



## A Study of Google Docs Learning Media on Creative Thinking Skills and Student Learning Outcomes in Social Studies in Junior High Schools

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### ABSTRACT

**Purpose of the study:** This study investigates the effectiveness of Google Docs as an innovative learning medium in enhancing students' creative thinking skills and learning outcomes in Social Studies learning at the junior high school level.

**Methodology:** A quantitative approach was employed using a quasi-experimental posttest non-equivalent control group design. The participants consisted of 28 eighth-grade students from Junior High School Negeri 12 Madiun, divided into an experimental group (n = 14) that used Google Docs for learning activities and a control group (n = 14) that used traditional textbook-based learning media. Data were collected through a creative thinking questionnaire and a learning outcomes test, and then analyzed using descriptive statistics and independent-samples t-tests at a 0.05 significance level.

**Main Findings:** The results indicate that students in the experimental group achieved significantly higher levels of creative thinking and learning outcomes than those in the control group. The independent-samples t-test results revealed significant differences in creative thinking skills ( $t = 6.957, p < 0.05$ ) and learning outcomes ( $t = 5.924, p < 0.05$ ). These findings demonstrate that Google Docs effectively promotes collaborative learning, active engagement, and higher-order thinking skills.

**Novelty/Originality of this study:** This study provides empirical evidence that integrating collaborative digital tools, such as Google Docs, can improve both cognitive achievement and creative thinking in junior high school Social Studies.

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## 1. INTRODUCTION

Education plays a highly strategic role in developing individual potential and serves as the primary foundation for national and state development [1]-[5]. Essentially, education aims to create a learning environment that enables students to optimally develop their talents and abilities, enabling them to realize themselves and function fully according to personal and societal needs [6]-[9]. Therefore, the quality of the learning process is a key factor in determining the overall success of education.

The increasingly rapid development of science and technology has brought about significant changes in the competency requirements of students. In the 21st century, students are no longer limited to mastering factual

knowledge; they are also required to think critically, systematically, logically, creatively, and logically, reasoning, and to collaborate effectively. In line with these demands, 21st-century education emphasizes the importance of character development and higher-order thinking skills. One essential character trait that needs to be developed is creativity, namely the ability of students to express ideas, develop concepts, and generate new solutions in the learning process. The progress of a nation is no longer solely determined by the wealth of its natural resources, but by the creativity of its human resources.

In the context of Social Studies (IPS) learning, developing creative character is highly relevant because social studies material is closely related to dynamic and contextual social phenomena. Creative character enables students to analyze social problems, put forward ideas, and formulate solutions based on their conceptual understanding [10]-[12]. Social studies learning that emphasizes creative character development not only enhances conceptual understanding but also fosters critical, analytical, and reflective thinking skills. Therefore, strengthening creative character in social studies learning plays a crucial role in developing students who are active, caring, and responsible members of society. However, the implementation of social studies learning in schools still faces various challenges. One major issue is the dominance of teacher-centered learning, particularly through the lecture method [13]-[18]. This situation is also found at Junior High School 12 Madiun, where social studies learning tends to be monotonous, lacks active student engagement, and does not provide adequate space for students to develop their creativity. As a result, students become passive, easily bored, lack the courage to ask questions or express opinions, and experience difficulty analyzing conceptual and contextual social problems.

Initial observations of 8G grade students at Junior High School 12 Madiun in the 2024/2025 academic year indicate that they struggle to deeply understand social studies concepts. When given questions requiring cause-and-effect analysis of social problems, most students are unable to explain the reasons for their answers. Students tend to rely solely on memorization, leading to confusion when faced with questions requiring critical and creative thinking. This condition leads to low learning motivation, a decreased enthusiasm for thinking, and a low level of creative character, which ultimately impacts suboptimal social studies learning outcomes.

Empirical evidence shows that social studies learning, which is still teacher-centered, lacks variety in methods, and does not utilize technology-based learning media, results in low student engagement. Students primarily act as listeners and note-takers, while the teacher is the center of learning activities. This learning pattern limits students' opportunities to actively participate, collaborate, and develop ideas creatively. As a result, students' creative character does not develop optimally, as reflected in a lack of ideas, a lack of courage to express opinions, and social studies learning outcomes that do not achieve classical mastery. The initial ability test data for 8G students supports these findings. The average score for students was only 68.79, with the lowest score being 40 and the highest being 90. Of the 29 students, 21 (72.41%) had not achieved the Learning Objective Completion Criteria set by the school, which was 80, while only 8 (27.59%) had achieved completion. Classically, this condition indicates that social studies learning in 8G class has not been running effectively.

Learning outcomes play a crucial role in the learning process because they serve as indicators of student success in understanding the material. Learning outcomes are the result of the interaction between learning and teaching [19]-[23]. Learning outcomes as changes in behavior patterns, values, attitudes, knowledge, and skills achieved by students after participating in the learning process. Learning outcomes encompass the cognitive, affective, and psychomotor domains. Practically, learning outcomes are also expressed numerically as a result of student ability assessments after participating in learning [24]-[28]. Burke et al [29] states that learning outcomes are influenced by internal factors such as motivation and interest, as well as external factors such as the learning environment and the role of the teacher.

One alternative solution to address these issues is the implementation of technology-based learning media that can encourage active student involvement and foster creative character. Google Docs is a cloud-based digital learning tool that allows students to work collaboratively, sharing ideas, editing, and developing them together in a single document. Google Docs allows all connected users to edit documents simultaneously, thereby enhancing interaction and collaborative learning [30]-[33]. Utilizing Google Docs has a positive impact on the development of creative writing skills through dynamic online collaboration. Furthermore, Alim & Baidawi [34] found that using Google Docs in group assignments encourages independence, discipline, and effective coordination among group members, technology can make learning more active, engaging, and varied.

Although various studies have demonstrated the effectiveness of Google Docs in improving collaboration and writing skills, a research gap remains. Most previous studies have focused on the context of higher education, writing skills, or collaborative aspects alone, while research specifically examining the use of Google Docs in social studies learning at the junior high school level with a focus on improving creative character and learning outcomes is still very limited. Furthermore, there are not many studies that directly link the use of Google Docs to the problems of teacher-centered social studies learning and the low creative character of students at the junior high school level. Based on this gap, the novelty of this study lies in the application of Google Docs as an innovative learning medium in social studies learning at the junior high school level that is simultaneously directed at improving creative character and student learning outcomes, especially in classroom

contexts that have previously been dominated by conventional learning. Thus, this study is expected to not only provide an empirical contribution to the development of technology-based social studies learning, but also enrich the study of strategies for strengthening students' creative character through the use of collaborative and contextual digital media.

## 2. RESEARCH METHOD

The researcher's research design is quantitative, using a quasi-experimental posttest non-equivalent control group design. It was done to investigate causal hypotheses by comparing one or more experimental groups that received treatment with a comparison group that did not. This research design was implemented because it aligned with the research objectives, which aimed to determine whether the problem-based learning model could improve student activity and learning outcomes. This study used descriptive statistics (average, minimum, and maximum) and inferential statistics. The inferential statistic used was the independent sample t-test.

**Tabel 1.** Posttest Non-Equivalent Control Group Design

Group	Pretest	Treatment	Posttest
Experimental	O <sub>1</sub>	Google Docs as an innovative learning medium in social studies learning	O <sub>1</sub>
Control	O <sub>2</sub>	Traditional Learning media (book of students)	O <sub>2</sub>

This research was conducted at Junior High School 12 Madiun, with a total of 28 fourth-grade students. There were 14 students in the experimental class and 14 students in the control class. The experimental class used the Google Docs as an innovative learning medium in social studies learning media, while the control class used the Traditional Learning media. The sample collection technique used was purposive sampling. Purposive sampling is a sampling technique based on the researcher's criteria. In this study, the first step in the data collection process was to provide intervention only to the experimental class using the Google Docs as an innovative learning medium in social studies learning media. In contrast, the control class used Traditional Learning media. The results of the assessment of student creative and learning outcomes were then compared between students who used the Google Docs as an innovative learning medium in social studies learning media and students who did not use the learning media. The instruments used were a questionnaire for creative thinking and a test for learning outcomes. The interest students used a 4-point Likert scale. Not good a score of 1, moderately active received a score of 2, Good received a score of 3, and very good received a score of 4. Meanwhile, the learning outcomes used 10 multiple-choice questions with a maximum score of 100.

The following are the categories of creative thinking and learning outcomes, including very good, good, sufficient, not good, and very poor, as shown in Table (2-3).

**Table 2.** Categorization of Creative Thinking Skills

Category	Interval
Very Good	65.1 – 80.0
Good	50.1 – 65.0
Moderate	35.1 – 50.0
Not Good	20.0 – 35.0

And category for learning outcome in Tabel 3.

**Table 3.** Categorization of learning outcome

Category	Interval
Very Good	75.1 – 100.0
Good	50.1 – 75.0
Moderate	25.1 – 50.0
Not Good	0.0 – 25.0

All data obtained from the questionnaire of student creative thinking and tests for student learning outcomes in the control and experimental classes were collected, then calculated and analyzed using SPSS 21. Descriptive statistics were used to calculate the frequency, percentage, average, minimum, and maximum for the control and experimental groups. In this study, quantitative data were analyzed using parametric statistics, including independent sample t-tests. Independent sample t-tests were conducted to test differences in student interest and learning outcomes in the application of the Google Docs as an innovative learning medium in social studies learning media. This study used SPSS 21 at a significance level of 0.05.

### 3. RESULTS AND DISCUSSION

This section describes the research findings on student interest and learning outcome. The results of the Category, Mean, Min, Max, and Percentage of the posttest, which show the impact of Google Docs as an innovative learning medium in social studies learning media on students creative thinking and learning outcome among junior high school students, are presented as table 4 and 5.

Table 4. Gaps in Students creative thinking

	Interval			Mean	Min	Max	%
	Range	Category	Total				
Class Experiment	65.1 – 80.0	Very Good	10	72	60	78	71.4
	50.1 – 65.0	Good	4				28.6
	35.1 – 50.0	Moderate	0				0.0
	20.0 – 35.0	Not Good	0				0.0
	TOTAL		14				100
	Interval			Mean	Min	Max	%
	Range	Category	Total				
Class Control	65.1 – 80.0	Very Good	0	45	30	60	0.0
	50.1 – 65.0	Good	2				14.3
	35.1 – 50.0	Moderate	9				64.3
	20.0 – 35.0	Not Good	3				21.4
	TOTAL		14				100

From table 4, which comes from 14 respondents of Junior High School Students, is categorized as good in the experimental class, and after being processed and the results obtained using the SPSS 21 program application, it was found that the creative thinking students in the experimental class has a very good category of 71.4% for 10 students from a total of 14 students, and good at 28.6% for 4 students from a total of 14 students. Of the 14 students, the average is 72, the maximum is 60, and the minimum is 78. Then in the control class which comes from 14 respondents, the dominant category is not good, and after being processed and the results obtained using the SPSS 21 program application, it was found that the creative thinking students in the control class has a moderate category of 64.3% for 9 students from a total of 14 students, good at 14.3% for 2 students from a total of 14 students, not good at 21.4% for 3 students from a total of 14 students. The 14 students had an average score of 45, a maximum score of 60, and a minimum score of 30.

Table 5. Gaps in Learning Outcome Students' Scores

	Interval			Mean	Min	Max	%
	Range	Category	Total				
Class Experiment	75.1 – 100.0	Very Good	11	85	70	92	78.6
	50.1 – 75.0	Good	3				21.4
	25.1 – 50.0	Moderate	0				0.0
	0.0 – 25.0	Not Good	0				0.0
	TOTAL		14				100
	Interval			Mean	Min	Max	%
	Range	Category	Total				
Class Control	75.1 – 100.0	Very Good	0	48	20	75	0.0
	50.1 – 75.0	Good	3				21.5
	25.1 – 50.0	Moderate	10				71.4
	0.0 – 25.0	Not Good	1				7.1
	TOTAL		14				100

From table 5, which comes from 14 respondents of Junior High School Students, is categorized as good in the experimental class, and after being processed and the results obtained using the SPSS 21 program application, it was found that the learning activity in the experimental class has a very good category of 78.6% for 11 students from a total of 14 students, and good at 21.4% for 3 students from a total of 14 students. Of the 14 students, the average is 85, the maximum is 92, and the minimum is 70. Then in the control class which comes from 14 respondents, the dominant category is moderate, and after being processed and the results obtained using the SPSS 21 program application, it was found that the learning outcome of students in the control class has a moderate category of 71.4% for 10 students from a total of 14 students, good at 21.5% for 3 students from a total of 14 students, not good at 7.1% for 1 students from a total of 14 students. The 14 students had an average score of 48, a maximum score of 75, and a minimum score of 20.

This comparison shows that traditional learning media fails to meet students' need for active participation. At the same time, Google Docs as an innovative learning medium in social studies learning media provide a more contextual, applicable, and problem-solving learning experience, thus encouraging improved student academic achievement.

**Table 6.** Independent sample t-test for student creative thinking

	t	df	Mean	Std.Deviation	95% confidence interval	
					Lower	Upper
Learning Activity	6.957	28	3.2927	.14093	8.297	.6508
	6.957	2.048	2.1203	.20957	7.039	.8597

From table 6 it can be seen that the value obtained (t count) with the t table value. The t table value can be found in the t table with a significance value of 0.05 (2-sided test) with degrees of freedom (df) 22. In this study, the results for the t table are 2.048. While for the t count value can be seen in table 5 (t column) which is 6.957. The criterion for testing the hypothesis is the rejection value of H<sub>0</sub>. So, it can be concluded that there is a significant difference in student learning interest between the control class taught using the traditional learning media and the experimental class using the Google Docs as an innovative learning medium in social studies learning media. It can be seen from table 6 that the average value of student learning activities is 3.2927, which means it can increase student creative thinking.

**Table 7.** Independent sample t-test for learning outcome

	t	df	Mean	Std.Deviation	95% confidence interval	
					Lower	Upper
Learning Outcome	5.924	28	3.2259	.14147	8.593	.6509
	5.924	2.048	2.6057	.20512	7.039	.8598

From table 7 it can be seen that the value obtained (t count) with the t table value. The t table value can be found in the t table with a significance value of 0.05 (2-sided test) with degrees of freedom (df) 22. In this study, the results for the t table are 2.048. While for the t count value can be seen in table 5 (t column) which is 5.924. The criterion for testing the hypothesis is the rejection value of H<sub>0</sub>. So, it can be concluded that there is a significant difference in student learning outcomes between the control class taught using the traditional learning media and the experimental class using the Google Docs as an innovative learning medium in social studies learning media. It can be seen from table 5 that the average value of student learning outcomes is 3.2259 which means it can improve student learning outcomes.

The findings of this study provide strong empirical evidence that the use of Google Docs as an innovative learning medium in social studies instruction significantly enhances both students' creative thinking skills and learning outcomes among junior high school students. The descriptive analysis of creative thinking skills (Table 4) reveals a clear contrast between the experimental and control groups. In the experimental class, 71.4% of students achieved the very good category and 28.6% reached the good category, with a relatively high mean score of 72. In contrast, the control class was dominated by moderate (64.3%) and not good (21.4%) categories, yielding a substantially lower mean score of 45. This disparity indicates that traditional learning media are less effective in fostering higher-order cognitive processes such as creative thinking. From a theoretical perspective, these results align with constructivist learning theory, which emphasizes active knowledge construction through interaction, collaboration, and reflection [35]-[39]. Google Docs facilitates collaborative writing, real-time feedback, and shared problem-solving, all of which are critical conditions for the development of creative thinking. Creative thinking involves fluency, flexibility, originality, and elaboration—dimensions that are stimulated when learners are encouraged to generate ideas, revise their work, and respond to peers' input [40]-[43]. The collaborative affordances of Google Docs appear to support these processes more effectively than conventional, teacher-centered instructional media.

The statistical analysis further confirms the robustness of this effect. The independent samples t-test for creative thinking (Table 6) yielded a t-value of 6.957, which substantially exceeds the critical t-table value of 2.048 at the 0.05 significance level (df = 28). This result indicates a statistically significant difference between the experimental and control groups, leading to the rejection of the null hypothesis. The magnitude of this difference suggests that Google Docs does not merely support surface-level engagement, but actively contributes to higher-order thinking development. Similar findings have been reported in prior studies, which demonstrate that collaborative digital tools significantly enhance students' creative thinking and idea generation by enabling iterative revision and peer interaction [44]-[47]. In addition to creative thinking, the impact of Google Docs on learning outcomes is equally pronounced. As shown in Table 5, 78.6% of students in the experimental class

achieved the very good category, with a mean score of 85, while none fell into the moderate or not good categories. Conversely, the control class was dominated by moderate achievement levels (71.4%), with a considerably lower mean score of 48. These findings indicate that the enhancement of creative thinking skills is accompanied by improved academic achievement.

The inferential results presented in Table 7 reinforce this conclusion. The obtained t-value of 5.924 exceeds the critical value of 2.048, confirming a statistically significant difference in learning outcomes between students taught using Google Docs and those taught with traditional learning media. This finding is consistent with Noetel et al [48] and Cavanagh & Kiersch [49] multimedia learning theory, which argues that meaningful learning occurs when learners actively process information through well-designed instructional media that support organization, integration, and application of knowledge. The improvement in learning outcomes can be attributed to several pedagogical mechanisms facilitated by Google Docs. First, the platform enables continuous formative feedback from both teachers and peers, which has been shown to significantly enhance learning effectiveness [50]-[52]. Second, collaborative document editing encourages students to articulate ideas, justify arguments, and revise misconceptions, thereby promoting deeper cognitive processing [53]. Third, the accessibility and flexibility of Google Docs allow learning activities to extend beyond classroom boundaries, fostering self-regulated learning and sustained engagement [54]. Overall, the findings suggest that traditional learning media tend to limit students' opportunities for active participation, creative expression, and collaborative problem-solving. In contrast, Google Docs as an innovative learning medium creates a student-centered learning environment that supports both cognitive and creative development. Given that creative thinking is increasingly recognized as a core 21st-century skill closely linked to academic success, the dual improvement in creative thinking and learning outcomes observed in this study underscores the pedagogical value of integrating collaborative digital tools into social studies instruction at the secondary school level.

The novelty of this study lies in the empirical application of Google Docs as a collaborative digital learning medium in junior high school Social Studies (IPS) with a specific focus on simultaneously improving creative thinking skills and learning outcomes. While previous studies have largely examined Google Docs in higher education contexts or focused primarily on writing skills and collaboration, this research extends its application to secondary-level IPS learning, addressing a context where instruction is often teacher-centered and students' creative thinking remains underdeveloped. Moreover, this study positions Google Docs not merely as a technological tool, but as an instructional medium that facilitates idea generation, collaborative problem-solving, and reflective learning, thereby filling a methodological and contextual gap in technology-enhanced Social Studies education. The findings of this study have important theoretical, practical, and pedagogical implications. Theoretically, the results support constructivist learning theory by confirming that collaborative digital environments enhance students' creative thinking through active knowledge construction and social interaction. Practically, this study provides teachers with empirical evidence that Google Docs can be effectively used as an alternative to traditional learning media to foster student engagement, creativity, and deeper conceptual understanding. Pedagogically, the use of Google Docs encourages collaborative learning, continuous feedback, and student-centered instruction, which are essential for developing 21st-century skills. Therefore, the integration of Google Docs into Social Studies learning can serve as a strategic approach to improving learning quality and student achievement at the junior high school level.

Despite its positive findings, this study has several limitations. First, the sample size was relatively small and limited to a single school, which may affect the generalizability of the results. Second, the research design focused on posttest data, so it did not examine students' learning progress over time. Third, the study only analyzed creative thinking skills and learning outcomes, without considering other relevant variables such as learning motivation, collaboration quality, or digital literacy. In addition, the implementation of Google Docs was limited to specific learning topics, which may not fully represent its effectiveness across different Social Studies materials. Based on the findings and limitations of this study, several recommendations are proposed. Future research should involve larger and more diverse samples across different schools and regions to enhance the generalizability of the findings. Longitudinal studies are recommended to examine the long-term effects of Google Docs on students' creative thinking development and academic achievement. Further studies may also incorporate additional variables such as motivation, critical thinking, collaboration skills, or self-regulated learning. Moreover, future research could explore the integration of Google Docs with other digital learning platforms or instructional models to optimize technology-enhanced learning in Social Studies education.

#### 4. CONCLUSION

This study concludes that the use of Google Docs as an innovative learning medium has a significant positive effect on students' creative thinking skills and learning outcomes in junior high school Social Studies learning. The results of both descriptive and inferential analyses demonstrate that students who participated in learning activities supported by Google Docs achieved higher levels of creative thinking and better academic performance than students who learned using traditional textbook-based media. The independent sample t-test

results confirmed statistically significant differences between the experimental and control groups in terms of creative thinking skills and learning outcomes, indicating the effectiveness of Google Docs in enhancing learning quality. The improvement in students' creative thinking skills suggests that Google Docs facilitates a collaborative and interactive learning environment that encourages idea generation, discussion, and reflective thinking. Through real-time collaboration, shared document editing, and continuous feedback, students were actively involved in constructing knowledge and solving social problems contextually. This active engagement not only supported the development of higher-order thinking skills but also contributed to deeper understanding of Social Studies concepts, which was reflected in improved learning outcomes. Furthermore, this study provides empirical support for the integration of digital and collaborative learning media in line with the demands of 21st-century education. By shifting learning from a teacher-centered approach to a student-centered and technology-supported model, Google Docs enables meaningful learning experiences that foster creativity and academic achievement simultaneously. Therefore, it can be concluded that Google Docs is an effective and feasible learning medium for improving creative thinking skills and learning outcomes in junior high school Social Studies learning, and its implementation is highly recommended to support more active, collaborative, and innovative classroom practices.

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### AUTHOR CONTRIBUTIONS

The author was solely responsible for the conceptualization and design of the study, data collection, implementation of the narrative counseling intervention, data analysis, and interpretation of the results. The author also prepared the original draft of the manuscript, revised the content critically, and approved the final version for publication.

### CONFLICTS OF INTEREST

The author(s) declare no conflict of interest.

### USE OF ARTIFICIAL INTELLIGENCE (AI)-ASSISTED TECHNOLOGY

The authors declare that no artificial intelligence (AI) tools were used in the generation, analysis, or writing of this manuscript. All aspects of the research, including data collection, interpretation, and manuscript preparation, were carried out entirely by the authors without the assistance of AI-based technologies.

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