ANALYSIS OF THE EFFECT OF CHATGPT ON THE LEARNING PRODUCTIVITY OF SECONDARY SCHOOL STUDENTS

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Article Info	**Abstracts**
	This study directs readers to find out the effect of chatGPT on the learning productivity of high school students. In the industrial era 5.0, humans have fast-paced demands in carrying out various activities in daily life. This study used a simple regression analysis technique to determine the significant difference between chatGPT and student productivity in secondary schools. Data collection was carried out using a questionnaire and given to 25 students of MTsN 2 Kota Kediri. The data that has been collected will be analyzed using simple regression consisting of several tests including, normality and linearity tests, and heteroscedasticity tests. From these tests, the results obtained a significance value above 0.05 so it can be concluded that the use of chatGPT affects student learning productivity

Introduction

Since the covid 19 pandemic, the closure of schools, institutions and other learning spaces during the pandemic has affected more than 94% of the world's student population (Pokhrel dan Chhetri 2021). These restrictions have led to a surge in the use of digital technology, not least among adolescents (De', Pandey, and Pal 2020; Paksi et al. 2022). Digital devices that are relatively lightweight and portable make students increasingly free to access information more easily (Anon 2020; De' et al. 2020). The use of these technologies certainly provides digital literacy defined as "the ability to access and process information from any form of transmission" (Harahap and Adeni 2020; Potter 2019) so that it provides opportunities for adolescents to explore important skills in their experience, one of which is for learning productivity.

Learning productivity in children, especially adolescents is very important considering that adolescence is a period of high curiosity, so an activity is needed to provide positive things to their experience (Aulia et al. 2023; Bunsaman dan Krisnani 2020; Octavia 2020; Paksi et al. 2022; Zietz, de Hoop, dan Handa 2018). Positive things such as developing ideas, seeking new insights that fit the context of their academic constraints (Potter 2019), the learning process at school or through activities at school (Febriana and Nurdiansyah 2021).

Learning at school is generally the core activity of students at school with the delivery of material. Teachers will give assignments to their students as an evaluation of the learning process. Workmanship is known to be an additional value for students who do it. Currently, generally students will use search tools to help their search. But with today's technological advancements, chatGPT such as chatGPT can further help students with their assignments.

ChatGPT is a chatbot-type tool that can be used as an chatGPT-based dialog search tool. Unlike Google, chatGPT can provide more detailed answers because their chatGPT base can

create more dynamic answers that are more in line with the answers students need depending on the command given. Of course, this ability will be able to be used by students as a place for their exploration in adding insights as an alternative to general search engines such as google, bing, safari, etc. That way, chatGPT can certainly help students in increasing their productivity in learning.

Recently, high school students in some region in Indonesia have a fairly low level of learning interest which is one of point on productivity (Amelia 2019; Reski 2021). This can be caused by the difficulty of getting information that suits their needs. The use of search engines as a source of information is considered less helpful than what they want to know. This may happen because the information provided by Google must first be published. With the difficulty of finding information, of course, the level of student productivity decreases.

In the last 5 years, several studies on chatGPT have been conducted such as the use of chatGPT at the secondary school level (Aydin dan Karaarslan 2022; Biswas 2023; King 2023), the potential of chatGPT (Biswas 2023; Chinonso, Theresa, dan Aduke 2023; Sok dan Heng 2023), and research on the effect of chatGPT on learning motivation (Ali et al. 2023). In addition, similar research has also been conducted such as online learning productivity (Paksi et al. 2022) and increasing learning productivity using light and sound stimulation (Candra et al. 2019; Iswatiningsih 2023). Furthermore, other articles discuss productivity between genders (Krukowski, Jagsi, dan Cardel 2021), and the role of community activities and organizations on productivity (Mulyaningsih 2022; Zietz et al. 2018). There has been no research analyzing the effect of ChatGPT on the productivity of high school students. This kind of research needs to be done because it can provide information on how influential the potential of ChatGPT is used by students in increasing their learning productivity. In addition, the results of this study can be used by teachers as a basis for recognizing the potential of ChatGPT in its use in the learning process. Therefore, the purpose of this study is to analyze the effect of using ChatGPT on student productivity.

Methods

To collect sample data, a questionnaire containing questions about the use of chatGPT and learning productivity was distributed. The questionnaire answers are in the form of "Strongly Agree", "Agree", "Moderately Agree", "Disagree", and "Disagree". Each answer represents a score where "Strongly Agree" represents 5, "Agree" represents 4, "Moderately Agree" represents 3, "Disagree" represents 2, and "Disagree" represents 1. The questionnaire sheet was given to 25 students of Madrasah Tsanawiyah 2 Kota Kediri using the help of google form.

The data results obtained will be used for simple regression analysis which consists of normality test, linearity test, and heteroscedasticity test. An overview between variables can be seen in Figure 1.
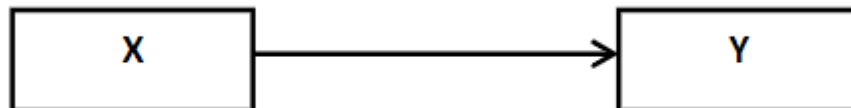

Figure 1 Correlation between variables x and variable y

Figure 1 shows the relationship between variables X and Y, where variable X is the use of chatGPT and variable Y is learning productivity. This relationship is interrelated, where variable X or the use of chatGPT will affect variable Y or learning productivity and vice versa, where variable Y or learning productivity will affect variable Y or the use of chatGPT.

Results and Discussion
Analysis

The first test carried out on data analysis is the normaliltas test which serves to determine whether the distribution is normal. The results of the test as shown in Figure 2 and Figure 3
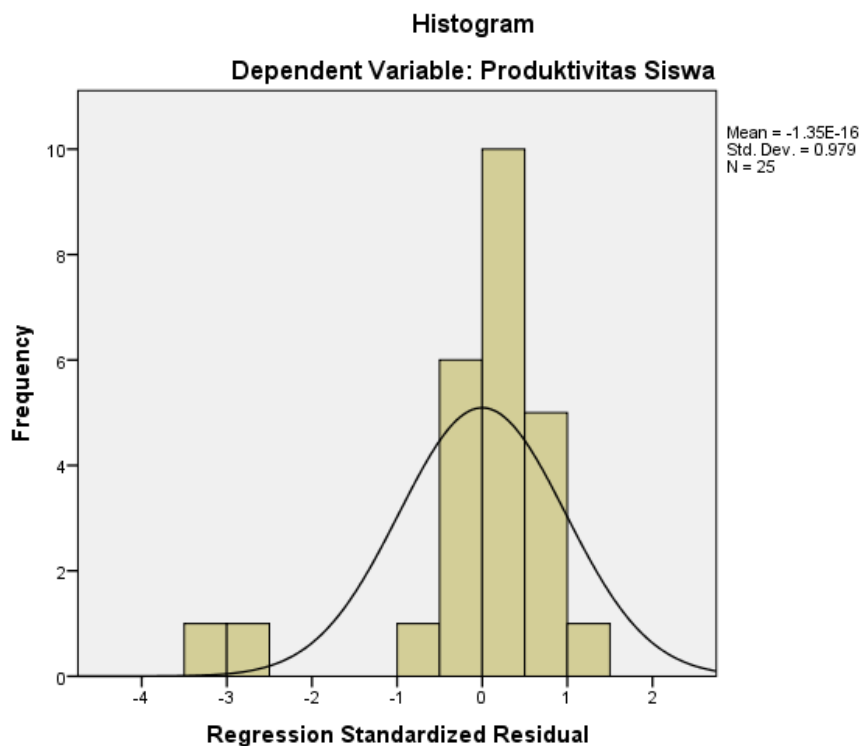

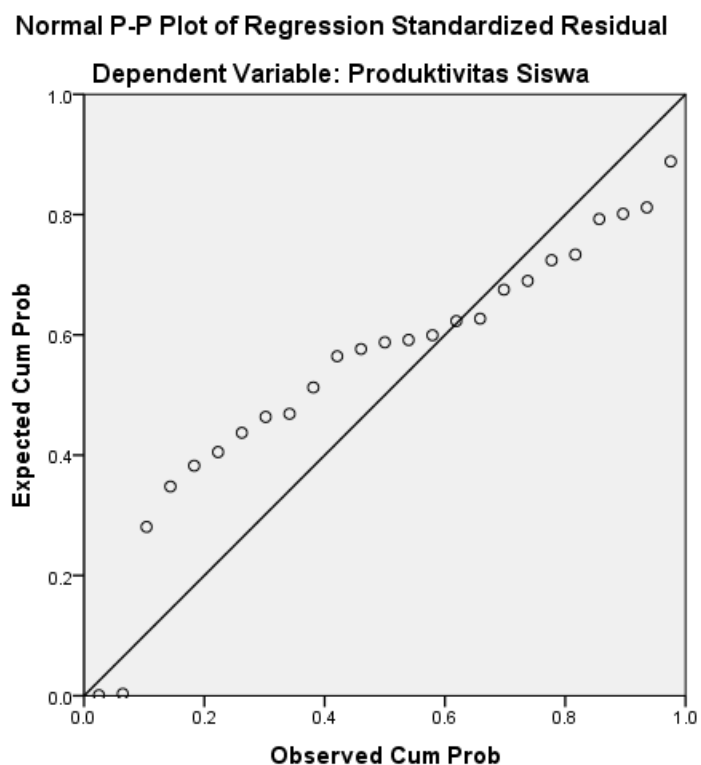Figure 2 Histogram of Normality Test according to SPSS 22

Figure 3 Normality P-Plot of Regression Standardized Residual

Based on figure 2 and figure 3 carried out with SPSS, the histogram and P-Plot table obtained show that the data analysed are normally distributed. However, decision making when only from graphs and histograms is less able to provide precise results so that the Kolmogorov-Smirnov and Shapiro-Wilk normality tests are carried out as Table 1.

Table 1. Normality Test Results using Kolmogorov-Smirnov and Shapiro-Wilk test

	Tests of Normality					
	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
chatGPT	.143	25	.197	.948	25	.221
Produktif	.145	25	.187	.922	25	.056

a. Lilliefors Significance Correction

Based on Table 1, the sig value is obtained. 0.187 in the Kolmogorov-Smirnov column and sig value. 0.056 in the Shapiro Wilk column is greater than 0.05 so that the data taken is accurately normally distributed. Furthermore, the correlative test is carried out to determine the statistical description of the data obtained from the questionnaire results of the use of chatGPT on the learning productivity of secondary school students. As Table 2

Table 2. Variable Data Results

		Model Summary[b]		
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.563[a]	.318	.288	7.654

a. Predictors: (Constant), Penggunaan chatGPT

b. Dependent Variable: Produktivitas Siswa

Based on Table 2, the correlation value shown is 0.563. In addition, Table 2 shows the coefficient of determination of 31.8%, which means that variable X or the use of chatGPT has an effect of 31.8% on variable Y or learning productivity. The other 68.2% influence is the influence of various other variables that are still unknown. Furthermore, the correlation test was conducted as shown in Table 3.

Table 3. Correlation Test Results

		ANOVA[a]				
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	626.750	1	626.750	10.700	.003[b]
	Residual	1347.250	23	58.576		
	Total	1974.000	24			

a. Dependent Variable: Produktivitas Siswa

b. Predictors: (Constant), Penggunaan chatGPT

Table 3 is the result of the correlation test conducted to determine the statistical description of the data obtained from the questionnaire results of the use of chatGPT on learning productivity where in Table 3 the results obtained the significance value is 0.003>

0.05 which indicates that there is a relationship between the use of chatGPT on learning productivity. Furthermore, the heteroscedasticity test was carried out as shown in Figure 4.
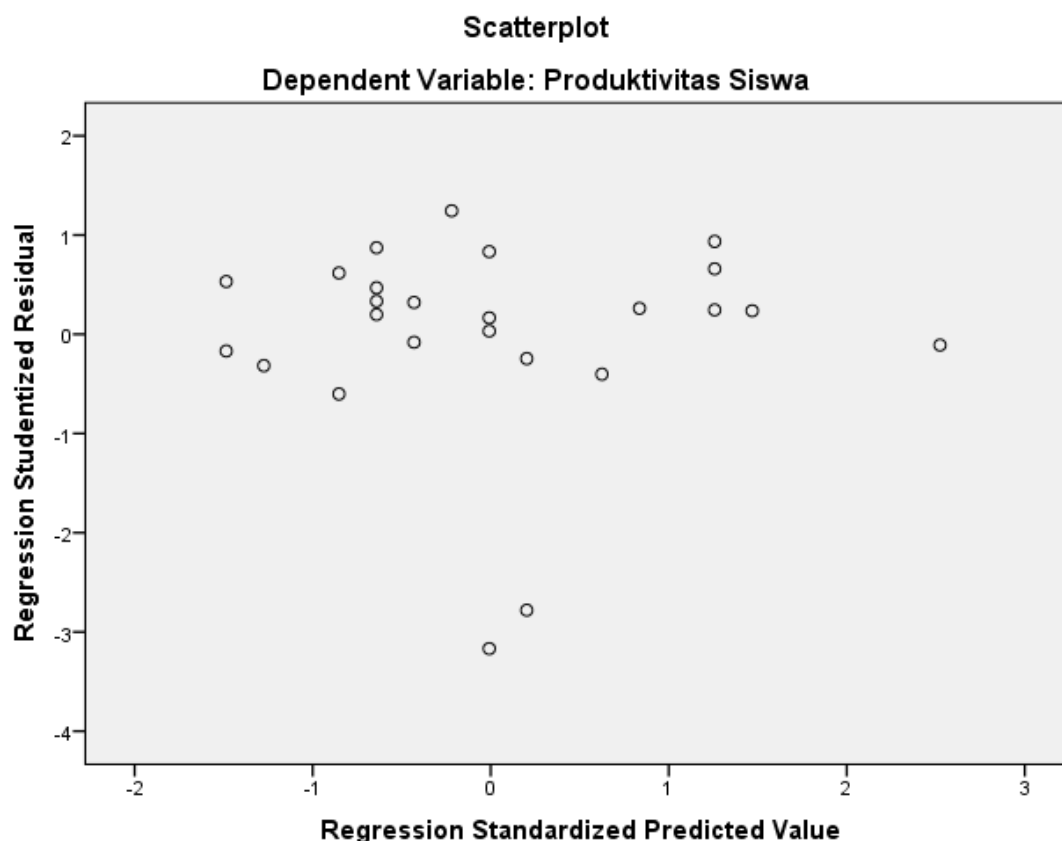

Figure 4 Heterocedasticity test using scatterplot according to SPSS 22

From Figure 4, there are no symptoms of heteroscedasticity if there is a clear pattern (widening, wavy, or narrowing) on the scatterplot, as well as points that spread above and below zero on the Y axis (Ghozali 2013)

Conclusion

This study examines the effect of using chatGPT on student productivity. The results of this study show that the use of chatGPT has a positive effect on student productivity. The use of chatGPT as one of the activities that can help students in providing a positive experience in their learning process.

From the findings derived from this study, the use of chatGPT as a tool for understanding concepts and working on assignments for students can be recommended by teachers in schools. Training and socialization on the benefits of chatGPT need to be done so that teachers can maximize the potential of chatGPT. In addition, teachers are also expected to be able to provide good and wise anticipation to overcome new types of cheating that arise due to the negative impact of chatGPT. Furthermore, further research can be carried out to determine the potential of chatGPT as a tool for teachers in making teaching modules or other stages of teacher learning preparation.

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