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## IMPROVING THE LEARNING OUTCOMES OF GRADE V STUDENTS IN SCIENCE THROUGH ELEMENTARY SCHOOL SCIENCE KIT MEDIA

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### Abstract

This study is a classroom action research to improve students' IPAS learning outcomes about sound and its properties through science kits. Science kits are didactic tools used in science learning and include whips, whips, funnels, balances, and others. This research was conducted in 2 cycles and pre-cycle, and each cycle consisted of 2 meetings. This PTK research consists of 4 stages, namely the planning stage, the implementation stage, the observation stage, the evaluation and reflection stage. This research was conducted in the odd semester of the 2024/2025 school year. The sample of this study included all 5th-grade students of SD Negeri 066054 Medan, totaling 23 people. The research data were collected through observation and tests. The tests used in this study consisted of 5 multiple-choice questions and 5 description questions. This research was described quantitatively and qualitatively. The data were analyzed using N-gain with 70% completeness criteria according to KKTP. The results of this study indicate that student learning outcomes have increased. In cycle I there was an increase of 36%, while in cycle II there was an increase of 48%, and all students it's completed in their learning outcomes. The increase in learning outcomes from cycle I to cycle II increased by 12% because on cycle II learning was more optimal in the learning process.

**Keywords:** learning outcomes, IPAS, KIT, clay and its properties.

### INTRODUCTION

Someone who learns will see changes in behavior, both from the cognitive, psychomotor, and attitudinal fields as well as positive values as an experience of various materials that have been learned. Learning is a change that occurs through practice or experience, both regarding the correct understanding of all aspects, forms, and manifestations so that an educator is needed so that mistakes do not occur (Suarim & Neviyarni, 2021). Difficulties in learning are experienced by students who make mistakes in doing assignments and tests using listening, speaking, reading, writing, reasoning, or mathematical studies (Faizah & Kamal, 2024). However, the findings in the field is that students still tend to be less motivated to learn.

Grade V students have entered the beginning of learning in the 2024 school year, so a teacher teaching in the classroom wants to map out how the teaching process suits students. The learning process is the interaction and utilization of various resources, both from the potential within and from outside oneself to achieve certain learning goals (Utami et al., 2021). Learning objectives will be achieved if planned well (Nissa & Haryanto, 2020). Good planning will provide a pleasant learning atmosphere, thus achieving learning objectives. The learning atmosphere can support students' interest in being active in learning (Trisnawati et al., 2021).

At the beginning of this odd semester study the science learning section. Learning science will provide a learning experience that is one with nature, namely studying and uncovering all the mysteries of the universe to control and ensure the reality that occurs (Swiyadnya et al., 2021). In this science lesson, it was found that students still tend to be low in their knowledge of basic concepts and skills. It was found that students' scores were still low, when given questions and questions about science learning, students were not active in asking questions. Low understanding of students create students' learning outcomes because students also have difficulty concentrating

on learning.

According to Wirda et al., (2020) states that learning outcomes include the ability of knowledge, skills, and attitudes. Science learning outcomes can be measured on cognitive aspects with instruments\* like multiple choice tests (Muliani & Wibawa, 2019). Knowledge can be reviewed from the degree of remembering, understanding, applying, analyzing, and creating (Amijaya et al., 2018). Factors that affect the value of students are internal and external factors that affect student success in the teaching and learning process (Sutrisno, 2021). The problems found in sector science learning are carried out only through books and do not use learning media, one of which is carrying out practicum so that it does not provide real experience and students find it difficult to concentrate. According to (Negara et al., 2021) science learning outcomes will improve if they provide direct experience by exploring and understanding the surrounding nature so that students can discover the concept of the ongoing subject matter for themselves.

The results of the problems found in the field that science learning is carried out still learning without the implementation of practicum. However, it was found that the science media kit already exists in the school but is still not utilized. The KIT media used contains tools for experiments in science learning, tuning pork, bat, funnel, rope, capsule tube, Coils of rope, and an aluminum rod that is not the same length which in essence can be a provider of information for students (Amran and Muslimin, 2017). So I as a researcher want to provide a new experience for students, namely by using KIT IPA media in science learning. Based on research by Ramadhani, et al., (2023) started that learning outcomes increased by 22%, with student learning completeness in cycle I and cycle II of 31% and 87.5% using Science KIT Media.

In science learning, the appropriate learning approach is the scientific approach (Syarlenis, 2022). The scientific approach or 5M is to observe; 2) question; 3) try; 4) associate, and; 5) communicate, so that students get used to thinking, behaving, and working (Widiyanti and Nisa, 2021). KIT IPA can provide direct experience by involving students in practicum, students will learn kinesthetically, visually see the process that occurs, and audio-visually through the researcher's explanation according to 5M.

Based on the description above, the researchers focused the research on the use of KIT IPA. Teachers must be creative in supporting student activity so that student learning outcomes increase. (Ramadhani, et al., 2023). So this study is entitled to improve the learning outcomes of IPAS sound material of students through the use of the IPA KIT media.

## METHODS

This study is a classroom action research (CAR) that aims to identify the advantages and disadvantages of using science media kits to improve student learning outcomes. This study was conducted in the odd quarter of the 2024/2025 academic year. This CAR consists of a pre-cycle and two cycles, each cycle consists of two meetings and the same learning tools at each meeting. The two cycles implemented are different with 2 meetings, each consists of 4 stages, namely 1) Planning; 2) Action; 3) Observation; and 4) Evaluation and Reflection. Field observation tools and tests in the form of multiple-choice questions and essays, each consisting of 5 questions by learning outcomes, were used for data collection. The subjects of this study were all 23 students of class V of UPT SD Negeri 066054 Medan Denai. The data obtained were analyzed and processed using quantitative and qualitative approaches. According to Sugiyono (2013) on Handayani (2018), The research results can be described using qualitative and quantitative approaches. The N-gain test was conducted to see the improvement of learning outcomes in cycle I and cycle II. The calculation of the normalized gain score (N-gain) is expressed by the formula:

$$g = \frac{\text{posttest} - \text{pretest}}{100 - \text{pretest}} \times 100 \text{ (Coletta \& Steinert, 2020)}$$

Based on the criteria for achieving learning objectives that have been completed without remedial, namely those with a value of 66% -100%. So the standard in determining the success rate in this study is 70% in each cycle of students' ability to understand sound material.

## FINDINGS AND DISCUSSION

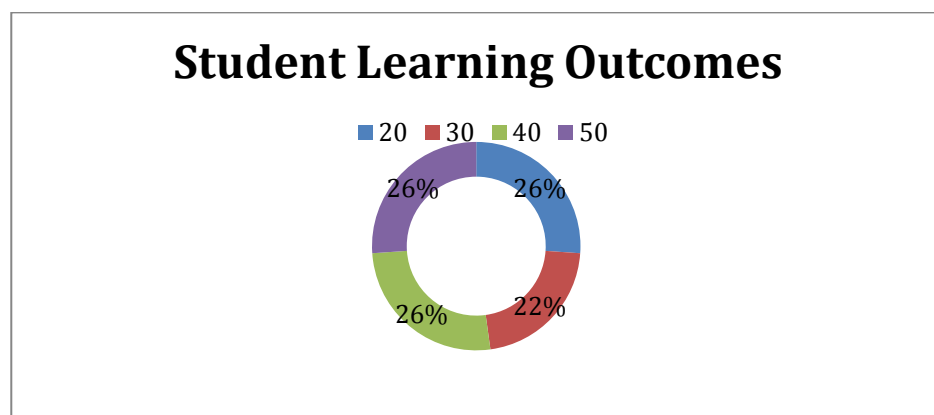
### Findings

#### a) Pre-Cycle

##### a) Pre-Cycle

The research conducted in the pre-cycle is only to determine the initial abilities of students. The implementation only provides questions before the research is carried out or there is no action. The results of working on the questions in the pre-cycle can be seen in Figure 1 below.

**Tabel 1. Student learning outcomes**



**Picture 1. Student learning Outcomes**

Based on the picture, explains that the learning outcomes of students are still incomplete. Then the researcher designed a study to improve the learning outcomes of students.

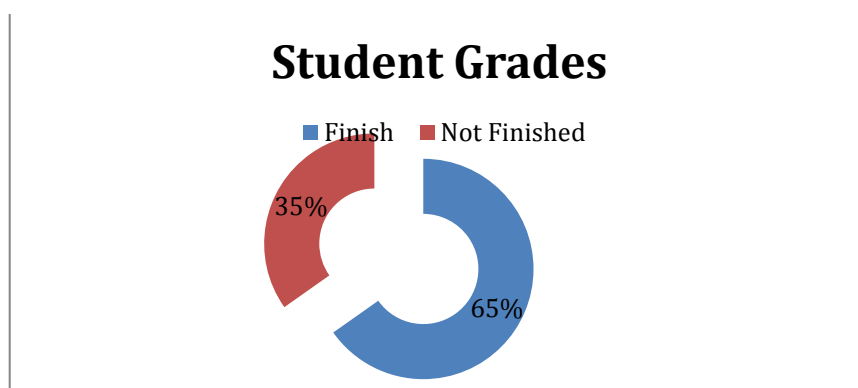
#### b) Cycle I dan Cycle II

The learning outcomes after treatment in cycle 1, namely learning to use the Science KIT on sound material, are written in a structured manner. The following are the learning outcomes in cycle 1, found in Table 1.

**Table 1. Student learning outcomes of cycle**

No	Name	value	Cycle		Value	Cycle	
			Finish	Not finished		Finish	Not finished
1.	AA	70	✓	-	75	✓	-
2.	AI	75	✓	-	95	✓	-
3.	AN	60	✓	-	85	✓	-
4.	AH	70	✓	-	80	✓	-
5.	CY	75	✓	-	75	✓	-
6.	DZ	50		✓	70	✓	-
7.	GM	70	✓	-	75	✓	-

No	Name	value	Cycle		Value	Cycle	
			Finish	Not finished		Finish	Not finished
8.	KP	70	✓	-	75	✓	-
9.	MJ	75	✓	-	85	✓	-
10.	MYo	70	✓		75	✓	-
11.	MA	60		✓	75	✓	-
12.	MYa	55		✓	75	✓	-
13.	Na	70	✓	-	80	✓	-
14.	PM	70	✓	-	85	✓	-
15.	RNa	70	✓	-	80	✓	-
16.	RNu	70	✓	-	75	✓	-
17.	RA	60		✓	80	✓	-
18.	RS	50		✓	75	✓	-
19.	VR	50		✓	70	✓	-
20.	WO	65	✓	-	80	✓	-
21.	Wu	80	✓	-	95	✓	-
22.	YA	70	✓	-	80	✓	-
23.	ZA	75	✓	-	80	✓	-



**Picture 3.** Student Grades

From Table 1 and picture 2 above, it is obtained that the results of learning science in class V of SDN 066054 Medan through the media of KIT IPA on the material of sound, the results of student learning are still incomplete. The results of student learning that have been completed are 15 students, around 65% and those that have not been completed are 8 students, around 35%. Table 2 above shows that the results of learning science in class V of SDN 066054 Medan through the media of KIT IPA on the material of sound, results of student learning have been completed. The criteria for achieving learning objectives (KKTP) are around 66-85% so that no more remedial

is given to students. Based on the table and KKTP, it was found that the learning results showed that they had been completed classically with a value of 70-95.

## Discussion

### a) Cycle I

This research was conducted in 4 stages, each cycle consisting of 2 meetings. In cycle 1, the planning stage, the researcher planned a learning cycle, namely by designing a teaching module, LKPD, practicum procedures and observations, and questions. In the action stage, the researcher conducted research based on the plan that had been prepared. In the observation stage, the researcher observed how the students changed and provided post-test questions. While in the evaluation and reflection stage, the researcher assessed and reflected on the results obtained from the treatment so that changes were made in the second cycle. In cycle II, the researcher carried out the activities based on the reflection results obtained. The planning stage in cycle 2, created a design for a teaching module, LKPD, practicum, and questions through wordwall media. In the action stage, the researcher performs learning according to such design. In the observation stage, the researcher observed and provided questions to determine the development of their abilities. In the final stage, namely evaluation and reflection, researchers assess and reflect on the learning that was carried out to obtain maximum results. Based on these actions, learning outcomes were obtained with a percentage increase in learning outcomes. The improvement in learning outcomes is analyzed and presented in Figure 3.

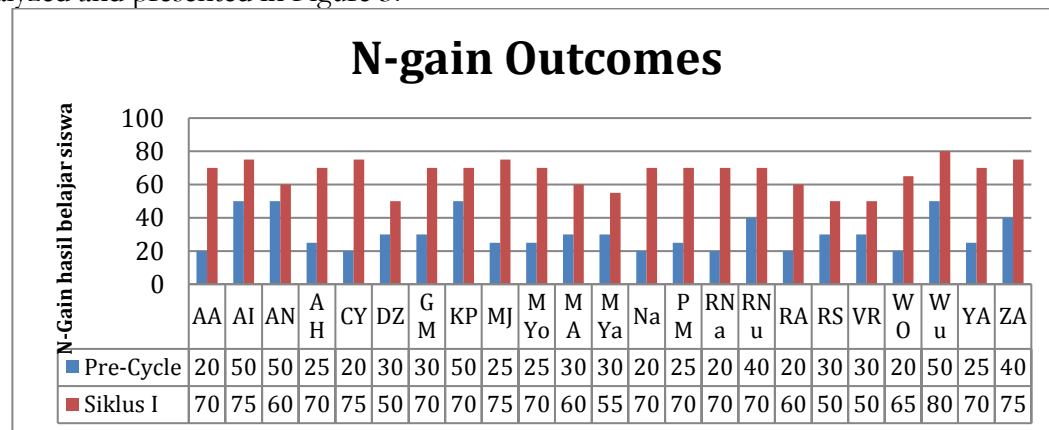


Figure 3. N-gain learning outcomes Cycle I

Based on Figure 3. It can be seen that students' scores have started to increase, but there are still some students whose learning outcomes have not been completed. In the pre-cycle, there were still no students' scores that were completed but, after being given learning using KIT IPA and LKPD, students' learning outcomes increased. This increase occurred because learning was carried out using KIT IPA as the activities and learning processes were still not optimal. This statement is supported by research by Saleh et al., (2017) which showed that students' science learning outcomes through KIT IPA in cycle I increased but, there were still some that were not completed because the teacher did not carry out the learning process optimally. The low learning outcomes in this cycle were because there were still weaknesses in this study, namely;

- 1) Students are still not familiar with the tools and materials in the KIT IPA media, because they are still rarely used by teachers in schools.
- 2) Implementing active learning by involving students
- 3) The teaching materials and exercises are still not creative and innovative in using interactive media so students feel burdened when learning.

### b) Cycle II

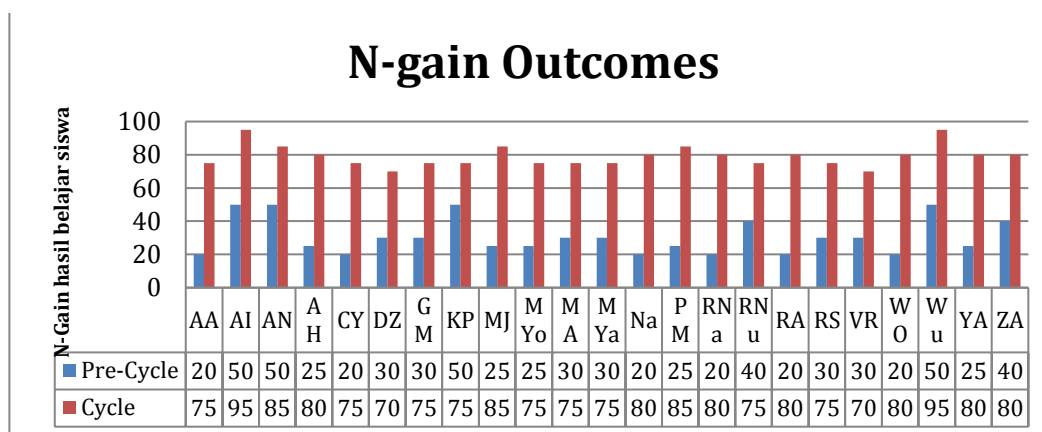
This research was continued until the 2nd cycle, with the same treatment as explained in the research method. In cycle 2, the results obtained have achieved good results, was complete as

plain the research method.

Cycle II was carried out based on the findings of learning weaknesses in cycle I, improvements in cycle II include:

- 1) Creating ideas to involve more structured activities and procedures in the implementation of practicums
- 2) Maximizing the using KIT IPA and combining learning with web Wordwall.

Based on these actions, an increase in learning outcomes was obtained which were analyzed and presented in Figure 4.



**Picture 3.** Ngain Outcomes

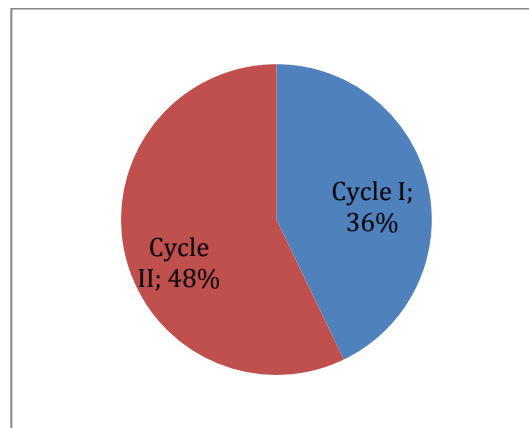
Based on Figure 3. It can be seen that the students' grades have increased and their learning outcomes have been completed. This happened when the researcher observed that they had maximally implemented the learning process. Students learn in groups and have become familiar with the tools and materials of the Science KIT so that learning science can be felt directly or experiential learning through practicums. According to research by Handayani & Ayub, (2018) learning through KIT provides real experiences so that students can directly observe basic concepts. In addition, researchers also provide practice questions via an interactive web, namely Wordwall. Wordwall media has a significant influence on students' science learning outcomes, which can be seen when students are more enthusiastic and passionate about learning (Savira & Gunawan, 2022). This research was stopped at this cycle because the students' learning outcomes had been completed by 100%. This statement is supported by research by Amran et al., (2017) that the learning outcomes of students had been completed by 100% because the teacher used teaching aids and the learning process had been carried out optimally.

### c) Percentage of Improvement in Learning Outcomes

The percentage of improvement in N-Gain of student learning outcomes is calculated using normalized gain (N-gain). The analysis of the Percentage of improvement in N-gain of learning outcomes is shown in Table 4.

**Table 3.** Improvement in learning outcomes per cycle

	Pre-Cycle	Cycle	N-gain (%)
<b>Cycle I</b>	30, 65	66, 52	36%
<b>Cycle II</b>	30, 65	79, 13	48%



**Picture 4.** Percentase Ngain out comes of cycle

Based on Table 3 and Picture 4, it shows that the increase in student learning outcomes has increased for each cycle. In cycle I, the percentage increase in learning outcomes increased by around 36%, while in cycle II it increased by 48%. These results indicate that the actions taken have been successful so that student learning outcomes have increased. Science learning should provide real experiences so that students can feel the practicum and find the concept. According to Amran et al., (2017), student learning outcomes increased per cycle, this is because the teacher guides students to finding scientific concepts through practicums using the Science KIT media. Through the Science KIT media, students learn science in a fun and interesting way for students so that their learning outcomes are complete (Ramadhani & Hambali, 2023). In addition, to the use for KIT, learning models, and approaches also make students think scientifically. The percentage of increase in student learning outcomes, from cycle I to cycle II also increased by 12%. The learning model used is a problem-based approach with scientific steps. According to Zuliani et al., (2023), science learning will be successful and effective by using the PBL model because through this model students will be given problems so that students think critically and solve the proposition according to scientific steps.

## CONCLUSION

Based on the results of the research that have been discussed, namely by carrying out an action in the field of learning with KIT IPA, it was found that student learning outcomes increased. In Cycle I, student learning outcomes increased by 36%, but there were still some that were not completed. In Cycle II, student learning outcomes showed completion, which increased by 48%. This happened because learning went well so students were actively learning.

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