

## Analysis of Constraints and Solutions in Implementation Project-Based Learning (PJBL) Model in the Subject of Biology in Class X of SMA Negeri 1 Binjai

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### ABSTRACT

Study This aim For identify problem main in Project- Based implementation Learning (PJBL) in subjects Biology in class X SMA Negeri 1 Binjai . Focus main study is limitations time and difficulty Teacher in manage class . Method used is descriptive with data collection via questionnaires and interviews with two Teacher biology . Results study show that available time No Enough For complete project tasks and difficulties in manage class hinder effectiveness of PJBL. For overcome problem this, recommended adjustment timetable lessons and training management class for Teacher. Implementation solution This expected can increase quality learning Biology through PJBL at SMA Negeri 1 Binjai .

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## INTRODUCTION

Biology is a mandatory subject studied for participant educate Mathematics and Natural Sciences major at the School Upper Middle. Biology very tightly connection with activity every day , so biology connected with solution conflict and problems daily . In Biology teaching and learning activities ,efforts to get participants educate increase results Study own a number of difficulties that create results Study participant educate very low. Lesson biology a little lack of force participant educate for remember understand and master draft until impact on results end learn a little not enough Good . Skill Teacher in do learning can also influence results Study participant educate . Educator generally use method that makes participant educate often feel bored so material lesson easy forgotten just like that ( Simangunsong et al., 2022).

Moment convey material educators should use suitable model so that participant educate feel encouraged Good. So from That important for use model where students role as the perpetrator ( Alghany,et al., 2021). In the learning teacher is direct person have connection for apply curriculum to participants educate , however curriculum as well as sufficient facilities no meaningful without involvement Teacher in implement model appropriate learning with condition the class he taught ( Simangunsong et al., 2022).

Indriyani et al.,(2019), revealed that for make memory participant educate to lesson long lasting, learning must be make participant educate active hook draft related with medium material walk. Process active learning must involving learning media optimally for stimulate liveliness participant educate. Participant educate should don't only make product as results end from solution problem that, but also must active in increase draft or solution the problem is there,so can seen quality process and quality results his learning. Simply put learning based project This hook existing technology with circumstances familiar environment happening around participant educate or projects found at school so that experience process learning participant educate seen interesting and useful ( Simangunsong et al., 2022).

Project- based model Learning ( PjBL ) is facing model participant educate on relevant learning which is positive influence development think creative participant educate enable participant educate to be active explore knowledge , ask , discover problem , design , and implement project (Baker, Trygg , Otto, Tudor, & Ferguson, 2011). Project-based Learning (PJBL) is possible strategy increase various competence like academic, achievement, level think, think critical, ability solve problems, creativity, independence, and presentation ability for see situation from more perspective good (Azzahra et al., 2023).

PJBL is wrong one model learning that uses problem world real as something context for student for study about how to think critical and skills solution problem as well as for obtain essential knowledge and concepts from material lesson. Learning PJBL is also expected capable give solution in finish problems that occur with create an idea or create product with utilise existing environment. Learning PJBL own steps as following : determination question fundamentals, designing planning project, compose schedule, monitor

participant education and progress project, test results, and evaluate experience (Azzahra et al., 2023).

As professional staff one teacher sued capable manage class that is create and maintain condition optimal learning for achieved objective teaching. According to amateur (in Supriyanto, 1991) "Management class is efforts made by teacher in create and maintain as well as expand grow motivation Study For reach the goals that have been set." Whereas according to Usman (2003) "Management effective class is precondition absolute for happen process Study effective teaching." Management seen as wrong one aspect maintenance system basic learning, among others kinds of teacher duties inside class. Various definition about management class that can accepted by experts education, namely : Management class defined as :

- a) Device activity teacher for develop act in demand participant educate the desired and subtract act behavior that doesn't desired .
- b) A set activity teacher for develop good interpersonal relationships and climate socio emotional positive class.
- c) A set activity teacher for grow and maintain organization effective class ( Rofiq , 2009 ).

Teacher in carry out teaching duties at a class necessary plan and determine management what classes are necessary done with notice condition ability study participant educate as well as material lesson to be taught in class the compile strategy for anticipate obstacles and challenges appears in order to process study teach still can walking and goals learning that has been done determined can achieved management class will become simple For done by the teacher own motivation high work , and teachers know that leadership style situational will very beneficial for teacher in carry out their teaching duties ( Rofiq , 2009).

In process learning management class is part the most important thing is that you can determine success process learning. Matter This in accordance with objective management class that alone that is create condition conducive class order activities Study teach taking place in accordance objective. Management class must implemented as maximally and effectively as possible give influence positive on behavior students ( Yantoro , 2020).

Objective from study this is for identify problem main in Project-Based implementation Learning (PJBL) in subjects biology in class X SMA Negeri 1 Binjai, in particular related with limitations time and difficulty Teacher in conducive class. Study this aim for evaluate impact constraint time to completion of project tasks by students and assess influence difficulty management class to effectiveness learning . Based on findings the research this is also purposeful For compile recommendation the right solution to overcome problems faced , with focus on management timing and strategy management effective class , for increase quality learning biology through PJBL

## LITERATURE REVIEW

The learning strategy carried out by the teacher greatly determines the success of students in learning. Teachers are required to understand the basic

components in implementing learning activities in schools both in and outside the classroom. The task of a teacher is not only to transfer knowledge, but to be a teacher must understand the philosophy of teaching and learning. In addition, a teacher must be able to know the behaviors when teaching. The teacher will be the main example that will later be imitated by students. Education in Indonesia is still low because the management of education is less than optimal. The low quality and quality of education in Indonesia, this is a shared responsibility to improve it, especially teachers (Habbah et.al, 2023).

The selection of learning strategies is one part of class management that must be carried out by teachers. Class management in elementary schools is not only the implementation of learning and physical facilities provided in the classroom but preparing class conditions to create a comfortable and effective learning atmosphere is also part of class management. Therefore, schools and classes must manage well so that the school atmosphere can create a supportive learning climate (Habbah et.al, 2023).

Classroom management is an important component in educational management, where in the classroom the application of other management will be felt directly by students, whether it is related to facilities and infrastructure, curriculum or learning. According to Made Pidarta, classroom management is the process of selecting and using the right tools for classroom problems and situations. This means that teachers are tasked with creating, improving, and maintaining classroom systems/organizations, so that students can utilize their abilities, talents, and energy in individual tasks. In a process, classroom management has activities or stages in its implementation, starting from planning, implementing, and evaluating activities so that what the teacher does can become a complete unit. To achieve effective classroom management, the activities or stages carried out must be efficient, such as not wasting time, money, and other resources which are important parts of classroom management so that the goals of classroom management can be achieved optimally. Classroom management is a teacher's skill in creating and maintaining optimal learning conditions and restoring the best possible conditions if problems occur, either by disciplining or carrying out remedial activities for students in the classroom (Habbah et.al, 2023). In teaching and learning activities, there are two things that determine the success or failure of a teaching and learning process, namely classroom management and teaching itself. Both are interdependent. The success of teaching, in the sense of achieving instructional objectives, is highly dependent on the ability to manage the class. A good class can create a situation that allows students to learn so that it is the starting point for successful teaching (Habbah et.al, 2023).

Students can learn well, in a natural atmosphere without pressure and in conditions that stimulate learning. They need guidance and assistance to understand teaching materials in various learning activities. To create an atmosphere that fosters enthusiasm for learning, improves student learning achievement, and makes it more possible for teachers to provide guidance to students in learning, adequate classroom organization or management is needed. Class organization is a series of teacher activities to foster and maintain

an effective organization, which includes: teaching objectives, arranging the use of available time, arranging the room and lesson furniture, and grouping students in learning (Faruqi, 2018).

Class organization related to students, related to their interests, abilities, desires and activities. An optimal learning condition is achieved when the teacher is able to organize students and teaching facilities and control them in a pleasant atmosphere to achieve the learning objectives. Sometimes the intended arrangement is more directly related to conveying teaching messages. In order for the teaching message to be received well by the learning subject, there needs to be a condition that allows for it. If the arrangement of learning conditions is maximized by itself, it is likely that the learning process will also take place optimally. Conversely, if there is a lack of tasks and facilities or tools, or a disconnection between one desire and another, or needs and their fulfillment, then there is a disruption to the intended learning process (Faruqi, 2018).

The Project-based Learning (PjBL) model is a model that confronts students with relevant learning, which positively influences the development of students' creative thinking, allows students to actively explore knowledge, ask questions, find problems, design, and implement projects. Project-based Learning (PJBL) is a strategy that can improve various competencies such as academic, achievement, level of thinking, critical thinking, problem-solving skills, creativity, independence, and presentation of the ability to see situations from a better perspective ( Azzahra et.al, 2023).

PjBL is a learning model that uses real-world problems as a context for students to learn about critical thinking and problem-solving skills and to acquire essential knowledge and concepts from the subject matter. PjBL learning is also expected to be able to provide solutions in solving problems that occur by creating an idea or creating a product by utilizing the existing environment. PjBL learning has the following steps: determining basic questions, designing project planning, preparing schedules, monitoring students and project progress, testing results, and evaluating experiences (Azzahra et.al, 2023).

The project-based learning model was chosen because this learning model involves students in complex problems, real-world problems, wherever students can choose and determine issues or problems that are meaningful to students. In addition, in project-based learning, students are required to use investigation, research, planning skills, and problem-solving skills when students complete projects. through project-based learning, students are more active in learning, students' creativity develops, teachers are only facilitators, teachers evaluate the products of student performance from the projects they work on (Azzahra et.al, 2023).

## METHODOLOGY

### *Time and location study*

Study This carried out on the day Friday 03 May 2024 at SMA Negeri 1 Binjai located on Jl. Wr. Mongonsidi No.10, Satria District Binjai City, City Binjai , Sumatra North, 20714.

### **Type study**

Study This use method study descriptive with technique data collection via interview . Subject study is Teacher biology class X at SMA Negeri 1 Binjai .

### **Procedure study**

#### 1. Preparation :

- a. Compile guide relevant interviews with objective study .
- b. Look after licensing and coordination with party school .

#### 2. Data collection :

Do interview direct with second Teacher For deepen answer questionnaire and get information addition.

#### 3. Data analysis :

- a. Collect and organize the data obtained from interview.
- b. Analyze data descriptively For identify patterns and conclusions relevant to objective study.

#### 4. Reporting Results :

- a. Compile report research that includes background background , methods , results , and conclusions.
- b. Share findings study to party school For increase quality learning biology.

## **RESULT AND DISCUSSION**

Based on results interview with two teacher biology class X at SMA Negeri 1 Binjai , found a number of problem in project-based implementation Learning (PJBL) in subjects biology. Following is findings main from interview the :

### **1. No Time Enough**

Teacher disclose that O'clock available lessons no enough for complete project tasks. Process processing project need more time long from allocation available time in timetable lesson regular. As a result students no can finish project with optimally and frequently must continue outside O'clock lesson,which gives rise to problem coordination and consistency.

### **2. Difficulty Conducive Class**

Teachers also complain difficulty in conducive class during implementation of PJBL. Student tend not enough focused and difficult arranged , so process learning No walk fluent . Matter This hinder effectiveness implementation of PPA and reducing achievement objective learning .

From findings results interview concluded that two problem main in implementation of PJBL in class X SMA Negeri 1 Binjai is limitations time and difficulty in management class. Following is discussion more detailed about second problem the as well as the right solution For solve it :

#### a. Limitations Time

PJBL requires a longer time allocation to provide opportunities for students to plan, implement and complete projects. To overcome this problem, schools can consider adjusting the lesson schedule by adding special lesson hours to the project or integrating the project with several related subjects. In addition, teachers can design projects that are more focused and can be

completed within the available time, without compromising quality and goals learning.

b. Difficulty in Management Class :

As a professional, a teacher is required to be able to manage the class, namely creating and maintaining optimal learning conditions in order to achieve teaching goals. According to Amateur (in Supriyanto, 1991) "Classroom management is the effort made by teachers to create, maintain and expand motivation to learn to achieve predetermined goals." Meanwhile, according to Usman (2003) "Effective classroom management is an absolute prerequisite for an effective teaching and learning process to occur." Management is considered one of the aspects of maintaining the basic learning system, including various teacher duties in the classroom. Various definitions of classroom management that can be accepted by educational experts, namely classroom management is defined as:

- a. Device activity teacher for develop act in demand participant educate the desired and subtract act behavior that doesn't desired .
- b. A set activity teacher for develop good interpersonal relationships and climate socio emotional positive class.
- c. A set activity Teacher For grow and maintain organization effective class ( Rofiq , 2009 ).

Management good class very important in implementation of PPAs. Teacher need develop effective strategy For guard class still conducive during implementation project. A number of possible solution applied include :

- a. Training management class: Teacher can follow training management class For develop skills in organize and motivate student .
- b. Making plan clear learning: Teacher need make plan clear and structured learning , including mandatory rules and procedures followed by student during project taking place .
- c. Use approach collaborative: Encouraging intercollaboration student in group small can help guard focus and engagement student .
- d. Application of varied classroom management techniques: Using varied classroom management techniques such as ice-breakers, group discussions, and peer assessment to increase student participation and discipline.

The function of classroom management is very basic because the teacher's activities in managing the class include the activities of managing, acting in the demands of students in the class, creating a socio-emotional climate and group management processes, so that the teacher's success in creating conditions that allow it is an indicator that the teaching and learning process is taking place effectively. The core activity of a school or class is the Teaching and Learning process (PBM). The quality of educating students and their graduates is largely determined by the success of implementing PBM or in other words is largely determined by the function and role of the teacher (Yantoro, 2020).

Effectiveness management class is level achieved objective from management class. Management class defined as series action taken teacher in

effort create condition class order process study teach can walk in accordance with the goal. Necessary actions done teacher in create condition class is do communication and interpersonal relationships between teachers participant educate reciprocally and effectively besides do planning or preparation teach ( Yantoro , 2020).

Teacher as manager class is people who have strategic role that is the person who plans activities that will be done in class, people will implement planned activities with subject and object participant educate, people determine and take decision with strategy that will used with various activities in class, and the teacher will also determine alternative solution for overcome obstacles and challenges that arise; so with a number of the approaches put forward, will very help teacher in carry out his work duties ( Rofiq , 2009).

Teacher in carry out teaching duties at a class, necessary plan and determine management what classes are necessary done with notice condition ability study participant educate as well as material lesson to be taught in class the . Compile strategy for anticipate obstacles and challenges appears in order to process study teach still can walking and goals learning that has been done determined can achieved. Management class will become simple for done by the teacher own motivation high work, and teachers know that leadership style situational will very beneficial for Teacher in carry out his teaching duties ( Rofiq , 2009).

With thereby management class no can regardless from motivation work teacher, because with motivation work teacher this will seen to what extent motive and motivation teacher for do management class, meanwhile with leadership style the right teacher to use in management class will optimize and maximize success management class the ( Rofiq , 2009). Management class have objective as following:

1. Provide and use facility Study For many kinds of activity Study teach to achieve good result .
2. Develop ability participant educate in use tools learn , provide possible conditions participant educate work and study , as well help participant educate For obtain expected results.
3. Realize situation and condition class , okay as environment Study nor as group learning is possible participant educate For develop ability maximum Possible
4. Remove various possible obstacles obstruct realization interaction study teach .
5. Provide and organize facility as well as furniture learning that supports and enables participant educate Study in accordance with environment social , emotional , and intellectual participant educate in class .
6. Coaching and guiding in accordance with background behind social , economic , cultural as well as traits the individual . Objective management class according to Sudirman ( in Djamarah 2006) in essence contained in objective education (Rofiq , 2009).

Objective management class in essence has contained in the goal education and in general objective management class is provision facility for many kinds of activity Study participant educate so that subject educate spared from problem bother like participant educate sleepy , reluctant doing assignments, late enter class , file question strange and other etc ( Yantoro , 2020).

Indicator from A orderly class is when:

1. Every participant educate keep going work, no congested it means no there is stalled child Because no know there is work to be done done or No can carry out the assigned tasks to him .
2. Every participant educate keep going do work without throw away time It means every participant educate will Work as soon as possible so quick complete the assigned tasks to him ( Yantoro , 2020).

With thereby can concluded that objective management class is provide, create and maintain optimal conditions inside class so that participant educate can study and work with Good. Besides that's also a teacher can develop and use tool help learning used in process Study teach so that can help participant educate in reach results desired learning ( Yantoro , 2020).

With overcome second problem that , is expected implementation of PJBL at SMA Negeri 1 Binjai can walk more effective and delivering benefit maximum for student in learning biology. Implementation strategy management good class and adjustment allocation time lesson will support PPA success and improvement quality overall learning

## CONCLUSIONS AND RECOMMENDATIONS

Study this find that project-based implementation learning (PJBL) in class X SMA Negeri 1 Binjai face two problem main: limitations time and difficulty in management class. Limitations time result project no can resolved with optimal, while difficulties in conducive class reduce effectiveness learning. For overcome problem this is necessary adjustment allocation time lessons and training management class for teacher. With thus, the implementation of PJBL is possible walk more effective and improving quality learning Biology.

For overcome problem application project-based model learning above, you can recommended :

1. School can consider for add O'clock lesson special for project or integrate project with several subjects related to providing enough time for student .
2. Teacher recommended for follow training management class for develop skills in organize and motivate students, create condition optimal learning .
3. Teacher need make plan structured learning , including mandatory rules and procedures followed by student during project taking place .
4. Push intercollaboration student in group small can help guard focus and engagement student .

5. Teacher use techniques management varied classes such as ice- breakers , discussions groups, and assessment colleague colleague for increase participation and discipline student .

## ADVANCED RESEARCH

Considering the limited knowledge and skills of the researchers themselves, the researcher found when producing this article that there are still numerous deficiencies in terms of language, writing, and presentation style. Because of this, the researcher anticipates helpful feedback and recommendations from a range of sources in order to ensure the piece is flawless.

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