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Inquiry Learning Model at SMK Negeri 6 Masni District, West Papua Year of Study 2021/2022

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Abstract

This study aims to improve learning outcomes for class XI ATPH through the application of the Inquiry Learning Model in the productive subject of Vegetable Crops Agribusiness at SMK (Vocational Upper-Seconday School) Negeri 6 Masni District. Through the Inquiry Learning Model, students are expected to achieve the goal of improved learning outcomes of Productive Vegetable Crops Agribusiness. This research is a Classroom Action Research (CAR) which is carried out in a two-stage offline learning cycle. Each cycle consists of four stages, namely planning, action implementation, observation, and reflection. The subjects in this study are 28 students from the class XI ATPH SMK Negeri 6 Masni. The success indicator in this study is: 75% of the students are actively involved in the learning process, an increase in learning outcomes is achieved during each cycle through the post-test, and 75% of the students are able to achieve the Minimum Completeness Criteria (KKM) determined by the school, which is 70.

Keywords: Inquiry Learning Model, Agribusiness, Vocational Education

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INTRODUCTION

A. Background

One of the things that play an important role in the success of teaching is good planning. It is believed that teaching based on interaction requires a more efficient and effective process in the students' experience of learning. The process of learning and teaching are two different things but form a single unit, like a double-sided coin. Learning is an activity carried out by students, while teaching is carried out by teachers. Teaching activities carried out by teachers greatly affect student learning activities. Therefore, it is necessary to plan the teaching implementation systematically in creating meaningful and also to activate the student's way to think.

In the teaching and learning process, there is a process of interaction between teachers and students that influences each other. It is not only teachers who influence their students, but also vice versa, students influence their teachers. Interaction in the teaching and learning process not only occurs among students, but between students and human resources (ie people who provide information), and also between students and the learning media.

Teacher of the productive subject of Vegetable Crops in year XI ATPH (Agribisnis

Tanaman Pangan dan Hortikultura) or Food Crops and Horticulture Agribusiness in SMK NEGERI 6 MASNI states that the students' ability in solving the problem in the subject is still very low. They seem afraid and embarrassed to ask about the material that they don't understand in the classroom. This is because the material of the subject is often presented in monotonous and boring way. Lack of innovation dynamics and creativity of the teacher in presenting the material leads to the students' difficulties in developing or improving their true quality. Therefore, a solution is needed so that the students feel part of the teaching and learning process. A way needs to be found in managing the teaching and learning process of the subject so that the material can be understood and liked by students. The Inquiry Learning Model model may be one of many solutions in improving student learning outcomes, especially in the subject of Productive Agribusiness Vegetable Crops.

The teaching and learning process in schools involves many factors. The input (raw) which is the basic material provides a certain learning experience in the teaching-learning process, with the hope that it can turn into output (expected) in the form of expected learning outcomes. In the teaching and learning process, it is also hoped that a number of facilities and environmental factors will support the achievement of the desired output.

During the teaching-learning process, there will be a reciprocal relationship between teachers and students who are diverse, and that will result in limited time for teachers to control how their behavior affects students' learning motivation. During the lesson, it is difficult for the teacher to determine which behavior has a positive effect on students' studying motivation; for example, which teaching style gives a positive impression on students; which strategies can help clarify concepts; which media and methods are appropriate to use in material presentation to help stimulate students' learning. This reinforces the notion that teachers are required to be more creative in the teaching and learning process, to create a pleasant learning atmosphere for students which in turn increases student learning motivation.

Teacher's professionalism requires not only developing knowledge, but more developing the ability to carry out interesting learning for students so that students more actively participate in learning. The attractiveness of a lesson lies in two things, namely the subject itself and the way the teacher teaches.

The way the teacher teaches is one of the determinants of the success of the teaching and learning process. One way is by applying a learning model. A learning model is the pattern that is used as a guide in planning learning. The model is defined as a conceptual framework that is used as a guide in carrying out activities.

There are lots of learning models that can be used by a teacher, one of which is the inquiry model. This learning model was developed by Suchman who believes that children are curious individuals. Since birth, human beings have the urge to find their own knowledge. The curiosity about the nature around him is intrinsic to human nature from birth. Since childhood, humans have the desire to know everything through the senses of sight, hearing, taste and other senses. Until adulthood, human curiosity continues to develop by using the brain and mind. The knowledge possessed by humans will be meaningful when it is based on that curiosity.

In the learning process that uses the inquiry model, the teacher is a "learning

facilitator". Students ask several questions, generate hypotheses, research, and experiment, analyze data, and provide explanations as evidence.

Inquiry is built and includes discovery and many more steps. In other words, this model is an extension of discovery processes that are used in a more mature way. In addition to discovery processes, inquiry contains higher-level mental processes, for example formulating their own problems, designing experiments, conducting experiments, collecting and analyzing data, drawing conclusions, having objective attitudes, being honest, curious, open, and so on.

Johnson in Supriyono (2011:68) distinguishes discovery learning from inquiry learning. Discovery learning features the "ahaa experience" which can be interpreted as, "well here it is". Inquiry learning does not always end in this process. This is because the final process of discovery learning is a finding, while the inquiry learning process ultimately lies in the satisfaction of research activities. Discovery learning emphasizes the experience as experienced by researchers when making a discovery, while inquiry learning requires the teacher to provide a situation in such a way that students are encouraged to carry out the procedures used by the research. The similarity between discovery learning and inquiry learning is that both learnings emphasize the contextual problems and investigative.

Based on the description above, the authors are interested in conducting research entitled "Inquiry Learning Model at SMK NEGERI 6 MASNI Academic Year 2021/2022".

B. Problem Formulation

1. Problem Identification

Based on the background of the problem above, the following problems can be identified::

- a. Presentation of the Productive subject Agribusiness Vegetable Crops material is still very monotonous and boring.
- b. Lack of students' learning motivation, especially the subject of Productive Agribusiness Vegetable Crops.
- c. Students' ability to solve Productive subject Agribusiness Vegetable Crops questions is still very low.

This has an impact on the low learning outcomes of Class XI ATPH students at SMK Negeri 6 Masni so that a solution is needed in order to improve their learning outcomes especially in productive learning of Vegetable Agribusiness.

2. Alternative Troubleshooting

The problem of the low learning outcomes in the Productive subject Agribusiness Vegetable Crops Students of Class XI ATPH SMK Negeri 6 Masni can be solved by applying the Inquiry Learning Model.

3. Problem Formulation

Based on the background mentioned above, the problem formulation of this research is "Can the Inquiry Learning Model improve the Productive subject learning outcomes of Vegetable Crops Agribusiness in Class XI ATPH Students at SMK Negeri 6 Masni?"

B. Research purposes

The purpose of this research is to improve the students of year XI ATPH learning outcomes of Productive subject Agribusiness Vegetable Crops at SMK Negeri 6 Masni by applying the Inquiry Learning Model.

C. Benefits of research

The benefits expected in this research are as follows:

- For students: The results of this study are very useful for students to understand Productive subject Agribusiness Vegetable Crops and can improve students' problem solving habits, can make students accept other students with different abilities and backgrounds, can motivate students in learning and increase student activity and creativity in accordance with the development of their thinking so that learning outcomes increase.
- 2. For teachers: by conducting this research, teachers can improve their competence so that the problems faced by the teachers themselves, students, and others can be overcome. Teacher will understand how to use learning models to present the Productive subject Agribusiness Vegetable Crops lessons.
- 3. For school: It contributes to better learning outcomes especially in the Productive subject Vegetable Crops Agribusiness.

RESEARCH METHODS

A. Type of Research

This research is a Classroom Action Research (CAR). The implementation method includes four stages, namely planning, action, observation, and reflection.

B. Location and Research Subject

This research was conducted in Class XI ATPH SMK Negeri 6 Masni, with a total of 28 students in the odd semester academic year of 2021/2022

C. Investigated Factor

The factors investigated in this study are as follows:

- 1. Student factors and the process. That is by looking at the readiness, sincerity, and activeness of students in receiving and participating in Productive subject Agribusiness Vegetable Crops lessons, especially in working on group assignments. The factors are:
 - a. Students who present in the process.
 - b. Students who ask about subject matter that they do not understand.
 - c. Students who answer the teacher's questions orally.
 - d. Students who complete the questions.
 - e. Students who do homework.
 - f. Students who are active during the study group.
 - g. Students who do other activities during the study group.
 - h. Students who respond to other groups' presentations.
- 2. The output factor is the students' productive learning outcomes of Vegetable Crops Agribusiness which are obtained at the end of each cycle after the Inquiry Learning

Model is applied.

D. Research Procedure

This classroom action research is planned for two cycles with four stages, namely: planning, action, observation, and reflection. In detail, the implementation of the research for these two action cycles is as follows:

- 1. Cycle I
- a. Planning Stage
- 1) Productive curriculum analysis of the subject Vegetable Crops Agribusiness at SMK Negeri 6 Masni.
- 2) Create a learning scenario for the implementation of the action with the Inquiry Learning learning model.
- 3) Make observation sheets to observe and identify everything that happens during the teaching and learning process, including attendance lists and student activity in the teaching and learning process.
- 4) The teacher prepares questions in the form of essay questions which are used as task questions that are completed in groups and individually.
- 5) Make an evaluation tool to see students' abilities in solving problems based on the given material.
- b. Action Stage
- 1) At the beginning of the meeting, the teacher explains the material according to the teaching plan that takes place for approximately 20 minutes including problem examples and involving students to solve them.
- 2) Students are directed to form small groups (4-5 people) which have been agreed to before. The members are variously skilled; some are smart, some moderate, and some less so.
- 3) The teacher distributes the work sheets to the students who work on them individually and submit them. Then, the teacher distributes the worksheets for group work where they discuss, present and submit.
- 4) During the teaching and learning process, each group is monitored, controlled and directed, especially the groups which are experiencing difficulties.
- 5) The answer sheets from each group or each student are checked and returned.
- c. Observation Stage

This observation was carried out when the researcher conducted the teaching and learning process. The teacher took notes during the learning process by filling in the observation sheets regarding the students' attendance, attention, and activeness in participating in the teaching and learning process.

d. Reflection

Reflecting on everything obtained through the observation sheet, assessing and studying the progress of student work at the end of cycle I. These two results are then used as a reference for the researcher to plan improvements and refinements for the next cycle (cycle II) so that the results achieved are better than the previous cycle

- 2. Cycle II
 - a. Planning Stage

- 1) Continuing the planning stage that has been carried out in the cycle I.
- 2) From the results of the reflection in cycle I, the teacher makes a new plan to be followed up, including supervising students more firmly and providing direction or motivation to students who paid less attention to lessons or were not active.
 - 3) Group members were randomized by taking into account the heterogeneity of the group, as well as motivating students to be even more enthusiastic about the the Productive subject Vegetable Agribusiness in groups.

b. Action Stage

The action of this second cycle is to continue the steps that were carried out in the first cycle and some improvements that are considered necessary in solving problems that arise in the previous cycle. Actions that needed to be taken are:

- 1) Performing model actions of the inquiry learning.
- 2) Groups that have difficulty completing tasks are given direct guidance and occasionally directed classically, as well as assignments that are done individually.
- 3) The answer sheets from each group and individual are corrected and then returned to be discussed. Then questions that are considered to need further explanation are discussed classically regarding solving the problem.
- 4) The teacher gives praise and encouragement both in groups and individually.
- c. Observation Stage

The observation stage of the second cycle is to continue the activities in the first cycle which are carried out during the teaching and learning process.

d. Reflection

In the reflection stage, generally the steps carried out in cycle II are the same as those carried out in cycle I, namely:

- 1) Assess and observe the development of student learning outcomes in each group and individual learning outcomes as well as the final test scores of cycle II.
 - 2) Observing and recording developments or things experienced by students during the teaching and learning process as well as during group study.
 - 3) Drawing some conclusions from the results of the reflection analysis and the overall data that has been obtained from two cycles.

E. Data Collection

The data collection techniques are as follows:

- 1. Data on student learning outcomes are collected using tests at the end of each cycle.
- 2. Data regarding the conditions of teaching and learning activities and changes in student and teacher attitudes are collected through observations during learning activities.

F. Data Analysis

The data obtained from the research results were analyzed qualitatively and quantitatively. Observational data were analyzed qualitatively while student learning outcomes were analyzed quantitatively using descriptive data analysis. For quantitative data analysis, the technical categorization in the education report book set by the Ministry

of Education and Culture (1993:6) is as follows:

A score of 85-100% is categorized as "very high"

A score of 65-84% are categorized as "high"

A score of 55-64% is categorized as "medium"

A score of 35-54% is categorized as "low"

A score of 0-34% are categorized as "very low"

G. Success Indicator

Indicators of success in this classroom action research (classroom action research) after the Inquiry Learning Model applied were the students' learning outcomes in the Productive subject Agribusiness Vegetable Crops have increased from cycle I to cycle II. This increase is marked by an increase in the average score from cycle I to cycle II, which is a score above the Minimum Completeness Criteria Standard (KKM) set by the school, which is 70.00.

Results and Discussion

This chapter discusses the results of research that show an increase in productive learning outcomes of the subject, Vegetable Crops Agribusiness at SMK Negeri 6 Masni, after the Inquiry Learning Model is applied. What is being analyzed is the score of student learning outcomes given at the end of each cycle descriptively, the data regarding changes in students' attitudes taken from the observations, responses and reflections given by the students both written and verbally.

A. Research Result

1. Cycle I.

a. Quantitative analysis results

In the first cycle, the learning outcomes test was carried out. The data for the first cycle of learning outcomes scores can be seen in Table 1 below:

Table 1 Statistics of Learning Outcomes for Class XI ATPH SMK Negeri 6 Masni in cycle I

Statistics	Statistical value
Number of students	28
Ideal score	100
Maximum Score	80
Minimum Score	40
Score range	40
Average score	64,1

Deviation Standard	8,57
Variance	73,48

Table 1 shows that the average score (mean) of the Productive Accounting learning outcomes after applying the Inquiry Learning Model in the first cycle is 61 out of the ideal score of 100. This is due to the lack of student attention by doing other activities during the learning process.

If the scores of student learning outcomes are grouped into five categories, the frequency distribution of scores is obtained as presented in Table 2.

Table 2 Distribution of Frequency and Percentage of Productive Learning Outcomes Scores of ATPH SMK Negeri 6 Masni in cycle I.

Score	Category	Frequency	Percentage
			(%)
0 - 54	Low	2	7
55 – 64	Average	17	61
65 - 84	High	8	29
85 – 100	Very High	1	3
Т	Cotal	28	100

Table 2 shows that the average score of learning outcomes for Class XI ATPH students at SMK Negeri 6 Masni after being given action in the first cycle is in the medium category.

If student learning outcomes in the first cycle are analyzed, the percentage of student learning completeness in the first cycle can be seen in able 3 below:

Table 3 Description of Learning Completion Class XI ATPH SMK Negeri 6 Masni

Score	Category	Frequency	Percentage
percentage			(%)
0 - 69	Tidak	1	68
70 – 100	tuntas	9	22
	Tuntas	9	
Jumlah		2	100
		8	

Table 3 shows that the percentage of class completeness is 22%, namely 9 students out of 28 are included in the complete category and 68%, namely 19 students out of 28 are

included in the incomplete category. This means that there are 19 students who need improvement because they have not reached the individual completeness criteria.

b. Qualitative analysis results

In the first cycle, the attitudes of each student towards the Productive Agribusiness of Vegetable Crops were recorded. The students' attitudes were obtained from the observation sheet at each meeting which was recorded in each cycle. The observation sheet records changes in student attitudes during the teaching and learning process in class.

The students' attitudes from cycle I are as follows:

- 1. In the first cycle, there were still many students who did not attend the lesson, whether they were absent without explanation or were sick.
- 2. The students' attention in cycle I was still as usual. The students were not very enthusiastic about completing the worksheets in groups, nor a sense of cooperation in helping their friends to complete the worksheets in groups.
- 3. In cycle I, students' activeness in the learning process such as asking and answering questions about the material was still low.
- 4. In the first cycle many students are still passive. Volunteering to solve questions were still dominated by the smart students, appointed to the group.
- 5. In cycle I, when students have discussions with their group members, there are still many students who do other activities.
- 6. In the first cycle, the students were not serious and confident in presenting the results of the discussion. There are even students who are not ready to present the results of their group discussions.
- 7. During the presentation of the discussion's result, each group is given the opportunity to respond other groups' idea. In the first cycle, there were still few groups that responded to the results of other group discussions.
- 8. During the first cycle, there were still many students who did not pay attention to submit their homework for the various reasons they gave.
- c. Analysis of Results and Reflection

Cycle I was carried out by applying the Inquiry Learning Learning Model with various methods used in the teaching and learning process. In the first cycle, there were still many students who did not attend the lesson, either without explanation or because of sickness. This is because students think that the Productive Agribusiness of Vegetable Crops lesson is difficult and complicated.

Before introducing the subject matter the teacher always conveys the learning objectives and then motivates students so that students are interested in the subject matter, but there are still many students who do not pay attention to the teacher. So when they work on the work sheets, they don't know how to solve them.

At the end of the meeting the teacher always gives homework in order to let students learn and train in solving questions, which will be collected at the next meeting. However, there were still many students who did not complete the homework for various reasons.

The last phase of Inquiry Learning comprises giving of awards to the groups. At this stage, increasing students' interest and enthusiasm in following the lessons is still not feasible. This is because students are new to the Inquiry Learning learning model which has never been used by their class teacher before.

2. Cycle II

a. Quantitative Analysis Results

As in the first cycle, the learning outcomes in this cycle were sought in the form of a written test. The results of the quantitative analysis show that the average score achieved by Class XI ATPH SMK Negeri 6 Masni which is taught using the Inquiry Learning Learning

Model in cycle II are presented in Table 4 below:

Table 4 Statistics of Student Learning Outcomes of Class XI ATPH SMK Negeri 6 Masni in cycle II

Statistics	Statistical values	
Number of students	28	
Ideal score	100	
Maximum Score	86	
Minimum Score	50	
Score range	36	
Average score	70,1	
Deviation Standard	8,69	
Variance	75,43	

From the table above, the average score (mean) learning outcome for Productive Subject Agribusiness Vegetable Crops Class XI ATPH at SMK Negeri 6 Masni after the Inquiry Learning Model is applied in cycle II is 70.1 out of 100. Even though there has been an increase in this cycle, there are still students who do other activities during the learning process.

If the students' learning outcomes scores are grouped into 5 categories, the distribution frequency of values obtained are shown in Table 5

Table 5 Distribution of Frequency and Percentage of Productive Subject Vegetable Crops Agribusiness Learning Outcomes of Class XI ATPH SMK Negeri 6 Masni in cycle II

Score	Category	Frequency	Percentage
			(%)
0 - 54	Low	1	3
55 – 64	Average	6	21
65 – 84	High	17	61
85 – 100	Very High	4	5
	Total	28	100

Table 5 shows that the average score of learning outcomes for Class XI ATPH SMK Negeri 6 Masni after the activity in cycle II is in the medium category.

If student learning outcomes in the first cycle are analyzed, then the percentage of student learning completeness in the second cycle can be seen in Table 6 below:

Table 6 Description of Learning Completion Class XI ATPH SMK Negeri 6 Masni in cycle II

Score	Category	Frequency	Percentage
Percentage			(%)
0 – 69	Incomplete	7	20
70 – 100	Complete	21	80
Total		2	100
		8	

Table 6 shows that the percentage of class completeness is 75% or 21 students from 28, while 25% or 7 students out of 28 are in the incomplete category.

b. Qualitative Analysis Results

During the study, in addition to the increase in the learning outcomes in cycle I and cycle II, there was also a number of changes that occurred in each student during the Productive Subject Agribusiness Vegetable Crops lesson. These changes were obtained from the observation sheet at each meeting in each cycle. The observation sheet records changes in student attitudes during the teaching-learning process in the classroom.

The changes were as follows:

- 1. In the second cycle, there were almost no changes in the absence of students compared to the first cycle.
- 2. Students' attention in cycle II seemed to increase when the students worked on their work sheets. Cohesiveness between group members occured by providing mutual assistance to group members who do not understand the subject matter. This is due to the encouragement that motivated them to work together in completing the work sheets.
- 3. In cycle II, student activeness increased during the learning process. This is shown from many students answering questions and having the courage to ask the teacher questions.
- 4. In cycle II it is clearly seen that not so many students were passive and many students had the courage to answer questions and work on questions without being appointed.
- 5. In cycle II when students had group discussions, there were a few students who did other activities.
- 6. In the second cycle, when the students were more brave and serious in giving their presentations.
- 7. In this cycle, the students showed their seriousness in giving explanation during the presentation.
- c. Reflection of Analysis Results

By applying Inquiry Learning with various methods used in the teaching and learning process, almost no students were absent. This is because of students' curiosity about the Productive subject Plant Agribusiness. While previously this subject was considered difficult, actually it turned out to be easy. The students were enthusiastic to follow the lesson. They became more enthusiastic in receiving the material. The work sheets were done well, even though there were still some students who question and disturb their group mates. Moreover, almost all students worked on their assignments and took them home them even though they were completed at school. In this second cycle, the enthusiasm and interest of students increased with the awards given that motivated them in the learning process.

B. Student Reflection Analysis

From the results of the analysis of students' reflections and responses, they can be divided into the following categories:

1. Student's opinions about the Productive Subject Agribusiness Vegetable Crops lesson

Some students thought that the Productive Subject Agribusiness Vegetable Crops lesson is a lesson that is sometimes easy to understand and sometimes difficult to understand starting from understanding the material to its application in practice in the field. Therefore, the subject needs seriousness, concentration and high discipline. There are also those who thought that the enjoyment of this subject is relative, meaning that when the subject matter being taught is easy, they are happy to learn. But when the material is difficult, they were less happy to receive the subject matter.

In addition, in studying this Productive subject, it is necessary to conduct a lot of experiments and direct practice in the field in order to improve students' abilities and competencies in the subject. In this subject, students learn how a simple plant can be a source of income with has a very large turnover. Therefore, studying vegetable crops provides great benefits for us because we will gain knowledge, skills and ideas about the vegetable crop agribusiness that also can be very useful to share with farmers or other people.

2. The barriers in learning the productive subject Agribusiness Vegetable Crops using the Inquiry Learning Model.

Some barriers for the students in learning Productive Subject Agribusiness Vegetable Crops by using the Inquiry Learning Model.

- a. The students still found the material difficult to understand since there were not enough examples.
- b. The students still had difficulty in following the lesson.
- c. There were not enough facilities and infrastructure to support the learning process.
- d. The learning model requires more time.

C. Discussion

In this study, a Systematic Problem-Solving Strategy was applied which consisted of two cycles. This research contributes significant results, such as increasing the learning outcomes of the productive subject Agribusiness Vegetable Crops Class XI ATPH SMK Negeri 6 Masni.

CONCLUSION

Based on the results of both the qualitative and quantitative research, it can be concluded that the application of learning through the Inquiry Learning Model in the learning process can improve the Class XI ATPH at SMK Negeri 6 Masni students' learning outcomes in the productive subject Agribusiness Vegetable Crops. In addition, students' activeness in the learning process increased in terms of students' attendance, attention in group discussion, involvement in solving questions using metacognitive strategies, and seriousness in writing summaries at the end of the lesson as well as completing the assigned tasks.

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