

# The Application of Learning Methods of Inkuiri Guided to Improve the Learning Outcomes of Science Elementary School Students

Suwardi<sup>1</sup>, Made Pidarta<sup>2</sup>, Suryanti<sup>3</sup>

<sup>1,2,3</sup>Study Program of Elementary education, graduate school, State University of Surabaya

**Abstract:-** This research aims to determine the application of teaching methods of learning inquiry to improve the learning outcomes of grade V-C SDN Gading I Surabaya. The natural sciences lesson in the V-C class of SDN Gading I Surabaya was found, Students still study individually, lack of cooperation among students, and also teachers give fewer opportunities for students to find themselves concepts in SCIENCE learning. This research was conducted at SDN Gading I Surabaya with the subject of class V-C students from 40 students. The research draft used is class action research (PTK) developed by Kemmis & Mc. Taggart, includes four stages of 1) planning, 2) Acting & are, 3) reflecting and 4) revise plan. While the instrument used is a test sheet. The results showed that the application of learning methods of inquiry guided to the learning of the heat transfer Grade V-C students at SDN Gading I Surabaya can be well implemented, In two cycles with cycle I and cycle II. From the data analysis results obtained the average student learning results experienced an increase from cycle I to cycle II by 16.73 with an increase in the study's satisfaction of 22.5%. Thus that the cycle II can be expressed successfully and proven application of the method of inquiry is able to improve student learning outcomes of grade V-C SDN Gading I Surabaya.

**Keywords:-** Guided Inquiry Method, SCIENCE Learning Results.

## I. INTRODUCTION

The learning process of natural sciences emphasizes on providing a direct experience to develop competencies to explore and understand the natural surroundings scientifically. Natural science learning should be implemented in scientific inquiry to cultivate the ability of critical thinking, to work and to be scientific and communicate as an important aspect of life skills. Therefore, learning Science in primary schools emphasizes the provision of learning experiences directly through the use of and process skills development and scientific attitudes. However, so far based on observations in the learning process, Teachers are generally less concerned with teaching approaches and methods that should be used. This may be due to the lack of teacher mastery over the various learning methods. Supposed approaches and methods used should be based on mental development or cognition of students.

Natural science learns everything related to nature. The IPA discusses systematic, structured natural symptoms based on the results of experiments and observations made by humans. Therefore, IPA is a subject that gives students the opportunity to think critically and objectively.

Based on observations and interviews with two V-class teacher colleagues at SDN Gading I, low learning outcomes are due to several factors, among others: 1) Learning is still conventional, learning is initiated by the teacher by explaining the concept and then directly giving questions to the students. The teacher simply explains the concept through lectures and assignments gives less room for students to find and to form concepts and associate them with early student knowledge. 2) Experimental methods are rare. In teacher learning is less creative to create conditions that lead students to be able to seek and found a way of solving the problems he faced by working scientifically through experiments. It can be said that students' activity is invisible to the learning process. Interstudent interactions are also rarely seen. Teachers feel worried about using the experiment method will run out of time in explaining the material. 3) In learning, Teachers provide less opportunities for students to learn natural phenomena about the heat transfer occurring around the students and linking with the concepts learned, students become less able to understand the material because it is not associated with the daily life of students.

While teaching IPA learning, A teacher should not be fixed using a single learning method, But teachers should use varied methods so that the learning process is not boring but it attracts students' attention. Learning that is not boring and attracts students' attention will affect the learning objectives that will be achieved. Learning objectives are characterized by increasing student learning outcomes. Students still receive low learning outcomes that are under the EMBASSY at the time of daily assessment of SCIENCE subjects. Based on the observation in class V-C SDN Gading I, also experienced the same thing in general that is learning results are still low in SCIENCE subjects.

One of the learning methods that can give students an opportunity to actively engage in determining the facts seen from the environment is the method of learning inquiry. By Trianto (2007:135) Inquiry Learning method is a series of learning that involves a maximum of all students' ability to find and investigate critically so that they can self-formulate inventions with confidence. In learning in elementary school a teacher is tasked to guide students in

learning. Thus need guidance in the process of discovery of students.

Based on the above issues, researchers conducted research by implementing methods of learning Inquiry guided at SDN Gading I Surabaya.

The formulation of problems and objectives in this research is how the application of teaching methods guided learning can improve the outcome of SCIENCE students V-C in SDN Gading I Surabaya? With the aim of research to know the method of learning inquiry inquiry can improve

the outcome of science students V-C class at SDN Gading I Surabaya.

By Sanjaya (2009:196) Inquiry learning is a student-centered activity in which a group of students inquiry into an issue or Seeking answers to the question content through the procedures outlined in a clearly structural group. Learning will be more meaningful if students are given the opportunity to actively engage in finding the facts seen from the environment with the guidance of teachers. The steps of learning inquiry were guided according to Sanjaya (2010: 306) among others:

Phase	Behavior
Orientation	Teachers are conditioned so that students are ready to perform the learning process
Formulating problem	Teachers directing students into issues containing puzzles, So that students are encouraged to seek the right answers from puzzles in the formulation of problems.
Formulating hypotheses	Teachers provide opportunities for students to give opinions on analysis while a problem. Teachers guide students to make temporary conclusions.
Collecting data	Teachers guide students to get the information needed to test a proposed hypothesis.
Testing the hypothesis	Teachers provide opportunities for students to convey information that has been obtained to compare to the hypotheses that have been made. Teachers do a justification of hypotheses that do not match the information obtained.
Formulating conclusions	Teachers guide students in making accurate conclusions

Table 1:- Guided Learning Inkuiri Stage

## II. METHOD

The research draft used is class action research (PTK). While the type of research is a qualitative descriptive taken from qualitative data is then written in a descriptive to describe the "improvement of the learning of the movement around us in grade V-C students at SDN Gading I Surabaya. Action research This class uses a cooperative model between researchers and the observers. Where in the research activities that researchers will do as teachers and teachers of other class V as an Observer. The reference used in the implementation of this collaborative PTK is a PTK cycle model developed by Kemmis and Taggart (1990).

Before planning, Researchers on Monday, January 14, 2019 observe as a pre-action activity on the implementation of the study of energy source material and functions. Based on the results of the observation shows that in the study of the source material of heat energy and function, btudents are less able to understand the material presented by teachers. Teachers rarely give students the opportunity to interact with friends or with teachers. In conducting the learning of source material of the energy sources and the function of using learning methods vary very low, more teachers use conventional models on every learning he does. In addition to the lack of enthusiasm and lack of work between students while learning, The condition also affects student learning outcomes that can not be optimal in the source material of the heat energy and function. Student learning results are still under Minimal Submission Criteria.

Subsequent researchers conducted interviews to several students and observers. Then conduct discussions to find the problem that is considered the most urgent and needs to be addressed through this class action research. Researchers with Observators at SDN Gading I Surabaya conducted several activities. One of them is conducting preliminary studies with the reflection on the implementation of study of the movement of the In the V-C class of SDN Gading I Surabaya which has. Researchers strive to recall the various learning events that have been held, conducting interviews on class V-C students, Share a poll to class V-C students, to uncover the difficulties of what they experienced and perceived when learning the source material of the heat energy and its function, uncover students ' feelings relating to the learning atmosphere experienced and perceived by students.

In addition, Researchers are also studying the documents about the ability of students in the form of students ' formative test results in particular Materials and functions and the results of the daily assessment I in the subjects of natural science. Researchers have also redescribed the results of observations on the learning process, reflecting the model of teaching, learning outcomes, and student responses.

Based on the observations and interviews the researchers started by identifying learning problems in class V-C SDN Gading I. So researchers raised the Calor movement material in this study because of the previous material, Teacher at V-C grade SDN Gading I had difficulties that needed to be solved immediately. This class of action research is conducted on a cyclic basis consisting

of two cycles, Cycle I consists of 1 time meeting and the cycle II consists of a one-time meeting. This is because to complete the subject matter about conduction, convection, and radiation there is basic competency “Applying the concept of a heat transfer in everyday life” Basic competencies consist of 3 indicators.

In cycle I discusses indicators of the heat transfer conduction. The materials presented at this meeting include: understanding and example of the heat transfer in conduction. While in cycle II continue to discuss indicators about identifying heat transfer in convection. At this meeting II, the media used to identify the convection heat transfer in the form of PowerPoint. The material in this cycle II discusses identifying the convection of the heat transfer in the surrounding environment..

The researcher chooses and establishes the research subject is a grade V-C student of SDN Gading I Surabaya in the year of lesson 2018/2019 with a total of 40 students.

Research instruments in this study include:

➤ *Test sheet*

The tests used in this study are post-test (after learning). The types of tests used are objective in the form of multiple choice and fill and subjective in the form of description. The double-choice test is a 3-item problem with 4 answer options and one of the four options is the correct answer. Stuffing amounted to 1 item with short and correct answers. While the description test is used to study students in organizing their thoughts, ideas or their reasoning by using their own sentences..

In this study in cycle I used a type of multiple choice writing test, stuffing, and description consisting of 5 questions. And in cycle II use a type of writing test with the form and number of the same problem as the cycle I.

➤ *Poll Student*

To describe the response of class V-C students of SDN Gading I Surabaya on the implementation of study of the Movement of through an inquiry model guided by researchers using a research instrument in the form of a poll sheet.

Data or information collected is then analyzed in a descriptive or quantitative descriptive. Qualitative data is analyzed by stages: data exposure, data simplification, data grouping according to the focus of the problem, and the analysis of the results.

As for the data to be analyzed in a quantitative descriptive is the data about the student responses gathered through the poll sheet. While data on the ability of students identify the sources of energy through each video with the score of the students on the test assessment.

Related to this research to obtain data with feasibility in applying the model of guided inquiry to the learning of energy sources, The analysis of data conducted among others :

➤ *Student Learning Data*

Student Learning Data is obtained through the test result and also the performance of each group. Assessment of learning outcomes include assessment of process of group performance and results of student's ability to do test questions. The final value is derived from the result of a group performance process assessment combined with the student test results then divided into two. While the test to know the student's success in learning is held on each cycle. In cycle I held one test, then the result of averaged to know the ability of classical students of class V-C SDN Gading I Surabaya. While in cycle II is also done with one test. The maximum score students get each work on test questions is 100 which is divided into multiple choice questions, fields, and descriptions. Multiple choice score the number of correct answers multiplied by 2, the correct answer field score is multiplied by 3, and the correct number description score is multiplied by 4. The number of score obtained is divided by the maximum score 8. The division results multiplied by 100 and became the student's value.

After the percentage of student learning results are counted, then the criteria are determined. In this case the student score category criteria can be seen in the following table 2:

Number	Score Interval	Qualifications
1	85-100	Very good (A)
2	70-84	Good (B)
3	55-69	Simply (C)
4	40-54	Less (D)
5	0-39	Very less (E)

Table 2:- Quality Standards Achievement Success

To determine the increase in student learning outcomes is determined by individual and classifying learning. The minimum Learning mastery criteria used in this study is:

- Individually, it is deemed to have been "complete learning" if the absorption of students reaches 65, while the
- Classifying, it is considered to have been "complete learning" when it reaches 80% of the total number of students who reach at least 65.

➤ *Student Response Data*

Data from the poll of students ' responses to the learning of energy sources using the guided Inkuiri method is analyzed using a percentage of the (%) i.e. counting the number of students who respond divided the total amount multiplied by 100%.

The learning of heat transfer using the model Inkuiri is successful if 75% of the total students of the V-C grade SDN Gading I Surabaya Think that learning is fun, love learning by exchanging information, in accordance with the heat transfer, assisting in understanding the heat transfer material, get more material information, happy with the media used, happy with the way teachers teach, and willing to use the method of inquiry reguied.

### III. RESULTS AND DISCUSSION

The results of studying IPA students through learning method of inquiry is guided based on analysis of the results of students learning data class V-C SDN Gading I Surabaya, it can be known that student learning values persist from the highest value of 100 in the I cycle to 100 in cycle II, as well as its lowest value increased from 38 in cycle I to 63 in cycle II. Then in the test result the average student learning results of 71.25 with a study of 62.5% in the I cycle. While the average student learning results in cycle II is 87.98 with a study in relation of 85%. So it can be said that the average student learning results experienced an increase from cycle I to cycle II by 16,73 (22,5%) with improved learning submission of 22,5%. Data on the increase of learning outcomes scores of students from cycle I to cycle II are presented in the table below.

cycle I	cycle II	Score increase	% Score increase
71,25	87,98	+16,73	22,5%

Table 3:- Increased student outcomes score from cycle I to cycle II

While the analysis of the learning data for students of V-C grade SDN Gading I Surabaya between cycle I and cycle II can be seen in the following table:

Learning Submission	TB I	TB II	% Score increase
Complete learning	62,5	85	22,5%
Not complete learning	37,5	15	-

Table 4:- Learning to learn students at Cycle I and cycle II

Keterangan:

TB I : The guidance of learning cycle I

TB II: The guidance of learning cycle II

According to the table above, it is known that the submission of study in Cycle I is 62.5% and the student's study submission in cycle II is 85%, so that the learning to learn students in Cycle II experienced a very high increase of 22.5%. As for the final value students also experience an increase with the highest average value of 100 on cycle I to 100 in cycle II and the lowest end value with an average of 38 on the I cycle increased to 63 in cycle II. These results already meet the criteria that researchers expect. This means the II cycle is declared successful and proved that

the application of teaching methods to be guided learning can increase the learning outcomes of students in the V-C grade SDN Gading I Surabaya.

In cycle I There are a number of reasons that cause the unachievement of learning is caused by the: (1) Most of the students are still struggling while performing an image observation, this results in students being less able to understand the problem, (2) While self-learning collects data for the hypothesis that most students can already perform well, But there are still some students who are still struggling when collecting data, so that the data obtained by students is less complete, and (3) Questions that teachers are too difficult to understand so that some students are less able to answer correctly.

In reference to the above then implemented corrective action carried out in cycle II. From the outcome of the action on cycle II It can be noted that student learning results are increased by the highest number of scores of 100 and the lowest number of scores 63. As for the test result write the average class value of 87.98. The average grade of grades 87.98 meets the criteria for the minimum learning of SDN Gading I Surabaya at 75. The classical average can also be noted that the results of the study after the action of cycle II increased by 16.73 (22.5%). There are 34 students who complete learning and as many as 6 students do not complete learning. With the classical guidance of learning students at 85%, so it can be stated that in the II cycle of students in the V-C grade SDN Gading I Surabaya has finished learning because the minimum classifying percentage of learning has reached 85%. As for the student's final value shows that the average value is the highest 100 and the lowest 63.

This condition indicates that cycle II can be declared successful and and proven application of teaching method of guided learning is able to improve student learning outcomes of grade V-C SDN Gading I Surabaya. With the increasing learning outcomes that the students have demonstrated the fact that the learning method of inquiry has been guided can improve students ' understanding of concepts in the heat transfer material. Thus, the hypothesis of the action proposed that increased learning identifies a heat transfer through methods of learning inquiry guided in grade V-C students of SDN Gading I Surabaya is acceptable.

### IV. CONCLUSION

Based on the implementation of class action research on improving learning outcomes of natural sciences students of V-C SDN Gading I Surabaya through the implementation of a guided learning method, it can be concluded that: The application of learning methods Inquiry guided by the study of science students V-C grade SDN Gading I Surabaya can be implemented properly and effectively, In two cycles with cycle I and cycle II. The implementation of learning with the method of learning inquiry is guided of Students at V-C SDN Gading I Surabaya can also improve student learning outcomes in

the form of group performance as well as test student writing results.

## V. SUGGESTION

Based on the research results, the recommended researchers in the effort to improve the quality of education in elementary school, especially On the subject of natural sciences is expected that teachers can use the method of learning inquiry guided on Study of natural sciences, whether on "transition" or other material that allows to use a guided learning method so that students can better understand the concept of natural science clearly and easily.

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