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Improving Student Learning Outcomes by Using the PJBL Model Assisted by the EDU Assemblr Application Media

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Abstrak

This study aims to improve student learning outcomes in the water cycle material with the Project Based Learning learning model assisted by the Assemblr EDU application media, describing the increase in student learning outcomes in the water cycle material after creating an Augmented Realty project assisted by the Assemblr EDU application media. The research conducted was a class action research that had been carried out in 2 cycles. The research subjects were fifth grade students at SDN 2 Mungkung Rejoso, a total of 15 students in the even semester of the 2022/2023 academic year. The research results obtained showed that there was an increase in student learning outcomes after applying the Project Based Learning learning model with the help of the Assemblr EDU application media.

Keywords: improvement, PJBL learning, Assemblr EDU, Augmented Realty.

Abstract

This study aims to improve student learning outcomes in the water cycle material with the Project Based Learning learning model assisted by the Assemblr EDU application media, describing the increase in student learning outcomes in the water cycle material after creating an Augmented Realty project assisted by the Assemblr EDU application media. The research conducted was a class action research that had been carried out in 2 cycles. The research subjects were fifth grade students at SDN 2 Mungkung Rejoso, a total of 15 students in the even semester of the 2022/2023 academic year. The research results obtained showed that there was an increase in student learning outcomes after applying the Project Based Learning learning model with the help of the Assemblr EDU application media.

Keywords: improvement, PJBL learning, Assemblr EDU, Augmented Realty

Introduction

Learning is happening in humans consciously by carrying out a process to achieve an achievement to be achieved in humans to make themselves become better behaved. Learning is a process of mental

activity carried out by a person to obtain a change in behavior that is positive and lasts relatively long through training or experience involving aspects of personality both physically and psychologically (Setiawan, 2017). Learning can produce a change in each individual, and this change has a positive value for his own person (Setiawan, 2017).

Learning outcomes are results that can show students' ability to master lesson material (Kurniati, 2022). Learning outcomes are to determine the success of teaching components in order to achieve goals. Learning outcomes provide material for consideration whether students are given a remedial program, enrichment or continue on to the next teaching program. Apart from that, for the purposes of guidance and counseling for students who experience failure in a learning material program (Suhono, 2022).

The success of a learning process can be known by looking at the ability he has for the knowledge he has learned. In other words, learning outcomes are abilities that children acquire through learning activities (Arifin, 2021).

The learning domain according to Bloom (in Sudjana, 2012) is divided into three learning domains, namely:

• Cognitive domain: this cognitive domain is a domain related to intellectual learning outcomes consisting of six aspects, namely knowledge or memory, understanding, application, analysis, synthesis, and evaluation.

• Affective domain: the affective domain is the realm relating to attitude which consists of five aspects, namely acceptance, response or evaluation reaction, organization, and internalization.

• The psychomotor domain: the psychomotor domain relates to the learning outcomes of skills and the ability to act, there are six aspects, namely reflex movements, basic movement skills, visual discrimination skills, physical skills, complex skills and communication.

Based on several statements related to the understanding of learning outcomes, it can be concluded that learning outcomes are results that have been obtained by students in achieving an ability that they already have in accordance with the process that has been passed. The learning domain itself is divided into three, namely, the cognitive domain, the affective domain, and the psychomotor domain.

Based on the existence of a joint document study with class teachers with KKM 70 there are still many students whose almost half of the students still cannot meet the KKM scores. Based on the existing data, the low value of student learning outcomes is because they have not been able to understand the material properly and many students have not been able to dare to express new ideas and ideas that they already have. So that in learning activities it will be necessary to create an

innovative activity in which learning is fun and can improve student learning outcomes is learning with the Project Based Learning (PjBL) model.

Based on the problems above, it is necessary to have an action research with the research title "Improvement of Student Learning Outcomes by Using the PJBL Model Assisted by the EDU Assemblr Application Media" with the hope that later in this research it can improve student learning outcomes at SDN 2 Mungkung Rejoso, and can be used as an innovation by teachers to be able to improve student learning outcomes in learning by using the Project Based Learning learning model.

Method (15%)

The type of research in this research is classroom action research (PTK). The existence of this research aims to improve student learning outcomes by using the Project Based Learning learning model assisted by the Assemblr EDU application media.

This research was conducted at SDN 2 Mungkung Rejoso, with the research subjects being fifth grade students at SDN 2 Mungkung Rejoso. Based on the details of the number of students including, 7 female students and 8 male students. The research was conducted in March-May 2023.

Classroom action research (PTK) was conducted in grade 5 in science subjects focusing on science learning with water cycle material. The subjects of this classroom action research were 5th grade students at SDN 2 Mungkung, totaling 15 people. The selection of research subjects was based on the results of observations that had been made, as well as from the existence of information on problems related to the lack of interest of students in learning and student learning outcomes that were considered not good enough. To improve student learning outcomes, the Assemblr EDU application learning media is positioned as an action in this class action research (CAR).

The use of the Assemblr EDU application is related to the PJBL learning model. The PJBL syntax applied to classroom action research (CAR) consists of 6 stages, including 1) determining the main problem, 2) planning the project, 3) making a project completion schedule, 4) monitoring the progress of project completion, 5) presenting and reviewing the results of the completion project, 6) evaluate and reflect on the project and project results.

Analysis of the data used in the research is based on the calculation of the classical learning outcomes assessment as follows:

Classical learning outcomes

$$P_{\mathrm{k}} = \frac{\sum srtk}{\sum sik} \, x \, 100\%$$

Information :

P_k = Individual achievement

$\sum_{srtk}$ = Total real score reached

$\sum_{sik}$ = Total ideal score achieved by the individual.

After the data is collected, it is categorized based on the criteria for student learning outcomes according to Mahsyud (2016: 354), the following is a table of student learning outcomes criteria.

Table 1. *Kriteria Hasil Belajar Siswa*

Percentage	**Learning Outcomes Criteria**
80-100	Very good
70-79	Good
60-69	Pretty good
40-59	Not good
0-39	Not very good

Research at SDN 2 Mungkung Rejoso is said to be successful if the completeness of student learning outcomes is 80% of the number of students with KKM 70. To determine student achievement, a cycle test is held after each action. The completeness of learning outcomes classically Wardhani (2007: 25) in (Maesari et al, 2019) can be processed with the following calculations.

$$Kk = \frac{Number\ of\ students\ who\ completed}{Jumlah\ number\ of\ students}\ x\ 100\%$$

Results and Discussion (70%)

The results and discussion in this study can be presented as follows:

• Pre-cycle Student Learning Outcomes

The learning outcomes obtained based on the data analysis obtained pre-cycle student achievement have used the pre-cycle test in a classical manner including at a less percentage, it can be said to be lacking. Student learning outcomes from pre-cycle percentage calculations still cannot fulfill the completeness of the student learning achievement percentage requirements.

Tabel 2. *Percentage of Pre-cycle Criteria*

Criteria	**Amount**	**Percentage (%)**
80-100	0	0
70-79	5	62,5
60-69	4	50%
40-59	5	62,5
0-39	1	12,5

• Learning Outcomes of Cycle 1

Actions that have been taken in cycle one learning using the Project Based Learning learning model by making drawing products about the water cycle process in groups and individual tests. Learning outcomes from cycle 1 have increased compared to pre-cycle learning outcomes that have been done before. Student learning outcomes in cycle 1, namely, very good criteria of 25%, good criteria of 62.5%, good enough criteria of 12.5%, less good criteria of 50%, and very poor criteria

of 37.5%. The percentage of learning outcomes can be observed in the following table.

Tabel 3. *Percentage of Student Learning Outcomes Criteria Cycle 1*

Criteria	Amount	Percentage %
80-100	2	25
70-79	5	62,5
60-69	1	12,5
40-59	4	50
0-39	3	37,5

• Student Learning Outcomes Cycle 2

Actions that have been taken in the second cycle of learning using the Project Based Learning learning model with the help of the Assemblr EDU application media, in cycle 2 the resulting project is Augmented Realty about the water cycle material. Projects are given to students in groups and assignments are given independently. The percentage of learning outcomes that have been obtained by students from cycle 2 has increased compared to the percentage of learning outcomes in cycle 1. Student learning outcomes have increased. The student learning outcomes that have been obtained are as follows, very good criteria of 87.5%, good criteria of 75%, quite good criteria of 12%%, unfavorable criteria of 12.5%. The percentage of learning outcomes in cycle 2 can be seen in the following table.

Table 4. *Percentage of Student Learning Outcomes Criteria for Cycle 2*

Criteria	Mount	Percentage%
80-100	7	87,5
70-79	6	75
60-69	1	12,5
40-59	1	12,5
0-39	0	0

CImproved student learning outcomes can be seen and observed in the following graph.

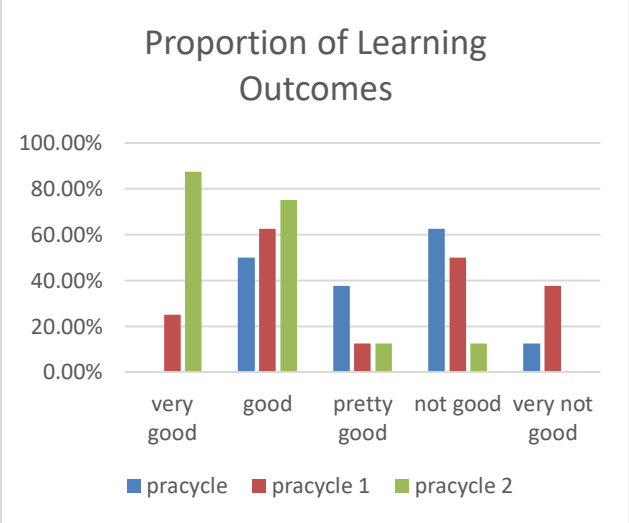

Figure 1. Graph of Increasing Student Learning Outcomes.

Based on the graphic description above, the percentage of learning outcomes achieved by fifth grade students at SDN 2 Mungkung Rejoso has increased and is in accordance with the expected percentage of 80%. It can be seen from the graph above that the pre-cycle percentage is 39% with less criteria, in cycle 1 action it increases by a percentage of 61% with good criteria, and

the percentage increases in cycle 2 with a percentage of 83% with very good criteria.

Mastery based on pre-cycle to cycle 2 the number of students who experience completeness in learning outcomes can be said to increase. This can be proven by the number of students who have completed the pre-cycle as many as 5 children with a percentage of 33%. Whereas in cycle 1 the number of students who have completed is 7 children with a total percentage of 46%, and in cycle 2 the number of students who have completed is 86%.

Based on the large percentage that is related to the percentage of completeness of the learning outcomes of class V students at SDN 2 Mungkung which has been carried out by researchers it can be said to be successful because the percentage achieved has been completed based on classical calculations which fulfill the completeness of 80% of the number of students with KKM 70.

An innovation will be in line with the active search for information on knowledge by students (Hurit et al, 2021). The process of a learning by using a way to solve a problem that can form a meaningful learning. Learning according to Bruner has focused on a discovery which is because a learning can actually be through self-discovery.

Bruner's theory has conveyed that in a student lesson, students must be able to have an active role in the learning process in the classroom (Ekawati, 2019).

Conclusion (5%)

The conclusion that has been obtained by researchers is that the learning that has been done for learning outcomes from pre-cycle to cycle 2 has increased. The increased learning outcomes of class V students at SDN 2 Mungkung can be observed based on an analysis of the results of observations made directly to students. The percentage increase in student learning outcomes can be seen from the large number of students who have experienced an increase in each assessment in the good and very good criteria with a KKM score of 70.

The increase that has been achieved by fifth grade students at SDN 2 Mungkung is also based on the existence of a learning model that is applied with the help of media that is sufficient for the implementation of these learning activities. So that the existence of available media can also affect student learning outcomes, because from this media students can easily understand or capture existing material.

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