



Implementation of the Project-Based Learning (PjBL) Learning Model in Observing Learning Styles and Improving Product Results in Biology Learning at SMAS Sultan Iskandar Muda Medan

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ABSTRACT

The research was motivated by the problem of student learning styles in group learning and product targets in making project assignments. The aim of this research is to find solutions that can be used to solve problems at SMAS Sultan Iskandar Muda Medan School through Project Based Learning (PjBL). The research method used is quantitative descriptive. The subjects in this research were students of SMAS Sultan Iskandar Muda Medan. This research uses surveys and literature to collect data. Research findings show that the use of the PjBL model can improve students' collaboration abilities in group learning. Students and teachers can utilize available resources to ensure that the tools and materials used by students are accessible. The conclusion of this research is that the PjBL learning model can be an effective solution in overcoming student learning style problems and optimizing product targets in working on project assignments in groups.

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INTRODUCTION

Education is currently undergoing an information-driven transformation and knowledge is expanding at an unprecedented rate. This rapid development of information is assisted by the use of media and technology called the information super highway. Learning activity methods during the knowledge age should be adapted to the needs of the knowledge age. Learning materials must provide an appropriate problem-solving framework in which students can work together to find solutions to learning problems. Problem solving leads to questions and finding answers for students, students can then find answers to problems during the learning process by using available resources. Education has undergone significant changes. Changes that have occurred in the world of education include: the learning process, which was

originally teacher-centered, has now shifted to become student-centered. One-way learning has now become two-way or interactive. Classroom learning develops into learning that utilizes networks, develops collaboration or teams, and trains critical thinking skills. Learning activities do not just convey knowledge but move on to knowledge transition.

Project-based learning (PjBL) is an educational model that facilitates collaborative learning. The project-based learning model is a refinement of the problem-based learning (PBL) model. Apart from that, PjBL has a training strategy that focuses on CTL or contextual teaching and learning processes. The project-based learning model (PjBL) is a learning model that emphasizes learning concepts and principles that contribute to students' work results in solving problems and other important tasks, which students follow so they can participate independently in academic activities until students are finally able to create the actual product. This is in line with research findings (Riskayanti, 2021) which explains that the use of a project-based learning model known as Project Based Learning (PjBL) can improve students' collaborative skills in learning activities. And research (Alfaeni et al., 2022) confirms that the project-based learning model can improve students' collaborative skills. Project-based learning gives everyone the opportunity to imitate what the experts do, and if done right, it can be very interesting and fun. Project-based learning gives students the freedom to solve problems and provides opportunities for self-exploration. In this way, students are encouraged to experiment in a liberating learning environment where there are no rules in the classroom. The role of the teacher as a guide in project-based learning is very important because the teacher will direct students to think critically so that creativity will emerge from their environment. Active learning activities are closely related to individuals who behave creatively in expressing their ideas. Individual creativity can produce works such as developing original ideas, attitudes in formulating learning strategies (fluency), and usually creative students also pay more attention to precise details and details (elaboration) and are flexible in handling certain situations. . The ability to draw also has an impact on a person's creativity. Project-based learning is an active learning approach, because it teaches students directly and according to certain criteria which will also improve their critical thinking skills, such as carrying out critical assessments of projects that will be completed through student-created content. The project-based learning approach has authentic qualities so it will quickly lead students to become involved in construction research (Insyasiska et al., 2017).

Implementing the Project Based Learning learning model requires a lot of time, both in terms of teacher preparation, media, project work and also student contributions. Therefore, the aim of this research is to analyze the problems of student learning styles in group learning and product targets in the implementation of the Project Based Learning (PjBL) Model at SMAS Sultan Iskandar Muda Medan and

provide recommendations based on existing theoretical insights. This is in accordance with research by Farihatun (2019) regarding the weaknesses of the project based learning model, including: a. a teacher is unable to lead students to problem solving, b. Often requires expensive costs and a long time, c. a teacher's difficulty in monitoring student learning activities outside the classroom.

RESEARCH METHOD

This research was conducted at Sultan Iskandar Muda Private High School in Gg Bakul lingkungan XI Pekan 1 Sunggal, Medan City, North Sumatra. Data collection in this research was obtained through interviews with a teacher mover who implemented learning using the Project Based Learning learning method. This research consists of qualitative and descriptive research methods. Qualitative research is a type of research intended to understand human or social phenomena by creating comprehensive and detailed illustrations that can be expressed in words, describing what arises from data sources, and conducting research in a comfortable atmosphere. Qualitative research involves examining specific contexts found in real-world (natural) life and aims to understand phenomena by analyzing what happens, why it happens, and how it happens. The qualitative research method is based on the going explorer concept which involves in-depth and case-oriented study or a number of cases or a single case.

RESULT AND DISCUSSION

Based on the results of interviews with SMAS Sultan Iskandar Muda Medan teachers mover, there are problems in implementing the Project Based Learning (PBL) teaching model. These problems include student learning styles in group study and product targets in project work. Some students prefer to study alone and lack contribution in group learning. Apart from that, when working on projects, students often spend a lot of money to get more satisfactory project results.

Learning Style

According to DePorter and Hernacki (2000), learning is a combination of how an individual perceives, then manipulates and organizes information. Learning is not just absorbing information, observing, analyzing, expressing and writing; it is also about acquiring specific, analytical, global, or right brain left brain knowledge. Another aspect of learning is when something is applied to the learning environment (applied abstractly and specifically). According to Pila, there are three types of learning, namely: a. visual learning, b. auditory learning and c. kinesthetic learning. Every student has a different learning style, and all of them are effective. Each method has its own unique strengths. As stated, every one of us has four learning styles; however, there is usually only one learning style that dominates.

Based on the results of the interview, problems were found regarding students' learning styles in group study. The problem of students who are reluctant to study in groups can be a complex challenge for teachers and the students themselves. The inability to actively participate in the group's learning process can hinder their academic progress and harm the overall dynamics of the group. Factors such as differences in interests, abilities, or even personal conflicts can be the cause. Additionally, it is also possible that some students prefer to study alone because they feel more comfortable or confident in a quieter environment. However, it is important for teachers to identify the root of the problem and create an environment that supports collaboration and active participation for all students, both individually and in groups. With the right approach and adequate support, these problems can be overcome and students can engage more effectively in group learning.

From the problems above, teachers have solutions to overcome student problems in group learning. During learning, teachers must choose heterogeneous group members. If there are students who are still unable to accept their group members, a teacher takes action in making an approach. The teacher approaches students who do not participate in group learning by providing motivation and looking for solutions to the obstacles they face. Apart from that, teachers can also give consequences to students who are still unable to accept their group members. Another alternative carried out by teachers is to make choices of tasks that can be done in groups or individually. Students are given the opportunity to choose and think about the consequences. If this solution does not work, then a teacher asks for help at the counseling stage.

Based on Khumaerah's (2023) research findings, it can be concluded that the Project Based Learning (PjBL) model has succeeded in increasing students' collaboration capacity. The teaching process uses a project management technique, namely PjBL, which makes it easier for researchers to match lesson plans with collaborative projects. This allows them to create adaptable cycle prototypes with biological materials that meet learning objectives. For this reason, the teacher's role is very important in developing teamwork through effective teaching methods.

Product targets

From the results of the interviews conducted, problems were found in project work. One of the main challenges faced by students who want to make products with satisfactory results is expensive capital. The process of developing quality products often requires significant investment in terms of funds to purchase raw materials, equipment, or even to hire skilled labor. This can be a significant barrier for students, especially those from economically disadvantaged backgrounds.

Apart from the factors that hinder teachers in the process of designing other projects, there is no funding for purchasing project-based learning tools and materials. This is in line with Komalasari's assertion that in contextual education, teachers and

students are often faced with various media, sources and tasks that require them to spend a lot of money so that limited costs will hinder the implementation of contextual learning and project work.

To overcome problems that arise during the design phase of a project, instructors must ensure that available resources are used and that tools and materials can be used by students. This statement was conveyed by Widiyatmoko & Pamelasari who emphasized that there are several things that need to be considered when creating a project, such as the use of sustainable materials that are easily obtained from nearby natural areas or from nearby shops or markets. If you have to buy something, consider the cost and make sure the materials used are not too expensive for students.

In an effort to deal with time problems at this stage, the teacher will ensure that projects that are not completed in class will be continued working on the project at home. Rais stated that the projects carried out by students are projects that require a long time to complete, so teachers can ask students to complete the project in a non-school environment. When lessons are taught during school hours, students in class just present the results of the project.

To overcome the problem of time delays, teachers try to remain consistent with the time allocation that has been determined since the beginning of learning by using time as efficiently as possible. Apart from that, teachers also provide additional time so that stages that are delayed from the specified schedule can still be evaluated. This effort is supported by Prayogo, who stated that one way teachers can improve student learning achievement is by increasing lesson hours. However, the additional lesson hours should not interfere with other subjects so as not to affect students' grades in other subjects (Yusriani, 2020).

CONCLUSION

Based on the results of the research that has been carried out, it can be concluded that there are several obstacles in implementing the Project Based Learning learning model at SMAS Sultan Iskandar Muda Medan. These problems are students' learning styles which are still lacking in studying in groups as well as constraints on the costs incurred to create target products in project work. To overcome this problem, a project-based learning model or Project Based Learning is implemented by forming heterogeneous groups, providing motivation and good relationships between students and teachers, and utilizing available resources so that the target product can be reached by students. By implementing these strategies, it is hoped that it can improve students' collaboration abilities and optimize the results of project work. Therefore, it can be concluded that the Project Based Learning learning model can be an effective solution to overcome the problems of student learning styles and product targets in group project work at SMAS Sultan Iskandar Muda Medan.

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