

COMPARISON OF PANCASILA EDUCATION LEARNING USING CHAT GPT AND GOOGLE ON LEARNING OUTCOMES

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Abstract

This research aims to compare the effects of using Chat GPT and Google on student learning outcomes in Pancasila Education at UPT SD Negeri 158 Gresik. The study employed a Pretest-Posttest design, involving a total of 64 students who were divided into two groups. Data were collected through student assessment worksheets comprising multiple-choice and essay questions. The data were analyzed using the non-parametric Mann-Whitney U test to compare the learning outcomes between the two groups. The results indicated that both groups, those using Chat GPT and those using Google, showed a significant improvement in learning outcomes from Pretest to Posttest. The average score for the Chat GPT group was 92.74, while the Google group scored an average of 92.30, with a marginal difference of 0.44. However, there was no significant difference in student learning outcomes between the two groups at the Posttest stage. This is supported by a significance value of 0.708 from the Mann-Whitney U test, which is greater than 0.05, indicating no statistically significant difference between the groups' average Posttest scores. This research contributes to understanding the role of technology in Pancasila Education. The practical implications underscore the importance of integrating technology into the learning process. Although both technologies positively impact learning outcomes, there is no significant difference between Chat GPT and Google in the context of Pancasila Education at UPT SD Negeri 158 Gresik.

Keywords

Comparison, Chat GPT, Google, Learning Outcomes.



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INTRODUCTION

Pancasila Education has become an integral part of the curriculum in Indonesia, including at the elementary school level. According to the Republic of Indonesia Law No. 2 of 2003 on the National Education System, the main objective of Pancasila Education is to shape students' character into good citizens who are responsible, and who understand and implement the values of Pancasila as the foundation of the state ideology. However, in practice, many elementary school students have not achieved optimal learning outcomes in Pancasila Education, despite its importance in shaping character and awareness of Pancasila values for becoming responsible citizens (Suwandi, 2018; Nurhayati, 2017; Iskandar, 2019). The success of learning outcomes in Pancasila Education largely depends on the quality of teaching applied. Pancasila Education is expected to shape students' character so they develop a sense of nationalism, empathy towards others, and the ability to make positive contributions to the country. In this regard, the role of teachers and effective teaching methods is crucial (Rohman, 2020). Pancasila Education also plays a significant role in shaping the character of the younger generation as the main foundation for creating a cultured, ethical, and morally good Indonesian society. As stated by Megasafitri (2021), Pancasila Education must continue to exist to shape the character of the younger generation in social and state life.

The advancement of technology and digitalization has had a significant impact on the world of education, especially in the context of learning. Given the importance of teaching quality in Pancasila Education, two intriguing technological innovations in this context are Chat GPT and Google. The integration of such technologies is expected to make Pancasila Education more interactive and engaging. These technologies provide quick access to information about Pancasila values and citizenship issues. However, it is important to ensure that these technologies are used in alignment with the objectives of Pancasila Education to achieve the goal of developing good and responsible citizens.

One breakthrough in artificial intelligence is Chat GPT, which uses natural language processing technology to interact with users through a website (Awwad, 2022). This website can be used in Pancasila Education by providing relevant answers and explanations regarding questions or topics discussed. Additionally, Google provides a wide range of learning resources accessible through its platform, including Pancasila Education materials that support interactive learning. Both technologies have the potential to enrich teaching methods and facilitate a deeper understanding for students.

Generative Pre-trained Transformer or Chat GPT is a website that uses artificial intelligence to interact with users through text conversations. This website is based on natural language processing models that have been trained using deep learning methods on human conversation data involving various topics (Nabhan & Sa'diyah, 2021). Chat GPT demonstrates how AI differs from search engines, which only collect and publish information rather than drawing new insights from it (Firat, 2022). Google, a globally renowned technology company, is also the most popular web search engine (Permatasari, 2022). Through Google.com, users can enter keywords or questions, and Google will display a list of search results that best match the keywords (Madarik, 2023).

In the context of improving Pancasila Education outcomes at UPT SD Negeri 158 Gresik, the use of Chat GPT and Google has the potential to provide positive contributions. By utilizing these technologies, students are expected to access relevant information and understand Pancasila Education material in a more interactive way. Additionally, Chat GPT can facilitate ongoing discussions and Q&A between students and the website, thereby increasing student participation in Pancasila Education. This aligns with the main goal of Pancasila Education to shape students' nationalist character and national awareness (Witasari, 2021).

The use of Chat GPT and Google in Pancasila Education offers complementary benefits. First, both websites provide a broader range of learning resources, enriching students' understanding (Hartono, 2021; Rahmawati, 2020). Second, these websites enhance interactivity and student engagement, making learning more engaging (Setiawan, 2019). Third, using these websites develops technology-based skills, which are crucial in the digital era (Putri, 2021). Lastly, these websites encourage the development of students' critical thinking skills, helping them understand and apply Pancasila Education values (Pavlik, 2022; Wulandari, 2020). Therefore, integrating technology into Pancasila Education is relevant and important.

Thus, this research aims to provide a deeper understanding of the comparison between the learning outcomes of students using Chat GPT and Google in Pancasila Education for fifth-grade students at UPT SD Negeri 158 Gresik. The benefits of this research are expected to contribute positively to improving the quality of Pancasila Education and provide new insights into the use of technology in the learning process. Therefore, this technological integration is hoped to support efforts in creating Indonesian youth who are characterized, ethical, and responsible.

METHOD

This research uses a quantitative approach with a Quasi-Experimental design. The research sample consists of 64 fifth-grade students at UPT SD Negeri 158 Gresik, selected through purposive sampling. The study is conducted from January to February 2024. The research procedure employs Pretest and Posttest to assess students' learning outcomes before and after using Chat GPT and Google. The research instrument includes student learning tests comprising multiple-choice and essay questions, aligned with the Pancasila Education curriculum for fifth grade. Validity is assessed by evaluating the relevance of the instruments to the research objectives, while reliability is measured using the Cronbach Alpha formula.

Data collection is carried out by administering tests to students before and after the intervention. Data analysis includes descriptive analysis to observe mean scores, standard deviations, and inferential analysis to compare learning outcomes between the two groups. In inferential analysis, normality is tested using the Kolmogorov-Smirnov test and homogeneity is tested using Levene's test. To ensure the data meet the statistical assumptions required for hypothesis testing, the researcher uses the non-parametric Mann-Whitney U test.

FINDINGS AND DISCUSSION

Findings

From the analysis conducted to examine the average scores of the pretest and posttest for the Chat GPT group, SPSS was used to present the descriptive analysis and yielded the following results:

Tabel 1. Descriptive Statistics Pretest Posttest Chat GPT

	N	Minimum	Maximum	Mean	Std. Deviation
<i>Pretest</i>	31	72	88	77.87	3.500
<i>Posttest</i>	31	82	100	92.74	5.733
Valid N (listwise)	31				

Based on the calculations for the Chat GPT group, the table shows that the average posttest score is higher than the average pretest score. The researcher also presents a comparison of the average scores for the Google group between the pretest and posttest as follows:

Tabel 2. Descriptive Statistics *Pretest Posttest Google*

	N	Minimum	Maximum	Mean	Std. Deviation
Pretetst	33	71	83	77.76	3.446
Posttest	33	82	100	92.30	4.934
Valid N (listwise)	33				

Based on the calculations for the Google group, the table shows that the average posttest score is higher than the average pretest score. Next, the researcher presents the results of the descriptive analysis by SPSS for the two groups, namely the Chat GPT group and the Google group, as follows:

Tabel 3. Descriptive Statistics Posttest Chat GPT Google

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Chatgpt	31	18	82	100	92.74	5.733
Google	33	18	82	100	92.30	4.934
Valid N (listwise)	31					

Based on the table above, there are two observed groups: the Chat GPT group and the Google group. The average scores for both groups are nearly the same, approximately 92.74 for the Chat GPT group and 92.30 for the Google group.

To validate the results of the comparison between the use of Chat GPT and Google in learning, the researcher determined the research hypothesis through normality and homogeneity tests as follows:

Tabel 4. Tests of Normality

	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
chatgpt	.158	31	.046	.912	31	.014
Google	.167	31	.028	.939	31	.079

Based on the results of the Kolmogorov-Smirnov normality test, it can be concluded that both groups, Chat GPT and Google, show a distribution pattern that is not normally distributed. For the Chat GPT group, the significance (Sig.) values from both tests indicate that the data distribution is not normal, with values lower than the alpha level (0.05). A similar situation is observed in the Google group, where the significance (Sig.) values from both tests also show that the data distribution is not normal.

Tabel 5. Test of Homogeneity of Variances

Levene Statistic	df1	df2	Sig.
1.684	1	62	.199

Based on the results of the homogeneity of variance test using Levene's test, the Levene statistic value obtained is 1.684 with degrees of freedom of 1 and 62 for df1 and df2, respectively, and a significance (Sig.) value of 0.199. Since the significance (Sig.) value is greater than 0.05, the variances of the two data groups being measured are homogeneous.

The hypothesis test in this study is conducted using the non-parametric Mann-Whitney U test because the Posttest data for both groups do not follow a normal distribution but have homogeneous data. The results of the analysis using SPSS are briefly presented in the following table:

Tabel 6. Test Statistics^a

	Nilai
Mann-Whitney U	484.000
Wilcoxon W	1045.000
Z	-.375
Asymp. Sig. (2-tailed)	.708

Based on the Mann-Whitney U statistical test results, the significance value (Asymp. Sig.) obtained is 0.708 ($p > 0.05$). This result indicates that there is no significant difference in the observed variable between the Chat GPT group and the Google group. The study involved two groups, namely the Chat GPT group and the Google group, with each group undergoing a pretest and posttest. Descriptive analysis using SPSS shows that the average pretest score for the Chat GPT group is 77.87 with a standard deviation of 3.500, while the average posttest score increased to 92.74 with a standard deviation of 5.733. For the Google group, the average pretest score is 77.76 with a

standard deviation of 3.446, and the average posttest score increased to 92.30 with a standard deviation of 4.934. The increase in average scores from pretest to posttest for both groups indicates improved performance after the intervention.

Comparison between the two groups on the posttest scores shows that the average posttest score for the Chat GPT group (92.74) is slightly higher than that of the Google group (92.30), although the difference is not significant. The normality test using Kolmogorov-Smirnov indicates that the data from both groups are not normally distributed. The significance value for the Chat GPT group from the Kolmogorov-Smirnov test is 0.046, while for the Google group, the significance value is 0.028.

Because the data distribution is not normal, non-parametric statistical tests were used for further analysis. The homogeneity of variance test using Levene's test shows that the variances of the two groups are homogeneous with a significance value of 0.199. Based on these results, the Mann-Whitney U test was used to test the hypothesis of differences between the two groups. The Mann-Whitney U test results show a U value of 484.000, with a Z value of -0.375 and an asymptotic significance (2-tailed) value of 0.708. This indicates that there is no statistically significant difference between the posttest results of the Chat GPT group and the Google group.

Discussion

Based on the research findings, both the Chat GPT group and the Google group have had a significant impact on the success of Pancasila Education learning outcomes. The results indicate that both groups, those using Chat GPT and those using Google, experienced significant improvements in their Pancasila Education learning outcomes after the intervention. This is evident from the comparison of pretest and posttest scores in both groups, with the average score for the Chat GPT group increasing from 77.87 to 92.74, and the Google group's average score increasing from 77.76 to 92.30. Although the average posttest score difference between the two groups is only 0.44, the non-parametric Mann-Whitney U test results show no significant difference between the effects of using Chat GPT and Google on learning outcomes. This finding is consistent with previous literature. The results align with Azzahra (2023), who highlighted Google's contribution to expanding students' knowledge and supporting information literacy development. Similarly, Han (2022) and Velibor Božić (2023) emphasized the positive effects of using Chat GPT to enhance students' learning experiences. This study reinforces these findings by showing that both technologies, Chat GPT and Google, significantly contribute to Pancasila Education learning.

This research is consistent with Suharmawan (2023), who highlighted the use of Chat GPT to explore scientific research ideas. Suharmawan demonstrated that this platform has comparable potential in supporting research and academic writing activities in education (Pratama, 2022; Anwar, 2021). Additionally, Huallpa (2023) found that, in terms of learning outcomes, both technologies have similar impacts without significant ethical dilemmas at the primary education level (Kusuma, 2022). This indicates that both Chat GPT and Google can play a crucial role in improving educational quality.

In the context of the presented research, it can be concluded that several researchers have observed various relevant aspects. From these citations, it is clear that there is a deep understanding of Chat GPT and Google's critical role as a search engine in facilitating access to diverse learning resources and information. Advanced search technology and extensive indexing allow users, including students and educators, to easily find educational materials, references, and relevant learning resources. With its ability to provide quick and easy access to abundant knowledge, Google is a valuable partner in addressing learning challenges in the current information era. Furthermore, these citations also emphasize the importance of using Chat GPT and Google in education. Thus, through the analysis of these citations, this research aims to bridge and further develop understanding of the use of Chat GPT and Google in Pancasila Education by integrating the important elements identified by previous researchers.

This study shows that the use of Chat GPT and Google in learning both results in significant improvements in student performance, but there is no significant difference in the effectiveness of the two tools based on posttest results. Both groups showed similar increases in their posttest scores. This suggests that both Chat GPT and Google can be effectively used as learning tools, depending on the users' preferences and needs. Further research with larger samples and variations in study design could provide deeper insights into the comparative effectiveness of these tools.

However, this study also has limitations. The research was conducted only with fifth-grade students at UPT SD Negeri 158 Gresik, so generalizing the results to a larger population is limited. The limited learning time may also affect students' learning outcomes, so future research with a more representative sample and extended learning time could provide a more in-depth understanding. Considering these findings and limitations, further extensive and in-depth research could provide better insights into the use of Chat GPT and Google in Pancasila Education learning.

CONCLUSION

Based on the research conducted at UPT SD Negeri 158 Gresik regarding the comparative analysis of Pancasila Education learning using Chat GPT and Google, it can be concluded that both media are effective in improving the learning outcomes of fifth-grade students. The study showed a significant increase in learning outcomes in both groups after using Chat GPT and Google. The average pretest score for the Chat GPT group increased from 77.87 to 92.74 in the posttest, while the average score for the Google group increased from 77.76 to 92.30. These results indicate that Chat GPT and Google are effective in enhancing students' understanding of Pancasila Education subjects. This research suggests that integrating technologies such as Chat GPT and Google into the Pancasila Education learning process can enrich teaching methods and facilitate a deeper understanding of the subject matter. The use of these media can also promote students' digital skills, which are crucial in today's technological era. Therefore, educators should consider integrating these technologies more broadly into the curriculum to maximize students' learning outcomes.

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