

The Effect of The Problem-Based Learning Model Assisted by Quizizz Paper Mode on Student Learning Outcomes in Science Subjects

Zidan Ahmad Farhan*, Fitri Nuraeni, Afridha Laily Alindra

PGSD Universitas Pendidikan Indonesia Kampus Purwakarta

ARTICLE INFORMATION	ABSTRACT
<p>Article History: Received July 11, 2024 Revised August 04, 2024 Accepted August 08, 2024 Published October 31, 2024</p> <p>Keywords: PBL, Quizizz Paper Mode, Learning Outcomes, IPA, Elementary School</p> <p>*Corresponding Author: zidanaf@upi.edu</p> <p>DOI: https://doi.org/10.5281/zenodo.14918046</p>	<p>In the learning process, challenges arise when students lack concentration and motivation to absorb new knowledge, especially in science subjects, resulting in decreased learning outcomes. The low learning outcomes of elementary school students are the background to this research. The aim of this research is to determine the improvement in science learning outcomes of students who use the Problem Based Learning learning model with the help of Quizizz Paper Mode media as compared to those who learn with the conventional model in elementary schools and to find out the effect of the Problem Based Learning learning model assisted by Quizizz Paper Mode media on results. student learning in science subjects in elementary schools. The research method used in this research is quasi-experimental in the form of a nonequivalent control group design on the topic of discussing magnetic forces with a sample of 40 students. Data collection techniques in this research used tests and documentation. Based on data analysis, the n-gain score in the experimental class was 0.6673 and the control class was 0.5498, meaning that students who used the Problem Based Learning learning model with the help of Quizizz Paper Mode media were better than using the conventional model in elementary school. Meanwhile, the results of the linear regression test obtained an rSquare value of 0.508 while the coefficient of determination was 50.8%, meaning that there was an influence of the Problem Based Learning learning model with the help of Quizizz Paper Mode media on student learning outcomes in elementary school science subjects.</p>

INTRODUCTION

The current digital education era demands educators to continuously keep up with the rapid development of technology. Educators are expected to integrate this technology into the learning process to enhance students' learning abilities and interest, making classroom learning more engaging and less monotonous for students.

According to Airlanda (2021), the learning outcomes of elementary school students are still relatively low, especially in the cognitive domain. This is due to the lack of innovation in implementing learning that suits the characteristics of each student, resulting in suboptimal learning outcomes. Students' learning processes are influenced by various factors, including physical, individual psychological, family support, surrounding environment, and school facilities, one of which is learning media.

To address these issues, the Problem Based Learning (PBL) model can be used. According to Hermansyah (2020), Problem Based Learning is a learning model that presents students with real-world problem situations within a context, allowing them to develop critical thinking skills, both individually and in groups. By utilizing the Paper Mode feature on the Quizizz application, teachers can also embed videos, audio, and images in the questions created, creating a fun,

engaging, and enjoyable learning atmosphere. Additionally, Quizizz Paper Mode can be applied to all subjects.

Observations show that during science lessons, teachers still use conventional methods such as lectures and do not use media other than relying on student worksheets (LKS), making the learning process monotonous and less engaging for students, leading to boredom and poor comprehension of the material. This impacts students' understanding and learning outcomes during the learning process.

Based on the above explanation, the researcher is interested in conducting a study aimed at determining the influence of the Problem Based Learning model assisted by Quizizz Paper Mode media on the learning outcomes of science subjects for fifth-grade students at SD Negeri 2 Langensari.

LITERATURE REVIEW

Problem Based Learning

According to Syamsidah & Suryani (2018), Problem Based Learning is an approach that introduces new knowledge to students through solving a problem. Thus, this approach is a learning method that involves active participation from students and helps teachers create an engaging learning environment.

This approach also begins by presenting significant and relevant problems to students, allowing them to gain more real-world learning experiences. However, teachers are still expected to provide guidance to students so that the learning process can identify relevant, current, and realistic problems.

Learning Outcomes

According to Susanto (2014: 5), student learning outcomes are the abilities possessed by each student after undergoing the process of acquiring new knowledge that has the potential to change their behavior. Student learning success can be measured by the achievement of learning objectives previously set by the teacher. These learning outcomes involve three aspects: cognitive, affective, and psychomotor domains.

Quizizz Paper Mode

According to Azizah (2023), Quizizz Paper Mode is an interactive, challenging, and enjoyable game with the potential to improve students' learning outcomes. In line with technological advancements, the Quizizz application has introduced a new feature called Paper Mode. This Paper Mode feature can be used for interactive quizzes in the learning process without requiring an internet connection.

Based on the opinions outlined, it can be concluded that Quizizz Paper Mode is a feature of Quizizz that can be used by teachers as a learning medium, allowing students to be interactive and practice their competence in solving quiz questions without using smartphones.

METHOD

Research Type

The type of research used in this study is Quasi-Experimental, as it involves two groups: the experimental group and the control group. The researcher used the Non-Equivalent Control Group Design model for this study.

Research Time and Locations

This research was conducted at SD Negeri 2 Langensari. The reason the researcher chose this location is that the school meets the criteria for the problem being studied. The research was conducted during the second semester of the 2023/2024 academic year.

Research Subjects

In this study, the researcher used purposive sampling for sample selection because it required considering specific criteria for selecting the sample. A total of 20 students from class 5A and 20 students from class 5B were chosen based on their grades.

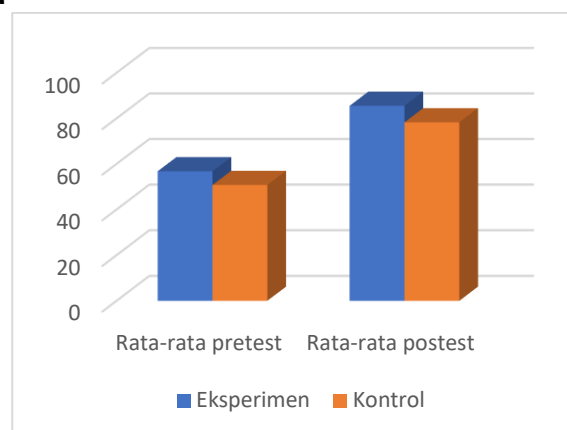
Research Schedule

The research was conducted over three sessions, consisting of one session for learning and two sessions for administering the pretest and posttest in each class.

Data Collection and Analysis Techniques

Data from before and after the test were analyzed to determine how well the use of the Problem Based Learning model assisted by Quizizz Paper Mode media affects students' learning outcomes in science subjects. The researcher used IBM SPSS 25 to assist in analyzing the obtained data. The tests to be conducted include the normality test, homogeneity test, and independent sample t-test.

RESULT AND DISCUSSION



Based on the bar chart above, the results of science learning in the experimental and control classes show that the average pretest and posttest scores increased. Previously, the average pretest score in the experimental class was 56.75, which increased to 85.50 on average in the posttest. Meanwhile, in the control class, the average posttest score increased from 50.75 to 78.25.

Previous relevant research conducted by Ayu (2023) indicates that the use of Quizizz Paper Mode media has a significant positive impact. This media encourages students to actively participate during learning sessions, thus affecting improved learning outcomes. This is evidenced by the difference in learning outcomes between students using the educational game media Quizizz Paper Mode and those not using it, with the calculated t-value being greater than the critical t-value.

Based on the statements above, it is proven that students' learning outcomes using the Problem Based Learning (PBL) model are better than those using conventional teaching methods. Therefore, it can be concluded that the implementation of Problem Based Learning (PBL) assisted by Quizizz Paper Mode media has a positive impact on improving learning

outcomes, as it has been found that students' learning outcomes in science subjects have significantly increased.

Test	F	Sig.	Signifikansi (<i>a</i>)
Regression	18,573	0,00	0,05

The linearity test results in this study show a significance value of 0.000, which is smaller than the significance level. This means that H_0 is accepted for the pretest and posttest data in the experimental class, indicating linear regression.

R	<i>r Square</i>	<i>Std Error of the Estimasi</i>
0,713	0,508	9,308

This indicates that the coefficient of determination (D) obtained is 50.8%, meaning that the Problem Based Learning model assisted by Quizizz Paper Mode media has a 50.8% influence on students' learning outcomes in science subjects. Therefore, there are other factors influencing students' learning outcomes by 49.2%.

Thus, it can be concluded that there is a significant impact of using the Problem Based Learning model assisted by Quizizz Paper Mode media on students' learning outcomes in science subjects.

CONCLUSIONS

Conclusion

There was an improvement in the learning outcomes of students who used the Problem Based Learning model assisted by Quizizz Paper Mode media, with an average N-gain of 0.6673 in the medium category. Meanwhile, students who received the conventional learning model achieved an average N-gain of 0.5498 in the low category. There is an influence of the Problem Based Learning model assisted by Quizizz Paper Mode media on students' learning outcomes in science subjects in elementary school. Based on the simple linear regression test, an r -square value of 0.508 was obtained. This indicates that the coefficient of determination of 50.8% can influence students' learning outcomes in science subjects.

Limitation

The Problem Based Learning model with the assistance of Quizizz Paper Mode media in the experimental class can serve as a reference for teachers to choose innovative and enjoyable teaching models and media. This allows students to actively participate in the learning process inside the classroom.

Suggestion

This study shows an improvement in learning outcomes, as indicated by an average N-gain of 0.6673, which falls within the moderate category. The Problem Based Learning (PBL) model assisted by Quizizz Paper Mode has an influence of 50.8% on students' learning outcomes in science subjects. This means further research is needed to understand the remaining 49.2% influenced by other factors in this teaching model regarding students' learning outcomes in science subjects.

REFERENCES

- Airlanda, P. (2021). Hasil Belajar Kognitif. *Jurnal Basicedu*, 5(3), 1683–1688.
- Ayu, F. (2023). *Eksperimentasi Penggunaan Media Pembelajaran Terhadap Hasil Belajar Matematika Siswa Kelas IX SMP Negeri 1 Karangdadap*. Universitas Islam Negeri K.H Abdurrahman Wahid Pekalongan.
- Azizah, B. Y., Hermawan, I., & Farida, N. A. (2023). Penggunaan Aplikasi Quizizz Paper Mode dalam Peningkatan Motivasi Belajar Mata Pelajaran Pendidikan Agama Islam Kelas VII SMP Islam Tarbiyyatul Falah Karawang. *SALIHA: Jurnal Pendidikan & Agama Islam*, 6(2), 281–300. <https://doi.org/10.54396/saliha.v6i2.782>
- Susanto, A. (2014). *Teori Belajar dan Pembelajaran di Sekolah Dasar*. Jakarta: Kencana Prenamedia Group.
- Syamsidah, & Suryani, H. (2018). *Buku Model Problem Based Learning (PBL)*. Yogyakarta: CV Budi Utama.