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THE EFFECT OF GPT CHAT ON THE LEARNING OUTCOMES OF KHAIRUN UNIVERSITY INFORMATICS STUDY PROGRAM STUDENTS

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Abstract

In an era where technological innovation is increasingly penetrating all aspects of life, education cannot be separated from the positive impacts brought by technological progress. An interesting innovation that enriches the learning process is the use of ChatGPT (Generative Pre-trained Transformer). ChatGPT is an artificial intelligence language model that is capable of understanding and producing text with a high level of complexity. This research aims to examine the effect of ChatGPT and classroom learning on student learning outcomes. The research method used is quantitative. The results of this research consist of three hypotheses. 1. ChatGPT implementation has a positive relationship with student learning outcomes. Therefore, the hypothesis that states: "There is connectivity between the application of ChatGPT (X1) and learning outcomes (Y)" can be accepted. 2. Classroom learning has a positive relationship with student learning outcomes. Thus the hypothesis which states: "There is connectivity between learning in the classroom (X2) and learning outcomes (Y)" can be accepted. 3. The combination of implementing ChatGPT (X1) and classroom learning (X2) has a positive relationship to student learning outcomes (Y). Thus the hypothesis which states: "There is connectivity between the use of ChatGPT (X1) with classroom learning (X2) and learning outcomes (Y)" can be accepted.

Keywords: ChatGpt, Class Learning, Learning Outcomes, Influence.

INTRODUCTION

In an era where technological innovation increasingly permeates every aspect of life, education cannot escape the positive impacts offered by technological progress. One interesting innovation that enriches the learning process is the use of Chat GPT (ChatGPT - Pre-trained Generative Transformer) is an artificial intelligence language model is capable of understanding and producing text with a high level of complexity. In an educational context, the use of GPT Chat provides great potential in changing the learning paradigm, creating a more adaptive and interactive learning experience.

One of the digital technologies that is currently developing and used as a tool for finding information in learning is Chat Generative (GPT) technology. Pre-trained Generative Transformer Pre-trained Transformer or better known as GPT chat is a technology that uses artificial intelligence. The presence of GPT chat is of particular concern to people from various social status backgrounds such as in education. This is because with various advantages or advantages of using GPT chat, it can provide a new learning strategy. Chat in GPT activities has the ability to produce automatic text. D. Yan (2023)

ChatGPT (Generative Pre-Trained Transformer) is a robot or chatbot that utilizes artificial intelligence that can communicate and help humans in solving various problems in everyday life. According to Lund, & Wang (2023). The influence of Chat GPT in the world of education is not limited to its ability to convey information efficiently, but also in providing creative solutions to learning challenges. Through carefully designed conversation scenarios, Chat GPT can serve as a responsive learning partner, providing specific assistance to students according to their individual needs.

However, we must also recognize that the presence of technologies such as GPT Chat brings with it ethical and security challenges. Therefore, it is important to design the implementation of this technology wisely, ensuring that every interaction within the educational environment is aligned with ethical values and maintains the safety of its users.

The implementation of ChatGPT technology in education offers the potential to enhance the quality of learning. However, its usage necessitates careful attention to privacy and ethical considerations. Consequently, education professionals must thoughtfully evaluate how they integrate ChatGPT technology into the learning process and ensure that its application adheres to established ethical standards and privacy guidelines.. Fikri Kurnia Ramadhan (2023).

Studies related to GPT chat have been widely conducted in various disciplines. One of the studies found Implications for educational and research practices using SWOT analysis. M. Farrokhnia et al. (2023). In other research, it is also applied in the study of engineering education in terms of the promises and pitfalls in applying AI to learning. J. Qadir (2022).

Researchers consider it necessary to conduct research regarding the influence of Chat Gpt on the learning outcomes of Khairun University Informatics Study Program students. This is the basis for researchers to conduct

research because there are no research results that show how low or high Chat Gpt is between internal factors and the learning outcomes of University Informatics Study Program students. Khairun.

LITERATURE REVIEW

The presence of technological media in the 21st century acts as a catalyst for teaching innovation. Teachers must leverage their ingenuity and creativity to rethink learning processes through technological means, turning them into tangible products in the educational landscape. It involves the application and advancement of technology in managing subsequent learning processes. (2021).

Using ChatGPT can write scientific essays by providing discussion topics by dividing them and asking ChatGPT to write each part, it is possible for ChatGPT users to create entire articles with the ChatGPT tool. Lund & Wang (2023). It is hoped that the use of the ChatGPT tool will be well utilized by the wider community. According to the results of trials carried out by Xiaoming Zhai (2022), ChatGPT was used in writing scientific papers entitled artificial intelligence for education. The trial results showed that ChatGPT was able to help researchers write scientific papers well, coherently, accurately, informatively and systematically.

Learning results are closely related to the process of acquiring knowledge. Dimyati & Mudjiono in (Afnan et al., 2021) revealed Learning outcomes are the result of communication between learning attitudes and teaching attitudes. Learning outcomes are achievements obtained by students after acquiring knowledge within a certain period of time. Learning outcomes can also be interpreted as a reflection of learning efforts. Ideally, the better a student's learning efforts, the better the learning outcomes he will achieve. Therefore, learning outcomes can be a benchmark for assessing student learning success. Andri Yandi et al (2023).

Chat GPT (Generative Pre-trained) is one of the artificial intelligence applications that functions to interact in text-based conversations. Santhosh et al (2023). Chat GPT can simulate human conversation and provide automatic responses to user questions using NLP. Chat GPT works by collecting document data from the internet, including source code, which is then combined without labeling, then all the data is entered into the deep learning algorithm. Chat GPT can provide various information quickly and accurately. Arwanto (2023) based on the search words used. Chat GPT has become increasingly popular in

recent years, the use of Chat GPT in the service sector has actually been able to improve customer service and greatly contribute to customer satisfaction where Chat GPT itself can be accessed all the time, besides Chat GPT can automate repetitive tasks Dwivedi et al., (2021). The following is a picture of the GPT chat. Stages Of Research

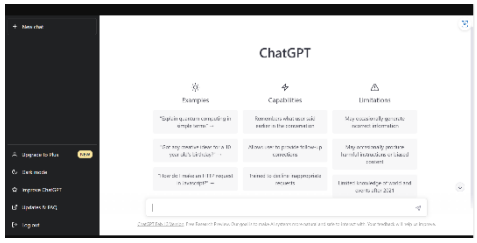

Figure 1. Chat GPT

SPSS is one of the many statistical software that has been widely known among its users. In addition, there are still many other statistical software such as Minitab, Syastas, Microstat and many more. Soecahyadi (2012). SPSS or Statistical Package for Social Science is an application program that has a fairly high statistical analysis capability and a data management system in a graphical environment with a fairly simple way of operating it so that it is easy to understand. The application is one of the software applications that is widely used along with the development of science and technology where many institutions want research in various fields (research that is closely related to data that will be processed using a statistical analysis method). Teguh Wahyono (2006). The following is a display of SPSS.

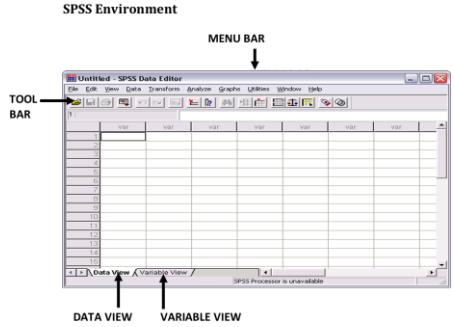

Figure 2. SPSS Application

RESEARCH METHODS

In this research, several stages are used as shown in picture 2 below.

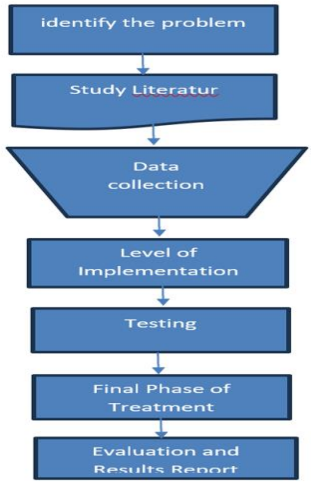

Figure 3. Stages Of Research

At this stage of research, the first problem is identified by looking at the situation analysis and formulating research questions clearly. After identifying the problem, a literature study is carried out on the research topic in order to obtain the relevant research theoretical context to help determine the research hypothesis.

Next, the data collection stage was carried out, where in this research the data collection methods used were interviews, observation, and experimentation. After the data has been collected, it continues with the implementation stage. This stage ensures that the data collected is relevant and accurate. Then the data collected is analyzed using quantitative methods to find patterns from the hypothesis. The final stage is to evaluate the research results based on existing hypotheses and then prepare a final report which produces conclusions and recommendations.

The population in this study is divided into the target population and the reachable population. The target population in this research was Khairun University's Informatics Study Program students who were active in lectures, totaling 1100 students. The accessible population in this study was 400 students. The type of research sample used is simple random sampling. The sample size uses the Slovin formula with an error rate of 10%. Thus, the sample size required is as follows:

$$n = \frac{400}{1+(400x\ 0{,}01^2} \quad \text{.....1)}$$

n = 80 Student.

So the sample used in this research was 80 students. The sample size is determined to represent the characteristics of the population and meets the requirements for analysis. The types of data that have been collected include learning outcome data (variable Y), Chat Gpt (variable X1) and class learning (variable X2).

RESULTS AND DISCUSSION

The results of the study show that the influence of GPT Chat greatly influences the learning outcomes of UNKHAIR informatics students. The following is documentation of the learning outcomes of students using GPT Chat.

Figure 4. Utilization of GPT Chat

The results of the research data that the researcher presents in this chapter were obtained from learning results tests and the results of distributing ChatGpt Utilization questionnaires as well as the results of distributing learning questionnaires in class. The results of this descriptive data calculation include: mean (average), median (middle data), mode (mode), standard deviation (standard deviation), Varince (variance), minimum (lowest value), maximum (highest value), such as can be seen in Table 1 below:

Table 1. Descriptive Data on Learning Results (Y) GPT Chat (X1) and Class Learning (X2)

Stastic				
		Chat GPT	Classroom Learning	Learning Outcome
N	Valid	80	80	80
	Missing	0	0	0
Mean		110.11	104.16	23.89
Median		111	102	25.00
Mode		105[a]	97[a]	27
Std. Deviation		8.39	18.229	6.094
Variance		338.29	332.29	37.14
Range		87	91	23
Minimum		63	51	12
Maximum		150	142	35

In testing regression analysis, there are several conditions that must be met, namely: samples in the form of pairs of data X and Y are taken randomly and meet the minimum sample size. Normality testing aims to determine whether the data on learning outcome scores, creativity questionnaire results, and the campus environment of the population are normally distributed. Testing for normality of data in this study used SPSS statistics version 21 with the Kolmogorov-Smirnov test. The statistical hypothesis proposed for testing normality is as follows:

Ho: Data is normally distributed

H1: Data is not normally distributed

Test criteria: Ho is accepted and H1 is rejected if Sig > 0.05 H0 is rejected and H1 is accepted if Sig <0.05.

Normality tests were carried out on learning result score data, creativity questionnaire results, and class learning. Below are the results of the normality test of learning outcome data (Y), the results of the ChatGPT utilization questionnaire (X1), and the results of the classroom learning questionnaire (X2). Data normality test results can be seen from the following table:

Table 2. Normality Test Results for Variables Y, X1 and X2

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Stastic	Df	Sig	Stastic	df	Sig
ChatGPT	.092	80	.090	.982	80	.338
Classroom Learning	.075	80	.200	.986	80	.546
Learning Outcome	.087	80	.0200	.965	80	.027

Based on table 2 in the Kolmogorov-Smirnov column, it is known that the significant value after processing the data in SPSS shows that the output significance value for variable Y is 0.200, variable X1 is 0.90, and variable X2 is 0.200. The sigY value is greater than the α value (0.200 > 0.05), the sigX1 value is greater than the α value (0.90 > 0.05), and the sigX2 value is larger than the α value (0.200 > 0.05). This, H0 is accepted, which means the data has a normal distribution.

The first hypothesis states, "There is a positive correlation between the application of ChatGPT and the learning outcomes of UNKHAIR Informatics students. To test this hypothesis, simple regression analysis will be used. The proposed null hypothesis states that there is no connectivity between the two variables (ρy1 = 0), while the alternative hypothesis states that there is positive

connectivity between the two variables (ρy1 > 0).

The testing rules based on probability values are as follows: if probability (sig) > α, then H0 is accepted; if probability (sig) < α, then H0 is rejected. The results of linearity and significance test calculations carried out using SPSS version 21 are shown in Table 3 below.:

Table 3. ANOVA test significance calculation using SPSS ANOVA

Model		Sum Squares	Of Df	Mean Squares	F	Sig
1	Regresion	348.560	1	348.560	11.766	.001[b]
	Residual	2549.427	78	32.685		
	Total	2933.988	79			

a. Dependent Variable, Learning outcomes

b.Predictors: (Constant), ChatGpt

Based on table 3 above, the F value is calculated at 11.76. Based on a probability value (sig) that is smaller than α (0.01 < 0.05), H0 is rejected. This shows that the coefficient of Y regression direction over X1 is significant at the level of 0.05, which is a simple linear regression model that can be used to predict connectivity between learning outcomes that are influenced by the use of ChatGPT..

The second hypothesis states: "There is a positive connectivity between classroom learning and the learning outcomes of UNKHAIR Informatics students." This hypothesis test uses simple regression analysis. To test this hypothesis, the null hypothesis stating that there is no connectivity between the two variables (ρy1 = 0) is contrasted with the alternative hypothesis stating that there is a positive connectivity between the two variables (ρy1 > 0). The results of the linearity and significance test calculations carried out using the SPSS version 21 program are shown in table 4 below:

Table 4. Anova for X2 and Y Linear Regression

Model	Sum Squares	of	Df	Mean Square	F	Sig.
Regression	991.392		1	991.392	39.807	.000[b]
Residual	1942.596		78	24.905		
Total	2933.988		79			

a. Dependent Variable, Learning outcomes

b. Predictors, (Constant), Classroom Learning

Based on table 4 above, the probability value (sig) is < α (0.000 < 0.05), then H0 is rejected. This shows that the coefficient of Y regression direction over X1 is significant at the level of 0.05, that is, The calculation results are used to predict the connectivity of learning outcomes influenced by classroom learning.

Based on table 4 above, the probability value (sig) is < α (0.000 < 0.05), then H0 is rejected. This shows that the coefficient of Y regression direction over X1 is significant at the level of 0.05, which is a Based on the calculation results used by researchers to classify the connectivity of learning outcomes influenced by classroom learning.

The third hypothesis tested is: "There is a positive connectivity

between the implementation of ChatGPT and the learning outcomes of computer science students at UNKHAIR." The null hypothesis states that there is no correlation between the two independent variables and the dependent variable ($\rho y1,2 = 0$), while the alternative hypothesis states that there is a positive correlation between the two independent variables and the dependent variable ($\rho y1,2 > 0$). The multiple correlation coefficient was obtained through multiple regression analysis, and the significance test was carried out using the F test. The null hypothesis will be rejected if the calculated F value is greater than the F table value. Multiple regression analysis was carried out using SPSS version 21, and the results are presented in Table 5 below:

Table 5. Anova for Linear Regression X1, X2 and Y

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	1073.344	2	536.672	22.209	,000[b]
Residual	1860.644	77	24.164		
Total	2933.988	79			

a. Dependent Variable, Learning Outcomes

b. Predictors, (Constant), Classroom Learning, ChatGpt

Based on the SPSS output results from table 10 above, the F value is calculated at 22.2. While the F value of the table (2; 79; 0.05) is 3.11. Since F calculates > F table (22.20 > 3.11), H0 is rejected. This means that there is a linear influence of the variables of ChatGPT utilization and classroom learning on learning outcomes. This also means that there is a joint influence between the use of ChatGpt on learning outcomes.

In the results of testing the first hypothesis regarding the connectivity between ChatGPT implementation and UNKHAIR students results, based on several tests, a simple regression equation from the first hypothesis was obtained, namely

Y=10.68+0.120X1

From this equation, it shows that the use of ChatGPT has a positive effect on learning outcomes. However, the tconnectivity between ChatGPT implementation and learning values is said to be sufficient with a correlation value of 0.36. The use of ChatGPT affects.

In the results of testing the second hypothesis regarding the relationship between classroom learning and learning outcomes, based on several tests, a simple regression equation was obtained from the second hypothesis, namely

Y=3.64+0.194X2

This equation implies that classroom learning has a positive effect on academic performance. The connectivity of classroom learning with academic achievement is considered strong with a correlation value of 0.581. Classroom learning affects learning outcomes by 33.8%. This shows

that the variable affects learning outcomes by 66.2%.

This test produces a third hypothesis regarding the relationship between the use of ChatGpt with classroom learning and learning outcomes, based on multiple tests, a simple regression equation for the third hypothesis is obtained, namely.

Y = 0.67 + 0.059X1 + 0.173X2

This comparison shows that the joint use of ChatGpt and Classroom Learning has a positive effect on learning outcomes. The combined use of ChatGpt and Classroom Learning then has a strong relationship to the influence of learning outcomes with a correlation value of 0.605. The combination of the use of ChatGpt and Classroom Learning affects learning outcomes by 36.6%. So, the research results show that X2 is significantly affected by variables X1 and Y (0.035 < 0.05), and X1 is significantly affected by variables X2 and Y (0.00 < 0.05). This can be interpreted as:

1. The implementation of ChatGPT has a positive correlation with student learning outcomes, so the hypothesis which states: "There is a correlation between the implementation of ChatGPT (X1) and learning outcomes (Y)" can be accepted.
2. Classroom learning has a positive correlation with student learning outcomes, so the hypothesis that: “There is a correlation between classroom learning (X2) and learning outcomes (Y)” can be accepted.

The join use of ChatGPT (X1) and classroom learning (X2) together have a positive correlation with student learning outcomes (Y). Therefore, the hypothesis stating: "There is a correlation between the application of ChatGPT (X1) and classroom learning (X2) with learning outcomes (Y)" can be accepted.

CONCLUSION

The conclusions in this research are as follows:

1. a positive and significant correlation was found between the application of ChatGPT and learning success. In other words, the more often you use ChatGPT, the higher the learning outcomes.
2. a positive and significant correlation was obtained between the application of ChatGPT and classroom learning and learning scores. Thus, the greater the application of ChatGPT and classroom learning, the better the learning score results.
3. In line with the findings above, it can be concluded that (a) the use of ChatGPT and (b) classroom learning are determinant factors for

the learning outcomes of UNKHAIR Informatics students. In other words, UNKHAIR student learning outcomes can be improved through improving these two factors, both individually and together.

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