewantara (Yusuf, 2018), education guides the natural potential of children, enabling them to achieve personal well-being and contribute to society. Similarly, Hamalik (2017) defines education as a continuous and complex process designed to develop individuals who are beneficial to themselves, others, and the broader community. The Indonesian National Education System Law (UU SISDIKNAS No. 20 of 2003) further defines education as a conscious and structured effort to create a learning environment where students actively cultivate their spiritual, intellectual, and practical abilities.

Indonesia's education system is now entering the Super Smart Society Era (Society 5.0). According to Martini et al. (2019), Society 5.0 enables individuals to address social challenges by leveraging technological innovations from the Fourth Industrial Revolution (Industry 4.0). In this era, the internet and artificial intelligence (AI) are not only sources of information but integral parts of daily life, shaping identities and interactions. AI has the potential to bridge economic and social gaps by transforming industries, including education. Its integration into learning processes enhances accessibility, efficiency, and engagement, offering personalized learning experiences tailored to individual needs. In addition, English is also important in this era, (Handayani, 2016) states that communication tools in the globalization era and the key to a person's success in achieving a bright future career.

One of AI's significant contributions to education is intelligent content, which facilitates access to and dissemination of digital learning materials. Anand and Shohel (2019) highlight AI's ability to process vast amounts of data autonomously, creating new opportunities to enhance learning effectiveness. Similarly, Baker and Inventado (2014) emphasize AI's role in adaptive learning, personalized instruction, and data-driven teaching improvements. However, AI is not just a technological trend—it represents a paradigm shift with profound implications. Holmes, Bialik, and Underwood (2019) argue that AI influences learning methodologies, teaching strategies, and overall educational outcomes. This study aims to explore AI's role and potential in addressing modern educational challenges, offering insights into its future applications in learning.

The use of digital learning tools, such as Microsoft Word, PowerPoint, Zoom, Google Meet, and AI-based applications, has become increasingly

prevalent. According to Japar (2019), diverse learning resources enable students to interact more actively with educational content. AI-based learning systems offer personalization and adaptability, with Dwi Robiul (2023) emphasizing their ability to recognize individual learning styles, provide real-time feedback, and tailor materials to students' needs. One notable AI application is ChatGPT, which enhances learning experiences through interactive and individualized support. By fostering student independence and comprehension, ChatGPT addresses common challenges in traditional education. As Syah (2014) states, a proper understanding of learning processes is essential, as misconceptions can lead to ineffective educational outcomes. AI's role extends beyond assistance—it transforms education by making learning more engaging and effective.

In line with the statement from Handayani (2014), that learning media serves as an educational tool to stimulate students' interest in learning, and to facilitate communication in delivering learning materials. The appropriate learning media in the classroom can stimulate students interest and improve students learning outcomes. According to observations and interviews at MAN 1 Surakarta indicate that technology integration in education remains suboptimal, leading to decreased student interest. Despite the availability of projectors and LCD screens, teaching methods remain traditional, focusing on lectures, rote memorization, and textbook-dependent instruction. Classroom activities primarily involve teacher-centered approaches with limited student engagement. The lack of interactive digital learning tools hinders students' motivation, particularly in English learning.

The insufficient integration of technology significantly affects student engagement. According to Robert Gagné (1985), diverse and dynamic learning media play a crucial role in increasing student motivation. Digital learning tools cater to varied learning styles, making lessons more appealing and effective. Furthermore, teacher involvement is essential in fostering student engagement. As Arianti (2018) asserts, educators' efforts in utilizing diverse digital learning media contribute to improved student motivation, academic achievement, and overall learning quality. In this context, ChatGPT serves as an innovative tool that complements traditional teaching methods, fostering student motivation and participation in English learning.

Findings from observations and interviews indicate that the use of technology at MAN 1 Surakarta remains suboptimal, affecting students' creativity, engagement, and motivation. To address these issues, implementing innovative digital learning media, such as ChatGPT, is essential. ChatGPT offers several advantages, including enhanced conceptual understanding, improved knowledge retention, increased student motivation, and a more interactive learning environment. Given the urgent

need for AI integration in education, this study seeks to examine the influence of ChatGPT in enhancing student motivation and achievement.

Research Methods

This study aims to examine the influence of ChatGPT as a digital learning media on students' learning motivation and achievement in English on the eleventh-grade students of MAN 1 Surakarta in the 2024/2025 academic year. This research was conducted in the eleventh-grade students of MAN 1 Surakarta in the 2024/2025 academic year.

Design

This research employed a quantitative approach, as described by Sugiyono (in Siyoto, 2015:16), which is based on positivism to analyze specific populations or samples. The research follows a pre-experimental design using a one-group pretest-posttest method (Sugiyono, 2017:74), where students undergo a pre-test (O1) before the treatment (X1) and a post-test (O2) after utilizing the learning media.

Participants

The researcher used all grade XI students at MAN 1 Surakarta in the 2024/2025 academic year as a population. The sample of this research, representing a portion of the population, was selected through a non-probability sampling method using a simple random sampling approach. Following a randomized selection process, class XIF9 was chosen as the research sample.

Instrument

Data collection techniques include questionnaires and tests. The questionnaire, based on a Likert Scale, measures students' motivation and includes 20 items following Uno's (2012:23) motivation indicators. A closed questionnaire format was used and distributed via Google Forms. The test method involved a multiple-choice pre-test and post-test to assess students' learning outcomes before and after using ChatGPT as a learning tool. The results aim to determine the influence of ChatGPT on student motivation and achievement in English.

Data Collection

Participant Selection

The participants are chosen using a simple random sampling technique to ensure fairness and randomness in the selection process.

Validity and Reliability Test

The researcher measures the validity and reliability of the questionnaire and test to determine whether both instruments are valid, reliable, and suitable for use in the research.

Pre-Test Distribution

The researcher distributes the pre-test questionnaire and test to the experimental class (XI F9) to assess the students' initial knowledge and motivation before applying the treatment.

Treatment Implementation

The researcher provides the treatment to the experimental class (XI F9) by using ChatGPT as a learning media, aiming to enhance the students' engagement and understanding of the subject.

Post-Test Distribution

After the treatment, the researcher distributes the post-test questionnaire and test to the experimental class (XI F9) to evaluate the effectiveness of the treatment and compare the results with the pre-test outcomes.

Data analysis

The qualitative data collected in this study involved two main analytical stages: prerequisite analysis testing and hypothesis testing. These stages played a crucial role in ensuring the validity and reliability of the data and in drawing meaningful conclusions from the research findings. Each stage is outlined in more detail below:

1. Prerequisite Analysis Test

The prerequisite analysis test involved a normality test to determine whether the regression model in the study followed a normal distribution (Rukajat, 2018). The Shapiro-Wilk test was employed for this purpose, with the following criteria:

- a. If the probability value > 0.05 , the distribution is considered normal.
- b. If the probability value < 0.05 , the distribution is considered abnormal.

2. Hypothesis Testing

Hypothesis testing was conducted using the Paired Sample T-Test to assess the effectiveness of the treatment. Data analysis was performed with the IBM SPSS Statistics 25 software. The decision-making guidelines for this test, based on the significance (sig) value, are as follows:

- a. If the significance value > 0.05 , the hypothesis (H_a) is rejected.
- b. If the significance value < 0.05 , the hypothesis (H_a) is accepted.

Results and Discussion

Results

This study examines the impact of ChatGPT as a digital learning media on students' learning motivation and achievement in English among eleventh-grade students at MAN 1 Surakarta in the 2024/2025 academic year. Using a one-group pretest-posttest design, the research involved 34 students from class XIF9. Data collection included pre-tests, treatments, and post-tests, with motivation measured through a 20-item questionnaire and achievement assessed via 20 multiple-choice questions. Descriptive statistical analysis, including mean, median, mode, and standard deviation, was conducted using IBM SPSS Statistics 25.

Result of Students' Learning Motivation

1. Students' Learning Motivation Before Treatment

Before using ChatGPT, students completed questionnaires and tests. The average motivation score was 66.35 (SD = 10.462) with a Median of 66, a Mode of 62, a Maximum Score of 84, and a Minimum Score of 41.

Table 1. Descriptive Statistic Questionnaire Before Treatment

Mean	Median	Mode	N Max	N Min	Std. Deviation
66.35	66	62	84	41	10.462

2. Students' Learning Motivation After Treatment

Following the implementation of ChatGPT, motivation scores significantly increased to 85.15 (SD = 5.040), with a Median of 84.5, a Mode of 83, a Maximum Score of 97, and a Minimum Score of 77.

Table 2. Descriptive Statistic Questionnaire After Treatment

Mean	Median	Mode	N Max	N Min	Std. Deviation
85.15	84.5	83	97	77	5.040

Result of Students' Learning Achievement

1. Students' Learning Achievement Before Treatment

Before using ChatGPT, students completed tests. The average motivation score was 54.85 (SD = 8.571) with a Median of 55, a Mode of 55, a Maximum Score of 70, and a Minimum Score of 45.

Table 3. Descriptive Statistics Test Before Treatment

Mean	Median	Mode	N Max	N Min	Std. Deviation
54.85	55	55	70	45	8.571

2. Students' Learning Achievement After Treatment

Following the implementation of ChatGPT, test scores significantly increased to 80.65 (SD = 7.202), with a Median of 82.5, a Mode of 85, a Maximum Score of 95, and a Minimum Score of 70.

Table 4. Descriptive Statistics Test After Treatment

Mean	Median	Mode	N Max	N Min	Std. Deviation
80.65	82.5	85	95	70	7.202

Prerequisite Test Analysis

A normality test using the Shapiro-Wilk method confirmed that both pre-test and post-test (Questionnaire and Test) data were normally distributed (sig > 0.05), validating their suitability for further statistical analysis.

Table 5. Normality Test Shapiro-Wilk (Questionnaire)

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Pre_Test_Questionnaire	,122	34	,200	,972	34	,512
Post_Test_Questionnaire	,129	34	,162	,963	34	,306

Based on Table 5, the results of the normality test show that the significance value (2-tailed) for questionnaires from the pre-test questionnaire is 0.512 and the post-test questionnaire is 0.306, which are greater than 0.05. This implies that the data follows a normal distribution, as it exceeds the significance threshold of 0.05, making it appropriate for further analysis.

Table 6. Normality Test Shapiro-Wilk (Test)

	Kolmogorov-Smirnova			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	df	Sig.
Pre_Test_(Test)	,140	34	,088	,960	34	,244
Post_Test_(Test)	,143	34	,074	,938	34	,053

Based on Table 6, the results of the normality test show that the significance value (2-tailed) for test from the pre-test is 0.244 and the post-test is 0.053, which are greater than 0.05. This implies that the data follows a normal distribution, as it exceeds the significance threshold of 0.05, making it appropriate for further analysis

Result Test of Hypothesis

This hypothesis test is used to determine whether or not the impact of the use of ChatGPT as digital learning media. The hypotheses were:

1. Ho: There is no significant influence of ChatGPT as digital learning media on student' learning motivation and learning achievement in learning English.
2. Ha: There is a significant influence of ChatGPT as digital learning media on student' learning motivation and learning achievement in learning English.

The Paired Sample T-Test results indicate that:

The questionnaire mean score was -18.794, the Standard Deviation was 12.343, The Standard Error Mean was 2.117, and tcount was 8.879 with a significance (2-tailed) of 0.000.

Table 7. Paired Sample T-Test (Questionnaire)

Paired Samples Test									
Paired Differences									
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Pre Test - Post Test	-18,794	12,343	2,117	-23,101	-14,487	8,879	33	,000

The test mean score was -27.794, the Standard Deviation was 10.090, The Standard Error Mean was 1.730, and tcount was 16.062 with a significance (2-tailed) of 0.000.

Table 8. Paired Sample T-Test (Test)

Paired Samples Test									
Paired Differences									
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Pre Test - Post Test	-27.794	10.090	1.730	-31.315	-24.274	16.062	33	,000

Since the t_{count} values 8.879 for the questionnaire and 16.062 for the test, exceed the t_{table} value (2.035), H_0 is rejected, and H_a is accepted. Additionally, the significance value (0.000) is below 0.05, confirming that ChatGPT significantly enhances students' learning motivation and achievement. Thus, the hypothesis is accepted at a 5% significance level.

Discussion

Initially, students in class 11F9 at MAN 1 Surakarta faced challenges in understanding lessons due to monotonous teaching methods, leading to low motivation and academic performance. Based on observations and interviews conducted at MAN 1 Surakarta, it was found that the application of technology in learning remains relatively low, contributing to a decline in students' interest in learning. This issue arises because classroom activities are often repetitive and lack variety. Although classrooms are equipped with LCD projectors, the teaching methods remain predominantly traditional, relying heavily on lectures and evaluations through direct question-and-answer sessions or assignments submitted via paper, books, Gmail, or Google Classroom. Some teachers still depend on textbooks and emphasize note-taking rather than more interactive approaches.

The lack of technology integration in learning results in reduced student involvement in the learning process. According to Robert Gagné (1985) said that the importance of varied learning media can increase student motivation. The digital learning media used aims to meet the needs of students' learning styles so that students are more interested and more motivated by the material that can be taught. The role of teachers is also very large in achieving success in the learning process, of course, in implementing varied digital learning media, so that it can increase student motivation in learning. According to Arianti (2018) said that the role of teachers greatly influences student motivation, and the main goal is to achieve and improve the quality of learning in the learning process. It is hoped that the use of AI in the form of ChatGPT can be used as a teacher, one of the variations of

teaching media, to motivate students and enhance learning achievement, especially in learning English.

The implementation of technology has brought significant changes in the world of education, especially in learning methods. According to Andi Kurniawan (2022), digital learning is a learning medium that is carried out digitally without having to wait for internet access to be able to start the lesson. This means that e-learning in the past, in today's era is called a digital learning method.

Learning motivation is also one of the important factors in learning. According to Sardiman (2014) states that learning motivation is the driving force within students that gives rise to learning activities, which guarantees the continuity of learning activities and provides direction to learning activities so that the goals desired by students can be achieved. According to Uno (2016), several intrinsic factors indicate learning motivation. These include students' interest and attention in learning, their desire to gain new knowledge, and their active involvement in the learning process. Additionally, students' independence in learning, willingness to overcome difficulties, and consistency and perseverance in studying play a crucial role. Furthermore, recognition of learning achievements and students' satisfaction with their learning outcomes also contribute to their overall motivation.

Learning achievement is a complex process that involves changes in various aspects of an individual, including knowledge, attitudes, and behavior, which are influenced by experience and conscious activity. According to Djamarah (2012), learning achievement is the result obtained in the form of impressions that cause changes in the individual as a result of learning activities. Each student has different learning outcomes or achievements, depending on their learning process. These achievements can range from low, medium, to high, depending on the results of the evaluation and assessment carried out. By leveraging current technological advancements, such as the use of AI tools like ChatGPT in learning, it is expected to facilitate access to education from anywhere and enhance students' learning motivation and learning achievement, especially in English.

Before using ChatGPT, learning was mainly lecture-based, limiting student engagement. The pre-test results showed the lowest score at 45 and the highest at 70, with a mean of 54.85. After implementing ChatGPT, the post-test results improved significantly, with the lowest score at 70, the highest at 95, and a mean of 80.65.

A hypothesis test using SPSS 25 and a paired sample t-test confirmed ChatGPT's positive impact. The t-test results for the questionnaire ($t_{count} =$

8.879) and test ($t_{\text{count}} = 16.062$) were greater than the t_{table} value of 2.035 at a 5% significance level, leading to H_0 rejection and H_a acceptance. This proves that ChatGPT significantly enhances student motivation and learning achievement in English.

Previous studies have also examined the impact of technology on student learning and motivation. Ersyanda Yunarzat (2024) investigated the use of ChatGPT in class 10 Accounting at SMK Negeri 6 Makassar and found that it was effective, with an average assessment score of 3.43 across 19 aspects. Students' motivation was also categorized as effective, with a score of 3.22 from 15 aspects. Amanda Putri Rahayu (2023) evaluated ChatGPT's acceptance by Indonesian students, revealing that 71% of 360 respondents were highly accepting, 25% accepted, 14% were neutral, and only 0.3% rejected it. Muhamad Salwan Syahrianda (2024) studied ChatGPT-based information search behavior at SMA Negeri 2 Cianjur, demonstrating that the platform enhanced students' understanding and skills through two learning cycles, leading to faster and more confident use. Finally, Aryo Wibi Pradana (2024) explored the impact of Quizziz on English learning motivation among 10th-grade students at MAN 1 Surakarta, showing a 5% influence with statistically significant results ($t_{\text{count}} = 37.787 > t_{\text{table}} = 2.060$), leading to the acceptance of the alternative hypothesis (H_a). These studies highlight the growing role of AI-based tools and interactive media in enhancing learning outcomes and student engagement.

Conclusion

Based on the pre-test and post-test data analysis using the t-test, it is evident that utilizing ChatGPT as a digital learning media positively influences student motivation and learning achievement in English for eleventh-grade students of MAN 1 Surakarta in the 2024/2025 academic year. The Shapiro-Wilk test confirmed that the data were normally distributed, with pre-test and post-test significance values exceeding 0.05. The students' average motivation score increased from 66.35 to 85.15, while their test scores improved from 54.85 to 82.62 after implementing ChatGPT.

Statistical analysis using IBM SPSS Statistics 25 and the paired sample t-test indicated a significance value of 0.000 (<0.05), leading to H_0 rejection and H_a acceptance. The t_{count} values for the questionnaire (8.879) and test (16.062) exceeded the t_{table} value (2.035) at a 5% significance level, confirming a significant impact.

The hypothesis stating that "ChatGPT as a digital learning media influences student motivation and learning achievement in English" is statistically proven.

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