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Increasing students' learning motivation in natural science learning through project based learning

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Abstract

Education is basically very important in society, because with education, society will form a civilized character. SDN 01 Pinang Ranti uses curriculum 13, but the scientific approach applied by teachers is not optimal, the learning process in class is still not effective, and teachers still use the lecture method. Students' activeness in learning is still lacking, students' problem solving abilities in working on exam questions are still very low, as can be seen from observations of daily tests on plant grouping material with an average score of 49.55. In the learning process in class IIIC, students' learning motivation is still low. The aim of this research is to increase the learning motivation of class IIIC students in science subjects. The research method used is classroom action research and the models used are the Kemmis and MC models. Taggart. Kurt Lewin. Data collection techniques were carried out using questionnaires, interviews, observation and documentation. Data analysis techniques were carried out based on those expressed by Miles and Huberman. The research results showed that in the pre-cycle, the level of student learning motivation was quite low, namely 38%. After taking action in cycle I, it was found that student learning motivation increased to 41% and increased again in cycle II with a figure of 65%. The conclusion is that the use of the PjBL learning model can be applied to increase the learning motivation of class IIIC students in science subjects.

Keywords: Science, Learning Motivation, Project Based Learning (PjBL)

1 INTRODUCTION

Education is basically very important in life in society, because by being educated, society will form a good and civilized character. Education will continue until we are able to develop this character and be civilized. In the Law of the Republic of Indonesia concerning the National Education System Number 20 of 2003 article 3 states that: National education functions to develop abilities and shape the character and civilization of a dignified nation in order to make the life of the nation intelligent, aimed at developing the potential of students so that they become human beings who believe and have faith in God Almighty, have noble character, be healthy, knowledgeable, capable, creative, and be democratic and responsible citizens. Children are required to go to school according to government regulations, namely that students are required to go to school for 9 years in order to form a character and civilization that is in line with the government's expectations.

One of the subjects that must be given to students is Natural Sciences (IPA). Natural Sciences (IPA) are essentially processes, products, attitudes and technology. Science means science that studies events that occur in nature (Irfan et al, 2019). In applying science, six learning principles must be met: motivation, background, discovery, learning by doing, learning by playing, and social. Motivation is an important factor in achieving learning goals. Students will be motivated to participate in the ongoing learning process if they are motivated to learn (Amin et al, 2021). Learning motivation is the drive to achieve great results that emerge through learning behavior or showing efforts to achieve learning goals (Darwis et al, 2019).

Based on the results of interviews and observations with class III C teachers at SDN 01 Pinang Ranti School, SDN 01 Pinang Ranti School has used curriculum 13, but the scientific approach applied by teachers has not been optimal for students, the learning process in class is still not effective, and teachers are still using lecture method. Students' activeness in the learning process is still lacking, students' problem solving abilities in working on

exam questions are still very low, as can be seen from observations of daily tests on plant grouping material with an average score of 49.55. The learning process in class III of SDN 01 Pinang Ranti, students' learning motivation is still low.

Based on the problems above, this research aims to increase students' learning motivation in learning science on plant grouping material through Project Based Learning (PjBL) at SDN 01 Pinang Ranti, East Jakarta, Semester 2 of the 2022/2023 Academic Year. Through this research, it is hoped that teachers will be able to apply the PjBL learning model and students will feel happy when learning so that they can increase the level of student learning motivation. The inquiry-based learning method known as project-based learning Project based learning (PjBL) involves students in knowledge construction by requiring them to complete meaningful projects and create real-world products (Ratnasari et al, 2018).

Research conducted by (Budiharti & Aristiyaningsih, 2016) found that project-based learning in elementary schools can help students master concepts, increase learning motivation and develop positive attitudes in social interactions. Apart from that, the application of project-based learning can improve students' academic achievement in the science field. The most important part that differentiates Project based learning (PjBL) from other student-centered pedagogies, such as problem-based learning, is the ability to create products that solve real problems. In the process of integration, application, and construction of knowledge, this creation process requires students to collaborate in order to find original solutions to problems (Krajcik et al, 2021).

2 RESEARCH METHOD

This research is classroom action research. The aim of the research, which is based on the atmosphere, conditions and situations in the learning room, is to answer problems related to improving the quality of learning in the classroom. The term "action" refers to a planned action that is successfully completed. Learn to use a cyclical sequence of student actions. Classroom action research can be synthesized, namely observing learning activities, actions that are consciously presented and occur together in the classroom, by analyzing the understanding of the main words, namely research, action, and class (Arikunto et al, 2014).

The model used in this research is the Kemmis and MC model. Taggart. Kurt Lewin was the first person to introduce this model. The components of this model consist of planning, action, observation and reflection.

3 RESULTS AND DISCUSSION

This research was conducted as an effort to increase the learning motivation of third grade elementary school students through the application of a project-based learning model (Project Based Learning). This Classroom Action Research was carried out in class III of SD Negeri 01 Pinang Ranti, East Jakarta. This research was carried out in two cycles, each cycle being held in two meetings. The subjects of this research were 32 class III students, but the researchers only focused on 10 students who, based on the results of observations and interviews, had the lowest level of learning motivation. The results in this research are described based on each cycle which is explained as follows.

Based on the results of observations, out of a total of 32 students, there were 10 students who had very low levels of learning motivation. Students play more and talk alone with their classmates when the teacher is explaining the plant grouping material. This was also conveyed by the homeroom teacher and he hopes that this research can increase students' learning motivation, especially in the science subject material grouping plants.

From the results of observations made on the 10 students who were the subjects of this research, the score or average of students' learning motivation results was 38%. This figure is included in the low category, but based on the results of data processing obtained from the questionnaire, the level of student motivation is in the sufficient category with an average of 56%. Therefore, to increase students' learning motivation, other methods are needed that must be applied. Researchers provide action in 2 cycles using the Project Based Learning (PjBL) learning model.

The results of observations in cycle I showed that the 10 students with the lowest level of learning motivation, when compared with the pre-action observation sheet where the average level of motivation was only 38%, experienced a slight increase when cycle I was carried out, namely to 41%. This increase seems like nothing, but the results show that there is a change after the learning method was carried out using the PjBL method. Based on the results of research data processing, the first indicator received a score of 41%, while the second indicator, namely Resilient in facing difficulties, received a score of 43%. The third indicator got a score of 42% but the fourth indicator only got 38%. In the fifth and sixth indicators, the percentage is 39% while the seventh and eighth indicators both get a percentage of 43%. Thus, the average percentage or level of student learning motivation is 41%.

After the meeting in cycle I, researchers and teachers reflected on the implementation of actions in cycle I. This reflection aimed to identify deficiencies in the implementation of cycle I and serve as a guide for implementation in cycle II. Several things to note are: (a) Students still feel unfamiliar with this learning method but have shown more positive changes so that even though it is only in cycle I, the level of students' learning motivation has increased compared to before the action was taken; (b) Elementary school students are still carried away by the new learning atmosphere so that even though their level of motivation shows an increase, students still often enjoy themselves and playing with their friends. This is the basis for carrying out cycle II to truly ensure the validity of increasing student learning motivation.

From the results of observations in cycle II, the level of student learning motivation in science subjects on plant grouping material has increased with an average score of 65%. This figure increased from cycle I with an average value of 41%. Thus, based on the results of observations, there is a significant increase in student learning motivation when viewed from cycle I to cycle II. Based on the results of distributing questionnaires filled in by students, the results obtained were that the average level of learning motivation for the 10 students, namely the subjects of this research, had increased, namely in pre-action the average level of student motivation was 56% and was included in the sufficient category. Meanwhile, after taking action in cycle I, it was found that the level of student motivation had increased to 62% in the strong category. After taking action in cycle II, the average percentage of student learning motivation was 63%, which did not increase too much but showed a change in student learning motivation for the better.

4 Discussion

Students who learn are motivated by their own desires, and when they do so, they are able to independently determine the tasks they must complete to achieve their learning goals (Nurlaeliah et al, 2021). The basic desire that inspires individuals to fulfill their own needs is called self-motivation. It is very important to give students the opportunity for personal exploration and allow them to find something meaningful through work to increase students' motivation (Sulastri & Masriqon, 2021). The application of the Project Based Learning (PjBL) learning model to plant grouping material in science subjects can be implemented well. Based on the results of previous research and observations, the following results were obtained:

Pre-cycle it was found that the average score of student learning motivation was only 38% based on observations and then in the first cycle it increased to 41%. In cycle II the level of student learning motivation increased rapidly with an average of 65%. Thus, the researcher decided to stop in cycle II because the objectives to be achieved had been met.

Based on the results of reflection from cycles I to II through the Project Based Learning (PjBL) learning model on plant grouping material in science subjects, it provides students with the opportunity to focus their environment on the learning groups that have been formed. Even though initially there were still students who were not able to adapt, the research results showed that students felt suitable for the Project Based Learning (PjBL) learning model.

The research results above are in line with findings from research conducted by (Nurhadiyati et al, 2021) that science learning with the project-based learning model Project based learning (PjBL) is better than ordinary learning. This proves that the project-based learning model Project based learning (PjBL) can be used for science learning. When students have motivation to learn, the subsequent learning experience is more intense and consistent. Learning motivation not only inspires students to learn, but also directs students' activities towards learning goals (Marina et al, 2019).

Table 1 Comparison of Student Motivation

Motivation Percentage Category	Motivation Percentage Category
Pre Cycle 38%	Pre Cycle 38%
Cycle I 41%	Cycle I 41%
Cycle II 65%	Cycle II 65%

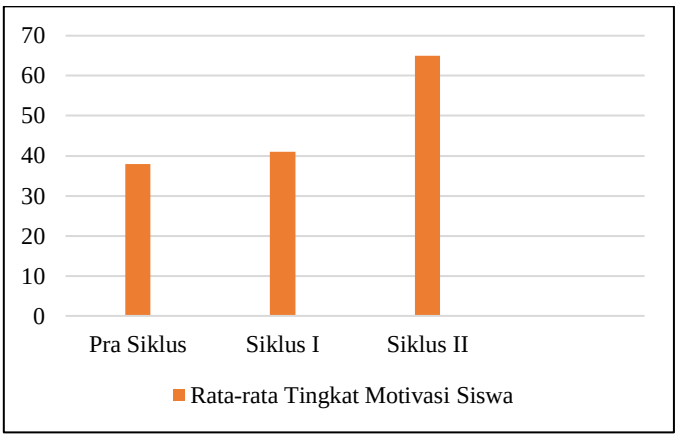

Figure 1 Average level of student motivation

5 CONCLUSION

Based on the data and discussion above, it can be concluded that the use of the PjBL learning model can be applied as an effort to increase the motivation and learning outcomes of class III students at SD Negeri Pinang Ranti 01 in the science subject material Grouping Plants. However, it is important to note that this research has limitations, such as the limited sample size and only being conducted in one school. Therefore, further research needs to be carried out with a larger sample and involving other schools to obtain higher validity.

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