The effect of the GASING method on mathematics learning outcomes of fourth-grade students at SDN Kesek 1

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Abstrak

Penelitian ini memiliki tujuan untuk mengetahui ada atau tidaknya pengaruh penggunaan metode GASING terhadap hasil belajar matematika siswa kelas IV SDN Kesek 1. Penelitian ini merupakan penelitian kuantitatif dengan jenis penelitian *Quasi Eksperimental Design,* dengan menggunakan desain *none-equivalent control group design*. Penelitian ini dilaksanakan di SDN Kesek 1 yang berjumlah 28 siswa. Sampel diambil dengan menggunakan teknik *purposive sampling*. Instrumen yang digunakan adalah lembar observasi, lembar tes hasil belajar siswa. Data yang dikumpulkan menggunakan soal *posttest* kelas eksperimen dan *posttest* kelas kontrol. Hasil penelitian ini menunjukkan bahwa terdapat pengaruh penggunaan metode GASING (Gampang, Asik, Menyenangkan) terhadap hasil belajar matematika siswa. Berdasarkan kriteria pengujian jika nilai Sig. (2-tailed) < 0,005 maka H_o ditolak dan H_a diterima, dan jika nilai $t_{hitung} > t_{tabel}$ (2,062 > 2,055) maka H_o ditolak dan H_a. Sehingga dapat disimpulkan bahwa terdapat pengaruh pada penerapan penggunaan metode GASING terhadap hasil belajar matematika siswa kelas IV SDN Kesek 1.

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Kata Kunci: Metode GASING, Hasil Belajar, Matematika

Abstract

This research aims to determine whether there is an effect of using the GASING (Gampang, Asik, Menyenangkan - Easy, Fun, Enjoyable) method on the mathematics learning outcomes of fourth-grade students at SDN Kesek 1. This was a quantitative research study using a Quasi-Experimental Design, specifically a nonequivalent control group design. The research was conducted at SDN Kesek 1 with a total of 28 students. Purposive sampling was used to select the sample. The instruments used were observation sheets and student learning outcome test sheets. Data was collected using post-test questions for both the experimental and control classes. The results of this study indicate that there is an effect of using the GASING method on students' mathematics learning outcomes. Based on the test criteria, if the Sig. (2-tailed) value is < 0.005, then H0 is rejected and Ha is accepted. Additionally, if the t count value > t table (2.062 > 2.055), then H0 is rejected and Ha is accepted. Therefore, it can be concluded that there is an influence from the application of the GASING method on the mathematics learning outcomes of fourth-grade students at SDN Kesek 1.

Keywords: GASING Method, Learning Outcomes, Mathematics

Introduction

Education is the most crucial factor in creating a nation with a high quality of life. The government's efforts to achieve national education goals are outlined in the form of a curriculum. The curriculum is broken down into several subjects that are taught to students. One of the compulsory subjects that must be taught to students is mathematics. Education plays a key role in determining the direction and sustainability of a nation (Oktavia et al., 2023).

Mathematics education is one of the fields of study that plays a vital role in everyday life. Various problems in life can be solved using mathematical concepts. Moreover, many fields of study heavily rely on mathematics for their development. This is supported by Susanto's opinion in Artina Nisa & Sumardi (2013: 185), which states that mathematics is one of the disciplines that can enhance thinking and argumentation skills, contribute to solving everyday problems and in the workplace, and support the development of science and technology. As times evolve, educational approaches continue to change and develop. However, the lack of utilization of learning media and monotonous teaching methods can hinder the learning process (Nurulaeni & Rahma in Mahmudi Ihwan & Masturoh Fitri, 2023).

The role of mathematics is extremely important in life and the development of knowledge. Mathematics education is a subject that needs to be taught to students at the school level, with the aim of equipping them with systematic, logical, creative, critical, and analytical thinking skills, as well as the ability to work collaboratively (Nahdi, 2017).

Based on the results of interviews, observations, and student needs questionnaires conducted by the researcher on Monday, October 9, 2025, and Thursday, October 14, 2025, with the fourth-grade teacher at SDN Kesek 1, Labang District, Bangkalan Regency. There are 20 students in class IVA and 11 students in class IVB. Based on the interview results, it was found that many students in class IVA have not yet reached the Learning Objective Achievement Criteria (KKTP) in the Mid-Semester Assessment (PTS), with a percentage of 20% or 4 students not meeting the KKTP (80% of 20 students is 16 students meeting KKTP, hence 20 - 16 = 4 students is 20% of 20 students). However, the correct calculation based on the text would be 80% of students meeting KKTP would be 16 students, hence 20% or 4 students not meeting KKTP seems inconsistent with the text. If 20% or 4 students is incorrect and it is actually 80% not meeting KKTP, that would be 16 students. On the other hand, in class IVB, 7 out of 11 students have met the KKTP, with a percentage of 63.63%. This means that 4 students in class IVB have not met the KKTP.

In the learning process, the teacher uses lecture and assignment methods. However, during mathematics lessons in class, out of 20 students, only 4 students are actively engaged in learning, while the other students show less enthusiasm. The students still appear to be distracted, focusing more on other activities such as talking to friends, playing with objects around them, and not paying attention to the material presented by the teacher. Although the teacher has made efforts to manage the class and keep students focused on the material, it has been found that innovation is needed in providing learning methods used in daily teaching and learning activities. If the methods used by the teacher are lectures or continuous assignments, learning will become monotonous, causing students to feel bored, and ultimately, the expected learning objectives will not be optimally achieved.

Based on the background above, the use of learning models or methods is crucial to improve student learning outcomes. Therefore, the researcher conducted a study entitled "The Effect of the GASING Method on Mathematics Learning Outcomes of Fourth-Grade Students at SDN Kesek 1".

Research Questions

Based on the background above, the research questions for this study are as follows:

1) Is there an effect of using the GASING method on the learning outcomes of fourth-grade students at SDN Kesek 1?

Research Objectives

In accordance with the research questions outlined above, the objectives of this study are:

1) To determine whether there is an effect of using the GASING method on the learning outcomes of fourth-grade students at SDN Kesek 1.

Benefits of the Research

The benefits of this research are expected to provide valuable information and advantages to all relevant parties. Some of the benefits of this research include:

Theoretical Benefits: The results of this research are expected to provide valuable information on various aspects related to the use of learning methods in mathematics education and their impact on student learning outcomes. Additionally, this study is expected to serve as a reference for developing future research on other methods and media in learning.

Practical Benefits

For Students: This research is expected to benefit students by improving their learning outcomes in mathematics.

For Teachers: This research is expected to serve as a reference for teachers in teaching and learning activities, or as a consideration for selecting suitable methods and media to make learning more engaging and enjoyable.

For Schools: This research is expected to provide suggestions and alternative methods that can be used by teachers in the teaching and learning process, particularly for mathematics subjects.

For Researchers: This article is written to fulfill the requirements for obtaining a Bachelor's degree in Elementary School Education.

Method

This study employs a quantitative research approach. Quantitative research is based on positivist philosophy, used to investigate specific populations or samples, collect data using research instruments, and analyze quantitative data to explain and test predetermined hypotheses (Sugiyono, 2022). The research design used is a quasi-experimental design, specifically a non-equivalent control group design, conducted at SDN Kesek 1, Labang District, Bangkalan Regency. The sampling technique used is purposive sampling, which involves selecting samples based on specific considerations (Sugiyono, 2013:218). As a result, the sample consists of 28 students.

The data collection techniques used in this study include observation sheets and student learning outcome tests. The data analysis techniques employed in this research involve validation of research instruments by experts, trial testing of test instruments, analysis of prerequisite data for learning outcomes and learning interest questionnaires, hypothesis testing, and analysis of observation sheets on the implementation of learning.

The validation analysis by experts was conducted on the research instruments and learning devices to determine their feasibility before use in the study. The analysis of test instruments included validity, reliability, item difficulty level, and discriminatory power. Meanwhile, the analysis of learning outcomes data consisted of two types: (1) prerequisite data analysis, which included normality tests and homogeneity tests, and (2) hypothesis testing, which included independent sample t-tests or two independent sample tests.

Results and Discussion
Results of Research Instrument Data Analysis
a. Validity Test
1. Learning Design Validation Results

This validation was conducted because the teaching module serves as a guide or reference for researchers in learning activities. Before using the module in the learning process, it underwent validation testing by expert lecturers. After validation, the module was deemed feasible for use in the learning process. The validation results for the experimental class teaching module are as follows:

Table 1: Expert Validation Results of Teaching Module

No	Assessment Criteria	Score
	Content	
1.	Systematic structure of the module	5
2.	Suitability of learning activity sequence	5
3.	Inclusion of activities to prepare students for learning, motivation, apperception, and information on learning objectives	5
4.	Suitability of teacher and student activities for each learning stage	5
5.	Clarity of learning scenario (opening, core, and closing activities)	5
6.	Suitability of learning activities with learning objectives	4
7.	Suitability of material organization with student development	4
8.	Suitability of activities for student development	4
9.	Learning activities emphasizing teacher experience	4
10.	Utilization of learning models to activate and make students creative	5

No	Assessment Criteria	Score
11.	Attachment of assessment instruments and evaluation of learning outcomes	4
12.	Suitability of assessment instruments with learning objectives	4
13.	Suitability of assessment instruments with learning objectives	4
	Time	
14.	Suitability of allocated time	4
15.	Details of time for each stage	4
	Total Score	66
	Percentage %	88
	Category	Very good

Based on Table 1, it can be seen that the recapitulation results of the teaching module validation scores given by expert validators obtained a total score of 66 with a percentage of 88%. According to the expert validation calculation criteria, it can be concluded that the teaching module falls under the "very good" category.

2. Test Instrument Validation Results

After undergoing the validation process and being declared feasible for use, the test questions can be utilized. The expert validation results for the test instrument are as follows:

Table 2 Expert Validation Results of Test Instruments

Aspect	Indicator	Rating Scale
Clarity	1. Clarity of instructions	4
	2. Clarity of each question	4
Language Accuracy	1. Language used is easy	4

Aspect	Indicator	Rating Scale
	to understand	
	2. Use of clear, simple words without ambiguity	4
	3. Adherence to Indonesian language rules	4
Content Achievement	1. Alignment with learning objectives and numeracy indicators	5
Relevance	1. Questions related to the material	5
Validity	1. Level of correctness of each question	4
Total Score		34
Percentage%		85
Category		Very Good

Based on Table 2, it can be seen that the recapitulation results of the test instrument validation scores given by expert validators obtained a total score of 34 with a percentage of 85%. According to the expert validation calculation criteria, it can be concluded that the test instrument falls under the "very good" category.

1. Validity of Pretest Questions

Table 3: Validity Analysis of Pretest Questions

No	r_{count}	r_{table}	Category
1.	0,616	0,576	Valid

No	r_{count}	r_{table}	Category
2.	0,420	0,576	Not Valid
3.	0,154	0,576	Not Valid
4.	-0,154	0,576	Not Valid
5.	0,668	0,576	Valid
6.	0,633	0,576	Valid
7.	0,660	0,576	Valid
8.	0,298	0,576	Not Valid
9.	0,616	0,576	Valid
10.	0,597	0,576	Valid
11.	0,616	0,576	Valid
12.	0,000	0,576	Not Valid
13.	0,616	0,576	Valid
14.	-0,240	0,576	Not Valid
15.	0,599	0,576	Valid
16.	-0,054	0,576	Not Valid
17.	-0,565	0,576	Not Valid
18.	-0,050	0,576	Not Valid
19.	0,344	0,576	Tidak Valid
20.	0,660	0,576	Valid

2. Validitas Butir Soal *Posttest*

Tabel 4 Tabel Uji Validitas Soal *Posttest*

No	r_{count}	r_{table}	Category
1.	0,329	0,576	Not Valid
2.	0,660	0,576	Valid
3.	0,661	0,576	Valid
4.	0,674	0,576	Valid
5.	0,696	0,576	Valid
6.	0,680	0,576	Valid
7.	0,075	0,576	Not Valid
8.	0,598	0,576	Valid
9.	0,696	0,576	Valid
10.	0,257	0,576	Not Valid
11.	-0,153	0,576	Not Valid
12.	0,637	0,576	Valid
13.	0,637	0,576	Valid
14.	0,882	0,576	Valid
15.	0,381	0,576	Not Valid
16.	0,626	0,576	Valid
17.	0,225	0,576	Not Valid
18.	0,065	0,576	Not Valid
19.	0,330	0,576	Not Valid
20.	-0,055	0,576	Not Valid

Based on the analysis results above, it was found that there were 10 valid pretest questions and 11 valid posttest questions.

3. Reliability Test

The analysis of instrument scores in this reliability test used the Cronbach's Alpha technique for multiple-choice tests. The results of the reliability test calculation are presented in the following table:

Table 5: Pretest Reliability Test Results

r_{11}	r_{table}	Category
0,858	0,576	Reliable

Table 6: Posttest Reliability Test Results

r_{11}	r_{table}	Category
0,900	0,576	Reliable

Based on the reliability test results, the pretest questions obtained a value of 0.858 and the posttest questions obtained a value of 0.900. According to Arikunto (2013), if the reliability coefficient ($r11$) is greater than 0.6, the instrument is considered reliable. Therefore, it can be concluded that the test instrument is reliable.

4. Difficulty Level Test

The difficulty level test was conducted using SPSS 22 to categorize the test questions into easy, medium, and difficult levels. The results of the analysis are as follows.

Table 7: Pretest Difficulty Level Test Results

No.	Mean Value	Category
1	0,64	Medium
5	0,64	Medium
6	0,14	Difficult
7	0,79	Easy
9	0,64	Medium
10	0,57	Medium
11	0,64	Medium
13	0,64	Medium
15	0,29	Difficult
20	0,79	Easy

Table: Posttest Difficulty Level Test Results

No.	Mean Value	Category
2	0,64	Medium
3	0,57	Medium
4	0,79	Easy
5	0,64	Medium
6	0,21	Difficult
8	0,71	Mudah
9	0,64	Medium
12	0,21	Difficult
14	0,43	Medium
16	0,57	Medium

Based on the table above, it can be seen that the results of the difficulty level test for the pretest and posttest questions indicate that there are easy, medium, and difficult questions.

5. Discriminating Power Test

The discriminating power test is used to determine the extent to which a test question can differentiate between students with high ability and those with low ability. This test was conducted using SPSS 22. The results of the discriminating power test are presented below:

Table 9: Pretest Discriminating Power Test Results

No.	Person Correlation Value	Category
1	0,691	Good
5	0,741	Very Good
6	0,573	Good
7	0,774	Very Good
9	0,691	Good
10	0,707	Very Good
11	0,691	Good
13	0,542	Good
15	0,624	Good
20	0,600	Good

Table 10: Posttest Discriminating Power Test Results

No.	Person Correlation Value	Category
2	0.807	Very Good
3	0,756	Very Good
4	0,586	Good
5	0,762	Very Good
6	0,660	Good
8	0,741	Very Good
9	0,807	Very Good
12	0,660	Good
14	0,879	Very Good
16	0,584	Good

Based on the results of the above tests, the questions used in the study consisted of 10 pretest questions and 10 posttest questions. This was done to ensure that each test item represented the specific learning objectives and to achieve a balanced proportion of difficulty levels, which included 20% easy, 60% medium, and 20% difficult questions for both the pretest and posttest.

Research Data Analysis Results
a. Normality Test

The normality test was conducted to determine whether the data follows a normal distribution or not. The data was tested using the Shapiro-Wilk test. The results of the normality test are presented in the table below.

Table 11: Pretest Normality Test Results

	Kolomogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig	Statistic	df	Sig.
Pretest eksperimen	0,168	19	0.161	0,953	19	0,446
Pretest kontrol	0,199	9	0,200	0,930	9	0,481

Table 12: Posttest Normality Test Results

	Kolomogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig	Statistic	df	Sig.
Posttest eksperimen	0,201	19	0.041	0,918	19	0,103
Posttest kontrol	0,199	9	0,200	0,930	9	0,494

Based on the normality test using Shapiro-Wilk, the significance values were 0.446 for the pretest and 0.103 for the posttest. Since both significance values are greater than 0.05, Ho is accepted, indicating that the research data follows a normal distribution.

b. Homogeneity Test

The homogeneity test was conducted to determine whether the two groups (experimental and control) have equal variances or not. The data was tested using One Way ANOVA. The results of the homogeneity test are presented in the table below.

Taable 13: Homogeneity Test Results

Levene Statistik	df1	df2	Sig.
0,063	1	26	0.803

Based on the homogeneity test results, the Sig. value of 0.803 is greater than 0.05. Therefore, it can be concluded that the data from the experimental and control classes have equal variances or are homogeneous

c. Hypothesis Testing

The hypothesis testing in this study aims to determine whether there is a significant difference between the experimental and control classes after implementing the

GASING (Gampang, Asik, Menyenangkan) method. The hypotheses used in this study are as follows.

H_o: here is no significant effect of the GASING method on the interest in learning and the ability to understand mathematical concepts of 4th-grade students at SDN Kesek 1

H_a: There is a significant effect of the GASING method on the interest in learning and the ability to understand mathematical concepts of 4th-grade students at SDN Kesek 1.

This hypothesis test uses an independent sample t-test, with the following decision rule: if the Sig. (2-tailed) value is less than 0.05, Ha is accepted and H0 is rejected. Conversely, if the Sig. (2-tailed) value is greater than 0.05, Ha is rejected and H0 is accepted. The results of the hypothesis test are presented in the table below

Table 14: Hypothesis Test Results

t_{hitung}	t_{table}	Sig . (2-tailed)	Sig
2,062	2,055	0,049	0,05

According to Table 14, the calculated t-value is 2.062 and the t-table value is 2.055. Based on the testing rule, if the calculated t-value is greater than the t-table value, H0 is rejected and Ha is accepted. Since the calculated t-value (2.062) is indeed greater than the t-table value (2.055), H0 is rejected and Ha is accepted. This result indicates a significant difference between the posttest scores of the experimental and control classes after treatment. The average score of the experimental class is higher than that of the control class, suggesting that the GASING method has a positive effect on the learning outcomes of 4th-grade students at SDN Kesek 1.

d. Observation Data Analysis Results

the learning implementation observation in this study aims to assess the teacher's activities in delivering lessons using the GASING method (Easy, Fun, Enjoyable) and evaluate student engagement during the learning process. The teacher observation sheet was completed by Mrs. Agustina Indri Astutik, S.Pd., SD, the teacher of class IVA at SDN Kesek 1. The student observation sheet was completed by two observers: Shintia Shepti Hariani (Observer 1) and Anggun Nafla Syarifatul Azmi (Observer 2), who are peers from the 2021 batch of PGSD UTM students. The results of the teacher and student observation sheets are presented in the following table:

Table 15: Teacher Observation Sheet Results

Meeting	Percentage	Criteria
1	84,46	Very good
2	96	Very good
Avarage	90,23	Very good

Table 16: Student Observation Sheet Results

Meeting	Percentage	Criteria
1	85,42	Very good
2	93,47	Very good
Avarage	89,44	Very good

Based on the teacher and student observation results above, it can be concluded that the implementation of the GASING method has been carried out very well, and each stage has been effectively evaluated by the respective observers.

Discussion

This study aims to determine whether there is an effect of using the GASING method (Easy, Fun, Enjoyable) on the mathematics learning outcomes of 4th-grade students at SDN Kesek 1. The subjects of this study consisted of all 4th-grade students at SDN Kesek 1, totaling 31 students. The data collection techniques used included observation sheets, learning outcome tests, and validation. The data analysis techniques employed were instrument testing, analysis of observation data, prerequisite analysis, and analysis of research data results.

The results of the independent sample t-test showed that the calculated t-value was

greater than the t-table value, and the significance value Sig. (2-tailed) was less than 0.05. Based on these results, the null hypothesis (Ho) was rejected, and the alternative hypothesis (Ha) was accepted. Therefore, it can be concluded that there is a significant difference between the posttest results of the experimental class and the control class in the implementation of the GASING method on the mathematics learning outcomes of 4th-grade students at SDN Kesek 1.

The research results showed that the calculated t-value (t-count) was greater than the t-table value (t-table), indicating that the alternative hypothesis (Ha) was accepted and the null hypothesis (Ho) was rejected. Specifically, the calculation results yielded a t-count value of 2.062, which exceeded the t-table value of 2.055. Therefore, Ho was rejected, and Ha was accepted, leading to the conclusion that there is a significant effect of the GASING method (Easy, Fun, Enjoyable) on student learning outcomes.

The implementation of the GASING method (Easy, Fun, Enjoyable) was evaluated using teacher observation sheets and student observation sheets. The results of the teacher observation sheets showed a very good criteria with an average score of 90.23, while the average score for the student observation sheets was 89.44.

This finding can provide a solution to the problems identified during the pre-research phase, where the methods used failed to engage students actively in the learning process. Therefore, the GASING method (Easy, Fun, Enjoyable) can be an effective alternative learning approach to improve student learning outcomes.

Conclusion

Based on the research conducted at SDN Kesek 1 Bangkalan on the "Effect of the GASING Method on 4th-Grade Student Learning Outcomes," it can be concluded that the use of the GASING method (Easy, Fun, Enjoyable) has a significant impact on student learning outcomes. The independent sample t-test results showed a significance value of 0.049, which is less than 0.05, indicating that Ha is accepted and Ho is rejected. Additionally, the calculated t-value (2.062) exceeded the t-table value (2.055), further supporting the acceptance of Ha and rejection of Ho. Therefore, it can be concluded that the GASING method has a significant effect on the mathematics learning outcomes of 4th-grade students at SDN Kesek 1 Bangkalan.

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Curriculum Vitae

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