

STUDENT ACTIVITIES ON LEARNING CHEMISTRY

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ABSTRACT

This case study aims to analyze student activities and student responses to the chemistry learning process. This research was conducted at SMAN 8 Banda Aceh using a qualitative approach. Data collection methods used in the form of observation, interviews, surveys and documentation during the case study. The technique for selecting resource persons was adjusted based on the data to be obtained, the selected sources were vice principals, chemistry teachers and students. Data analysis technique uses descriptive qualitative. Based on the results of observations at SMAN 8 Banda Aceh classified as having adequate facilities, the activities of students in the second observation were classified as good and experienced an increase, namely 71.43%. The obstacles faced in learning chemistry based on interviews with teachers are that students are less motivated in learning, the lack of understanding of students about the importance of learning chemistry, there is limited time to do practicum.

Keyword : Movie, Moral Value, Discourse Analysis

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1. INTRODUCTION

Learning at school is an attempt to arouse student initiative and the role of students in learning (Assriyanto, 2014). Widodo and Widayanti (2013), added that the presence or absence of learning is reflected in the presence or absence of activity. Without activity, learning is not possible. So that in teaching and learning interactions activity is an important principle in determining whether teaching is effective or not so that it can develop the potential that exists in itself. Active students will get better learning outcomes than students who just sit and wait for the learning to be transferred by the teacher (Pratiwi and Muhammad, 2014). The case study was conducted at SMAN 8 Banda Aceh because SMAN 8 is one of the schools that is easily accessible from the city of Banda Aceh. This school is one of the schools that has many enthusiasts every year. SMAN 8 accommodates approximately 709 students each year. Each science and social studies class at SMAN 8 is filled with a maximum of around 30 to 32 students. SMAN 8 has a vision that is to excel in quality based on faith and piety with a technology perspective. SMAN 8 Banda Aceh has complete facilities such as classrooms, teacher rooms, student health unit rooms (UKS), school grounds, chemical laboratories, libraries, computer laboratories, prayer rooms, canteens and toilets. Hasnah (2014), states that learning facilities in schools that are complete can support the process and success in learning. Chemistry is one of the subjects that must be taught for science classes at the high school level, and results are low compared to other science lessons, such as biology (BSNP, 2017). Actually, chemistry is a lesson that is not difficult to understand if students clearly understand the concept and are active during the learning process. Student activity is driven by several

factors of good student activity capable of producing good learning outcomes. Wahid (2014), states that the activity of students can increase if they have supporting factors in achieving learning objectives, one of the supporting factors is the use of laboratories for practicum/experiments, so that good learning results are obtained. Experiments or experiments carried out aim to find and find various answers to the problems faced. With this method students can be trained to think scientifically. By conducting experiments, students also find evidence of the theory being studied (Roestiyah, 2008).

Based on the results of observations at SMAN 8 Banda Aceh, chemistry learning still has obstacles to being carried out optimally. Classroom management and practicum in the learning process are still not optimal, even though SMAN 8 Banda Aceh has adequate laboratory facilities. Hosnan (2014: 20) says, "Teachers are not only required to have knowledge, teaching skills with the complexity of roles in accordance with the tasks and functions they carry out, but also must be creative". For example, the teacher uses an interesting learning model, approach or strategy in delivering material. Based on this background, the researcher is interested in conducting a case study at SMAN 8 Banda Aceh. Through this case study it is expected to be able to see the activities of students and teachers as well as students' responses to learning chemistry at SMAN 8 Banda Aceh.

2. RESEARCH METHOD

This study is a research with qualitative methods. The case study was conducted at SMAN 8 Banda Aceh. Data collection techniques used observation sheets of students' activities during chemistry lessons, questionnaires on responses to students and teachers on chemistry lessons, interviews with students, chemistry teachers and vice principals, surveys of facilities and infrastructure at school facilities and documentation. Data processing and analysis was carried out in a qualitative descriptive manner. This study was conducted at SMAN 8 Banda Aceh which is located at Gampong Pineung, Banda Aceh, Aceh. SMAN 8 has 36 classes consisting of 12 classes for each level. Processing and analysis of data using descriptive qualitative method. Frankael, et al. (2012), stated that educational research usually uses descriptive methods in the form of *surveys* and interviews. A qualitative descriptive approach in education includes identifying student achievement, describing teacher behavior and describing the physical abilities of schools. Data were analyzed by writing down the results of observations that had been made from the beginning to the end of the lesson. Data from observations of students' and teachers' activities during learning activities were analyzed using descriptive statistics using the percentage formula as follows:

$$\text{Value} = \frac{\sum \text{skor nilai yang diperoleh}}{\sum \text{skor maksimal}} \times 100\% \dots\dots\dots 1$$

3. RESULTS AND DISCUSSION

In this case study, three observations were made at SMAN 8. This school has implemented the 2013 curriculum since 2015. Learning activities and assessments at school have also been based on the 2013 curriculum. Researchers observed students' activities twice. The teacher observed was Mrs. RD who is a chemistry teacher who has taught at this school for more than 25 years. Mrs. RD teaches chemistry in class X IPA 4&5 and class XI IPA, each class has 30-32 students. In the first observation, the teacher was present at school on time. The teacher opens the class by greeting and all students answer the teacher's greeting, then the teacher invites students to pray to start the lesson in order to increase students' devotion to Allah SWT. The teacher gives several questions (apperception) to remind students of the previous material and motivate students to learn. In the core activity, the teacher explains the material using the lecture method and writes some important things on the blackboard. The teacher also gives students the opportunity to ask questions and copy notes. In closing activities, the teacher reflects and gives feedback to strengthen students' understanding. In the second observation, the researcher re-observed the activities of the students in the class, the initial learning activities went better than the previous observations, the activities of the students experienced several improvements which can be observed using Figure 1.

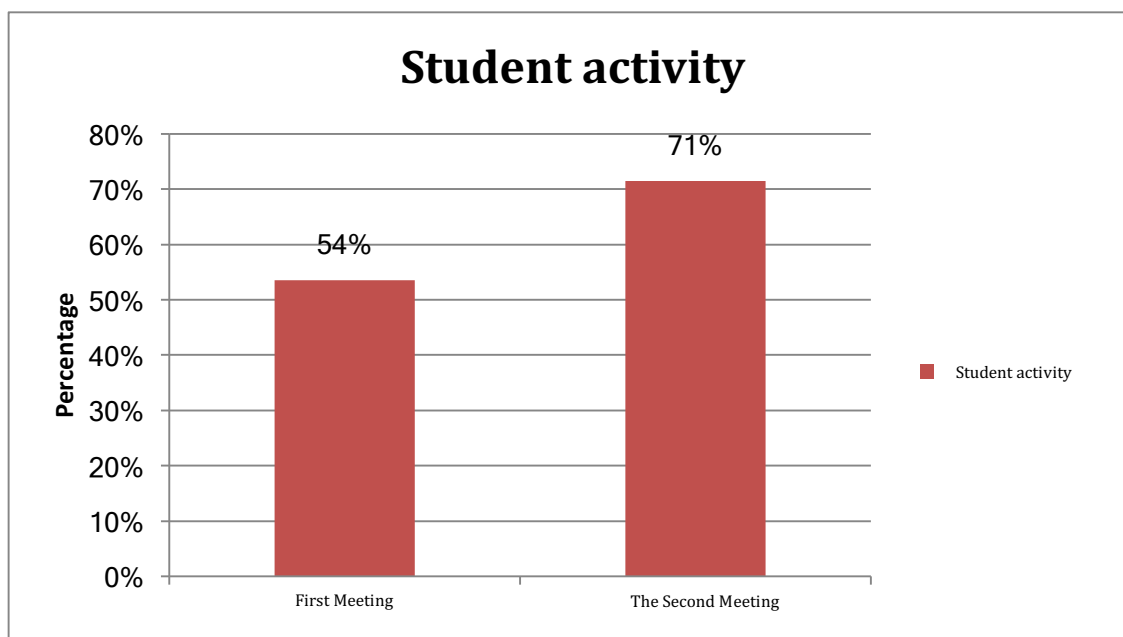


Figure 1. The results of student activities in the first and second observations

In the first observation, it was found that the activeness of students reached 54%, which was included in the unfavorable category (Sudijono, 2010). This is because, student learning is only centered on the teacher. Another factor that causes a lack of student learning activity is expressed by (Sabriani, 2012) there are still many students who often arrive late during class hours, do not have handbooks and pay little attention when the teacher explains. Holt (2010), stated that failures that occur in school children are due to fear, boredom and confusion. Students feel what is taught in school is trivial and boring and has no meaning at all. Learning can occur well if students are actively involved in it, students who can understand and complete assignments well will feel the benefits. They easily solve exam questions and get high marks. Students who always do assignments will create a habit so that it will have a positive impact on their daily life. Tasks can involve students to participate in learning, Herawati et al. (2013) stated that the use and selection of appropriate learning in presenting a material can help students understand everything presented by the teacher, so that through learning achievement tests it can be seen that the increase in student learning achievement. With proper learning, students are expected to be able to understand and master teaching material so that it can be useful in real life.

Learning that is less active can be dealt with by using various strategies, namely using varied learning models and using learning media. Learning models that are applied can provide opportunities for students to actively learn material through actions, experience themselves, find and develop the knowledge gained (Ismail et al., 2013). Tosum and Senocak (2013) revealed that *problem based learning* (PBL) is more effective in increasing metacognitive awareness and positive attitudes of students with low scientific backgrounds. Based on Figure 1, it was found that the activity of students in the second observation was better than before. The total number of student activities at the second meeting reached 71.43% belonging to the good category (Sudijono, 2010). This might be due to the second observation, in the initial activities students were divided into several discussion groups, so that students were motivated to compete with their peers. Hamdu and Agustina (2011) stated that motivation greatly influences the success of student learning activities, if learning activities are good, student learning achievement will also be good (high). Conversely, if students have bad habits in learning, then their learning achievement will be bad (low). Suprihatin (2015) states that one logical way to motivate students in learning is to relate learning experiences to student motivation. Teachers as people who teach students are very interested in this problem. So that as teachers or prospective

teachers as much as possible we should always try to be able to increase learning motivation, especially for students who experience learning difficulties by using various efforts that can be made by the teacher, namely: 1) Clarify the goals to be achieved. 2) Generating student motivation. 3) Create a pleasant atmosphere in learning. 4) Using a variety of interesting presentation methods. 5) Give reasonable praise for each student's success. 6) Give an assessment. 7) Give comments on the results of student work. 8) Create competition and cooperation.

In the core activity, the teacher asks students simultaneously. The teacher also gives *rewards* to students who are able to tell well what they have learned last night. This is done by the teacher to increase the motivation and activity of other students so that they are motivated to learn. Then at the end of the lesson the teacher also gives reflections and assignments that must be done at home. The activities of the participants determine the effectiveness of teaching, the learning process is said to be effective if students are actively involved in organizing and discovering information (knowledge) so that they do not only passively accept the knowledge provided by the teacher. Darnita, et al. (2014), stated that the activities of students in participating in the learning process greatly determine the learning outcomes of students. Basically learning chemistry, according to its characteristics, must start from working on problems that take place in students' daily lives. Through solving problems in real life by applying chemistry knowledge, students are expected to be able to build a more meaningful understanding and understanding of chemical concepts because they form their own structure of chemical concept knowledge through the help or guidance of the teacher. Wasonowati et al. (2014) stated that the learning process that has been taking place so far does not encourage student activities to be actively involved in developing knowledge because activities are still often dominated by teachers. So to increase student learning activities and outcomes, teachers are required to be able to package learning activities with models that can provide opportunities for students to carry out simple explorations so that they don't just accept and memorize. The use of learning models that support scientific approaches such as inquiry learning models, *discovery*, *project based learning* (PjBL) and *problem base learning* (PBL). Wahono (2014), states that teachers should always think about how efforts are being made to improve the quality of learning, including by making lesson plans carefully and preparing a number of appropriate learning tools.

Based on interviews conducted with teachers, several obstacles were found by teachers in teaching chemistry, including students who were less motivated in learning, students' lack of understanding of the importance of learning chemistry, teachers also rarely carried out practicums due to time constraints and the target indicators of learning achieved were very high. Lots. Teachers should be able to minimize these constraints and problems by using instructional media (animation/practical videos) and conducting mini demonstrations.

4. CONCLUSION

Based on the discussion above, it can be concluded that there are several factors that influence the activities of students and teachers in learning chemistry, including the readiness of the teacher in preparing teaching materials, the clarity of the teacher in explaining concepts and providing motivation to students. The activities of students and teachers at the second meeting tended to increase by 71.43 and 72.4%, respectively. Based on interviews and questionnaires given to students and teachers, good responses were found to the chemistry learning being carried out, but there were several obstacles in the chemistry learning process, namely limited time with so much material, lack of doing practicum, so students expect that chemistry practicum carried out more frequently and it is hoped that teachers will be more active and creative in carrying out chemistry learning.

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