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Teachers and Partners are Involved in implementation Project Based Learning Model of Biology Education at SMAN 13 Medan

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ABSTRACT

This research was carried out at the State High School 13 Medan. The population of this study was 32 pupils and 2 biology teachers. The evaluation methods used in this research are quantitative methods and library studies. Education is a conscious and planned effort to create a good learning atmosphere and produce good students anyway. The Merdeka Curriculum is a curriculum with diverse intra-curricular learning where content is more optimal so that students have enough time to deepen concepts and strengthen skills. One of the schools that implemented the Merdeka curriculum is the SMAN 13 Medan. Results found from observations of problems or shortcomings in the PjBL learning model are available in time, cost, and LKPD.

Key Word *Education, Free Curriculum, PjBL Learning Model*

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INTRODUCTION

Education is a conscious and planned effort in realizing a good learning atmosphere and producing good students as well. Education provides useful knowledge so that students can understand and understand something that is not yet known. The father of education Ki Hajar Dewantara defines education as a demand in the life of growing children, so that they as humans and as members of society can achieve the highest safety and happiness. In education there is the term humanization or known as humanizing humans. Learners in education cannot be arranged at will, they need attention in the maturation process in order to become independent human beings and can think critically. So the meaning of the word humanize is to respect the human rights of students and pay attention to them in the maturation process without regulating at will (Marisyah et al, 2019). Education is a teaching and learning process carried out

by teachers to students with the aim of moral, intellectual changes that affect behavior so that it becomes even better.

Learning is a communication process between students and teachers in acquiring knowledge and forming good morals for students. In learning, there are important components, namely, educational goals, students (learners), educators, learning materials, learning methods, media or learning tools, and learning evaluation. These components will become a unified whole so that the desired educational goals are achieved (Anwari et al, 2021). These components are important in learning, one of which is in learning biology.

Biology learning is learning centered on active and creative completion (Siregar, 2022). Therefore, in order to produce active and creative students, the learning model used is the PjBL (Project Based Learning) learning model. The PjBL learning model is applied as learning in the Merdeka curriculum era. The Merdeka Curriculum is a curriculum with diverse intracurricular learning where content is optimized so that students have enough time to deepen concepts and strengthen skills. The Merdeka Curriculum is based on the ideals of independence and the philosophy of Pancasila (Kemendikbud, 2024). The PjBL learning model is a learning method used by educators that focuses on the development and skills of students through projects. Using this model will produce active, creative, collaborative students in completing learning according to the material (Ernawati, 2022).

Based on Nurazizah & Diana's research, 2023 states that the difficulties faced by teachers in implementing the PjBL learning model are the time and instructions needed in working on projects that have been assigned outside of learning hours. The PjBL Learning Model makes students feel that more learning time is used in making projects so that it is not effective. The next obstacle is that the teacher argues that the learning outcomes of students are less specific.

One of the schools that implement the Merdeka curriculum is SMAN 13 Medan. Based on observations made in class XI SMAN 13 Medan, it was found that in biology learning using the PjBL learning model there were several problems. The problems obtained are based on the results of interviews with teachers and students. The first problem, students stated that the LKPD (Learner Worksheet) was not well understood, so that students were confused in doing the project. LKPD is a learning media that contains steps in working on projects. LKPD can help students carry out learning activities in a structured and effective manner (Noperman, 2022). LKPD components contain titles, basic competencies, processing time, material needed in the work briefly and clearly, brief information, processing steps, tasks and report preparation (Saputri &

Endang, 2022). LKPD is the responsibility of a teacher to facilitate students in working on assignments in the form of projects. The second problem, on the problem of students stating that project learning requires quite a lot of money. Teachers also stated that the difficulty in this PjBL learning requires more costs and it will burden students. Furthermore, the third problem is time. An interview conducted with one of the XI grade teachers stated that this PjBL learning problem lies in time. In doing project work, it takes quite a lot of time.

Through this research, it will be known the solutions needed by teachers in overcoming problems or difficulties in implementing the Project Based Learning (PjBL) learning model at SMAN 13 Medan.

RESEARCH METHOD

This research was conducted at SMA Negeri 13 Medan located at Jl. Karya Bersama, Titi Kuning, Kec. Medan Johor, Medan City, North Sumatra. This study involved two biology teachers and 32 students. This research used quantitative methods and literature review. The research tool used by the teacher was an interview with 6 questions. The research instrument given to students consists of a questionnaire containing 3 questions with several options that allow students to choose more than one answer desired by the student. The results of the instruments given to students will be calculated using Microsoft Excel. The purpose of using Microsoft Excel to calculate the results of instruments given to students, namely by calculating the average percentage of students' interest in project-based learning and to calculate the average percentage of advantages and disadvantages of Project Based Learning according to the students' opinions.

RESULTS AND DISCUSSION

The results found from observations regarding problems in implementing the PjBL learning model are found in time, cost, and LKPD. Time is the main problem experienced by teachers while cost and LKPD are problems that many students feel.

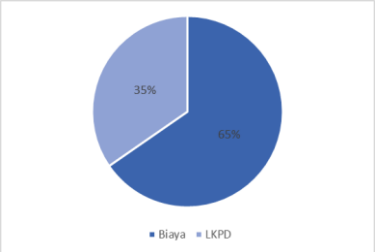

Figure 1.
Diagram of Observation Results on Students

As much as 65% of the data obtained shows that students feel objections in the cost or and spent when doing project assignments, while as many as 35% of students feel that LKPD is difficult to understand. We need to remind you that the data above we only chose 2 problems that had the most votes. Next is the time problem obtained from the results of interviews with biology subject teachers.

Time is the main problem in implementing PjBL in the classroom because it requires long stages. The stages in the use of PjBL, namely: 1) Determination of Basic Questions, namely the delivery of problem topics and directions to students to discuss related solutions that will be used as the basis for project assignments. 2) Designing project planning, which is the stage of selecting groups and types of products that will be made into projects. 3) Developing a schedule, in which teachers and students discuss determining the schedule for the stages of work and collection of project assignments to match the learning targets. 4) Monitoring students and project progress, i.e. teachers supervise students' activeness when working on projects in class and guide students who are struggling. 5) Testing the results, namely the teacher measures the achievement of standards on the projects that students work on. 6) Evaluating the experience, namely the teacher guides students to present the results and experience of working on the project and ends with a reflection / conclusion (Zuhdiyyah et al, 2023).

The solution that can be done to prevent or overcome these problems is good time management. Time management is concerned with scheduling projects effectively by coordinating project schedules with other teachers concerned with the subject matter (Dewi, 2023). This time management is in the form of preparing a schedule of activities. Teachers and learners discuss to set a schedule of activities in completing the project. The project completion time must be clear, and students are given direction to manage the time available. The project carried out by learners is a project that requires a long time to complete, so the teacher can ask students to complete the project in groups outside of school hours. During the project, the teacher must always supervise so that the project can be completed on time (Susanty, 2020).

PjBL produces a product that requires materials and tools that must be provided even some materials and tools must be purchased, so that cost is one of the problems felt by students. It is also stated by (Surwuy and Harmusial, 2023) that the weakness of PjBL is that it requires a lot of equipment supplies so that it spends a lot of funds for each activity.

The solution that can be used to overcome these shortcomings is to use used materials. The advantage of using used materials as an alternative solution

is that the material is easily obtained from the surrounding environment (Kurniawati et al., 2017). The utilization of used goods to support learning has several benefits, including training the creativity of students and teachers to utilize equipment around, as a cheap learning media, and also training students to love the environment (Listiani and Purwanto, 2018).

The use of the PjBL model can be modified by using an environment-based inquiry approach. Environment-based learning also has several benefits in learning, including: saving costs, providing real experiences for students, learning becomes more concrete and applicable (Erviana, 2015 in Zuhaida and Mubtasyiroh, 2022). The use of the PjBL model which uses an environment-based incuri approach means that students can directly understand the problems or potential of the surrounding environment. The next problem is LKPD which is difficult for students to understand due to lack of explanation from the teacher and writing LKPD that is wrong or not in accordance with the requirements of a good LKPD so that it can have an impact on the course of learning activities.

LKPD is a sheet of paper that contains activities and questions or questions that must be answered by students when doing real activities with objects and problems studied (Syamsu, 2020). The use of LKPD can increase the efficiency and effectiveness of learning in schools, both time, funds, facilities, and energy to achieve (Mukti et al., 2018). LKPD that meets good criteria will create an effective learning process. But on the other hand, if the LKPD is not in accordance with the criteria, what will be born is various problems in learning (Sari et al, 2020). This problem is such as the lack of understanding of students with LKPD provided by the teacher so that students are hampered when working on projects.

The above problems can be solved by paying attention to the preparation of a good LKPD. The development of a good LKPD must contain knowledge (facts, concepts, principles, procedures), skills / abilities, and attitudes that students must learn in achieving learning objectives (Kusno, 2014; Sari et al, 2020). The language in the LKPD must be effective and communicative so that it is easy to understand in learning (Sari et al, 2020).

LKPD must keep up with the times. One solution that can be applied is E-LKPD or electronic-based LKPD. Teachers can use electronic devices such as smartphones, laptops, or PCs to distribute electronic student worksheets. In addition, by converting student worksheets into electronic student worksheets, teachers can make the display more attractive (Azizah et al, 2023). The advantages of e-LKPD are that it can save time and space making it easier for

users to mark important things, small size and capacity and not using paper (Haqsari, 2014 in Afridhonal and Effendi, 2023).

CONCLUSION

The Project Based Learning learning model used at SMA Negeri 13 Medan still has several problems, namely the LKPD which is difficult to understand by students and the large costs used and this learning model requires a long time to complete. Therefore, related to the time management problem can be done by the teacher compiling a schedule of activities in advance in completing the project to be carried out, while for the LKPD problem the teacher can use language that is easily understood by students and the teacher can apply electronic-based LKPD with an attractive appearance, and for the cost problem the teacher can direct students to use used tools and materials around them.

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