

INFLUENCE OF INQUIRY LEARNING MODELS ON DIGITAL SIMULATION LEARNING RESULT (Case Study of Class X in Vocational High School 6 Padang)

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ABSTRACT

This study aims to determine the effect of inquiry learning model on the learning result of digital simulation of grade X students of Culinary Services Vocational High School 6 Padang City odd semester of academic year 2014/2015. This type of research is quantitative using experimental quasi experimental type experimental method. This research was conducted at Vocational High School 6 Padang on November 2014. The population in this research is the students of X Class of Catering at Vocational High School 6 Padang. Sampling technique used is probability sampling with simple random sampling technique. The selected to be samples in this study are the students of class X Catering Service 1 as the experimental class and X Catering 2 as the control class. Based on the result of the research, the average of students' learning outcomes in the experimental class is 87,70 while in the control class 75,51. From the test data analysis found that the data is normal and homogeneous. Test results at the level of significance α 0.05 (95% confidence level) obtained $t_{count} = 7,196$ and $t_{table} = 1,670$ so obtained $t_{count} > t_{table}$ ($7,196 > 1,670$). Thus H_0 rejected and H_1 accepted, which means that the results of student learning using Inquiry model is higher than students using conventional methods of demonstration on the subjects of digital simulation class X Culinary Services at Vocational High School 6 Padang odd semester of the academic year 2014/2015.

Keywords: experiments, inquiry and learning outcomes

1. INTRODUCTION

A professional teacher is required to show skills in front of the class. One component of that skill is the ability to deliver lessons to the students. To be able to deliver lessons effectively and efficiently, teachers need to recognize the different types of teaching and learning strategies so they can choose which strategy is most appropriate for a teaching field. Learning strategy is a learning activity that must be done by teachers and students so that the learning objectives can be achieved effectively and efficiently (Kemp in Sanjaya, 2006: 126).

Strategies are used to gain success or success in achieving goals. While the approach is our starting point or point of view of the learning process. Learning model is defined as a conceptual framework used as a guide in conducting activities. The model can be understood as a type or design, a description or analogy used to help the process of visualizing something that can not be directly observed, a system of assumptions, a simplified design of a work system and a simplified reality translation (Komaruddin in Sagala, 2013:175). The success of learning can be seen from the learning results obtained by students. The result of student learning is essentially a change of behavior. Behavior as a result of learning in a broad sense includes the

fields of cognitive, affective and psychomotor (Sudjana, 2009:3). Learning outcomes are not only useful for knowing whether or not instructional goals are being achieved, in this case changes in student behavior, but also as feedback for improving the teaching and learning process.

Learning outcomes can also be defined as the abilities that students have after receiving their learning experience. Based on the research that the researcher did on the students of X grade of Department of Catering on Digital Simulation subjects in Vocational High School 6 Padang, there were information: students were less interested in taking digital simulation lesson because the way of teaching the teacher is one way, so the students acted as passive recipient, boredom for the students themselves. In addition, based on observations that researchers do, attendance rate siswapun still low. Where there are some students who often do not attend Digital Simulation lessons. With the presence of these low students, also impact on the learning outcomes Digital Simulation of students in grade X of Catering Department at Vocational High School 6 Padang odd semester of academic year 2014/2015.

The solution of the problem presented is to choose a learning model that matches the character of the student. So that the process of teaching and learning can take place as expected and can achieve the goals of national education. In that context, the instructional model offered as the solution is the inquiry learning model. Starting from some expert opinion that has been explained before, Digital Simulation learning purpose given to all class X student of Vocational High School level is to provide knowledge and skill to students to make information network and able to operate computer properly. So they can compile the information they get into the material exposure, presentation, and can utilize the internet in various activities. This digital simulation learning requires the attention and genuine support of a teacher, so that the material can be delivered maximally to the students. Therefore, to know the success of the method that I offer, therefore I raised the title "Influence of Inquiry Learning Model to Digital Student Learning Results of X Class Students of Catering Department at Vocational High School 6 Padang."

2. METHOD

The type of research used in this thesis is quantitative research using experimental quasy experimental type experimental research method. This study aims to describe the influence of Inquiry learning methods to the students' learning outcomes X grade Catering Department on Digital Simulation subjects at Vocational High School 6 Padang odd semester of academic year 2014/2015. The research was conducted in Vocational High School 6 Padang with the subject of the study of the students of X class of odd semester of academic year 2014/2015, having address at Jalan Suliki No.1 Padang, West Sumatera Province. Research activities are conducted in the odd semester of the academic year 2014/2015, starting from November 2014 to December 2014.

The population of this study is all students of X class of Department of Catering registered in the even semester of academic year 2014/2015 in Vocational High School 6 Padang consisting of 3 classes. Based on data obtained from the school that students enrolled in the Department of Culinary is 96 students. The sample in this research using Simple Random Sampling technique. Sampling is done by lottery, then X Catering Service 1 as the experimental class, X Catering 2 as the control class and X Catering 3 as the test class.

Data collection techniques is an important step in a study. Based on the source data collection techniques in this study using: 1) Primary data is data obtained directly from respondents that is by taking the value of the study of semester test results Digital Simulation in class X Vocational High School 6 Padang year lesson 2014/2015. Primary data collection is in the form of Test. 2) Secondary data is data that has been previously collected and reported by people or agencies outside of the researcher himself, in the form of Observation and Documentation. For the test used is an objective test in the form of Multiple Choice given to the students who were sampled.

The data analysis technique used to see the difference in learning outcomes between the experimental class and the control class is the t-test:

a. Normality Test

Normality test is used to test the data of each variable to be analyzed to normal distribution. In this research the technique used is Liliefors test. The formula can be seen below (Triyono, 2012):

$$L = (|F(Z_i) - S(Z_i)|) \quad (1)$$

Information:

L = Test statistic with liliefors method.

Z_i = Data x_i which has been standardized.

F (Z_i) = The value of the normal raw cumulative distribution function in Z_i.

S (Z_i) = The value of the cumulative empirical distribution function in Z_i.

Take the largest price among the absolute prices of the difference. If L₀ < L_{table}, then the data is normally distributed and H₁ hypothesis is accepted.

b. A Homogeneity Test

Homogeneity test of variance is required to compare two or more groups. In this study homogeneity test using homogeneity variance test. The formula can be seen below (Triyono, 2012):

$$F = \frac{S_{max}}{S_{min}} \quad (2)$$

Information:

F = Value of homogeneity

S Max = Variance of the group with the greatest variance

S Min = Variance of the group with the smallest variance

To determine the homogeneous data or can not be seen with the provision that is: If F arithmetic < F_{table}, means homogeneous data. If F arithmetic > F_{table}, the data is not homogeneous.

c. Hypothesis Test

Hypothesis test is used to see the tendency of variable intensity observation influence of learning Inquiry to Digital Simulation learning result at X grade student of Department of Catering at Vocational High School 6 Padang that is using comparative hypothesis test two sample by using t test type separated variance. The formula can be seen below (Sugiyono, 2013):

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{S_1^2}{n_1} + \frac{S_2^2}{n_2}}} \quad (3)$$

From the results of the hypothesis, $t_{arithmetic}$ compared with t table with the criteria test conditions as follows: If $t_{arithmetic} > t_{table}$ at $\alpha = 5\%$ then H_0 is rejected and H_1 accepted (effect). If $t_{arithmetic} < t_{table}$ is at $\alpha = 5\%$ then H_0 is accepted and H_1 is rejected (has no effect).

3. RESULT AND DISCUSSION

This research was conducted in November - December 2015 with the student population of X class of Culinary Services Vocational High School 6 Padang. Based on sampling technique that is simple random sampling technique (random sample) obtained two sample class that is class X Catering 1 as experiment class and class X Catering 2 as control class. The learning method applied in the experimental class is the Inquiry learning method, while the control class is applied conventional method of teaching that is demonstration. Prior to conducting the research first determined the subject that will be taught and develop a learning implementation plan that will be applied to the two sample classes. The subject chosen is a digital book.

Inquiry's model is a learning approach that can be applied to all levels of education. This highly integrated learning approach involves the application of a science process that implements logical thinking and critical thinking (Phillips, 2011). Then, according to Schmidt (2012) inquiry's model is a process to obtain information by way of observation and or experiment to find answers or solve problems to the question or problem formulation by using the ability to think critically and logically. Then, Blosser (2013) said the rationale of using inquiry methods is that students gain a better understanding of science, and are more interested in science if actively engaged in "doing" science. The investigation conducted by students is the backbone of inquiry method.

In the experimental class applied five stages namely: The first step in the application of learning methods Inquiry in this research is the teacher presents the problem to be solved by students by way of explaining the research procedures, presents conflicting situations To facilitate students understand the stages in this method, then at the meeting first the teacher explained how the teaching and learning process using inquiry method. The second step is the teacher lure students to find the core of the problem by examining the nature of the object and conditions encountered, and check the cause of the problem. Third step, students are required to be independent and explore their intellectual ability in reviewing data and experiment, so that students can formulate a temporary suspicion. Fourth step, students are expected to be able to organize, formulate, and explain how to solve problems from their respective point of view. The final step, students analyze the findings to obtain a more effective solution. After the fifth meeting, the teacher gives the final test to the students, to measure the success of the students. While on

learning using conventional methods, there are several stages: 1) Promotes what goals should be achieved by students. 2) Tell students what tasks to do. 3) Provide activities that stimulate students to think. 4) Create a soothing atmosphere. 5) Make sure that all students follow the course of the demonstration by observing the reactions of all students.

Inquiry learning model is a learning method in which students are required to be more active in the discovery process, the placement of students more self-learning as well as develop active in solving problems. Inquiry teaching methods will create an effective and conducive learning conditions, and facilitate and facilitate teaching and learning activities (Sudjana, 2009:154). While the learning outcomes are the result of an interaction of learning and teaching acts are usually indicated by the value of tests given by the teacher.

The purpose of this research is to know whether the result of digital simulation learning of X grade students of Department of Culinary at Vocational High School 6 Padang using inquiry learning model is higher than students using conventional method of demonstration. The success can be seen from the results of hypothesis testing that has been done using the t test formula, obtained $t_{arithmetic} > t_{table}$ ($7,196 > 1,670$). So it can be said the proposed hypothesis has been accepted. It can be said that student learning outcomes using Inquiry learning model is higher than students using conventional methods of demonstration on the subjects of digital simulation class X Culinary Services at Vocational High School 6 Padang odd semester of academic year 2014/2015. It can be seen from the average value of the experimental class and control class. Where the experimental class applied inquiry learning method obtained an average of 87.70. While the control class applied conventional methods of demonstration earn an average of 75.51. So it can be seen there are differences in learning outcomes are quite meaningful between the experimental class and control.

Differences in learning outcomes in the experimental class and control classes because students who are in the experimental class has a high learning motivation, it is seen from the activeness of students in following the learning process. In addition, students also look calm and comfortable to be in the classroom. No students are in and out during the learning hours. Because in this method of inquiry students are given the opportunity to explore the abilities they possess with the maximum and students can express their opinions with their respective point of view. In this method of inquiry, presented problems to be solved by students, then the students are required to be creative and explore their intellectual ability in solving problems. Then the students are asked to provide a solution of the problem. Finally, students describe the solutions they have over the problems presented by their respective point of view.

While in the control class using conventional methods of demonstration, students tend to be less excited and not focus in following the process of teaching and learning in the classroom. Where many students do not pay attention to the lessons well, there are even students who do not pay attention to the lessons altogether. This is caused by the teaching-learning process that is one-way, so as not to establish good communication between teachers and students. Teachers are learning centers, while students as passive recipients. After applying the method of inquiry study to the X grade students majoring in Culinary Services at Vocational High School 6 Padang odd semester of academic year 2014/2015, obtained the average value of students who are above the minimum completeness standard is 75.

Not only that, the relationship of teachers and students were intertwined better than before.

This research refers to the relevant research by Sitorus, H (2017) about "The Influence of Inquiry Learning Models on Students Scientific Attitudes in Ecosystem Topic at Mts. Darul Hikmah Sei Alim." This result shows there was significant influences of learning models in student scientific attitudes in ecosystem.

Based on the explanation of the research that the authors do and relevant research that has the authors describe it, it can be concluded that H1 accepted and H0 rejected the learning outcomes of students who use Inquiry learning model is higher than students using conventional methods of demonstration on the subject of digital simulation class X Culinary at Vocational High School 6 Padang odd semester of academic year 2014/2015.

4. CONCLUSION

Based on research conducted on X grade students of Department of Culinary at Vocational High School 6 Padang odd semester of academic year 2014/2015, it can be drawn the conclusion that is: student learning result using Inquiry model is higher than students using conventional method of demonstration on simulation subjects digital class X Culinary Services at Vocational High School 6 Padang first semester of academic year 2014/2015. This can be seen from the average value of experimental class learning result that is 87,70, while the mean value of control class learning result is 75,51. Then reinforced by the result of hypothesis testing where $t_{hitung} > t_{table}$ (7,196 > 1,670). Then H1 is accepted and H0 is rejected.

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THE CONTRIBUTION OF CAREER GUIDANCE TO WORD READINESS TO ENTER WORK FORCE OF CLASS XII's