



The Effect Of Experiential Learning Models In Improving Students' Understanding And Achievement On The Material Properties Of Light Class V SD

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ABSTRACT

The purpose of this study was to find out the effect of applying the Experiential Learning model in increasing students' understanding and learning achievement results in the material properties of light for class V SD Negeri Soka. This research uses qualitative and quantitative research that applies classroom actions. The subjects in this study were 20 students in class V with 13 boys and 7 girls. This research uses two cycles with two actions in each cycle. Data collection techniques in this research are observation, interviews, documentation. Qualitative and quantitative analysis techniques. The results showed that by applying the Experiential Learning learning model in four stages, namely concrete experience, reflective observation, abstract conceptualization, and experimentation, it can activate students to be able to be directly involved in conducting experimental proofs so that students can create their learning experiences and knowledge concepts they can get from the results of the learning experience. It appears that there was a significant increase in the average score of students from pre-action, namely 45 to 65 in cycle I and increased again in cycle II to 75. Meanwhile, the percentage of completeness of students' KKTP from pre-action was 40%, to 55 % in cycle I and 75% in cycle II. This means that the application of the Experiential Learning learning model has an effect on a significant increase

Keywords: *experiential learning, learning achievement, understanding of concepts*

1. INTRODUCTION

Education is very important for human life because it will give birth to people who are qualified, intellectual, with character, creative, independent, and able to develop their potential. In the 21st century, the development of science and technology (IPTEK) is increasingly rapid. This triggers every country to compete to improve the quality of its human resources so that they are able to compete and face problem-solving challenges. In the scope of education, we must always improve the quality of education to guarantee the nation's competitive position. We must always improve the quality of learning and skills of students, so that we can prepare the next generation who will be confident in competing. Conditions like this make people have to be more creative in dealing with problems. Currently the Indonesian government is not only focusing on general education which includes knowledge, affective and psychomotor development, but also on several other important aspects, namely cognitive skills, new literacy, the concept of

lifelong learning. life (lifelong learning), and co/extra-curricular activities.

To improve the quality of human resources, the Minister of Education and Culture (Mendikbud) Nadiem Makarim launched the national education policy "Freedom to Learn" [9]. In character building, efforts are made to build basic literacy which includes three types of literacy, namely numeracy literacy, reading (language) literacy and science-technology literacy as indicators of a nation's progress. Science education has a very important role in building a generation with future skills. From various research results and studies, several experts have proven that science can be used as a vehicle in the educational process to train students' problem-solving, innovation and creativity abilities. [26] [28] [14] [29]. By studying science a person will train their scientific thinking skills, in asking questions, gathering information, testing, managing information, solving problems and applying them in everyday life. Through science, students are involved in seeking their learning

experiences systematically and scientifically in seeking information from observations and experiments.

In a quote written by Fahri (2022) on the Tribunews.com page, it is stated that the results of the 2018 Program for International Student Assessment (PISA) Survey show that mathematics, science and reading abilities in Indonesia are at a low level. Therefore, it is necessary to increase basic literacy such as numeracy literacy, reading (language) literacy and science-technology literacy as an effort to increase it. In the Merdeka Curriculum, science and social studies subjects are combined into Natural and Social Sciences (IPAS) subjects, with the hope of triggering children to be able to manage the natural and social environment in one unit.

The problem with science education in schools in Indonesia is that teachers still experience problems in understanding the basic concepts of science education for students. This is because science learning taught in schools is still textbook in nature and delivered by teachers using the lecture method. In essence, science learning requires learning strategies that are scientific, concrete, and involve direct learning experiences for students so that learning becomes more meaningful [11].

Based on the results of observations on July 20 2023 of teachers and students when learning Light Science material in class V of Soka State Elementary School, the teacher was seen teaching using the lecture method. Next, practice questions are given by the teacher to find out the extent of current learning abilities. The teacher then gave the students 20 evaluation questions with a KKTP (Criteria for Achieving Learning Goals) score that the students had to achieve, namely 70. Based on the results of the assessment achieved by the students, the average posttest (pre-action) score for the 20 children was only 45, while the students who completed the KKTP score were only 40% of the total number of students. This proves that the average learning outcomes of class V students at Soka State Elementary School do not meet the KKTP completion score that must be achieved. Apart from that, based on the results of interviews conducted by several students, they did not understand the material presented by the teacher. According to them, the learning delivered by the teacher is not well understood by the students, this is because the language used by the teacher in delivering the material is not understood by the students because the learning is still textbook in nature so the concept of the material conveyed by the teacher is only abstract. When students are less actively involved in the learning process, learning is teacher-centered where the teacher is seen only using lecture, question and answer and assignment methods.

2. METHOD

The method used in this research is classroom action research (CAR). The PTK design chosen was the Elliot model design because the light concept material can be divided into many sub-discussions, so this design was chosen which offers 2 cycles, each cycle consisting of 2

actions. This research took as subjects fifth grade students at Soka State Elementary School which has a total of 20 students consisting of 13 boys and 7 girls. This study uses two cycles with two actions in each cycle. Data collection techniques in this research are observation, interviews, documentation. Qualitative and quantitative analysis techniques. The instruments used were observation sheets, evaluation questions to obtain data on learning outcomes, questionnaire sheets to obtain data on student responses to the experiential learning model and photo documentation. The aim of this research is to determine the effect of applying the Experiential Learning model in improving students' understanding and learning achievement results in the material on the properties of light in class V of Soka State Elementary School

3. LITERATURE REVIEW

3.1. Learning Model

A model is a conceptual form that is used as direction in carrying out an activity. The learning model functions as a guide for curriculum designers and educators in planning and implementing the learning process in the classroom

1. The characteristics of the Learning Model, according to [30] are:
 - a. Having certain educational goals or objectives, for example the inductive thinking model is created to advance the inductive thinking process.
 - b. Can be used as a guide to improve teaching and learning activities in class.
 - c. There are model steps called:
 - 1) Learning sequence (syntax)
 - 2) There are consequences principles
 - 3) Social system
 - 4) Support system.
 - d. Having results as a result of applying the learning model. These results include: learning consequences, namely learning outcomes that can be measured, accompanying consequences, namely long-term learning outcomes.
 - e. Carry out teaching preparation (instructional design) with instructions on the selected learning model.
2. History of ELT (Experiential Learning Theory)

ELT (Experiential Learning Theory) was created to provide an intellectual foundation for the practice of experiential learning responding to John Dewey for experiential theory to guide educational innovation. ELT is a synthesis of the works of those inventors who gave and experience a central role in their theories of learning and human development. ELT is a dynamic, holistic theory of the process of learning from experience and a multi-dimensional model of adult development. Dynamic learning thinking is based on the learning cycle supported by dialectical statements, the dual action/reflection and experience/abstraction.

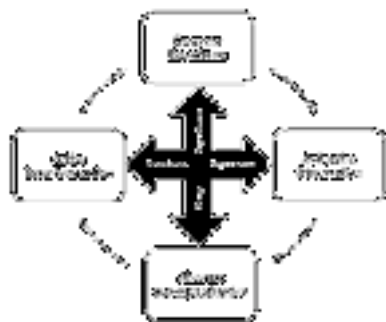


Figure 1.1 Experiential learning circle

3.2. *Experiential Learning Model*

1. Understanding the Experiential Learning Model
Experiential Learning comes from the word experiential which comes from the words experience which means experience and learning which means learning. So it can be concluded that the experiential learning model is a learning model that uses student experience as a medium in the learning process.

Conceptually, the foundation of learning experiences is experiential learning, as often defined by [12] Experiential Learning Theory (ELT), which is a holistic educational structure called for by a number of educational stakeholders. ELT is a synthesis of works from key theories built on the basic definition of learning as “The process by which knowledge is created through the transformation of experience”. This transformation of experience occurs cyclically as learners engage in concrete experience (CE), reflective observation (RO), abstract conceptualization (AC), and active experimentation (AE). In this learning process, discourse is completed through the transformation of new information and grasping or accommodation within existing schemas. According to [15] that experiential instruction is characterized by:

- a. A continuous learning process is based on experience,
- b. A process that requires conflict resolution
- c. The holistic process of adapting to the world
- d. Learning involves transactions between people and the environment, and
- e. The process of creating knowledge.

According to [16], learners are able to obtain skill values. These values link experiences when implementing learning with significant opportunities for students to learn outside of implementing that learning. Experiential learning emphasizes the totality of the human learning process, where experience forms the foundation for reviewing the four learning modes, namely feeling, reflecting, thinking, and doing. Experiential learning or experience-based learning focuses that experience plays a

central role in feelings in the learning process. Experiential learning is a sense-making process of activity involvement between the learner's self-feeling world and the world outside the learner's environment. So, interaction occurs between the learner and the environment which can lead to meaningful learning. In experiential learning, learners must be able to reflect on their experiences, process new connections, and attempt to review, checklist, verify modified knowledge. Students can participate in learning and reflect on the experience of the learning they have participated in, as well as get new explanations and try to try to apply these new meanings in other settings.

Based on the opinions of several experts, it can be concluded that the definition of Experiential Learning is a learning model that utilizes students' learning experiences in the learning process.

2. Objectives of the Experiential Learning Model

The aim of the Experiential Learning model according to [1] is to influence students in three ways, namely:

- a. Changing students' cognitive structures
- b. Changing student attitudes
- c. Expand existing student skills

3. Experiential Learning Model Steps

In the book [17] states that the experiential learning model, namely:

- a. Educators carefully formulate a plan for open-minded learning experiences regarding hidden results.
- b. Educators must be able to apply stimulation and motivation to introduce experiences.
- c. Students can work individually or in groups in learning.
- d. Students are placed in a clear situation of problem solving.
- e. Students actively participate in the available experiences, make their own decisions, and ask for consequences based on those decisions.
- f. The entire class presents experiences that have been learned in relation to the subject to expand learning

4. Strengths and weaknesses of the experiential learning model

According to [20] the advantages of using this experiential learning model are:

- a. Creating conducive conditions,
- b. Support students to see things from different perspectives,
- c. Increase involvement in problem solving and decision making.

Meanwhile, the weaknesses of the experiential learning model are:

- a. It is difficult to understand so there are still few who apply this learning model

- b. Time allocation for learning that requires a relatively long time
5. Stages of the Experiential Learning Model
In Kolb's learning theory quoted by [2] the stages of the experiential learning model consist of four stages, namely:
- a. Real experience (Concrete Experience)
At this stage students are provided with a stimulus that encourages them to carry out an activity. This activity can start from a previous experience, whether formal or informal, or a realistic situation. The activities provided can be inside or outside the classroom and carried out individually or in groups.
 - b. Reflective observation (Reflective Observation)
At this stage students observe experiences or activities carried out using the five senses or with the help of teaching aids. Next, students reflect on their experiences and from the results of this reflection they draw lessons. In this case, the reflection process will occur if the teacher is able to encourage students to describe the experiences they have gained, communicate again and learn from these experiences.
 - c. Preparation of abstract concepts (Abstract Conceptualization)
After observing and reflecting, at the stage of forming abstract concepts students begin to look for reasons, reciprocal relationships from the experience they have gained. Next, students begin to conceptualize a theory or model from the experience gained and integrate it with previous experience.
 - d. Active experimentation/implementation stage (active experimentation).
At this stage students try to plan how to test the efficacy of the model or theory to explain the new experience they will have next. At the application stage, a meaningful learning process will occur because the experiences students have previously gained can be applied to new experiences or problematic situations.
Based on the description of the steps described above, it can be concluded that the Experiential Learning model stage starts from the concrete experience experienced by students, then reflects on it, through the reflection process students learn to understand what happened or what they experienced. This reflection becomes the basis for the conceptualization of the process of understanding the principles underlying the experiences experienced as well as estimating possible applications in other (new) situations or contexts. The implementation process is a situation or context that allows the application of concepts that have been mastered.

A. Study of Student Understanding

1. Understanding Understanding.

According to Nasition (1999), understanding is the ability to interpret a theory or see the consequences or implications, predict the possibility or consequences of something.

According to Benyamin S. Bloom, quoted by [3], understanding is the ability to understand something after it is known and remembered. Students will understand something if they can provide an explanation in the form of a more detailed description of what they are learning using their own language.

In line with what [24] said, understanding is a level of ability that expects the testee to be able to understand the meaning or concepts, situations and facts that he knows.

Based on the description of this opinion, it can be concluded that student understanding is the student's ability to be able to define something.

2. Indicators of understanding

[33] said that understanding has the following characteristics:

- a. Understanding is a higher level than knowledge.
- b. Understanding is not just remembering facts, but is related to explaining the meaning or concept.
- c. Can describe, be able to translate.
- d. Able to interpret, describe variables.
- e. Exploratory understanding, able to make estimates.

According to Ali, quoted from [4], this stage of understanding can be divided into 3 categories, namely:

- a. Low Level: Understanding translations starting from translations in real meaning, for example, foreign languages and Indonesian.
- b. Intermediate level: Understanding that has interpretation, namely connecting previous parts with known parts of the graph with events or occurrences.
- c. High Level: Understanding extrapolation with extrapolation expected that someone is able to make predictions of consequences or can expand the reception in terms of time or problem.

From the description of this opinion, it can be concluded that understanding is one of the cognitive aspects (knowledge), namely understanding that can be measured through oral tests and written tests, so that the level of students' understanding in understanding the material taught by the teacher can be known.

B. Learning Outcomes

1. In the KBBI, results have several meanings, including:
 - a. Something carried out by business,

- b. Income; acquisition; fruit. Meanwhile, learning is a change in behavior or response caused by experience.
2. According to [32], learning is defined as (1) leading to change, (2) that change is essentially the acquisition of new skills, (3) that change occurs due to deliberate effort. In the same vein, Usman also said that learning means changes in behavior in individuals thanks to interactions between one individual and another individual and between the individual and the environment. So it can be concluded that learning will bring about a change.

Based on the description above, it can be concluded that learning outcomes are changes in behavior obtained by students after experiencing learning activities. One indicator of whether a learning process has been achieved or not is by looking at the learning outcomes achieved by students

4. RESULTS AND DISCUSSION

The research was conducted on class V students at Soka State Elementary School, totaling 20 students. From the results of observations on July 20 2023 of teachers

and students when learning Light Science material in class V of Soka State Elementary School, the teacher was seen teaching using the lecture method. Next, practice questions are given by the teacher to find out the extent of current learning abilities. The teacher then gave the students 20 evaluation questions with a KKTP (Criteria for Achieving Learning Goals) score that the students had to achieve, namely 70. Based on the results of the assessment achieved by the students, the average posttest (pre-action) score for the 20 children was only The 12 children who obtained an average score below the KKTP were 45 with a percentage of 60% with a poor predicate, while the students who completed the KKTP score were only 40% with sufficient predicate criteria from the total number of students. This proves that the average learning outcomes of class V students at Soka State Elementary School do not meet the KKTP completion score that must be achieved. In his research, [22] revealed that choosing an appropriate learning method designed by the teacher will influence student learning outcomes. Methods are used according to the objectives, conditions, type and function, time and place as well as students at various levels of maturity when the activities are carried out. The following is a table display of learning outcomes and students' level of understanding at pre-cycle time

Table 1. Learning Results Learning Results and Understanding of Pre-Cycle Students

Criteria	score range	Total student	Percentage	Level of Understanding
Very good	86-100	0	0	-
Good	71-85	0	0	-
Fair	56-70	8	40%	medium
Less	41-55	12	60%	low
Very poor	0-40	0	0	-
Total		20	100%	

From the results of table 1, it shows that the majority of students fall into the inadequate category at 60%, while the learning outcomes for other students are in the sufficient criteria at 40%. There are no student learning outcomes that reach the criteria for a good predicate. Apart from that, based on the results of interviews conducted by several students, they did not understand the material presented by the teacher. According to them, the learning delivered by the teacher is not well understood by the students, this is because the language used by the teacher in delivering the material is not understood by the students because the learning is still textbook in nature so the concept of the material conveyed by the teacher is only abstract. When students are less actively involved in the learning process, learning is teacher centered where the teacher is seen only using lecture, question and answer and assignment methods. The teacher acts as a source of information while students take notes on important things conveyed by the teacher, so that learning activities are less interesting and boring.

Based on the explanation of the problems above, it can be concluded that students' understanding and learning outcomes regarding the properties of light in class V at Soka State Elementary School are still very low, this encourages researchers to conduct further research. Because an educator should use learning methods or models that support teaching and learning activities, so that the learning design he designs can be student-centered so as to achieve the desired learning goals. Through these problems, efforts are then made to improve them by implementing the experiential learning model:

a. Real experience (Concrete Experience)

The teacher provides stimulation for students to make observations in the environment regarding light and its properties. Students are invited to the page directly to experience light and its properties. The teacher explains the material of light and its properties accompanied by direct activities carried out in groups. Students are provided with a stimulus that encourages them to carry

out an activity in groups carrying out simple experiments to prove simple properties.

b. Reflective observation (Reflective Observation)

At this stage, students reflect on the initial knowledge they know about light and its properties, then relate this knowledge to experiences or activities carried out using the five senses, carrying out experiments to prove the properties of light. Then, from the results of the experiment, each group discussed the results of their analysis and finally presented them in front of the class.

c. Preparation of abstract concepts (Abstract Conceptualization)

Students are given the task in groups to look for the properties of light through book references independently in each group. Together they discuss to complete their group assignments and carry out activities to prove the properties of light through experimental activities. Grouply carry out experiments to prove the properties of light, namely that it travels straight, penetrates clear objects, can be reflected, can be refracted, and can be explained using simple media so that Knowledge that was previously abstract can be consolidated through experimental activities that invite students to carry out direct experiences in groups.

d. Active experimentation/implementation stage (active experimentation).

The teacher encourages students to collect appropriate information and obtain an explanation of the phenomenon that has been conceptualized. From the results of the experiment, it is then presented in front of the class and then other groups provide responses regarding the presentation made by their friends. If there is disagreement, the other group has the right to provide a rebuttal in the form of an opinion

accompanied by strong reasons. The teacher also tries to invite students to reflect on the experiences of activities carried out by students by linking them to real experiences in everyday life so that students understand more about the concept of light material which is abstract and becomes concrete through activities that can grow students' concept of knowledge through direct experience. students through simple experiments that have been carried out.

Data from observations, field notes and interviews on the application of the experiential learning model carried out by the teacher, the teacher has carried out learning activities in accordance with the steps in the experiential learning model. Cycles 1 and 2 experienced improvements where science learning in cycle 1 still had shortcomings, namely the teacher had not given equal opportunities to all students to convey the results of their observations, but in cycle 2 the teacher gave freedom to all students who wanted to convey it. express his opinion based on the observations made. In addition, teachers divide students into larger groups with fewer members so that each group member participates in their group. Based on the results of observations, field notes, and interviews with students in cycle I, it was seen that there was no cooperation between group members, there were still students who were passive, not involved in group discussions, and there was a lack of self-confidence. during a presentation in front of the class.

In overcoming these problems the teacher uses an experiential learning model in addressing student learning outcomes. The results of action research in cycle I are described in table 2

Table 2. Learning Results and Understanding of Cycle I Students

Criteria	Score range	Total student	Precentage	Level of Understanding
Very good	86-100	4	20%	high
Good	71-85	7	35%	medium
Fair	56-70	3	15%	medium
Less	41-55	5	25%	low
Very poor	0-40	1	5%	-
Total		20	100%	

Implementation of actions is divided into 4 stages, namely the action planning stage, action implementation stage, observation stage and reflection stage which form a cycle. In more detail, each stage in this research will be explained as follows:

a. Action Planning Stage At this stage the activities carried out by the researcher are as follows:

- 1) Prepare a learning implementation plan (RPP) that refers to lecture learning using learning media.
- 2) Prepare the material to be presented, namely the sub-subject of the properties of light.

The application of the experiential learning model regarding the properties of light to fifth grade students at Soka State Elementary School, namely learning is carried out by asking questions based on students' concrete experiences.

However, in cycle II there was an increase, this could be seen from the students' courage in expressing their opinions, the cooperation between group members, students' activeness, and the level of students' understanding in understanding the material with proof. the success of the experiment and the value of

completeness of learning outcomes increased in the second cycle.

Table 3. Learning Results and Understanding of Cycle II Students

Criteria	score range	Total student	Percentage	Level of Understanding
Very good	86-100	2	10%	high
Good	71-85	7	35%	medium
Fair	56-70	6	30%	medium
Less	41-55	3	15%	low
Very poor	0-40	2	10%	low
Total		20	100%	

Based on the comparison of data from the pre-cycle posttest, cycle I and cycle II, it can be concluded that in the science learning material on the properties of light in class V there was a significant increase in cycle I, namely from 20 class V students at Soka State Elementary School who got a score above the KKTP, namely 11 people, namely 55%, while those who got a score below the KKTP were 9 people, namely 45% with an average score in cycle I, namely 65. Science learning in cycle I using the experiential learning model was proven to increase understanding of science learning, namely seen from the previous score. and after the action. In the implementation of the second cycle of learning using the experiential learning model, students' understanding increased as evidenced by the average score of students' work achieving a KKTP of 70 with a total of 15 students or 75% complete. information. Based on data on science learning outcomes, it shows an increase in understanding of science learning, the following is a display of student learning outcomes in cycle II:

Data from the second cycle learning posttest results showed that 75% of students had completed and as many as 25% of students were declared complete. Based on the comparison of data from the posttest results from cycle I and cycle II, it is proven that learning using the experiential learning model can increase the understanding of the material on the properties of light for class V students at Soka State Elementary School.

The results of the research show that the understanding of science and science learning material on the Properties of Light through the experiential learning model in class V students at Soka State Elementary School has increased. This is proven by an increase in the percentage of students' learning completeness, this can be compared with the average pre-action posttest score of 45, the average posttest score in cycle I was 65, and in cycle II the average posttest score was 75. Apart from that If we compare the presentation of students who achieved completeness in the KKTP score in the pre-cycle of 40%, then after receiving treatment with the experiential learning model in cycle I there was a significant increase to 55% and in cycle II it was 75%. This means that learning by applying the experiential learning model to

material on the properties of light in class V has an influence on students' level of understanding as evidenced by an increase in the average level of completion of students' posttest scores from pre-action, cycle I to cycle II. With this flow of understanding, students will better understand the concepts being studied because students are directly involved in these concepts through real experiments so that students more easily understand the concept of knowledge material which before it is abstract becomes concrete through an activity that is carried out and then concludes it so that the concept of knowledge is formed. new things he got from his experiences.

5. CONCLUSIONS AND RECOMMENDATIONS

Based on the results of data analysis from research that has been carried out, it can be concluded that: (1) the experiential learning model has an influence on student learning outcomes at Soka State Elementary School (2) learning by applying the experiential learning model has a moderate influence on student learning outcomes by looking at data results on the percentage of development of learning outcomes obtained by students in each cycle. The application of the experiential learning model to increase understanding of light material and its properties in fifth grade students at Soka State Elementary School uses 4 stages, namely concrete experience, reflective observation, abstract conceptualization, and active experimentation. Concrete experience stage where students are asked questions based on their experience then the teacher provides stimulus. At the reflective observation stage, students think about the observations made. At the abstract conceptualization stage, students convey the results of observations according to their knowledge. In the active experimental stage, students are grouped into groups of 4, then carry out experiments and conclude the results of the experiment and present them. Understanding of natural science and natural science material through the experiential learning model for class V students at Soka State Elementary School has increased. This is evidenced by an increase in the average

post-test score and the percentage of students' learning completeness both in pre-action, cycle 1 and cycle 2. The average score of students in pre-action was 45, the average score of students in cycle 1 was 65, and the average score in cycle II was 75. Meanwhile, the percentage of learning completion for students who achieved KKTP in pre-action was 40%, in cycle I was 65%, and in cycle II was 75%. . This proves that with the experiential learning model in the sun the properties of class V light have a significant effect on increasing learning achievement results and students' level of understanding. For teachers, we should provide opportunities for students to be actively involved in the learning process by inviting them to seek direct learning experiences to understand the concepts of the material they are studying so that their learning becomes more meaningful. Apart from that, a teacher must be willing to continue learning to develop his competence in order to improve the quality of his learning. For researchers, this research can be used as reference material for conducting similar research and improving or developing other research.

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