Eduvest - Journal of Universal Studies
Volume 4 Number 09, September, 2024
p- ISSN 2775-3735- e-ISSN 2775-3727

The Effect Of Using Quizizz Paper Mode Learning Media On Student Learning Outcomes In Mathematics Subjects At Sdn Setu 02 Jakarta

Muhammad Luthfi Apriadi, Zulfadewina
[1,2,] Prof. Dr. Hamka Muhammadiyah University, Indonesia
Email: : luthfiapriadi64@gamil.com

ABSTRACT

This study investigates the impact of using Quizizz Paper Mode as a learning medium on the mathematics learning outcomes of fifth-grade students at SDN Setu 02 Jakarta. Employing a quantitative research method with a Posttest-Only Control Design, the study involved two groups: an experimental group utilizing Quizizz Paper Mode and a control group relying on conventional teaching methods. The results demonstrate a significant improvement in the experimental group's post-test scores compared to the control group, indicating the effectiveness of Quizizz Paper Mode in enhancing students' mathematical understanding and engagement. The study's findings suggest that integrating technology like Quizizz Paper Mode in education can positively influence learning outcomes, though limitations such as sample size and focus on a single subject should be considered. The research underscores the need for further exploration and implementation of educational technologies in primary school curricula.

KEYWORDS *Quizizz Paper Mode, Student Learning Outcomes, Mathematics Education*

INTRODUCTION

Education is a conscious effort that is carried out in a planned manner to create an efficient and effective learning atmosphere and learning process. According to Listyarti in (Sadat et al., 2021) Education is also a process of "change" from an affective, cognitive and psychomotor perspective for the better. Education also has a very important role in shaping and building human resources in a nation. Little hope and hope in the current national education system can guarantee an increase in the quality and effectiveness of education management that can make changes and be ready to face the challenges of life in the global era so that changes or

How to cite:	Muhammad Luthfi Apriadi, Zulfadewina. (2024). The Effect Of Using Quizizz Paper Mode Learning Media On Student Learning Out-comes In Mathematics Subjects At Sdn Setu 02 Jakarta. *Journal Eduvest. 4* (9): 741-749
E-ISSN:	2775-3727
Published by:	https://greenpublisher.id/

renewal of a directed, planned and sustainable education system are needed (Utami, 2019). The educational problems that our country is experiencing according to Agustang's research (2021: 1) are problems of effectiveness, efficiency and standardization of teaching such as low physical facilities, quality of educators, student achievement and relevance of education to needs. How to overcome one of these problems is a creative educator in making learning media that supports student learning outcomes.

Learning outcomes are changes in the behavior of students that can be observed and measured in the form of knowledge, attitudes and skills after students follow a series of learning processes or a series of training processes. From the description above, it can be concluded that learning outcomes are learning achievements achieved by students after following a series of learning processes for a material based on learning objectives set by educators.

Mathematics is a science obtained from thinking because mathematics is a means of developing logical, reasoning and systematic ways of thinking. The existence of mathematics in schools aims for students to understand the nature of mathematics to be equipped with critical thinking and problem solving skills for use in everyday life. The presentation of mathematics lessons in elementary, junior high and high school is very different, in elementary school the concept of mathematics is explained from concrete things then abstract things. Thus students can capture understanding visually and intuitively. A meaningful, interesting and effective learning process is influenced by various things, including educators who understand the characteristics of their students and know the right learning methods and media. The availability of many learning resources will create a pleasant and maximum learning process and results.

Based on observations regarding the learning outcomes of mathematics that researchers conducted in class V SD Negeri Setu 02 Jakarta, it was found that the learning outcomes of low math scores and limited learning media and students who were not much involved in the learning process. Learners are only taught concepts and have difficulty when applying in everyday life. learning at school teachers only use conventional methods that tend to only use books and focus on mastering cognitive knowledge that prioritizes memorizing material without using innovative technology-based learning media. The learning process is considered less effective in providing learning experiences for students, the impact is that the learning atmosphere in the classroom becomes monotonous and less innovative, as a result students get bored quickly in participating in learning so that it can affect student activeness and understanding in receiving material and this can affect student learning outcomes.

Seeing this problem, it is appropriate to make innovations in learning. One alternative to solving the problem is to use innovative and interesting learning media. Using Quizizz Paper Mode media, because in this media there are several interesting features to increase the enthusiasm for learning of students.

Relevant research refers to previous research related to the topic and title of the research being conducted. Relevant research includes Rahma Annisa and Erwin's study which found that the use of the Quizizz application improved the science learning outcomes of fourth grade students at SDN Sumur Batu 08 Central

Jakarta, with the experimental class showing a significant increase in scores compared to the control class. Nurul Sukmah also found that Quizizz media in online learning improved students' biology learning outcomes, with the experimental class showing higher results than the control class. Vera Nur Aini examined the effect of Quizizz in improving the math learning outcomes of fifth grade students at SDN Setu 02 Pagi East Jakarta, finding that the use of Quizizz significantly increased students' posttest scores. These three studies show that Quizizz as an interactive learning media has the potential to improve student learning outcomes, despite differences in research methods and samples.

Based on the background that has been stated, the author identifies several main problems in learning mathematics in class V SDN Setu 02 Jakarta: limited learning media and lack of student involvement, low math learning outcomes, and the potential influence of using Quizizz Paper Mode on learning outcomes. The focus of this research is limited to the effect of using Quizizz Paper Mode on mathematics learning outcomes of grade V students. This research formulates the main question: Does the use of Quizizz Paper Mode affect student math learning outcomes at SDN Setu 02 Jakarta? The benefits of this research are expected to increase student learning motivation, assist researchers in developing learning strategies, improve learning models, and provide information about the effectiveness of Quizizz Paper Mode to readers. This problem is an interesting study to conduct research on "The Effect of Using Quizizz Paper Mode Learning Media on Student Learning Outcomes in Mathematics Subjects at SDN Setu 02 Jakarta".

Research Hypothesis

The hypothesis of this study is:

Ho: There is no effect of using *Quizizz Paper Mode* media on the learning outcomes of grade V math subjects at SDN Setu 02.

H1 : There is an effect of using *Quizizz Paper Mode* media on the learning outcomes of fifth grade math subjects at SDN Setu 02.

RESEARCH METHOD

This study aims to examine the effect of using Quizizz Paper Mode learning media on the mathematics learning outcomes of fifth grade students at SDN Setu 02 Jakarta. Conducted at SDN Setu 02 Pagi, East Jakarta in the 2023/2024 school year, this study used quantitative methods with a Posttest-Only Control Design. The population was all grade V students, which were divided into experimental classes (using Quizizz Paper Mode) and control classes (using books and teacher-centered learning). Data collection was done through a post-test with instruments in the form of multiple choice questions. Instrument validity and reliability tests were carried out to ensure the validity and reliability of measuring instruments. Data analysis included normality and homogeneity tests, and t-test to test the hypothesis. The results of the study are expected to provide an overview of the effectiveness of using Quizizz Paper Mode in improving students' math learning outcomes.

RESULT AND DISCUSSION

Data Description

This study used a descriptive quantitative method with a sample of Mathematics students at SDN Setu 02 Jakarta to assess the effectiveness of Quizizz Paper Mode. The research instruments were in the form of pre-test and post-test, and the validity and reliability were tested using SPSS on 32 students. The collected data were tabulated and analyzed statistically to describe the trend values. The results showed significant improvement in students using Quizizz Paper Mode compared to the control group. The control class (5A) data showed a total score of 2527 with a mode of 80, median of 82, standard deviation of 4, and a score range of 12. The experimental class (5B) data showed a total score of 2675 with a mode and median of 85, standard deviation of 4.4, and a score range of 15, indicating that the integration of this technology had a positive impact on student learning outcomes.

Analysis Requirements Testing

1. Normality Test

Normality Test 5A Control

		K.Kontrol					batas nyata	
n	32	dibulatkan	interval		interval kelas	nilai tengah	Tepi Bawah	Tepi Atas
max	87		75	81	75-81	78	74.5	80.5
min	75		82	88	82-88	85	81.5	87.5
range	12		89	95	89-95	92	88.5	94.5
K	5.997097928	6	96	102	96-102	99	95.5	101.5
P	2.000967825	7	103	109	103-109	106	102.5	108.5
			110	116	110-116	113	109.5	115.5
			117	123	117-123	120	116.5	122.5

UJI NORMALITAS K.KONTROL

No	Nilai (X)	Xbar	S	F	Fkum	FX	X²	FX²	Zi	F(Zi)	S(Zi)	F(Zi)-S(Zi)		
1	75	79.5	4	3	1	225	5625	50625	-1.13	0.13029	0.03125	0.09904	MAKSIMAL	0.16543
2	77	79.5	4	5	6	385	5929	148225	-0.63	0.26599	0.1875	0.07849		
3	80	79.5	4	8	14	640	6400	409600	0.13	0.54974	0.4375	0.11224		
4	82	79.5	4	5	19	410	6724	168100	0.63	0.73401	0.59375	0.14026		
5	85	79.5	4	5	24	425	7225	180625	1.38	0.91543	0.75	0.16543		
6	87	79.5	4	6	30	522	7569	272484	1.88	0.96960	0.9375	0.03210		
Total				32		656	39472	430336						

Mean	80
Nilai Terendah	75
Nilai Tertinggi	87
Rentangan	12
Banyaknya Kelompok	6
kelas Interval	6
Varians	11
Simpangan Baku	4
Ltabel	0.242
Lhitung	0.165
STATUS	NORMAL

Interpretation:

It can be seen in the table above that the calculated L value < L table or 0.165 < 0.242 which concludes that the 5A control class data is normally distributed.

Normality Test 5B Experiment

			K.Eksperimen				batas nyata	
n	32	dibulatkan	interval		interval kelas	nilai tengah	Tepi Bawah	Tepi Atas
max	95		80	86	80-86	83	79.5	85.5
min	80		87	93	87-93	90	86.5	92.5
range	15		94	100	94-100	97	93.5	99.5
K	5.99710	6	101	107	101-107	104	100.5	106.5
P	2.50121	4	108	114	108-114	111	107.5	113.5
			115	121	115-121	118	114.5	120.5
			122	128	122-128	125	121.5	127.5

UJI NORMALITAS K.EKSPERIMEN													
No	Nilai (X)	Xbar	S	F	Fkum	FX	X^2	FX^2	Zi	F(Zi)	S(Zi)	F(Zi)-S(Zi)	
1	80	85.5	4.4	7	1	560	6400	44800	-1.25	0.10565	0.03125	0.07440	MAKSIMAL 0.21145
2	85	85.5	4.4	12	13	1020	7225	86700	-0.11	0.45476	0.40625	0.04851	
3	87	85.5	4.4	4	17	348	7569	30276	0.34	0.63341	0.53125	0.10216	
4	90	85.5	4.4	5	22	450	8100	40500	1.02	0.84678	0.6875	0.15928	
5	92	85.5	4.4	1	23	92	8464	8464	1.48	0.93020	0.71875	0.21145	
6	95	85.5	4.4	3	26	285	9025	27075	2.16	0.98458	0.8125	0.17208	
Total				32		2755	46783	237815					

Mean	86
Nilai Terendah	80
Nilai Tertinggi	95
Rentangan	15
Banyaknya Kelompok	6
kelas Interval	2.5
Varians	19.78
Simpangan Baku	4.4
Ltabel	0.242
Lhitung	0.211
STATUS	NORMAL

Interpretation:

It can be seen in the table above that the calculated L value < L table or 0.211 < 0.242 which concludes that the 5B data for the Experiment class is normally distributed.

2. Homogeneity Test

Homogeneity Test Table

HOMOGENEITY TEST		
NO	K. Experiment	K. Control
1	80	80
2	85	75
3	92	80
4	90	85
5	95	82
6	90	85
7	85	80
8	80	77
9	85	82
10	85	77
11	90	87
12	87	87
13	85	85
14	80	80
15	80	80
16	95	87

17	85	77
18	85	75
19	90	82
20	87	75
21	80	77
22	87	80
23	85	85
24	85	80
25	85	87
26	90	82
27	87	77
28	85	87
29	80	87
30	80	85
31	95	80
32	85	82

F count	2.28
F table	1.822
Variance 1	20.22
Variance 2	15.81

Interpretation:

From the table above, it is known that the value of F Count> F Table or 2.28> 1.82 which can be concluded that the data is homogeneous.

3. Hypothesis Test

Hypothesis Test Table

HYPOTHESIS TEST		
NO	K. Experiment	K. Control
1	80	80
2	85	75
3	92	80
4	90	85
5	95	82
6	90	85
7	85	80
8	80	77
9	85	82
10	85	77
11	90	87

12	87	87
13	85	85
14	80	80
15	80	80
16	95	87
17	85	77
18	85	75
19	90	82
20	87	75
21	80	77
22	87	80
23	85	85
24	85	80
25	85	87
26	90	82
27	87	77
28	85	87
29	80	87
30	80	85
31	95	80
32	85	82

	sebelum	sesudah		
rata-rata	86.1	81.47		
simp. Baku	4.5	4.0		
varians	20.85	16.32		
dk	n1 + n2 - 2	62		
kriteria :	HO Diterima Apabila		t tabel < t hitung < t tabel	
SELISIH RATA2	5	4.63		1.16
VAR 1/n1	0.651545699			0.224987399
VAR 2/n2	0.510080645			
KOEF KORELASI	0.20			0.94
2 KOEF KORELASI	0.403			0.97
SIMP. BAKU/ AKAR n1	0.79			
SIMP. BAKU/ AKAR n2	0.70		t hitung	4.778874564
			t tabel	1.99897

Interpretation:

From the table above it can be concluded that T Count> T Table or 4.778> 1.998 which means that there is an influence of 5A Control with 5B Experiments Significantly **(HO Rejected and H1 Accepted).**

4. Validity and Reliability Test

Validity Test Table

UJI VALIDITAS MENGGUNAKAN RUMUS PEARSON PRODUCT MOMENT													
JUMLAH SISWA 32													
R Hitung		0.41	0.78	0.66	0.52	0.77	0.87	0.94	0.94	0.73	0.76		
R Tabel		0.338	0.338	0.338	0.338	0.338	0.338	0.338	0.338	0.338	0.338		
Keterangan		Valid	Valid	Valid	Valid	Valid	Valid	Valid	Valid	Valid	Valid		
Varian		10.63538	7.286154	8.375384615	7.318462	12.95385	12.78153846	14.04462	13.54615	13.12154	11.14462	111.2077	Jumlah varian
												615.7985	Total varian

Interpretation:

In the table above, it is known that the R value counts everything> R table, namely 0.338, which can be concluded that the data is valid.

Reliability Test Table

UJI REABILITAS MENGGUNAKAN RUMUS ALPHA CROMBACH'S				
KRITERIA PENGUJIAN				Dasar Pengambilan Keputusan
Nilai Acuan	Nilai Crombach's	Kesimpulan		Jika Nilai Crombahk's Alpha > 0,70 Maka Berkesimpulan Reliabel
0.7	0.910454386	RELIABEL		Jika Nilai Crombach's Alpha < 0,70 Maka Berkesimpulan Tidak Reliabel

Interpretation:

In the table above, it is known that the Cronbach's Alpha value obtained is 0.910 which is> 0.70, so it can be concluded that the data is reliable.

Discussion of Research Results

This research brings us to a deep understanding of how the use of Quizizz Paper Mode affects student learning outcomes in the context of mathematics education at SDN Setu 02 Jakarta. By testing two groups, namely the control group (5A) who did not use Quizizz Paper Mode and the experimental group (5B) who adopted the technology, we were able to see a significant difference in student learning outcomes between the two groups.

The statistical analysis conducted showed that the calculated T value of 4.778, exceeded the relevant T table value for the degrees of freedom used, with a significance level of $p < 0.05$. This indicates that there is strong statistical evidence that Quizizz Paper Mode effectively contributed to the improvement of students' learning outcomes. The experimental group showed a significant increase in post-test scores compared to the control group, with the mean post-test score of the experimental group reaching 85.31, while the control group only reached 81.19. This difference is not only statistically significant, but also practical in the context of school learning.

The validity of the research instruments has also been confirmed through a validity test that shows a significant correlation between the instrument items and the total score. The reliability of the instrument, measured by Cronbach's Alpha of 0.910, confirms that the instrument used is consistent and reliable in measuring the variables under study. Thus, the data collected can be considered accurate and valid in supporting the finding that Quizizz Paper Mode has a significant positive impact on student learning outcomes.

Theoretically, the results of this study provide support for the concept that technology integration in education can enhance student interaction and engagement in the learning process. Quizizz Paper Mode, with features such as immediate feedback and adaptive question customization, not only facilitates better understanding of the Mathematics subject matter, but also encourages students to learn independently with higher levels of motivation. This is in keeping with the modern educational paradigm that emphasizes on the use of technology to optimize the teaching-learning process.

The implications of these findings are highly relevant in the context of curriculum development and educational policy at the primary school level. Practical recommendations include further integration of educational technologies such as Quizizz Paper Mode in the primary school mathematics curriculum, as well as the necessary training for teachers to use these technologies effectively in their daily teaching. Thus, this study not only contributes to the academic literature on the use of technology in education, but also provides a strong empirical foundation for the development of innovative learning strategies oriented towards better overall student learning outcomes.

Research Limitations

This study has some significant limitations, both in terms of content and technicalities, which are beyond the control of the researcher. Content-wise, the study was limited to a sample of grade 5 students at SDN Setu 02 Jakarta, which may not be representative of a wider population of students with a range of different educational, social and economic backgrounds. This limits the generalizability of the findings to other schools with different characteristics.

In addition, this study only focused on the subject of Mathematics, so it does not provide insight into the effect of using Quizizz Paper Mode on other subjects that may have different teaching approaches and learning characteristics. The lack of variety of subjects tested may reduce our understanding of the general effectiveness of this method.

From a technical perspective, this study was also faced with a number of limitations. Although validity and reliability tests have been conducted, uncontrollable external factors such as students' mood during the test or environmental disturbances may affect the pretest and posttest results, so the results obtained may not fully reflect students' academic abilities accurately.

In addition, this study used SPSS software for data analysis, which although very helpful, has limitations in terms of configuration and advanced analysis features that may be needed to explore additional variables that could be relevant. The use of SPSS is also not fully capable of identifying or controlling for intervening variables such as students' intrinsic motivation, parental support, or interaction with teachers, all of which can play an important role in students' learning outcomes. In addition, limitations in terms of time and resources prevented the researcher from conducting repeat testing and a more in-depth and comprehensive data analysis, which could have provided a more thorough view of the long-term effectiveness of using Quizizz Paper Mode. All of these limitations should be considered when

interpreting the results of this study, and indicate the need for further research with more diverse designs and more adequate resources.

CONCLUSION

This study revealed that the use of Quizizz Paper Mode significantly improved student learning outcomes at SDN Setu 02 Jakarta, particularly in Mathematics. The data showed a striking difference between the group that used this technology and the control group, with a significant T value. The findings support that technology integration can enrich students' interactivity and engagement, improving their understanding of the subject matter. Nonetheless, this study has limitations, such as the limited scope to one school and subject, as well as technical and social factors that may affect the results. From a theoretical perspective, the findings support the importance of technology integration in education, with recommendations to integrate more educational technology in the primary school curriculum and provide training for educators.

Implications of this study include the need for education policies that support technology integration, provision of adequate infrastructure and training for teachers and staff. In addition, the research encourages adaptation to technological developments to improve the overall quality of education, by developing policies that enable the use of technology to enrich students' learning experiences. The suggestions from this study emphasize the importance of investment in technology infrastructure, curriculum development that integrates technology and an evidence-based approach in selecting and implementing educational technology. Educational institutions also need to monitor the latest trends and research and pay attention to security and ethical aspects in the use of student data. These steps will help create a dynamic and inclusive learning environment, preparing students to face future global challenges.

REFERENCES

Ahmad, J. (2019). The Use of Technology in Mathematics Learning. Journal of Mathematics Education, 3(2), 100-112. University of Education Indonesia.

Aini, V. N. (2022). The Effect of Quizizz in Improving Student Learning Outcomes in Grade V Mathematics Subjects at SDN Setu 02 Pagi East Jakarta. Jakarta: State University of Jakarta.

Arikunto, S. (2013). Research Procedure: A Practical Approach. Rineka Cipta.

Baharuddin, & Wahyuni, E. N. (2015). Learning and Learning Theory. Ar-Ruzz Media.

Bawa, A. (2018). Effectiveness of Using Technology-Based Learning Media. Journal of Educational Technology, 6(1), 45-53. State University of Malang.

Dalyono, M. (2010). Educational Psychology. Jakarta: Rineka Cipta.

Darmawan, D. (2012). Learning Technology. Teenage Workshop.

Daryanto. (2010). Learning Media. Gava Media.

Dwijayani, N. (2019). Understanding Learning Outcomes according to Nana Sudjana. Jakarta: Kencana Prenada Media Group.

Edi, S. (2017). Application of Interactive Learning Media to Improve Learning

Outcomes. Journal of Education and Teaching, 4(3), 200-213. Sebelas Maret University.
Ernawati, L. (2019). The Effect of Using Quizizz on Student Learning Motivation. Indonesian Journal of Education, 8(4), 67-74. Surabaya State University.
Fathurrohman, M. (2015). Innovative Learning Models. Ar-Ruzz Media.
Hakim Nasution, A. (1996). Mathematics: Its History and Development. Jakarta: Erlangga.
Hamalik, O. (2004). Teaching and Learning Process. Bumi Aksara.
Haryono, T. (2018). The Use of Technology-Based Learning Media to Improve Learning Outcomes. Journal of Educational Technology, 7(2), 123-131. Jakarta State University.
Khairuddin. (2017). The Effect of Using Learning Media on Student Learning Outcomes. Journal of Education, 2(1), 54-62. State University of Jakarta.
Listyarti. (2021). Education as a Process of Change. In Sadat, et al. (Eds.), Transformation of Education in Indonesia. Jakarta: Rajawali Press.
Mulyasa, E. (2013). Development and Implementation of the 2013 Curriculum. Teenage Workshop.
Nurhadi. (2004). Contextual Teaching and Learning and its Application in KBK. State University of Malang.
Purwanto, N. (2011). Evaluation of Learning Outcomes. Student Library.
Putra, A. (2020). The Effect of Educational Technology Use on Student Learning Achievement. Journal of Technology Education, 5(2), 89-98. State University of Yogyakarta.
Rosyid, M. (2019). Learning Process and its Changes. Bandung: Alfabeta.
Ruseffendi, E. T. (1991). Understanding Mathematics as a Language of Symbols. Bandung: Tarsito.
Sadat, et al. (2021). Transformation of Education in Indonesia. Jakarta: Rajawali Press.
Setiawati, L. (2018). Effective Learning Activities. Jakarta: Bumi Aksara.
Soedjadi. (2000). The Nature of Mathematics. Jakarta: Grasindo.
Sudjana, N. (2011). Assessment of Teaching and Learning Process Results. Bandung: Teenage Workshop.
Suprijono, A. G. (2010). Cooperative Learning: Theory and Application of PAIKEM. Student Library.
Trianto. (2009). Integrated Learning Models in Theory and Practice. Prestasi Pustaka.
Triyono, M. B. (2017). Implementation of Learning Technology in Improving Learning Outcomes. Journal of Technology and Vocational Education, 10(1), 45-52. Surakarta State University.
Wena, M. (2013). Contemporary Innovative Learning Strategies: An Operational Conceptual Review. Bumi Aksara.
Yamin, M. (2008). New Paradigm of Learning: As a Reference for Educators in the Implementation of Effective and Quality Learning. Gaung Persada Press.
Yusuf, S. (2010). Psychology of Child and Adolescent Development. Rosda.