



Analysis of Innovative Learning and Student Learning Outcomes During the Covid-19 Pandemic

Rosma Nababan^{1*}, Fransiskus Gultom¹, Alim Perangin-angin¹, Losten Tamba²

¹Universitas Darma Agung, Indonesia

²Universitas Katolik Santo Thomas Sumatera Utara, Medan, Indonesia.

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Corresponding Author:

Rosma Nababan

nababanrosma@gmail.com

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Abstract: The purpose of this research is to describe the analysis of innovative learning and student learning outcomes in class X SMA Jambi Medan during the Covid-19 pandemic. This research is qualitative research, the research subjects were students in class X SMA Jambi Medan totaling 33 people. Data collection techniques were obtained through interviews and questionnaires. The results showed that the science learning process in class X SMA Jambi Medan during the Covid-19 pandemic was carried out offline using a shift system by applying the discovery learning learning model with a scientific approach and combined with several mind mapping learning methods, group discussions, question and answer and assignment. Student participation in science learning during the Covid-19 pandemic was good. Students participate actively in the science learning process. Assessment of students' science learning outcomes achieves the minimum completeness criteria.

Keywords: Covid-19 pandemic; Innovative learning; Learning outcomes

Introduction

Education is a conscious human effort to grow and develop knowledge, understanding, behavior and potentials both physically and spiritually in accordance with the values that exist in society. Education is a process with certain methods so that people gain knowledge, understanding, and ways of behaving according to their needs (Gultom et al., 2021; Sagala, 2013). Education for a nation that is currently developing, such as the Indonesian nation, is an absolute necessity that must be developed in line with the demands of development step by step. Teaching and learning process activities in schools are efforts to improve the quality of education and develop potential in society and culture, because schools are one of the important tools in education. Learning process activities in schools are efforts to improve the quality of national education (Deno et al., 2020; Kemdikbud, 2016), because schools are one of the educational tools. Various efforts have been made by the government to improve the quality of education, including by changing the

educational curriculum, improving the quality of education, and improving infrastructure. The rapid development of science and technology is inseparable from the progress of natural science which has resulted in many new findings in the field of science and technology. Therefore, science is placed as an important subject because one of the requirements for mastering science and technology is related to natural science (Keyes, 2010).

Science is one of the subjects that can be integrated with life skills education (Agustin et al., 2016). The learning process that is carried out places more emphasis on providing direct experience through competency development so that students can explore, discover and understand concepts or natural phenomena around them scientifically (Kurniawati et al., 2019; Setiawati, 2013).

Innovative learning is learning that directly solves the problems being faced by the class, based on class conditions, innovative learning is learning that is oriented towards strategies, methods or efforts to improve all positive abilities in the process of

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developing potential or abilities (Hamimah et al., 2019; Husdarta, 2013; Juliawan et al., 2020; Sjukur, 2012).

At this time, the world is faced with an outbreak of disease caused by a virus called Corona Virus Diseases-19 (Covid-19). The increase in positive cases of Covid-19 in Indonesia has urged the Indonesian government to immediately deal with the Covid-19 pandemic by making various policies such as establishing physical distancing, PSBB (Large-Scale Social Restrictions) and Lockdown. This condition has an impact on the condition of education which requires learning to be carried out in their respective homes (Kemendikbud, 2020; Keyes, 2010; Rizaldi et al., 2021).

The existence of these government policies certainly has a big impact on various aspects of life, especially on the aspect of education in Indonesia. The implementation of large-scale social restrictions has encouraged the government to issue policies on the implementation of education in Indonesia, because after all the learning process must continue so that the objectives of the learning process can be achieved in its entirety (Lestari et al., 2016; Miftahul, 2010).

The low learning outcomes, especially in science lessons, is because students know science as a difficult and boring subject, the delivery of science material uses a lot of memorization and formulas, and the learning model used by teachers is less varied and still teacher center in nature. Success in improving students' science learning outcomes is inseparable from the learning process carried out by teachers in schools and how to manage learning tools (Markaban, 2008). Thus, a teacher must apply a learning model that can attract students' interest in learning science (Dewi et al., 2016; Gultom et al., 2022; Gunawan et al., 2020). The learning model used must be in accordance with the type of material to be taught. This can be done by choosing the right model, choosing the right learning model is one way to improve student learning outcomes in science subjects (Rifa'i & Anni, 2011).

One learning model that can improve student learning outcomes is to use the discovery learning model (Idrus & Irawati, 2019; Kristin, 2016; Putrayasa et al., 2014). The learning model of discovery learning is participatory, active, creative, effective and fun learning. The discovery learning learning model was first introduced by Jerome Bruner who emphasized that learning must be able to encourage students to learn what they already have (Anwar, 2017; Rifa'i & Anni, 2011). According to Bruner's view in (Markaban, 2008), learning by discovery is learning to discover, where a student is faced with a problem or situation that seems odd so that students can find a solution. Discovery learning provides opportunities for students to participate actively in building the knowledge they will acquire. Student participation directs learning to a learning process that is student-centered, active, fun,

and allows information to occur between students, between students and teachers, and between students and the environment.

The mind mapping learning method is suitable for use in Jambi Medan Private High School who are still in their teens so that it makes them like new things and be more active and creative in the problems they face. The mind mapping learning method is expected to improve student learning outcomes at Jambi Medan Private High School.

Method

This research is a qualitative research (Gultom & Nababan, 2021), this research focuses on the science learning process in class X students of Jambi Medan Private High School during the Covid-19 pandemic. The subjects in this study were 33 class X students of Jambi Private High School in Medan. Data collection techniques through interviews and questionnaires. Data analysis techniques in this study are: data reduction, data presentation, and drawing conclusions.

Result and Discussion

Based on the interview data and the results of the student questionnaire analysis are as follows:

Science Learning Process

After the research data was collected, it was then analyzed using the Likert scale guidelines. Science learning process data obtained from the results of the analysis of student questionnaires can be seen in Table 1.

Table 1. Percentage of the results of the analysis of the science learning process through a questionnaire

Indicator	Score	F	Score Total	Total	Max	%
Innovative learning	4	119	476	1007	1229	81.94
	3	171	513			
	2	9	18			
	1	0	0			
Class management	4	23	92	268	327	81.96
	3	54	162			
	2	7	14			
	1	0	0			

For more details, this can be seen in Figure 1. Table 1 shows the results of calculations regarding the science learning process in the sub-indicator of innovative learning in science learning that appears the most, answering a score of 3 totaling 171 and the percentage results reaching 81.94%. In the classroom management sub-indicator, the most frequently answered score 3 was 54 and the percentage results reached 83.75%.

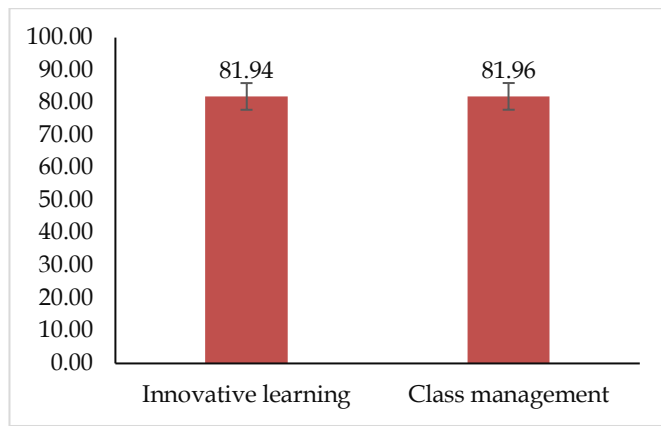


Figure 1. Percentage of student questionnaire results about the science learning process

Figure 1 shows the percentage of students' questionnaire analysis results related to the science learning process which consists of 2 sub-indicators.

Student Participation

Student participation data obtained from the results of the student questionnaire analysis are presented in Table 2.

Table 2. Percentage of the results of the questionnaire analysis on student participation

Indicator	Score	F	Score Total	Total	Max	%
Student Participation	4	21	84	183	215	85.12
	3	33	99			
	2	0	0			
	1	0	0			

Table 2 shows the results of the calculation regarding the participation of students who appear the most answering a score of 3 totaling 33 and the percentage results reach 85.12%.

Science learning outcomes assessment

The learning outcomes assessment data obtained from the results of the student questionnaire analysis are presented in Table 3.

Table 3. Percentage of the results of the questionnaire analysis on the assessment of science learning outcomes

Indicator	Score	F	Score Total	Total	Max	%
Assessment of learning outcomes	4	29	116	359	438	81.96
	3	81	243			
	2	0	0			
	1	0	0			

Table 3 shows the percentage of the results of the questionnaire analysis regarding the assessment of science learning outcomes that appear the most

answering a score of 3 totaling 81 and the percentage results reaching 81.96%.

Student learning outcomes

The learning outcomes data obtained in this study were the results of students' daily scores, activity results and portfolios as well as final semester exam scores for class X SMA Jambi Medan Private School. The results of the student semester final exam analysis can be seen in Table 4.

Table 4. Descriptive statistics on student learning outcomes

Indicator	Number of Student	Minimum Value	Maximum Value	Average
Learning Outcome	22	78	83	82.39

Table 4 is data on student learning outcomes obtained in the study on the results of the school's final exams for class X students of Jambi Medan Private High School.

Conclusion

The science learning process in class X SMA Jambi Medan during the Covid-19 pandemic was carried out offline using a shift system. Offline learning is carried out by applying the discovery learning learning model with a scientific approach and combined with mind mapping methods, group discussions, questions and answers and assignments. Student participation in science learning during the pandemic was good. Students participate actively during the learning process. The assessment of science learning outcomes used in class X SMA Jambi Medan during the Covid-19 pandemic remains in accordance with the 2013 curriculum which includes attitude assessment, knowledge assessment and skills assessment. Science learning outcomes of students have reached minimum completeness criteria which is equal to 82.39 (minimum completeness criteria = 70).

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