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Optimizing the Use of Inquiry Strategy in Learning Population and Environmental Education

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***Abstract*— This study aims to find out and analyze the effectiveness of the application of inquiry learning strategies in improving learning outcome. The research method used was the Classroom Action Research Method. The subjects of this study were students of Social Sciences Education, Faculty of Social Science of UNIMA, who took part in PKLH lectures in the even semester of 2017/2018, by a total of 30 people. This research was conducted from January to June 2018. Data collection techniques used were observation and test results. The data analysis technique was the analysis of frequency distribution to measure the increase in student learning participation and increase learning outcome. The success criteria determined that at least 85% of students in the class can actively participate in the learning process and the implementation of formative tests successfully achieves a mastery score of learning materials of at least 85% / are in the optimal category. The results of the study indicated that inquiry learning strategies were effective in improving student learning outcome and participation in studying Population and Environmental Education subject. Optimizing the application of inquiry strategy can be done by giving knowledge and self-sufficient skills to students before carrying out learning activities. With the ability to think independently, each student can apply the steps of inquiry effectively.**

Keywords—Inquiry Learning Strategies; Population and Environmental Education.

I. INTRODUCTION

In Population and Environmental Education (PKLH) learning, global trends marked by advances in information and technology, and its impacts on the earth's population need to be responded to, with a new paradigm of the learning process. Every student from an educational institution needs to be educated, trained and accustomed to developing their full potential to the maximum to be applied in formulating solutions to population and environmental problems. Furthermore, the students are expected to actively participate in disseminating information in order to control the population and preserve nature [1].

Based on observations of the PKLH learning process, the average level of mastery only reached a score of 70%, therefore innovative strategies are needed to develop students' abilities in exploring and discovering facts and best practices both thematically, spatially and chronologically. Thus, every student who learns PKLH can develop a dimension of knowledge that is factual, conceptual, procedural knowledge, based on the cognitive dimension that is developed, especially the ability to apply, analyze, evaluate and creatively formulate tentative answers to be tested with facts in learning PKLH material.

Based on the results of initial observations when analyzing this problem, it turns out that the causes are not only sourced from students but also lecturers. On the one hand, lecturers want to improve the quality of learning outcome of each student, but on the other hand, creative and innovative efforts to select and implement effective learning strategies have not been optimized.

In order to optimize and even maximize the quality of student learning processes and outcomes, a study of the application of inquiry learning strategies in PKLH subject learning is considered important to be studied in a classroom action research.

This class action research was based on the observation that in the lecture process some students have not been able to optimize their ability to realize, explore, identify and formulate the problems underlying the occurrence of population and environmental events. It seems to be affected by the fact that they did not yet know how to conduct inquiry or fact-finding based on scientific procedures that should be mastered by every student of the Social Studies Education Study Program.

This study was focused on analyzing learning strategies, an intervention of action by lecturers to optimize the ability of students to apply inquiry steps so that they can analyze PKLH lecture material based on inquiry learning procedures. Furthermore, optimizing these abilities is expected to have an impact on improving student learning outcome. Based on the background and focus of the research, the problems in this study was formulated as follows: (a). Are inquiry learning strategies effective in increasing PKLH learning outcome? (b). How significant was PKLH learning outcome increase through the application of inquiry strategies?

Inquiry learning strategy means a series of learning activities that involve the maximum ability of all students to search and investigate systematically, critically, logically,

analytically so that they can formulate their own findings with confidence.

This learning activeness with inquiry strategy, according to reference [2] "is aimed at optimizing intellectual-emotional involvement in the learning process". Likewise reference [3] said that the inquiry learning method emphasizes student learning activities in teaching and learning activities both physically, mentally, intellectually and emotionally to achieve optimal learning outcomes ".

The general goal of inquiry learning strategies is to help students develop the intellectual discipline and skills needed by asking questions and getting answers based on their curiosity. The application of inquiry strategies can give attention and help students investigate independently but in an orderly manner. ask why the event occurred, obtain and process data logically, so students develop a general intellectual strategy that they can use to get answers [4].

Learning with inquiry strategies has been developed from an active learning approach that requires each student to learn actively to acquire knowledge, skills, and values. In this inquiry learning strategy learning activities are designed so that students are involved in conducting an inquiry. The inquiry teaching strategy is student-centered teaching. The main goal is to develop intellectual skills, think critically and can solve problems scientifically [5].

Inquiry strategy can be applied in PKLH learning consisting of Education, Population and the Environment. PKLH emerged as a supporter of environmentally friendly Sustainable Development in Indonesia. Population Education studies the concept of population, population parameters, population problems and policies to overcome population problems and how to overcome these problems.

Environmental Education is education about the management of knowledge, attitudes, and human behavior, namely human interaction with the environment. The environment on earth is not separate but exists with other creatures, namely plants, animals and microorganisms. The other living creatures are not just friends living together neutrally or passively with humans, but living in an existence that interacts and influences each other in an inseparable unity.

The environment is a space united with living beings and the universe. If there is a change in one of these components, the other components will be affected. Environmental education is very important to reduce environmental damage and is an important means in producing human resources that can carry out sustainable development.

Environmental education is carried out as an effort to increase public understanding and concern in finding solutions to problems and preventing the emergence of new problems caused by environmental damage.

Knowledge of environmental education will produce individuals and communities who have the knowledge, attitudes, and behaviors that are responsible for their environment or become aware that it is important to preserve the environment and preserve it for the benefit of society today and in future generations.

The objectives of PKLH are to (1) enable students to have an understanding and awareness of the factors that cause population development and population development programs in order to improve people's lives; (2) have an understanding and awareness of the causes and consequences of the size of the family to the situation of life in the family and community environment; (3) having a rational and responsible attitude in managing the environment of the family, community, nation and world; (4) possessing positive knowledge and attitudes towards population and environmental issues and having the skills to teach population and environmental education to students and the surrounding community.

The approaches used in PKLH learning that has been developed so far are factual, processual and problematic approaches. The learning process in the classroom as an educational center in schools is a place for the functioning of all components in the education system.

II. Research Methods

The subjects of this class action research were Social Studies Education Program students who contracted PKLH courses in the even semester of the academic year 2017/2018, totaling 30 people.

The research was conducted in June-August 2018 the implementation of the study, namely the Social Studies Study Program Lecture Room, Faculty of Social Sciences, Manado State University.

The research method used was the Classroom Action Research Method. Data collection techniques used in this study were observation and learning achievement tests [4]. The observation was employed to observe the implementation of actions, while the test was used to measure and assess learning outcomes [6].

The data in this class action research were analyzed by percentage analysis in relative and cumulative frequency distributions. The frequency distribution is the process of compiling data so that it is easy to read and present. To determine the percentage, it was used the following formula:

$$\text{Percentage} = x\ 100\%$$

f is the frequency

n is the total of data

The standard for determining success in this class action research is an increase in student participation or participation in the learning process [7]. At least 85% of the total number of students in the class can actively participate in learning activities and the implementation of formative tests successfully achieve a mastery score of at least 85% or are in the optimal category. Thus in the application of inquiry learning strategies can be said effective if it has reached the criteria that have been determined as a standard of success in the implementation of this research [8].

III. Results and Discussion

The results of the implementation of inquiry learning strategies in the learning activities of Population and Environmental Education courses conducted during three rounds indicated that the application of inquiry learning strategies in the learning activities of Population and Environmental Education courses was effective in improving student learning outcomes [1]. The increase in results occurred through a quality learning process. The quality of the learning process was evident in the involvement and activeness of the learning of each student. Every student who was active in the whole learning process displayed their inquiry skills. Self-sufficient skills then created an active learning pattern. When the discussion took place, the students who already had inquiry skills started from questioning skills, formulated problems and tried to find answers, turned out to be very helpful in developing the ability to learn independently and to dare to ask questions, the ability to formulate questions critically, systematic and logical. The accumulation of the development and improvement of these abilities looks at increasing learning outcome continuously [9].

In developing and improving students 'learning abilities through the application of inquiry strategies, reference [10], explains that inquiry learning means a series of learning activities that maximally involve all learners' abilities to search and investigate systematically, critically, logically, analytically so that they can formulate their findings with confidence. Thus, not only academic learning abilities can be developed and improved but more than that it helps improve learning outcome and also develops the personal competencies of each student.

The effectiveness is seen in capacity building through active participation in formulating problems; formulate hypotheses as a temporary answer to the problems that have been formulated; and concluding. Furthermore, the effectiveness of improving learning outcomes appears in the formative test results that have increased in each round. In the first round, the average score achieved by 75.84, increased the second round to 84.34 and continued to increase until the third round to reach an average score of 92.

IV. CONCLUSION

Based on the overall results of the study and discussion of the results of the study it can be concluded that:

1. Inquiry learning strategies were effective in improving the learning outcomes of Social Sciences Education students who took part in Population and Environmental Education lectures.
2. The significance of the increase in PKLH learning outcomes through the application of inquiry strategies looks at improving formative test results. Likewise, the quality of increasing active student participation during the learning process shows that all students can formulate problems based on the topic or learning material being discussed, then proceed with the formulation of hypotheses, testing hypotheses to conclude.

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