

Profile of Biology Teachers Task in Development of an Integrated Science-Learning Based on environment

(Case Studies in Secondary School of "X" in Bandung City)

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Abstract

This study aims to determine the profile task of teachers in the implementation of integrated science teaching in secondary schools in Bandung that based environment. research conducted during the five week from the date of 6 August until 15 september 2008. Descriptive method of research conducted in the form of case studies on a biology teacher who taught science in eighth grade in school-based environment
Research data showed that integrated learning environment-based process optimization must be accompanied by the master domain concept of pedagogical approaches and appropriate learning models and according to the concept of use of the nature and the environment.

Key Words : *Biology's Teacher, Integrated Learning, environment*

Background

According to the Ministry of Education (2008) the quality of learning has several indicators such as learning to teachers, attitude, behavior and impact of learning for students, studying, training materials, education and training systems Teachers as part of a complex indicator according to Sidi (2000) provide the greatest influence on the process and student learning outcomes (36%).

Learning environment is the media and teaching resources to assist teachers in providing meaningful learning experiences for students. According Mulyasa (2008), learning resources are all things that can make it easy to learn, to get some information, knowledge, experience and skills required.

Schools 'X' is a nature-based school. In the guidelines for learning, the concept of nature as a medium of learning is applied to study the universe is real. The concept of learning 70% and 30% natural exploration literature (SAB, 2008). School teachers to emphasize the learning process and can take advantage of the concrete nature and the environment to the fullest. The things mentioned above is the reason why the school "X" is selected as a case study. From the case notes of this study obtained data on the role of teachers in teaching and learning in science class at school in the school of nature-based "X".

Method

The study was conducted in the form of case studies with quantitative data collected. observations were made for 5 weeks starting in August until 15 September 2008, the subject of study is 1 person Biological Sciences teacher who doubles as a chemistry .

Discussion

Description of the School and Junior High Science Teacher Profile "X" is a new school was established about 2 years. School complex about 0.5 km from the nearest village and 0.5 km in the north there are faculty housing complex. The surroundings are still rice fields. Although an isolated place, on average students who attend school are not from the surrounding environment, but from a place far enough away from the location of the school Antapani, stone fruit and Soekarno-Hatta area.

SMP "X" registered status. For daily operating costs have come from parents, and relying on money from fish farming and plantations with the result that is not too significant. Schools are not in government subsidies, cross subsidies only be obtained from the Foundation which is a branch of similar foundations in Central Jakarta
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Establishment of schools that come from the idealism of its founders to school for all, which means that the school can be reached by all levels of society, especially among the lower middle. This is reflected in school policy to minimize the funding for the study have a significant impact because of the use of uniforms and so forth.

Number of teachers in junior high "X" there are 13 people, including two aides and the head with 2 teachers. A science teacher to teach Biology, Chemistry and Environmental Education is the other teachers to teach physics, mathematics, science project on child well walikelas. There was also the guardian's homeroom class sons and daughters and 2 helpers who help teach the individual two crew people in the class. Staff, chief of administration worked several positions for kindergarten and elementary school administration.

Biological sciences teacher who teaches middle school "X" is an Alumni of Chemical Sciences of the leading State University. Teachers have 5 years experience teaching at a private high school junior. This year is the 2nd year he taught at the junior high "X". In terms of experience, teacher X has never been undergoing training in the field of kepedagogian. Understanding teachers 'X' for science education program just to get from field experience. For the learning process can take place in accordance with the wishes of the school, teachers XY guided by science teachers of teachers of Physics. Teacher Y also functions as a teacher of mathematics, science project, and the guardian class of boys. Teacher Y PTK but not alumni of the Faculty of Pharmacy alumni of leading public universities. Before starting the learning process is usually subject teachers will discuss the matter with the class teacher and parents. Discussions took place at the beginning of the month in which the tri partit activities facilitated by the school. In this activity the teacher will get input from classroom teachers and parents as well as support material and non-material.

Observation of learning processes

Observation to-1

In the first observation of material growth and development. Learning to be done outside of

class (under the tree in the schoolyard). Observer observed that the learning process, such as moving classes to the playground, the school environment means that pages are not optimally utilized as learning resources. plants and animals that exist in schools that are used as media of instruction and teaching resources to explain the material growth and development. When the observer is trying to confirm the teacher concerned about the teacher put right. eachers initially wanted to show that there are some plants in the field but because students are conditioned so hard to just limited to the teacher explaining the material under study in the school yard tree. To improve students' learning process was assigned to observe the germination of green bean and corn seeds tent in the dark and light in their own homes. According Mulyasa (2008), in the application of certain models of learning to master class teacher, class mastery associated with teachers' mastery of teaching materials, the number of students, classes are all trained in accordance with hours of flying experience and the teacher concerned.

Observation to- 2

At the second observation research conducted in the library, use of the learning environment in the library is usually the study of literature and literature in the context of understanding the concept. In the process of learning the teacher explained the material growth and development of theoretically using Mindmap. Lessons take place with the method of discussion and question and answer. At the end of the lesson, students are assigned to the mapping of individual minds with creative as possible. On learning that the observer does not see the use of libraries as a source of teaching. As confirmation, the teacher stated that the theory of learning today to complement the learning that is not optimal at the time of the previous meeting. The use of libraries is not associated with the use of the library as a learning environment. Replacement of the room from the classroom to the library for class VIII used around the foundation for meeting all the teachers (kindergarten, primary or secondary).

OBSERVATION T1

KBM at the time of observation to-3 is a visit to LIPI (mileage + 10 Minutes). The purpose of learning to know about some of the equipment, materials, and safety instructions in the laboratory. In LIPI students showed some laboratory equipment, working procedures and so forth. The learning process took place smoothly. At the end of the lesson, students are asked to write a report that contains the image of laboratory equipment are met, usability and work procedures. In the process of student learning is active enough to ask, students are given the task of drawing the informant asked for equipment and functions to ask. Learning is effective because students since the beginning of learning have been given guidance about what they should do.

OBSERVATION to-4

Activities undertaken in the form of lab work in class. In the laboratory the students to make compost by using organic waste in the school kitchen. Teachers design learning activities and materials needed by using simple materials based on internet search results. Learning activities lasted for 2 meetings. In this study, all students are actively involved, including children ABKnya, this is because the learning process involves all the senses of the character of students. The observations that have not been explored in the fourth observation does not see the learning objectives of this activity. Observers do not see the relevance of learning activities with SK or KD to be achieved. When the confirmation to the teacher concerned, she emphasizes studying the application of certain mastery not waste utilization SK or KD. It is tailored to the typical school curriculum that views nature as an essential part of the learning process.

PROCESS ANALYSIS LEARNING BASED ENVIRONMENT

Learning is an important part that determines the success of educational goals. The success of learning is supported by several components such as synergy educator resources, media, facilities, teaching aids, learning resources and approaches used, the atmosphere and learning environment. It takes effort to encourage alternative improvements that learning can be done with more interesting and meaningful. Neighborhood school concept

alternatives based learning innovation. It is based on several indicators.

a. Growing process of Creative and Critical Thinking.

One of the goals of national education is to form the Indonesian people who are creative. Problems that can not grow their own creativity, it takes a stimulant in the form of a conditioned environment so that the attitude of students' creative thinking can emerge. According to Desrochers (2004) learners will have the motivation to think creatively when they face the problem as a whole. Learning to use waste as a source of learning at the time of observation to-4 will encourage students to be able to overcome the difficulties faced by the creation of objects derived from waste. To create the necessary conditions on the design of learning that encourages student creativity. Conditions that encourage creativity by Desrochers (2004) is 1) a strong foundation of discipline, 2), test projects and tasks that are open and flexible; 3) the time to make. Must go through the concept of neighborhood school with a curriculum that integrates the third conditioning above can be met. By utilizing garbage, learners have an understanding of the subject matter so as to learn the facts, concepts and poured it in a work. Limited understanding of teachers about the project that is open and flexible to make this not be met.

According to Lau (2008) creative thinking and critical thinking is something different. Creative does not just mean the ability to produce something (idea) new. Someone who is creative is the person who can generate new ideas that are useful and relevant to the problems faced, while berpikir critical is the ability to evaluate the usefulness of new ideas, ability to define and modify the idea. Significance of the school with the concept of nature to encourage critical thinking based on several indicators. First, the use of nature as a source of continuous learning in activities that could make the participants think about the things that happen in the natural environment and its impact on human life.

b. Facilitate the learning of abstract concepts into something that is concrete

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According to Piaget (Dahar, 1989) children at the age of 11 are in the stage of formal operational thinking. This means, the child at the age of junior high school was able to use kongkretnya operations to make more major surgery but according Redjeki (2000) children of junior high school age are usually at the age peralihana concrete operational stage of thinking to formal operational. Based on the modeling required by the concrete Redjeki in explaining abstract material in junior high school age children.

Nature-based teaching " X " Schools in basic principles stated that the notion of nature as a learning environment for exploring the universe is real. Learning takes place in a specific case when studying insects, students were invited to see insects, and so on. Training teachers in the laboratory, even tries to use nature to the fullest. According to Piaget (Dahar, 1989) children under 11 years are in the process of formal operational thinking. This means that a child under the age of high school was able to use kongkretnya operations set operations more common, but under Redjeki (2000) secondary school-age children are usually aged peralihana specific operational stage thinking to formal proceedings. Based on this model requires specific Redjeki in descriptions of materials that are abstract in secondary school-age children.

c. Create a low-cost education

When the school can be a maximum in the use of nature and the environment as a source of learning, efficiency, low tuition is not something difficult to achieve. Nature as a learning resource can be exploited by planting crops, livestock, use of former waste. Communities around the school (parents, farmers, traders and others) could be learning society which can be used as a cheap source of learning and potential. Despite the fact that the school is not cheap but the destination school of "X" to get there.

d. constraint analysis of teachers in utilizing the environment as a learning resource

Based on the observation of visible effort on the teacher to use the environment to the maximum, when the authors tried to confirm these conditions for teachers and classroom teachers revealed that schools tended to emphasize the teacher to make the learning process and can

take advantage of the concrete nature and the environment to the fullest. In applications in the field, obtained data about the constraints of teachers in utilizing the environment as a source of learning. Constraints include:

- 1) Mastery learning methods and models that fit with the concept of school less controlled by the teacher. Learn the basic guidelines that require teachers to use nature as a medium to learn as much as 70%, making the teacher force yourself to "being in nature" so impressed the teacher just "bring the classroom into nature" rather than vice versa. Yet according to various studies (Bocholt, 2000; Banet and Ayuso, 2003), if properly conceptualized learn and use appropriate learning model will produce will most likely be optimal.
- 2) Lack of training school or a foundation of learning models in accordance with the concept of school learning. This resulted in no conception of equality of teachers about the learning process that uses nature as a medium of learning.
- 3) Use a large spider web with the theme "Tatar Sunda" quite difficult for teachers to apply. According to the Ministry of Education (2008) should have a theme that always should be used as the theme of learning is a theme that is rich and can be several themes within one semester of study (as needed).
- 4)) Diversity is high on the class of the initial estimate will be the factors that cause teachers kedulitan not a lot of problems for teachers because it is assisted by a helper for the crew and 2 men standing by the classroom teacher in the classroom

E. analysis of development theory and limitations

Mulyasa (2008) some general steps that should be considered for effective utilization of learning resources are: a. Making good preparation in selecting and using every resource to learn, to support the effectiveness of learning and the formation of the desired base. b. Selecting a learning resource in accordance with the standards of the material being studied and support the achiev
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strengths and weaknesses of teaching resources that will be used and to analyze the contribution to the process and learning outcomes when using these sources. d. There is no use of learning resources just as a distraction and entertainment, but must have a purpose that is integrated with standard materials being studied e. selection of teaching resources for use in studying Adjustment textbooks are available in a cost-efficient f. Efficiency of learning resources should be focused on efforts involving various senses so as to achieve the various senses so as to achieve optimal results through effective and enjoyable process

In addition to the above, according to Desrochers (2004) needed a strong foundation of discipline, sufficient time and adequate mastery of pedagogy. Lack of mastery of pedagogy that

teachers can not choose to make the models and methods in accordance with the concept that schools want. The impact, process and desired learning goals can not be achieved. Based on this observation occurs because teachers who teach science are not derived from the PTK and no pedagogical training of school materials that must be controlled.

CONCLUSION

The role of teachers in the learning process on the concept of the school environment not only need support from parents and schools but also requires teachers who have sufficient understanding of pedagogy.

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