

**THE EFFECT OF GUIDED INQUIRY LEARNING MODEL ON STUDENT'S LEARNING OUTCOMES  
ON HARMONIC VIBRATION TOPIC  
IN CLASS X SMA NEGERI 1 BERASTAGI A.Y 2017/2018**

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**ABSTRACT**

*The purpose of this research is to know the student's learning outcomes using guided inquiry learning model in harmonic vibration topic of class X SMA N 1 Berastagi. The type of this research is quasi-experimental which using pre-test and post-test design. The subject of this research are students of class X MIPA 4 that consists of 33 students as experiment class and X MIPA 5 that consist of 33 students as control class. The object in this research is student's learning outcomes. The data of pretest in experiment class is 23.66 and the average score of pretest in control class is 24.15. The experiment class is taught by guided inquiry learning model and control class is taught by conventional learning that get the result of average score in experiment class is 73.75 and average score in control class is 63.18. Based on hypothesis test is obtained that  $H_a$  is accepted and it means there is effect of guided inquiry learning model on student's learning outcomes on harmonic vibration topic in class X SMA N 1 Berastagi A.Y 2017/2018*

**Keywords :** *guided inquiry, student's learning outcomes, harmonic vibration, physics*

**INTRODUCTION**

Education is a process of improving the quality of human resources that has a dominant role in human life. The results to be achieved in the process of education is fostering of human resources in accordance with the demands of development, namely of Indonesian citizen who can solve today and the future problem. Law no 20 year 2003 on the national education system states that national education functions to develop the ability and form the character and civilization of a dignified nation in order to educate the life of the nation.

Education is one form of manifestation of dynamic human culture and full of development. Therefore, the change or the development of education is the thing that should happen in line with the changing culture of life. Changes in the meaning of education improvement at all levels need to be continuously done in anticipation of future interests.

Based on the experience of researcher in integrated field experience program of SMA N 1

Berastagi, physics teachers generally conduct the learning by using calculations or to discuss the questions. The problem arise the teacher is still using conventional learning, where in conventional learning teacher just explain what he want to teach and student just only listening to their teacher. The activity in the conventional class is not developed.

One way that can be used to solve the encountered problem is to use a learning model that requires students to be more active in finding a concept, understand it more deeply and expand guided inquiry model. Through guided inquiry learning students are required to conduct an investigation through experiment and then find a concept, with that student will be easier to understand, analyze and apply the knowledge gained in everyday life. Students who find themselves and understand concepts in depth is expected to be able to analyze and solve problems in everyday life in the form of questions of physics that would make an impact on student learning outcomes.

A guided inquiry learning model that involves students in the learning process so as to enhance the ability and knowledge of students and to develop students' confident that will ultimately improve student learning outcomes. Students are expected to be encouraged to think for themselves, to discuss and analyze the steps of presenting problems, data collection, experimentation, organization of data and the formulation of explanations by using this model so that it can find the concept is based on material or data provided by the teacher.

According Kuhlthau, *et al.*, (2012) guided inquiry is a way of thinking, learning and teaching are changing the culture of the school into a community collaborative investigation. The purpose of the school culture is the student who always received the teacher's explanation and did not participate directly find the concept. Is one of the guided inquiry learning model designed to teach the concepts and relationships between concepts. According to Sani (2013) guided inquiry learning that an inquiry learning model in which the implementation of teachers to provide guidance or instructions spacious enough to students. Teacher guided inquiry learning process does not take off just the activities carried out by the students.

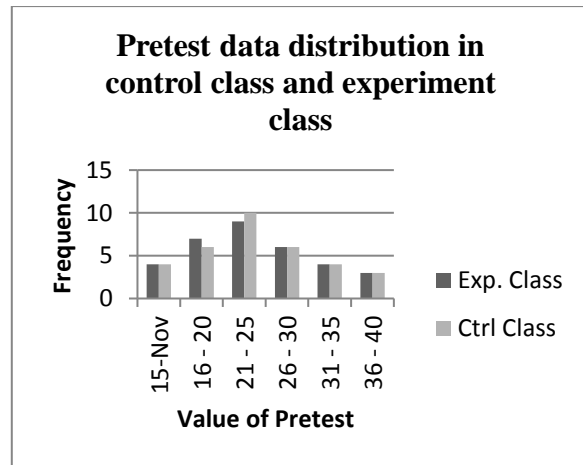
**METHODOLOGY**

This research will be conducted at SMA N 1 Berastagi Class X Semester II Academic Year 2017/2018 which will do during material taught without disturbing the process of teaching and learning in the school. The population in this study was all students of Class X Semester II SMA N 1 Berastagi consist of 6 classes with an average number of students 33 per class. This research includes Quasi-Experimental research is a study intended to determine whether there is the influence of something that is imposed on the subject

of the students (Sani dkk, 2018)  
**RESULTS AND DISCUSSION**

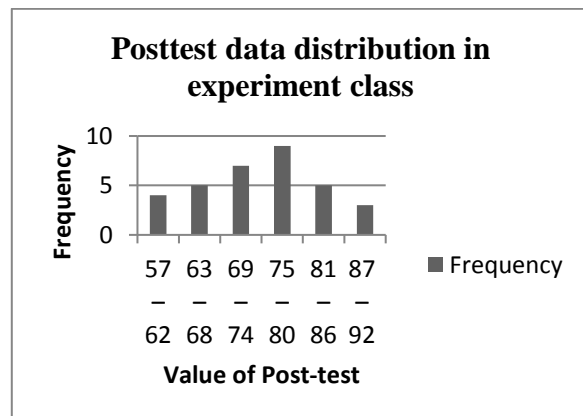
The histogram below also represents the data distribution of student's learning outcomes pretest in experimental and control class.

**Figure 1.1** The histogram data distribution of student's learning outcomes pretest in experimental class and control class



The histogram below also represents the data distribution of students learning outcomes in experimental and control class.

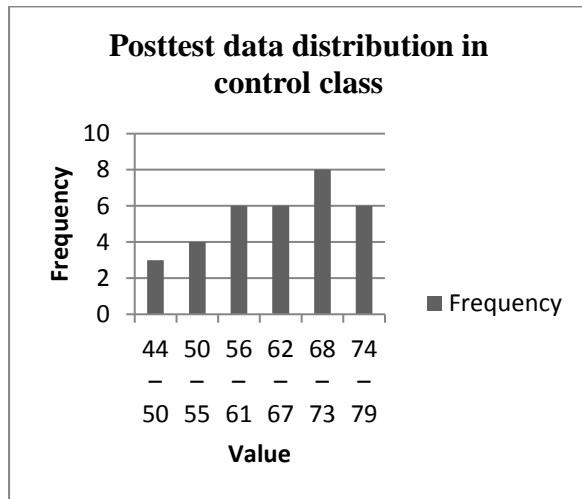
**Figure 1.2** The histogram data distribution of students learning outcomes posttest in experimental class



Based on diagram above, we can obtained the increase learning student's outcomes as shown by the diagram. Next, the histogram below also represents

the data distribution of students learning outcomes in control class

**Fig 1.3** The histogram data distribution of students learning outcomes posttest in control class



Based on the histogram above it can be seen the increasing results of students science process skill before and after treatment was done.

**a) Processing and Data Analysis of Pretest**

Before being given treatment for the experimental class, both classes were given an initial ability test to see if the two classes had the same initial ability. The result of the research on the average equality test of the students' initial ability showed that the students' initial ability in the control class (24.15) and the experiment class (23.66) were not much different. From the pretest results obtained that the two classes have a bad value, this is because the previous two classes have never studied the sound wave material. So at the time of the pretest the students difficult to answer the questions.

**b) Processing and Data Analysis of Posttest**

After giving treatment using guided inquiry learning model the experiment class while in the control class using conventional learning model, the result of experimental class posttest using guided

inquiry learning model has an average value of 73.75, while the result of control class posttest using conventional learning model has an average value of 63.18. The experiment class which is taught using guided inquiry learning model have higher learning outcomes than the control class using the conventional learning model. This is because the learning in the experimental class is the students directly involved in the learning process so that the students become more active, while in the control class, the students are not directly involved in the learning process. This means that the guided inquiry learning model influences the students' learning outcomes in the harmonic vibration topic in class X SMA N 1 Berastagi.

**c) Hypothesis Testing**

Based on the results of research using independent sample t-test shows that the influence of student learning outcomes using guided inquiry learning model compared with using conventional learning model. Student learning outcomes using guided inquiry learning model is better than student learning outcomes using conventional model. The application of guided inquiry learning model is intended to see whether or not the influence of student learning outcomes.

This research shows that inquiry model also can increase student's activity and learning outcomes. It also trained students to skillfully make the skill and daring to present the result. When students present the result of experiments that have been conducted of students, researchers looked at the difficulties from students in communicating to propose experimental results.

**CONCLUSION**

Based on data obtained research results and data analysis and hypothesis testing it can be concluded as follows:

1. Student learning outcomes using the guided inquiry learning model increased visible from the pretest result increased from 23.66 to 73.75
2. Guided inquiry learning model influences student learning outcomes on Harmonic Vibration Topic in class X SMA N 1 Berastagi A.Y 2017/2018.

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