



Application of Learning Media Assisted with Wordwall Applications in Improving Mathematics Learning Results for Class VI Students UPT SPF SD Inpres Maccini 1/1 Makassar City

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Abstrak

Tujuan dari penelitian tindakan kelas dilakukan untuk mengetahui bagaimana penerapan media pembelajaran berbantuan aplikasi wordwall dalam meningkatkan hasil belajar matematika siswa kelas VI di UPT SPF SD Inpres Maccini I/1. Jenis penelitian yang digunakan pada penelitian ini adalah Penelitian Tindakan Kelas (PTK). Subjek dalam penelitian ini adalah seluruh siswa kelas VI yang berjumlah 27 siswa dan guru wali kelas VI. Teknik pengumpulan data yang digunakan adalah observasi, tes dan dokumentasi. Teknik analisis data dengan cara reduksi data, penyajian data dan penarikan kesimpulan dan verifikasi. Hasil penelitian ini menunjukkan bahwa terdapat peningkatan aktivitas guru dalam menggunakan media pembelajaran berbantuan aplikasi wordwall pada siklus I mencapai kategori cukup (C) dan pada siklus II mencapai kategori baik (B). Adapun hasil belajar IPS siswa pada siklus I sebanyak 42,42% atau 11 siswa memperoleh nilai rata-rata 62.12 dengan kualifikasi cukup (C) dan mengalami peningkatan pada siklus II sebanyak 81,81% atau 27 siswa dengan nilai rata-rata 77,87 dengan kualifikasi baik (B). Hal ini dapat disimpulkan bahwa model problem Based Learning berbantuan aplikasi Wordwall dapat meningkatkan hasil belajar siswa pada mata pelajaran Matematika.

Kata Kunci: Media Pembelajaran, Matematika, Wordwall

Abstract

The aim of the classroom action research was to find out how to implement learning media assisted by the wordwall application in improving the mathematics learning outcomes of class VI students at UPT SPF SD Inpres Maccini I/1. The type of research used in this research is Classroom Action Research (PTK). The subjects in this research were all 27 class VI students and the class VI homeroom teacher. The data collection techniques used are observation, tests and documentation. Data analysis techniques by means of data reduction, data presentation and drawing conclusions and verification. The results of this research show that there is an increase in teacher activity in using learning media assisted by the wordwall application in cycle I reaching the adequate category (C) and in cycle II reaching the good category (B). The social studies learning outcomes of students in the first cycle were 42.42% or 11 students obtained an average score of 62.12 with sufficient qualifications (C) and experienced an increase in the second cycle of 81.81% or 27 students with an average score of 77.87. with good qualifications (B). It can be concluded that the problem based learning model assisted by the Wordwall application can improve student learning outcomes in Mathematics subjects.

Keywords: Learning Media, Mathematics, Wordwall.

INTRODUCTION

The use of media has become an important basic skill for teachers in managing learning and is part of pedagogical competence, which is the main competence of teachers. The application of media in learning has a significant influence on learning outcomes obtained through students' thinking skills. Media has a close relationship with communication in the learning process, including in mathematics learning carried out in class (Daryanto, 2016). In the learning process, there is communication interaction between teachers and students and between students, because learning requires two-way communication that occurs during the learning process. Learning media is one aspect that supports the effectiveness of the learning process. The use of media is highly recommended to help teachers in delivering material to students, especially for those who have difficulty understanding abstract concepts (EB. Simanjuntak, 2019).

Mathematics learning should be adjusted to its abstract nature, so that the use of concrete objects as learning media is needed to make it easier for students to understand mathematics material (Tarigan, 2017). In Indonesia, the learning process often faces various common problems such as low interest in learning, lack of use of technology-based learning media, and student learning outcomes that are still below the Minimum Completion Criteria (KKM). Although mathematics learning has been applied from pre-school to college levels, the main problem faced is the use of lecture methods by teachers, which are considered boring by students, and low learning outcomes. These learning outcomes are the focus of the assessment, where basically the assessment is carried out to measure the extent to which students have mastered the instructional objectives, namely the abilities obtained after they complete the learning process (Sudjana, 2016). Student learning outcomes are influenced by two main factors, namely internal and external

factors. Internal factors include the physical and mental conditions of students, while external factors include the environment, teaching methods, student learning abilities, and learning approaches used during the learning process (Slameto, 2017).

Learning media includes everything, whether in the form of tools, environments, or activities that are intentionally designed to convey learning messages to support the learning process in students so that learning objectives can be achieved effectively. The components of learning media include messages, devices, and humans (Prastowo, 2017). Wordwall is an interactive application used to create creative and innovative learning in the digital era. Wordwall is a website that provides various educational games, which aim to be a fun aid and evaluation tool for students (Mahwar, 2022). This educational media has an attractive appearance because it combines colors, images, and sounds, and can be accessed anytime and anywhere with the help of an internet connection.

The benefits of using Wordwall learning media in the learning process include: (1) supporting the principle of learning while playing, (2) increasing student interest, (3) easy for students to use, (4) fostering a sense of enjoyment in learning, (5) increasing student memory, (6) stimulating student creativity, and (7) in accordance with mathematical literacy learning (Maghfiro, 2018).

Based on the results of observations at the UPT SPF SD Inpres Maccini I/1, it was found that there were several students who were enthusiastic in participating in mathematics learning, while most were more passive in the learning process. There were problems in terms of student understanding, such as difficulty remembering the position between the numerator and denominator and a lack of understanding of multiplication, as well as distinguishing the function of arithmetic operations in solving problems in the form of fractions. In addition, teachers have not developed electronic-based media

in the learning process and the introduction of Wordwall learning media has not been used effectively. So this media is not yet known to students and has never been used by teachers in the learning process. Based on interviews with class teachers, it is known that 70% of the 27 students, around 19 students still have mathematics learning outcomes below the KKM (Minimum Completion Criteria), while 30% or 6 students have achieved learning outcomes above the KKM. This data was taken from class VI A.

Low learning outcomes indicate problems in mathematics learning, especially in simple spatial geometry material, which is caused by the lack of use of electronic-based learning media. The use of media in mathematics learning can help students receive the material better and make learning more interesting. Ideally, mathematics learning in elementary schools involves activities such as seeing, hearing, reading, following instructions, practicing, and completing exercises. Therefore, learning media, especially teaching aids, have an important role in mathematics learning activities in elementary schools (Mailani, 2016).

METHOD

This study aims to improve the Mathematics learning outcomes of grade VI students of UPT SPF SD Maccini I/1 by improving the learning process through the application of Problem-Based Learning models assisted by the Wordwall application, thus the use of PTK design is considered relevant in this study. The type of research used is PTK, which is an action research conducted in the classroom. PTK is research conducted with the aim of improving the quality of learning practices in the classroom (Arikunto, 2020). PTK is basically providing actions based on problems in classroom learning that aim to increase the effectiveness of learning. The

idea of action research was first developed by Kurt Lewin in 1946, who introduced four steps of PTK, namely: planning, action, observation and reflection (Sani and Sudirman, 2015).

The subjects of this study were teachers and students of class VI UPT SPF SD Maccini I/1 Makassar City with a total of 27 students, consisting of 10 male students and 17 female students. This study used classroom action research, namely research consisting of several cycles where one cycle consists of four stages. As stated by Arikunto (2015) that "there are four important stages in action research, namely (1) Planning, (2) Implementation, (3) Observation, (4) Reflection".

The indicators of success in implementing this research consist of process indicators and learning outcome indicators with the following qualification levels:

Presentation of Completion Level Study	Qualification
75%-100%	Good (B)
50-74%	Enough (C)
≤50%	Less (K)

Source: Arikunto and Cepi (2014)

RESEARCH RESULTS AND DISCUSSION

Results

This section presents data and findings from the results of Mathematics learning actions by implementing the Problem Based Learning model assisted by the Wordwall application for grade VI students of UPT SPF SD Maccini I/1 Makassar City. Data from the results of the actions, findings and reflections were obtained through observations of student learning outcomes. Data for each cycle are presented separately. The aim is to see the

similarities, differences, changes and developments in the flow of each cycle. This research was conducted in II cycles with each cycle consisting of 2 meetings.

Cycle I

The planning was prepared and developed by researchers who collaborated with grade VI teachers in an effort to improve student learning outcomes. Researchers and teachers agreed on the same perception of the subject matter to be taught, where the researcher would later act as the teacher in the learning process and the grade VI homeroom teacher of UPT SPF SD Maccini I/1 as the observer. The activities carried out at this stage were: 1) Collaboration between teachers and homeroom teachers in preparing the Learning Implementation Plan (RPP) and teaching and learning process scenarios for cycle I by implementing the steps for using the Problem Based Learning model and the Wordwall application. 2) Preparing teaching materials (teaching materials) sourced from teacher and student textbooks. 3) Preparing teaching media in the form of PowerPoint and animated videos that will be displayed in the learning process. 4) Creating evaluation questions on the Wordwall application to measure student learning outcomes during the research actions given at the end of the cycle or the second meeting. 5) Creating teacher observation sheets and student observation sheets as well as assessment rubrics to see the application of the RPP that had been prepared, whether it had been implemented properly or not.

1.Cycle I

Meeting 1

Teacher Activities

Based on the results of observations of teacher activities during the learning process in cycle I,

meeting 1, it shows that the results obtained for weight 3 were 0%, weight 2 was 47.61% and weight 1 was 9.52%.

Student Activities

Based on the results of observations of student activities during the learning process of cycle I, meeting 1, it shows that the results obtained were that weight 3 was 0%, weight 2 was 28.57% and weight 1 was 19.04%.

2.Cycle I

Meeting 2

Teacher Activities

Based on the results of observations of teacher activities during the learning process in cycle I, meeting 2, it shows that the results obtained were weight 3 as much as 42.85%, weight 2 as much as 28.57% and weight 1 as much as 4.76%.

Student Activities

Based on the results of observations of student activities during the learning process of cycle I, meeting 2, it shows that the results obtained were that weight 3 was 0%, weight 2 was 57.14% and weight 1 was 4.76%.

Based on the observation results obtained, a reflection was conducted on the actions that had been implemented in cycle I. In the actions of cycle I, several shortcomings were found from both the student and teacher aspects, namely: 1) the teacher was not optimal in guiding students in carrying out inquiry activities. 2) students had difficulty in developing their own initial knowledge. 3) students had difficulty in reflecting on the learning activities that had been carried out.

Meanwhile, the results of students' Mathematics learning showed that there were 14 out of 33 students who completed with an average score of

62.12 with the percentage of student learning completion reaching 42.42% (less). From these data, it can be concluded that the value has not reached the expected success standard.

Based on the results of the reflection, the researcher made improvements based on the guidance and observation results of the class teacher as an observer in cycle II, the reflection for cycle II is: 1) the teacher should maximize guiding students to carry out inquiry activities related to the topics taught. 2) the teacher should stimulate students' knowledge so that they can develop their own initial knowledge. 3) the teacher should provide guidance to students so that they can reflect on the learning activities that have been carried out during the learning activities.

Cycle II

1. Cycle II

Meeting I

Teacher Activities

Based on the results of observations of teacher activities during the learning process in cycle II, meeting 1, it shows that the results obtained were weight 3 as much as 42.85%, weight 2 as much as 28.57% and weight 1 as much as 4.76%.

Student Activities

Based on the results of observations of student activities during the learning process of cycle II, meeting 1, it shows that the results obtained were weight 3 as much as 28.57%, weight 2 as much as 38.09% and weight 1 as much as 4.76%.

2. Cycle II

Meeting 2

Teacher Activities

Based on the results of observations of teacher activities during the learning process in cycle II, meeting 2, it shows that the results obtained were weight 3 as much as 85.71%, weight 2 as much as 9.52% and weight 1 as much as 0%.

Student Activities

Based on the results of observations of student activities during the learning process of cycle II, meeting 2, it shows that the results obtained were weight 3 as much as 57.14%, weight 2 as much as 28.57% and weight 1 as much as 0%.

Based on the observation results obtained in cycle II, overall the implementation of learning using Problem Based Learning assisted by the Wordwall application was better than learning in cycle I. There was a greater improvement, both from students and teachers. This can be seen in the increase in teacher activity in implementing the Wordwall application which reached a good category (B) and the results of the cycle II test showed that students had improved their Mathematics learning outcomes. Student learning outcomes in cycle II were 27 out of 33 students achieving a complete score with a percentage of student learning completion reaching 81.81% (good). Based on these data, student learning outcomes have increased and this classroom action research was not continued to the next cycle on the grounds that the research had reached the predetermined target.

DISCUSSION

Teacher Activities

Observation of teacher activities during the research process using an observation sheet consisting of 7 indicators that will

start based on the assessment rubric. The indicators used in the teacher activity observation sheet are designed based on the syntax of the Problem Based Learning model assisted by the Wordwall application. This is in line with Apriyani's research (2022), that the implementation of the Problem Based Learning model assisted by the Wordwall application is included in the good and effective category. This is evidenced by the increase in the percentage of each meeting, both in teacher activities and student activities. In contrast to Lusiana's research (2023), using 2 classes as research samples and showing the results that the Problem Based Learning model assisted by the Wordwall application for improving learning outcomes has a strong effect and from the experimental class data of 0.70 or 70% with a high category and in the control class the increase was 0.31 or 31% with a moderate category.

The results obtained in cycle I meeting 1 were 57.14% (Enough) and in meeting 2 reached 71.42% (Good). These results indicate that 14.28% of the increase between meetings 1 and 2. This is because two indicators with the less category at meeting 1 increased to the sufficient category at meeting 2 and one other indicator with the sufficient category at meeting 1 increased to the good category at meeting 2.

Teacher activity data obtained in cycle I is reflected so that it becomes material for improvement. Seven indicators that have not reached the good category will be maximized in the implementation of the next cycle of research. Teacher activity data in cycle II meeting 1 obtained 76.19% (good) and increased in meeting 2 by 19.04% to reach 95.23% (good). Of the seven remaining indicators, one did not reach the good category due to the lack of teacher guidance to students in carrying out inquiry activities related to the topics taught.

Overall, the acquisition of teacher activity data increased from cycle I to cycle II at the end of cycle I obtained 71.42%. With a good category increasing at the end of cycle II 76.19% with a good category. There is a 4.77% increase in the number.

1. Student Activities

The implementation of student activity observation took place at the same time as the teacher activity observation. The student activity observation sheet has 7 indicators that are in line with the indicators in the teacher activity observation. The number of students as research subjects is 33 people.

Obtaining data from observation of student activities in cycle I, meeting 1 reached 47.61% and meeting 2 reached 61.90%. These results indicate that there was an increase in percentage of 14.29%. In this cycle, there were no assessment indicators that showed a good category. This happened because students were still less focused when receiving the teacher's explanation and less participation in the learning process.

There was an increase in student activity in cycle II, this happened because of the reflection results from the previous cycle. This is evidenced by the data on student activity in cycle II meeting 1, which was 71.42% and meeting 2 obtained 85.71%. The percentage increase was 14.29%. Based on this, it can be said that there was an increase between cycles I and II, cycle I was still in the good category and cycle II reached the good category.

2. Student learning outcomes

Improving learning outcomes is the main thing in this study. Data on student learning outcomes are based on evaluation results carried out at the end of each cycle. The learning outcomes of cycle I were 14 out of 33 students who achieved scores above the KKM with a completion percentage of 42.42%.

While in the evaluation test of cycle II there were 27 students who achieved the KKM score with a completion percentage of 81.81%. The measurement criteria in this study used 3 categories, namely: good (3), sufficient (2) and lacking (1).

CONCLUSION

1. Teacher activity in managing Mathematics learning with the Problem Based Learning model assisted by the Wordwall application for grade VI students of UPT SPF SD Maccini I/1 can be seen from the results of the percentage of teacher activity in cycle I meeting 1 57.14% and meeting 2 reaching 71.42%. While the percentage of teacher activity in cycle II meeting 1 76.19% and meeting 2 reaching 95.23%. Teachers are able to manage learning activities well, teacher activity in managing learning by implementing the Problem Based Learning model assisted by the Wordwall application between cycles I and II has increased.
2. The activity of grade VI students of UPT SPF SD Maccini I/1 in participating in the Mathematics learning process that applies the Problem Based Learning model assisted by the Wordwall application in cycle I meeting 1 obtained 47.61% and meeting 2 reached 61.90%. While the percentage of student activity in cycle II meeting 1 obtained 71.42% and meeting 2 reached 85.71%. The results of student activity in participating process learning can be seen on results observation during the learning process using observation sheets. Student activity in participating in learning using Problem Based Learning assisted by

the Wordwall application between cycle I and cycle II increased.

3. The learning outcomes of Mathematics students of class VI UPT SPF SD Maccini I/1 by implementing the Problem Based Learning model assisted by the Wordwall application in cycle 1, there were 10 out of 27 students who completed the course with an average score of 62.12 with a percentage of student learning completion reaching 42.42% (less), while the learning outcomes of students in cycle II, there were 18 out of 27 students who achieved a complete score with an average score of 77.87 with a percentage of student learning completion reaching 81.81% (good). Based on these data, it is proven that the application of the Problem Based Learning model assisted by the Wordwall application in Mathematics learning can improve learning outcomes which is indicated by an increase in the percentage of student learning completion

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