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PRACTICUM BASED LEARNING DEVELOPMENT ASSISTANCE IN STATE HIGH SCHOOLS 2 BAUBAU

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Abstract

The management of practicum time at State Senior High School 2 Baubau was considered inefficient by the teacher because in the implementation process, the practicum took a different time from the learning hours. This service aims to integrate the teacher's practical implementation time in learning hours. This service is carried out in three stages, namely the planning, implementation, and learning analysis stages. through Focus group discussions (FGD), the teacher and the resource persons compile learning instruments and at the implementation stage of learning the teacher and resource persons collaborate to help students carry out practicum. The analysis of the learning implementation assistance process shows that students are more enthusiastic in learning because they are directly involved in learning, while in the aspect of time management the teacher feels that this learning is very efficient because it reduces the time needed to hold practicum.

Keywords: Learning, Practicum Based, Practicum *Nata de coco*

A. Introduction

Practicum is a learning strategy that can attract students' interest in developing concepts because it can provide direct experience for students to observe a phenomenon that occurs so that students will better understand the concepts being taught (Hamidah et al., 2014). Through practicum students can train scientific thinking skills, can instill and develop scientific attitudes, can find and solve various new problems through scientific methods (Kurniawati et al., 2015). The practicum emphasizes the psychomotor (skills), cognitive (knowledge), and affective (attitude) aspects using scheduled equipment in the laboratory or in the field.

The role of the teacher in practicum activities is more focused on facilitating students than in direct learning. The teacher consciously places more attention on the involvement, initiative and social interaction of students (Hidayati, 2012). The teacher becomes a facilitator who plays an important role starting from planning, implementing, assessing to following up

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on the results of the assessment of the practicum implementation. Teachers can do this well if the teacher has the ability and adequate skills in managing the laboratory, including how to get around the efficient use of time for practicum activities so that the integration between theory and practice in learning activities runs effectively in achieving learning goals.

Baubau 2 State Senior High School (SHS) is a school that already has a laboratory, one of which is a biology laboratory. However, the use of these laboratories for practicum activities is very rarely implemented. This is due to various factors including time management, unavailability of laboratory assistants, and a lack of understanding of teachers regarding the separation of schedules between theory and practicum. Therefore, cooperation and assistance from universities are needed to help develop learning that integrates theory and practicum through the implementation of practicum-based learning. Taharu (2017) reports that practicum-based learning can improve student learning outcomes in the study of bacteria.

This practicum-based learning development assistance is carried out by taking the theme of using bacteria in the manufacture of food ingredients, namely nata de coco. This learning can be a solution for practicum time management which is an obstacle at Baubau 2 State Senior High School. The selection of the coconut water-based practicum topic is related to its abundant availability in the city of Baubau. According to Djajanegara (2010), coconut water (Cocos nucifera) is often wasted and causes problems due to its strong aroma after being thrown into the environment for some time. The amount of coconut water waste every day is much greater than the amount used. Assistance in processing coconut water waste into nata de coco has been carried out by Nurdyansah and Widyastuti (2017) to a farmer group in Kudus Regency. This mentoring aims to help teachers integrate practicum in the learning process in one time which was originally carried out separately so that the management of learning time in schools is more optimal.

B. Problem

The problem in community service is how can teachers implement theory and practice integrate the learning process at one time which was originally implemented separately so that the management of learning time in schools is more optimal?

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C. Method of Implementation

Community service activities were carried out in October 2019 at Baubau 2 Public High School. The materials used are coconut water, sugar, urea/ZA fertilizer, glacial acetic acid (CH_3COOH), *Acetobacter xylinum* seeds/starter, gauze/cover paper. The tools used are a pot, stirrer, stove, measuring cup, filter, baking sheet.

The implementation of this activity includes three stages, namely:

1. The planning stage

The planning stage begins with a focus group discussion (FGD) between the resource person and participant teachers to determine learning objectives, determine the allocation of practicum time, compile steps in the practicum-based learning process and compile practicum-based learning instruments such as student worksheets including preparation of tools and materials required.

2. Implementation stage

The implementation stage is the stage in which teachers who have participated in the FGD implement the plans that have been made accompanied by resource persons who also act as observers who collect the data needed to improve the practicum process carried out. This activity is a practical assistance for making nata de coco. The selection of this topic was based on the results of the FGD after seeing the potential use of coconut water as the main ingredient in this practicum. So far, the coconut water which is abundant in Baubau City has not been utilized optimally, in fact it is often just thrown away.

Here is how the making of nata de coco works. Coconut water as much as 1250 mL is filtered to be free from dirt and boil. After that, 100 grams of granulated sugar, urea / ZA fertilizer tablespoons are added, and tablespoons of acetic acid (CH3COOH) or vinegar is added. The mixture is then brought to a boil again. After that, pour it into a clean pan and cover with paper until it cools. After that, pour 100 mL of the starter solution containing the source of Acetobacter xylinum bacteria and cover it again. Incubate / ferment for approximately 1 week at room temperature. The success of making nata is marked by the formation of a thick white layer in the container. Harvesting the nata is done by removing the gelatinous layer. Cut it into pieces and soak in clean water until the sour taste is gone. To make it last longer, boil the nata for 5-10 minutes. The nata that is formed can also be soaked in a solution of sugar syrup or fruit syrup.

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3. Learning Analysis Stage

The analysis stage is carried out during and after the learning process to find out how effective and successful learning is in answering learning objectives as well as to determine the success of service activities. The analysis stage was carried out by the teacher and the resource persons through observations about the implementation of each step in the learning scenario, the accuracy in using time and also considering the learning outcomes of students both cognitive, affective and psychomotor. Interviews with students were also conducted to find out how they responded to learning.

D. Discussion

This learning development assistance was carried out in the biology laboratory of Baubau Public High School 2. Biological laboratory conditions are adequate, but activities in the laboratory need to be maximized. This is because previously learning activities, especially related to practicum, were rarely carried out in the laboratory. After conducting an FGD with biology teachers at Baubau 2 Public Senior High School it was decided that practicum-based learning needed to be carried out more regularly in the laboratory at Baubau 2 Public Senior High School and the process carried out to maximize activities in the laboratory was to integrate the practicum into a learning scenario called practicum-based learning.

In this mentoring process, a practicum title was chosen, namely the making of nata de coco on the topic of biotechnology. The selection of this practicum topic was based on the lack of knowledge of most people about the benefits of coconut water, especially water from old coconut. Old coconut water in traditional markets in this city is just thrown away after taking the pulp. Meanwhile, on the other hand, coconut water is known to have a content that is good enough for health and has the potential as a food ingredient, namely nata de coco. Hamad et al. (2014) revealed that nata is the result of the fermentation product of Acetobacter xylinum with a substrate containing sugar.

In this activity, participants were first provided with material regarding the role and mechanism of the formation of nata de coco made from coconut water and bacteria. The procedure for making nata de coco is carried out directly by the participants guided or accompanied by a speaker. Participants carry out directly carefully each stage of the work delivered. The delivery of material using the lecture and demonstration method directly supports the skills of the participants in mastering the material presented by the speakers.

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Figure 1. Implementation of Practicum-Based Learning

Figure 2. Analysis of Learning by Teachers and Narasubers

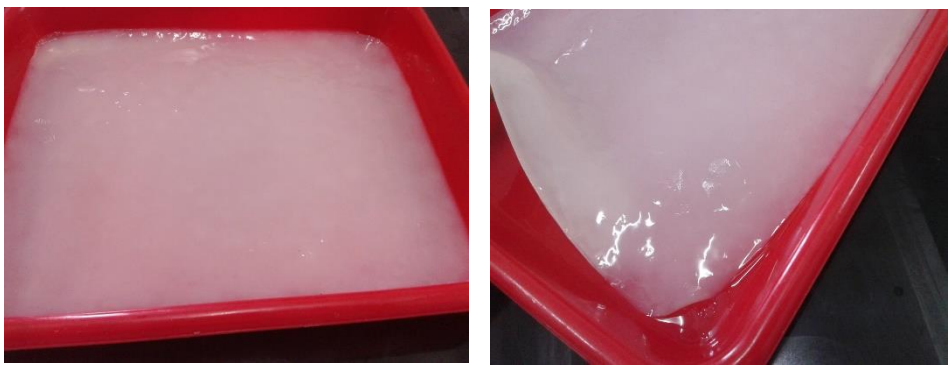

Figure 3. Products of *nata de coco*

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The practice of making nata de coco can help students understand the importance of working in sterile conditions, hone skills using measuring instruments, as well as utilize resources that have not been optimized for use.

E. Conclusion

Practical-based learning is a solution to solving problems in managing practicum time which is not efficient by separating the schedule between practicum and theoretical learning. Thus, an explanation of the concepts that students should understand is still given without neglecting the aspects of skills that students must also have, especially in biology subjects. This community service program can be followed up by increasing the number of practicums that are still possible to be implemented at Baubau 2 Public Senior High School or even in other schools.

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