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Analysis of the Implementation of Active Learning for MAN 3 Banda Aceh Students during the Covid-19 Pandemic

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Abstract

There has been a change in the implementation of chemistry learning from face-to-face learning to online learning during the Covid-19 pandemic. Teachers and students have tried to adapt to these new conditions in order to be able to carry out active learning. This study used a descriptive study that aims to explore how students carry out chemistry learning during the Covid-19 pandemic. The research subjects were 55 students of Class XI MAN 3 Banda Aceh. Data was collected using an online questionnaire consisting of 18 questions. From the results of data analysis, it was concluded: most of the students were able to carry out active learning in chemistry learning well in the midst of the Covid-19 pandemic. The implementation of an active learning that is applied gets a good category with an average percentage of 76.67%.

Keywords : Active Learning, Covid-19 pandemic, online Chemistry Lesson

INTRODUCTION

Chemistry lessons are one of the mandatory lessons taken for those who are majoring in Natural Science (IPA) (Subawa, 2020). The field of science which includes chemistry which is a field of science that plays an important role in developing the knowledge and activities of students. Chemistry as a branch of natural science has characteristics that distinguish it from other allied sciences (Farida, Sunarya, Aisyah, Helsy, 2020). Chemistry studies matter in terms of structure, composition, phenomena of reactions when there is a change in matter and the energy that accompanies that change (Gilbert, Kirss, Foster, Bretz, & Davies, 2018).

In studying chemistry, students are faced with the challenge of understanding macroscopic representations related to observable phenomena both in the real world/surrounding nature or in a controlled environment in the laboratory (Farida, Helsy, Fitriani, & Ramdhani, 2018). Students can master chemistry well if they are able to connect the three representations (Farida, Liliasari, Widyantoro, & Sopandi, 2017). Therefore, learning chemistry, both at the secondary school level and in higher education, must accommodate the interconnectedness of the three levels of chemical representation (CW Sari & Helsy, 2018). Students can understand chemistry is an active learning goal.

Active learning is a teaching and learning activity that involves interaction between teachers and students, students and students which has an influence on student learning outcomes. If learning is carried out through active learning activities, student learning outcomes will last a long time and will not be easily forgotten in a relatively long period of time. Active learning should be agile, fun, passionate and passionate. Students who will be directly involved and play an active role in understanding the material. The greater the involvement of students in learning activities, the greater for them to experience the learning process (Astuti, 2017).

Active learning activities cannot be separated from the role of a teacher in designing effective and efficient learning strategies so that learning is meaningful and achieves learning objectives. In order to achieve learning objectives, each teacher is required to be able to identify each group of students and be able to plan appropriate active learning strategies so as to increase student activity in learning. A teacher must think about which strategies or approaches will be used in learning (Sasikumar, 2014). The choice of strategy must be appropriate, namely in accordance with the situation and conditions faced so that it has an impact on the level of student mastery both cognitively, psychomotorically and affectively as well as student achievement. Situations and conditions faced by teachers and students in the learning process will not have a bad impact if a teacher has the ability to choose strategies.

The COVID-19 pandemic which is changing the social order of people's lives is an external factor that affects the current learning process (Strielkowski, 2020). Physical restrictions and social activities on a large scale do not allow learning to be carried out face-to-face, so that it has a major impact on learning activities (Saraswati & Martayasa, 2020). The situation and condition of the Covid-19 pandemic experienced by all countries, especially in Indonesia, had made learning activities paralyzed because the government implemented policies to leave students during *lockdown* and implemented online learning (on the network) or *online.*

The online learning system is a learning system without face to face directly between teachers and students but is carried out *online* using the internet network. Teachers must ensure that teaching and learning activities continue, even though students are at home. The solution, teachers are required to be able to innovate by utilizing online media (*online*).

It should be realized that the unpreparedness of teachers and students towards online learning is also a problem. The shift from conventional learning systems to online systems is very sudden, without proper preparation. But all of this must still be carried out so that the learning process can run smoothly and students actively participate even in the conditions of the Covid-19 pandemic. Most of the active learning activities during the Covid-19 pandemic have been implemented in high schools.

MAN 3 Banda Aceh is a high school that has been affected by the Covid-19 pandemic and has implemented online learning during the pandemic. Based on interviews with several teachers, especially chemistry teachers, they stated that active online learning had been carried out. Based on some initial surveys that have been conducted regarding the implementation of online learning during the Covid-19 Pandemic, several students stated that they had begun to adapt to implementing online learning and half of the respondents stated that the online system made the process easier. However, there is a tendency for students to be faced with several

obstacles, both technical and related to learning understanding. The results of the survey are general in nature, not focusing on tracing how active their learning activities are in participating in chemistry lessons. In this paper, we discuss the search results regarding what activities are carried out by teachers and students of class XI in taking chemistry lessons during the Covid-19 Pandemic. It is hoped that the results of this survey will obtain information on the implementation of active learning activities during the Covid-19 pandemic.

RESEARCH MTHODS

Methodsmethod used is a descriptive study (Creswell, 2009), because it aims to describe how students respond in carrying out chemistry learning during the Covid-19 pandemic. The research subjects were 55 students of Class XI MAN 3 Banda Aceh for the 2019/2020 academic year. Student responses regarding chemistry learning during the Covid-19 pandemic were collected using anquestionnaire *online* (*google form*). The distribution of questionnaires to students was carried out in October 2020 after they tooklearning *on-line*. Thequestionnaire *online* for students consists of 18 questions. The target of the survey is to get an overview of the implementation of active learning of students during the Covid-19 pandemic *online*. The data obtained is then processed using descriptive statistics, namely changing each response to the question item into a percent of the number of responses (Morissan, 2016). The results of data analysis are adjusted to the criteria for assessing the implementation of learning strategies (Hake, 1998) and discussed by linking them with other research findings and studies.

RESULTS AND DISCUSSION

Analysis of the Implementation of Active Learning Active

Learning strategies in chemistry subjects during the Covid-19 pandemic are said to be implemented effectively. The implementation of active learning is categorized as effective if the results of the interpretation of students' answers are in the good and very good range. The active learning strategy in its implementation can be analyzed using descriptive statistics of the average score. The description of the learning strategy implementation score can be seen in the data analysis technique section.

Table 1. Implementation of active learning for students at MAN 3 Banda Aceh

No	Indicator	(%)
1	Students are active in participating in preparing learning	85.61
2	Teachers participate in supervising and managing all learning activities	76.82
3	As facilitators and contributors to convenience	81.36
4	Learning is supported with the necessary facilities	68.79
5	Each group member advances his group by working together	63.18
6	Completing each task correctly is the responsibility of group members	79.09
7	Opportunity for each group member to convey the results of his group work	76, 97
8	Students are active when learning takes place	68.03

9	Give authority to students in being responsible and critical thinking	78.18
10	Fostering student motivation	77.42
	Average	75.85

Table 1. describes the percentages for each indicator in assessing how active learning is carried out by XI Science students at MAN 3 Banda Aceh.

The Covid-19 pandemic did not dampen the implementation of active learning. The interaction of teachers with students can still be carried out well, although with various limitations, especially the technical implementation. The assessment aspect consists of 10 indicators, with the minimum percentage obtained is 63.18% and the maximum is 85.61%. The minimum percentage is found in indicator 5 which states that each group member advances his group by working together. This is because students have difficulty in carrying out cooperation due to distance factors and the implementation is also online. While the indicators that get the maximum percentage results are in indicator 1, namely, students are active in participating in preparing for learning. Each student is present at the mutually agreed hour and has prepared himself in participating in the lesson.

In indicator 2, namely the teacher participates in supervising and managing all learning activities, the results are 76.82% in the good category (Hake, 1998). This cannot be separated from the teacher's role as a supervisor. Where the role of the teacher as a supervisor is related to providing guidance and supervision to students, understanding the problems faced by students, finding problems related to the learning process, and finally providing solutions to the problem (Sopian, 2016).

In indicator 3, namely as a facilitator and contributor to convenience, the results obtained are 81.36% with a good category (Hake, 1998). This shows that the teacher provides convenience and facilitates so that students can carry out active learning. This is in accordance with the task of the teacher as a facilitator. Learning will take place effectively and efficiently when children learn cooperatively with other children in an atmosphere and environment that supports*(supportive),*under the guidance of someone more capable, a teacher or an adult (Rahmawati & Suryadi, 2019).

In indicator 4, namely learning is supported by the necessary facilities, the result is 68.79%. The facilities needed in online learning are still not optimal because not all students have laptops and *phones* androidas well as inadequate networks. In the implementation of education to produce an effective and efficient teaching and learning process, facilities and infrastructure are needed (Manurung, Harahap, Tahrun, Suharyadi, 2020).

In indicator 6, namely Completing each task correctly is the responsibility of group members, the results obtained are 79.09% in the good category (Hake, 1998). The current online learning context requires students to be responsible for designing and implementing active and independent learning activities (Sari, Bermuli). Students have the responsibility to organize learning independently, diagnose learning needs and evaluate learning outcomes, in order to improve the learning process better during online learning. This shows that it is important for students to be aware of their respective responsibilities in order to achieve the ideal learning process in the context of online learning. In fact, students are still not aware of their responsibilities during online learning (Sobri, Nursaptini, and Novitasari, 2020 in Sari and Bermuli , 2021). According to Pasani and Basil (2014) in (Sari and Bermuli, 2021), students' cooperative attitude in carrying out group discussions is one indicator that can measure the role of students to be responsible for completing joint assignments.

In indicator 7, namely the opportunity for each group member to convey the results of their group work, the results obtained are 76.97% in the good category (Hake, 1998). The

teacher's strategy for carrying out the discussion is good. The teacher provides opportunities for groups to convey the results of their group work so that in the learning process students take an active role and are able to express opinions so that learning takes place well and the learning outcomes achieved are very satisfying (Supriyati, 2020).

In indicator 8, namely students are active when learning takes place with 68.03% results in the good category (Hake, 1998). Students who are active when learning takes place show their enthusiasm for the learning process and show their responsibility in active learning. Nuroniyah (2018) in (Sari & Bermuli, 2021) which explains that responsible students have the awareness to play an active role in participating in learning. Therefore, the lack of active involvement of students in participating in learning shows the behavior of students who are less responsible in carrying out learning activities.

In indicator 9, namely giving authority to students in being responsible and critical thinking with the results of 78.18%. Giving authority to students to be responsible and think critically in the learning process is good for the continuity of learning because students can freely carry out active learning

Judging from the percentage results in the questionnaire analysis for each indicator item from indicator 1 to indicator 10, the category is already good in the implementation of active learning with an average value of 76.67%. Based on the results of the interpretation scores of students' answers to the implementation of active learning that has been applied by the teacher, they get a good category (Hake, 1998) for each indicator and on average all indicators.

The results of the questionnaire answers show that so far teachers and students have been good at implementing each active learning indicator, although not very well. This is also influenced by the distance limitation factor and is carried out online, and there is no real interaction between teachers and students and interactions between students. According to Asiah (2017) the less than optimal implementation of active learning is also caused by the habituation factor, the implementation of active learning needs to be familiarized so that it can be carried out better. In this case, the Covid-19 pandemic condition is not an obstacle to carrying out active learning by utilizing internet technology.

CONCLUSION

Most of the students were able to carry out active learning in chemistry learning in the midst of the Covid-19 Pandemic. The implementation of active learning that is applied gets a good category with an average percentage of 76.67%.

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