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THE RELATIONSHIP BETWEEN GENIALLY LEARNING MEDIA AND THE MATHEMATICAL CREATIVE THINKING ABILITY OF FIFTH GRADE ELEMENTARY SCHOOL STUDENTS

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ABSTRACT

The development of creative thinking skills in problem-solving is crucial, especially in mathematics at the elementary school level. This study aims to investigate the relationship between the use of Genially learning media and the creative mathematical thinking abilities of fifth-grade students at SDN Sunter Jaya 03 Pagi. Employing a quantitative approach with a correlational design, the study involved all fifth-grade students as the sample. Data were collected through a creative thinking skills test and a questionnaire analyzing the use of Genially. The results indicate that Genially was engaging for students (84%), but they faced language comprehension difficulties (70%). The creative mathematical thinking test revealed that the fluency indicator had the highest percentage (81.5%), while the originality indicator had the lowest (40.5%). Pearson correlation analysis showed no significant relationship between the use of Genially media and students' creative mathematical thinking abilities, with a significance value of 0.731 and a Pearson Correlation of 0.072. These findings suggest that while Genially may be engaging, it does not significantly enhance creative mathematical thinking on its own. The study implies the need for further guidance from teachers in using Genially media to optimize students' creative potential and enhance their understanding of the learning material. This highlights the importance of integrating instructional support with technological tools in the learning process.

Pengembangan keterampilan berpikir kreatif dalam pemecahan masalah sangat penting, terutama dalam mata pelajaran matematika di tingkat sekolah dasar. Penelitian ini bertujuan untuk menyelidiki hubungan antara penggunaan media pembelajaran Genially dengan kemampuan berpikir kreatif matematis siswa kelas V di SDN Sunter Jaya 03 Pagi. Menggunakan pendekatan kuantitatif dengan desain korelasional, penelitian ini melibatkan seluruh siswa kelas V sebagai sampel. Data dikumpulkan melalui tes keterampilan berpikir kreatif dan angket yang menganalisis penggunaan Genially. Hasil penelitian menunjukkan bahwa Genially menarik bagi siswa (84%), namun mereka mengalami kesulitan dalam pemahaman bahasa (70%). Tes berpikir kreatif matematis mengungkapkan bahwa indikator kelancaran memiliki persentase tertinggi (81,5%), sementara indikator keaslian memiliki persentase terendah (40,5%). Analisis korelasi Pearson menunjukkan bahwa tidak terdapat hubungan signifikan antara

penggunaan media Genially dan kemampuan berpikir kreatif matematis siswa, dengan nilai signifikansi 0,731 dan Pearson Correlation 0,072. Temuan ini menunjukkan bahwa meskipun Genially menarik, media ini tidak secara signifikan meningkatkan kemampuan berpikir kreatif matematis siswa. Penelitian ini mengimplikasikan perlunya bimbingan lebih lanjut dari guru dalam penggunaan media Genially untuk mengoptimalkan potensi kreatif siswa dan meningkatkan pemahaman mereka terhadap materi pembelajaran. Hal ini menekankan pentingnya mengintegrasikan dukungan instruksional dengan alat teknologi dalam proses pembelajaran.

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1. INTRODUCTION

Based on the Republic of Indonesia Law Number 20 of 2003 concerning the National Education System, Chapter 1 Article 1 Paragraph 1, education is a deliberate and planned effort to create a learning environment and learning process so that students can actively develop their potential. This includes strengthening religious spirituality, self-control, personality, intelligence, noble character, as well as skills needed by oneself, society, the nation, and the state in an effort to develop their academic potential. Facing the challenges of the 21st century, every student is confronted with conditions that require them to optimize their thinking abilities to solve various emerging problems. Creative thinking skills have become one of the important competencies in this century. According to the Ministry of Education and Culture (2018), creative thinking is one of the skills that students must possess both individually and in groups within the competencies of the 21st century. Elvianasti et al. (2022) stated that "students who are able to think creatively are able to solve problems effectively." Therefore, creative thinking skills are important to be developed in every learning activity.

Mathematics is a subject taught at all levels of schooling, from elementary to higher education, and is often used in everyday life. The purpose of learning mathematics in schools is considered very important in shaping quality students, as mathematics serves as a tool for thinking and analyzing problem-solving logically and systematically. Mathematical creative thinking skills, namely the ability to solve mathematical problems by providing new ideas or suggestions based on one's own thinking, is one of the competencies expected in schools (Afriansyah, 2019; Faturohman et al., 2020; Wijers & de Haan, 2020; Noto et al., 2023; Warmi, 2022). In reality, the mathematical creative thinking ability of elementary school students is still low, as indicated by their lack of understanding of the material presented by teachers due to the monotonous mathematics learning

process that tends to enforce the teacher's way of thinking (Faturohman et al., 2020; Tan et al., 2020; Arifuddin et al., 2022). As a result of this teaching approach, students are passive, merely mimicking what the teacher does without understanding its meaning.

Technological development in Indonesia can be utilized in the field of education. Information and communication technology has enriched learning resources and media in various forms (Rimawati, 2018; Enstein et al., 2022). The use of learning media is a creative and systematic effort to create experiences that can assist the learning process of students. One innovative learning medium is Genially, a multimedia platform that includes various quality learning features such as content on learning materials, presentations, animations, learning videos, educational games, quizzes, electronic posters, infographics, all of which can provide interactive learning experiences for students (Rahayu et al., n.d.; Putra & Afrina, 2023; Romualdi et al., 2023; Afni & Bektiningsih, 2024).

Research shows that the use of Genially media can improve learning outcomes and students' creative thinking skills. For instance, a study by Fatma et al. (2022) at Muhammadiyah Condongcatur Elementary School showed that using Genially can improve science learning outcomes, with all students achieving post-test scores meeting the Minimum Completeness Criteria (KKM) of 70. Research by Dian Nuryani (2019) also found a significant increase in students' creative thinking skills after using Smart Land media. A study by Enstein et al. (2022) indicated that the web-based educational media “PangKar” helps students understand the concepts of exponents and roots in mathematics easily.

Based on the findings from previous studies, this research will examine the relationship between Genially media and mathematical creative thinking skills in mathematics learning in grade V of elementary school. This research uses Genially media, a technology-based medium, and selects the subject of mathematics to explore its relationship with the mathematical creative thinking skills of elementary school students. The findings from several studies and the theories of creative thinking skills used align with the chosen learning approach, so this research uses different theories because it focuses on the subject of mathematics. This research also combines several theories of creative thinking skills, hoping to make a significant contribution to the development of students' mathematical creative thinking skills.

2. METHODS

The research was conducted using a quantitative approach. According to Sugiyono (2018: 8), the quantitative approach can be defined as a research method based on the philosophy of positivism and is used to study specific populations or samples, with sampling techniques generally conducted randomly. The method employed in this research is the correlational method, which aims to determine the relationship between two or more variables (Sosial et al., 2023; Pratama et al., 2023). The sampling technique used in this study is saturated sampling, where all members of the population are used as samples. This technique is often applied when the population size is small or less than 30 people. Another term for saturated sampling is a census, where all members of the population are included as samples (Rikmasari et al., n.d.; Syafira et al., 2022). Consequently, the sample size used in this study is 24 people.

2.1. Research Subject

The population in this study consists of all fifth-grade students at SDN Sunter Jaya 03 Pagi, totaling approximately 22 students. The sampling technique used in this study is saturated sampling. According to Sugiyono, this technique involves using the entire population as the sample. Another term for saturated sampling is a census, where all members of the population are taken as the sample. Thus, the sample used in this study amounts to 22 students. The research was conducted over five months, from February to May 2024, including the time for compiling the research results.

2.2. Data Collection

The data collection techniques used in this study were questionnaires and essay tests. The questionnaire aimed to identify the effectiveness of using Genially media in helping students understand the material. It consisted of 20 statements, including both positive and negative ones. The type of questionnaire used was a closed and direct questionnaire, meaning that the statements were presented to the students with predefined answer options, allowing them to simply choose and mark (✓) the appropriate answer. The scoring for the statements in the questionnaire used a Likert scale with five answer choices: Strongly Agree (5), Agree (4), Neutral (3), Disagree (2), and Strongly Disagree (1). Besides the questionnaire, the test used in this study was in the form of essays aimed at assessing students' creative mathematical thinking skills. This test covered fraction material and consisted of 8 essay questions, each related to specific indicators and dimensions. Each question in the test was scored on a range from 0 to 4, with different criteria for each question based on its characteristics. The reference used to determine the level of mathematical creativity was adapted from the study by Wahyuni and Palupi (Wahyuni et al., 2022) as shown in the following table.

Table 1. Level of Mathematical Creativity

Level	Category	Criteria Based on Score	Criteria Based on Percentage
Level 0	Not Creative	If Total ≤ 20	0% - 20%
Level 1	Less Creative	If Total ≤ 40	21% - 40%
Level 2	Fairly Creative	If Total ≤ 60	41% - 60%
Level 3	Creative	If Total ≤ 80	61% - 80%
Level 4	Very Creative	If Total ≤ 100	81% - 100%

2.3. Data Analysis

The processing of data on students' mathematical creative thinking abilities was conducted by scoring test answers according to indicators of mathematical creative thinking abilities. Meanwhile, the processing of Genially learning media questionnaire data employed a Likert scale ranging from 1 to 5. Prior to administering the instruments,

validity and reliability tests were performed. Data analysis techniques included testing for normality using the One Sample Kolmogorov-Smirnov Test, testing for linearity to assess the linear relationship between variables, and hypothesis testing using Pearson Product Moment correlation.

For the normality test, if the significance value (p) < 0.05, the data for that variable are considered non-normally distributed; conversely, if p > 0.05, the data are considered normally distributed (Fitria et al., 2022). Furthermore, the linearity test was used to determine the presence of a linear relationship between variables (X) and (Y). Decisions were based on the significance value, where values > 0.05 indicated a linear relationship, while values ≤ 0.05 indicated no linear relationship (Arianti, 2023). After fulfilling the prerequisites for data analysis, the next step involved hypothesis testing using the Pearson Product Moment correlation formula.

3. RESULTS AND DISCUSSION

3.1. Results

It is known that all fifth-grade students of SDN Sunter Jaya 03 Morning have used Genially as a learning media for Mathematics. Based on the questionnaire distributed to the students, data from Table 1 were obtained. The data indicate that the highest average score is in the effectiveness indicator of the learning media in capturing students' interest, reaching 84.00%. This result suggests that the use of Genially stimulates students' interest in the learning process. Meanwhile, the lowest average score is recorded in the indicator of ease of language comprehension, with an average score of 70.00%. This decline suggests that some students find it challenging to understand the use of Genially, thus requiring further guidance from teachers.

Table 2. The Calculation Results of Each Indicator Score in the Genially Media Questionnaire

No.	Indicator	Total Score	Average
1.	Engaging Learning Media	210	84,00%
2.	Students' Interest in Learning	300	80,00%
3.	Ease of Students in Using Media	193	77,20%
4.	Appealing Media Design	201	80,40%
5.	Relevance of Content to Learning Media	200	80,00%
6.	Using Understandable Language	175	70,00%
7.	Ease of Students in Understanding Content	287	76,53%
8.	Enhancing Students' Learning Enthusiasm	382	76,40%

This field research aimed to assess students' mathematical creative thinking abilities in understanding fractions during Mathematics learning. A total of 25 fifth-grade students from SDN Sunter Jaya 03 Morning participated in filling out the creative thinking ability test, guided and instructed by the researcher to ensure consistency in answering methods. Prior to this, students had studied the material with their classroom teacher, making them

familiar with the types of questions presented. The collected data was processed, and the results are presented in Table 2.

Tabel 2. Calculation Results of Scores for Each Indicator of the Creative Thinking Ability Test

No.	Indicator	Total Score	Average	Category
1.	Fluency	163	81,50%	Very Fluent
2.	Flexibility	111	55,50%	Quite Flexible
3.	Originality	140	40,50%	Less Original
4.	Elaboration	112	56,00%	Sufficiently Detailed

In the Mathematics learning process at SDN Sunter Jaya 03 Morning, all fifth-grade students have taken a test on mathematical creative thinking abilities. Data from Table 2 shows that the average percentage score of the test is 58.37%. This indicates that overall, the test results fall within the category of moderately creative. Specifically, the fluency indicator reached 81.50%, which falls into the highly creative category. This indicates that most students are capable of generating numerous ideas, answers, and solutions to the given mathematical problems. The flexibility indicator recorded 55.50%, which falls into the moderately creative category. This indicates that some students can generate various different ideas and view problems from diverse perspectives, although not consistently. On the other hand, the originality indicator shows a percentage of 40.50%, indicating a lower level of creativity. The majority of students tend to produce answers they have learned previously rather than creating new and original solutions. This is evident when they struggle to solve problems that are slightly different from the examples given. Lastly, the elaboration indicator recorded a percentage of 56.00%, meaning some students are able to provide correct answers with adequate detail. However, there are also some students who only provide answers without detailed explanations.

3.2. Discussion

After data processing is completed, the next step is data analysis using several statistical tests. First, a normality test was conducted using SPSS version 29 and the Kolmogorov-Smirnov test to assess the data distribution. Decisions were based on the significance level, where values > 0.05 indicate a normal distribution, and values < 0.05 indicate otherwise. From the normality test result with a significance value of 0.200 (> 0.05), it can be concluded that the data in this study are normally distributed.

According to Ghozali (2018), "the normality test is an essential initial step in statistical analysis to ensure that the data used meets the basic assumption of normal distribution, which is required in various parametric statistical tests." This is supported by Santoso (2019), who states that "the validity of research results heavily depends on meeting the normality assumption, as many statistical methods require a normal distribution."

Next, a linearity test was conducted using SPSS version 29 to evaluate the relationship between independent and dependent variables. Decisions were based on the significance of

deviation from linearity, where values > 0.05 indicate an influence of the independent variable on the dependent variable. In this study, the linearity test result showed a deviation from linearity significance value of 0.673 (> 0.05), indicating that the Genially learning media affects creative thinking ability in Mathematics learning.

"The linearity test is an important step to ensure that the relationship between the independent and dependent variables is linear. In this study, the linearity test showed a deviation from linearity significance value of 0.673 (> 0.05), indicating that the Genially learning media affects creative thinking ability in Mathematics learning" (Ghozali, 2018). This aligns with Wijaya (2020), who states that "the use of innovative learning media such as Genially can help improve students' creative thinking skills, provided that the relationship is linear." According to Sugiyono (2016), "the linearity test helps determine whether the relationship between the independent and dependent variables can be predicted with a linear model, which is important for regression analysis."

Finally, a correlation test was conducted using the Pearson Product Moment technique to evaluate the level of relationship between variables. Decisions were based on the significance level, where values < 0.05 indicate a correlation between variables. However, in this study, the correlation test result showed a significance value of 0.731 (> 0.05), indicating no significant correlation between Genially learning media and mathematical creative thinking ability in Mathematics learning. The Pearson Correlation value obtained was 0.072, indicating a very weak or almost no correlation between the two variables, with a positive correlation type.

"The Pearson correlation test is a method often used to measure the degree of relationship between two variables. In this study, the correlation test results showed a significance value of 0.731 (> 0.05), meaning there is no significant correlation between Genially learning media and mathematical creative thinking ability. The Pearson Correlation value obtained was 0.072, indicating a very weak or almost no correlation between the two variables, with a positive correlation type" (Sugiyono, 2016). Riduwan (2012) also mentions that "the Pearson correlation test is a statistical technique used to determine the linear relationship between two continuous variables. A positive correlation indicates that both variables move in the same direction." According to Arikunto (2013), "even though the correlation is weak, there is still an opportunity to identify other factors that may influence the relationship between variables."

4. CONCLUSION

Based on the research findings, all fifth-grade students at SDN Sunter Jaya 03 Morning have utilized Genially as a learning media in Mathematics. Despite being perceived as engaging by students, the product moment correlation test results indicate no significant relationship between the use of Genially and students' mathematical creative thinking abilities ($r = 0.072$, $p = 0.731 > 0.05$). This correlation is positive but very weak or almost nonexistent. Difficulties in using this media, especially in understanding the language used, suggest the need for further guidance and direction from teachers. Furthermore, from the results of the mathematical creative thinking ability test, most students demonstrate proficiency in fluency indicators but show weaknesses in

authenticity indicators, tending to follow existing patterns and lacking the ability to generate new ideas.

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