The google classroom online learning platform the use analysis for biology students

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Article Info	ABSTRACT
	The Covid-19 virus epidemic that is still spreading throughout the world has caused a shift in the learning process, where previous interactions occurred face-to-face, and then the interaction switched through the help of a platform. This study examines the experience of using Google Classroom for biology learning media in eleventh grade during the Covid-19 virus outbreak. This research takes place from December 2021 to March 2022. This type of research is descriptive quantitative. The population of this study was sampled using proportional random sampling. This study involved 45 students in the eleventh grade majoring in natural science at State Senior High School 1, Kotanopan. Data was collected through questionnaires and documents. A closed questionnaire with 45 validated and distributed items were used to collect data. Technical analysis of the data used descriptive quantitative. Based on the research, the following are the results of the analysis of the use of Google Classroom for biology in eleventh grade: 1) Overall, the experience of using Google Classroom as a means of learning biology is excellent, with a score of 81.48%. 2) A study of the factors supporting the adoption of Google Classroom as a biology learning platform was good, with 66.22%. 3) The study of the barriers to adopting Google Classroom as a biology learning platform was hampered by 33.2%. During the Covid-19 virus outbreak, online biology learning through Google Classroom can complement classroom teaching.

INTRODUCTION

The Covid-19 virus pandemic that plagued the end of 2019 is still spreading worldwide. Indonesia is no exception, which first became an epidemic in March 2020. The Indonesian

government has implemented many policies as preventive measures to suppress the Covid-19 virus outbreak. In education itself, the Government establishes a distance learning policy, especially in areas in the red and orange zones. This impacts limited teaching and learning activities because face-to-face learning (PTM) cannot be held, so an alternative is done through distance learning (online).

The teaching and learning process is an interactive process that is bound, goal-directed, and implemented to achieve predetermined goals (Mukhtar and Iskandar, 2010: 78). Online learning is a means of interaction between lecturers and students who use the internet (Kuntarto, E., 2017). In this new paradigm, learning can be achieved relatively easily using internet-connected applications, which are no longer required in traditional learning environments. Through the internet, online education provides accessibility, connection, and flexibility in displaying various learning activities (Sadikin, Ali and Afreni Hamidah, 2020). Various technical gadgets, such as mobile phones, laptops, PCs, and tablets, are needed to support the implementation of online learning (Gikas and Grant, 2013).

According to Mustofa, Chodzirin & Sayekti, L (2019:154) from Bates and Wulf, the benefits of bold learning are: 1) increasing learning interactions between students and teachers or, 2) citing the occurrence of learning from anywhere and anytime (time and flexibility place), 3) Reaching out to students in a broad scope (potential to reach a global audience), 4) Facilitating the improvement and storage of learning materials (easy update of content and archivable ability).

According to the hadith of the Prophet Muhammad Sallallahu 'alaihi wa sallam, studying Islam is permissible anytime and from anywhere and obligatory for all Muslims on this planet, regardless of where they live. Schools are fighting the Covid-19 virus epidemic through online learning. According to the hadith of the Prophet Muhammad Sallallahu 'alaihi wa sallam, the following is true:

عَنْ أَنَسِ ابْنِ مَالِكٍ رَضِيَ اللهُ عَنهُ عَنِ النَّبِيِّ ﷺ طَلَبُ الْعِلْمِ فَرِيْضَةٌ عَلٰى كُلِّ مُسْلِمٍ (رَواهُ اِبْنُ مَاجَهْ)

Meaning: "From Anas Bin Malik Radhiyallahu'anhu, he said: "The Messenger of Allah sallallaahu 'alaihi wa sallam said: "Seeking knowledge is an obligation for every Muslim." (H.R Ibn Majah no. 224)

This hadith claims that all Muslims should seek knowledge, despite the pandemic caused by the Covid-19 virus. Online education can help students build self-study skills. Online applications allow individual learning (Oknisih, N., & Suyo, S., 2019). Student-centred learning in online education can foster commitment and autonomy (Kuo et al., 2014). According to Sobron et al. (2019), online learning increases student interest. Online education has the problem of not securing student attention. Szpunar, Moulton, and Schacter (2013) found that online lectures encourage students to daydream more than face-to-face lectures. Applications such as Google Classroom, WhatsApp, Smart Class, Zennius, Quipper, and Microsoft help adopt online learning (Dewi, 2020). Due to the lack of face-to-face teaching, State Senior High Scool 1, Kotanopan is turning to online learning by leveraging this Google Classroom to develop, deliver, and assess digital content in a paperless environment.

According to Arya Oka (2019:89), "Google Classroom is a free web service developed by Google for schools/colleges that aims to simplify creating, distributing, and grading assignments in a paperless way". The main goal of Google Classroom is to streamline the process of information transfer between students and educators. According to Sabran (2019:122), "Google Classroom is a program developed by Google that aims to help lecturers and students during their absence, lecture, and connect with students without class schedules". Google Classroom is an alternative media to facilitate online learning, make it easier for teachers to deliver material, and make it easier for

students to collect assignments through various facilities and special reminders (Ramadhani et al., 2019). The Google Classroom platform that can be accessed via a website or application also requires data and internet access. As a result, Google Classroom is a great online learning tool and task management system.

Using Google Classroom also encourages teachers and students to collaborate both inside and outside the classroom. In addition, according to Hapsari and Pamungkas (2019), instructors should be available to offer appropriate online learning instructions using Google Classroom.

Several conclusions from previous research related to this study assessed the Google Classroom learning platform: 1) Google Classroom as an Alternative E-Learning Platform for SKI Learning During the Covid 19 Pandemic at MA Hidayatullah by Khomisah et al., with the results of research using the Google Classroom platform carried out well because, by the ease of finding sources, flexible in time and place and easy to understand, the obstacles obtained are due to weak signals and limited data packets. 2) The results of the Google Classroom research can be used for the implementation of learning, according to Rini Utami's (2019) research entitled "Analysis of Student Responses to the Use of Google Classroom in Mathematics Learning Psychology Courses". 3) According to the research by Sabran and Edy Sabara (2019), "Effectiveness of Google Classroom as a Learning Media", 77.57% of Google Classroom's learning preparation rate is relatively good. 4) The results of research by Hamzaruddin Hikmatiar & Mentari (2020) "Utilization of the Google Classroom-Based Learning Management System in Learning", the use of Google Classroom has a good impact on learning outcomes. 5) The results of research by Wahyuni, Eni & Ratna, P. (2021) "Analysis of the Use of Google Classroom in the Covid-19 Pandemic Period on the Effectiveness of Student Learning" with the results of research on perceptions of usability having a direct effect on the use of Google Classroom.

Researchers can use it as research since this research has examined online learning systems, especially Google Classroom. "Analysis of the Google Classroom Online Learning Platform in the eleventh grade Biology" is different from previous research; this research focuses on analysing the use of the Google Classroom platform on biology subjects in the eleventh grade Senior High School during online learning. To analyse experiences, support factors and inhibiting factors for using the Google Classroom platform as a biology learning medium in the eleventh grade during the Covid-19 virus epidemic.

RESEARCH METHODS
Research Design

Quantitative research with descriptive methods is the type in this study (Sugiyono, 2017). This research consists of three stages: the preparation stage, the implementation stage, and the final stage. Descriptive quantitative is the technical analysis of the data in this study.

Population and Samples

The population of this study were all students of the eleventh grade majoring in natural science for the 2022 academic year at State Senior High Scool 1, Kotanopan, totalling 83 students. The technique used in taking samples from the population is done by proportional random sampling technique and then calculated using the Slovin formula quoted from Umar (2008: 108) below:

$$n = \frac{N}{1 + N\,(d)^2}$$

Students of the eleventh grade majoring in natural science with a total of 45 students were respondents/samples in this study with details of each class, namely eleventh science one with a

total of 17 students, the eleventh science two with a total of 16 students, and the eleventh science three class with a total of 12 students.

Instruments

The research instrument used for data collection is a closed questionnaire with the Guttman scale which has been validated, revised and validated by an expert (judgment experts) and distributed directly. This survey has 45 questions with two possible answers: "Yes" or "No". Each question will be given a score of 1 if yes, and 0 if no.

Procedures

The research procedure includes three stages: 1) The preparation stage, namely presenting the research title to the study program, collecting research materials or sources, compiling research proposals, preparing research instruments or tools, and managing research permits. 2) The implementation stage, namely asking the principal for research approval, distributing research instruments in the form of closed questionnaires directly to the eleventh grade, majoring in natural science for 45 minutes, checking and checking the completeness of the identity of the filler, data and questionnaire contents, 3) The final stage, namely classifying answers of the respondents, tabulate the data, analyse the data, then compile the final report.

Data Analysis

Descriptive quantitative is the technical analysis of the data in this study. After the data obtained are appropriate, the total amount of data is calculated. The expected score of each aspect of the expected score of the whole question is obtained from the question, which if it gets a score of 1. The expected score is the maximum/highest score for each question, given a score of 1 (ideal score). The following formula is used to achieve the maximum score (Sugiyono, 2017: 418):

$$\text{(The highest score for each instrument item) x (Number of instruments for each aspect) x (Number of respondents)}$$

The optimum value (maximum score) for each part of the experience and the supporting and inhibiting variables is 675 for the biology subject in the eleventh grade. After analysis, the data are summed and compared with the predicted value to produce a percentage (Arikunto, 2017: 244). The alternative can be searched using the following formula:

$$\text{Percentage} = \frac{observed\ score}{expected\ score} \times 100\%$$

The data were evaluated using descriptive quantitative and the distribution of scores and percentages against the determined rating scale category. After presenting the percentages, the next step is to describe and develop an assessment of each component. The following score interpretation table can be used to determine the adequacy of several factors in testing the use of the Google Classroom online learning platform for biology subjects in the eleventh grade:

Table 1. Interpretation of score analysis of the use of the google classroom online learning platform on biology subjects in the eleventh grade

Factor Percentage	Classification	Factor Percentage	Classification
0-24%	Good	0-24%	Uninhibited
25-49%	Fairly Good	25-49%	Moderately Inhibited
50-74%	Good	50-74%	Inhibited
75-100%	Excellent	75-100%	Significantly Inhibited

(Sumber: Modification of Arikunto, 2017).
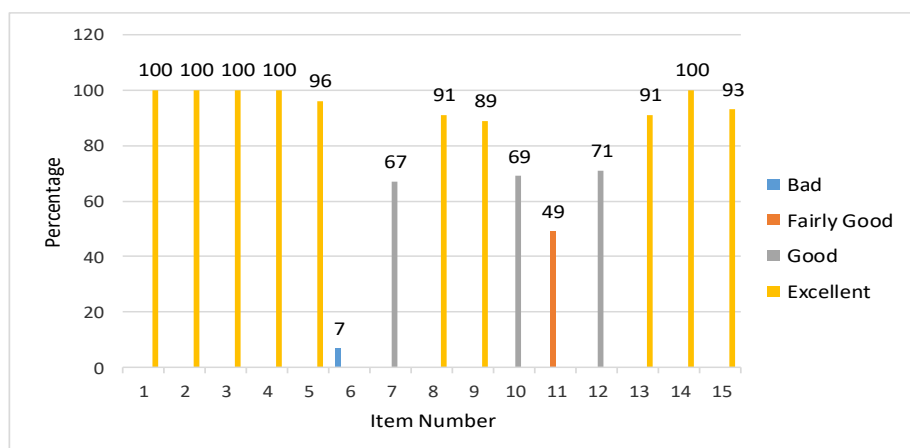
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RESULT

Analysis of the Experience Aspects of Using the Google Classroom Platform as a Biology Learning Platform Media

Based on an analytical questionnaire on the use of the Google Classroom online learning platform for biology subjects in the eleventh grade, the experiental aspects of using the Google Classroom platform as a biology learning platform are divided into three indicators: (a) the Google Classroom platform as a medium of learning between students and teachers; (b) participation of students and teachers in the learning process through the Google Classroom platform; and (c) the timeliness of the learning process through the Google Classroom platform. The following are the findings from a descriptive data study of several components of the experience of using the Google Classroom platform as a biology learning platform:

Table 2. Categorization of scores of experience aspects of using the google classroom platform as a biology learning platform media

Question Items	Frequency Response		Earning Score	Maximum Score	Percentage	Category
1			45	45	100	Excellent
2			45	45	100	Excellent
3			45	45	100	Excellent
4			45	45	100	Excellent
5			43	45	96	Excellent
6			3	45	7	Bad
7			30	45	67	Good
8	1	0	41	45	91	Excellent
9			40	45	89	Excellent
10			31	45	69	Good
11			22	45	49	Fairly good
12			32	45	71	Good
13			41	45	91	Excellent
14			45	45	100	Excellent
15			42	45	93	Excellent
Total Average			550	675	81.53%	Excellent
Gain Score			36.6			

Figure 1. Assessment of the experience of using the google classroom platform as a biology learning platform media

Based on Table 2, the average score for the experience aspect of using the Google Classroom platform as a biology learning platform media is 36.6 out of 45 (maximum score), with 81.53% belonging to the excellent category. In simple terms, an overview of the experience of using the Google Classroom platform as a biology learning medium can be seen in Figure 1.
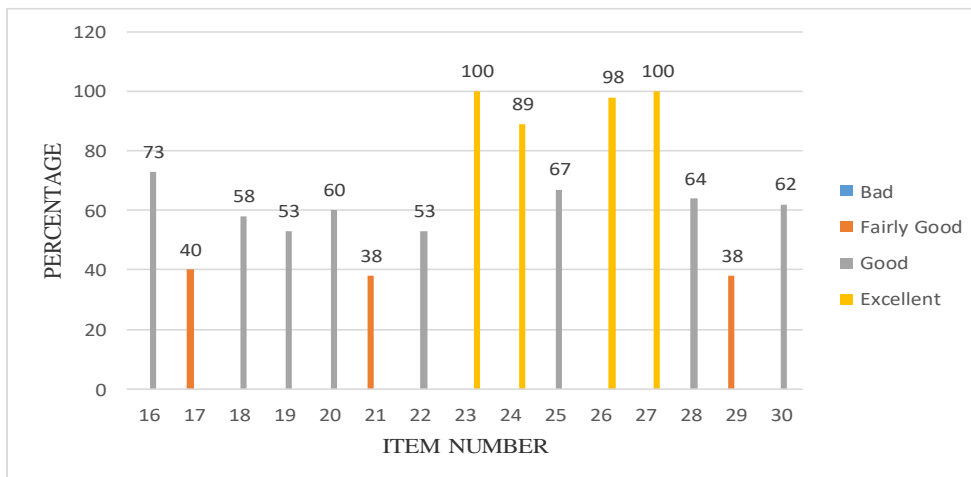
Analysis of the Aspects of Supporting Factors in Using the Google Classroom Platform as a Biology Learning Media

Based on a questionnaire analysis of the use of the Google Classroom online learning platform for biology subjects in the eleventh grade on the aspects supporting the use of the Google Classroom platform as a biology learning medium, it is divided into three indicators, namely: (a) Fostering student learning independence; (b) Facilitating access to virtual teacher and student communication, and (c) Facilitate the collection of tasks. The results of descriptive data analysis of aspects supporting the use of the Google Classroom platform as a medium for learning biology are as follows:

Table 3. Categorisation of scores of assessment results aspects of supporting factors using the google classroom platform as a biology learning media

Question Items	Frequency Response		Earning Score	Maximum Score	Percentage	Category
16			33	45	73	Good
17			18	45	40	Fairly Good
18			26	45	58	Good
19			24	45	53	Good
20			27	45	60	Good
21			17	45	38	Fairly Good
22			24	45	53	Good
23	1	0	45	45	100	Excellent
24			40	45	89	Excellent
25			30	45	67	Good
26			44	45	98	Excellent
27			45	45	100	Excellent
28			29	45	64	Good
29			17	45	38	Fairly Good
30			28	45	62	Good
Total Average			447	675	66.2 %	Good
Gain Score			29.8			

Sourced from Table 3, the average score of the acquisition of aspects supporting the Google Classroom platform as a biology learning medium is 29.8 out of 45 (maximum score), with a percentage of 66.2% belonging to the good category. In simple terms, Figure 2 below summarises an assessment of the variables that drive the use of the Google Classroom platform as a medium for biology education.

Figure 2. Assessment of supporting factors for using the google classroom platform as a biology learning media
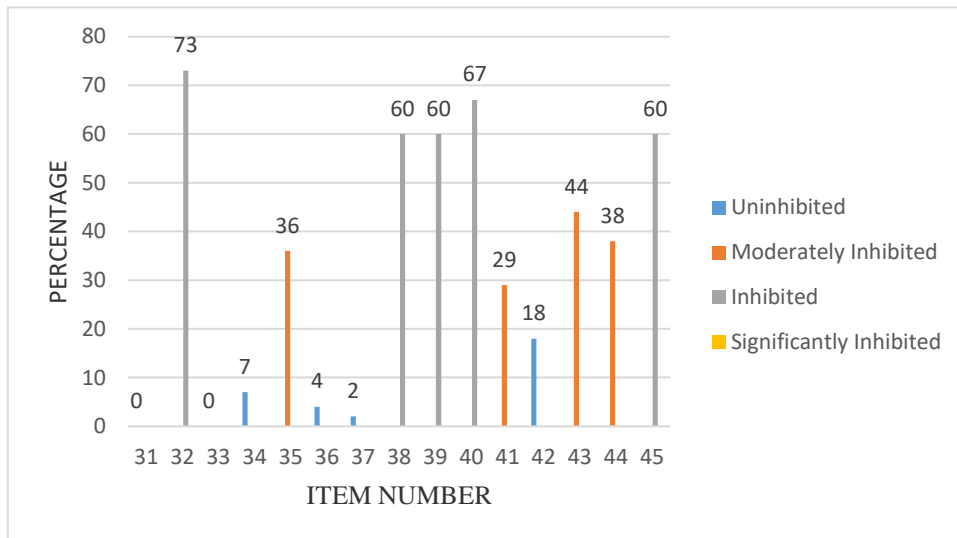
Analysis of Aspects of Inhibiting Factors in Using the Google Classroom Platform as a Biology Learning Media

Based on an analysis questionnaire on the use of the Google Classroom online learning platform for biology subjects in the eleventh grade, the aspects that inhibit the use of the Google Classroom platform as a biology learning medium are divided into three indicators, namely: (a) Facilities/tools used by students in participating in online learning; (b) Internet access used by students in participating in online learning; and (c) Internet quota. The results of descriptive data analysis aspects of the factors inhibiting the use of the Google Classroom platform as a medium for learning biology are as follows:

Table 4. Categorisation of scores of aspects of aspects of inhibiting the use of the google classroom platform as a biology learning media

Question Items	Frequency Response		Earning Score	Maximum Score	Percentage	Category
31			0	45	0	Uninhibited
32			33	45	73	Inhibited
33			0	45	0	Uninhibited
34			3	45	7	Uninhibited
35			16	45	36	Moderately Inhibited
36			2	45	4	Uninhibited
37			1	45	2	Moderately Inhibited
38	1	0	27	45	60	Moderately Inhibited
39			27	45	60	Inhibited
40			30	45	67	Inhibited
41			13	45	29	Moderately Inhibited
42			8	45	18	Moderately Inhibited
43			20	45	44	Moderately Inhibited
44			17	45	38	Moderately Inhibited
45			27	45	60	Moderately Inhibited
Total Average			224	675	33.2%	Moderately Inhibited
Gain Score			14.93			

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Based on Table 4, the average score for the aspects of the inhibiting factors for using the Google Classroom platform as a biology learning medium is 15 out of 45 (maximum score), with a percentage of 33.2% falling into the moderately hampered category. In general, Figure 3. below summarises an assessment of the obstacles that hinder the use of the Google Classroom platform as a medium for learning biology:

Figure 3. Assessment of inhibiting factors in using the google classroom platform as a biology learning media

DISCUSSION

Closed multiple-choice questionnaires were given to 45 students of the eleventh grade IPA State Senior High Scool 1, Kotanopan who took part in the research. The analysis of the Google Classroom online learning platform for biology in the eleventh grade consists of three categories/aspects. It is essential to understand the experiences and factors that encourage and hinder the use of Google Classroom as a medium for learning biology. This survey has 45 questions with two possible answers: "Yes" or "No". Each question will be given a score of 1 if yes, and 0 if no.

The maximum score is obtained from the highest score for each item multiplied by the number of questions per aspect multiplied by the number of respondents (Sugiyono, 2017: 418). The maximum assessment for each element is as follows: The use of the Google Classroom platform for learning biology is given a top score of 1 x 15 x 45 = 675. In contrast, the factors that support this use are given a maximum score of 1 x 15 x 45 = 675 and the factors that hinder this use provide a maximum score of 1 x 15 x 45 = 675.

In descriptive quantitative research of the use of Google Classroom for biology classes in the eleventh grade, the researchers found:

Analysis of the Experience Aspects of Using the Google Classroom Platform as a Biology Learning Platform Media

Based on the data obtained, the lowest percentage is in the 6th question with a rate of 7%; namely, many students answered that preparation for online learning through Google Classroom

does not take long. After calculating the average, assessing the experience aspect of using the Google Classroom platform as a biology learning medium is included in the excellent category with 81.53%.

The questionnaire results revealed that the experience of using the Google Classroom online learning platform was in the excellent category with a percentage of 81.53% because many students answered that using the Google Classroom platform was relatively easy, students and teachers took an active role. Its use was effective and efficient. In other words, the experience of using the Google Classroom platform as a medium for learning biology is excellent in these three aspects, so the use of Google Classroom can be used as a learning option even though there are still shortcomings. The results of this study are following Rini Utami's research (2019) entitled "Analysis of Student Responses to the Use of Google Classroom in Mathematics Learning Psychology Courses", with the results research that Google Classroom can be used to facilitate the implementation of learning because of the good responses shown by students.

Analysis of the Aspects of Supporting Factors in Using the Google Classroom Platform as a Biology Learning Media

From the data obtained, the lowest percentage is in the 21st and 29th questions with a percentage of 38%, that is, many students answered that online biology learning through Google Classroom was not able to create good communication between students and teachers, and students also had difficulty doing homework. The teacher gave online biology assignments through Google Classroom. After calculating the average, assessing aspects of supporting factors using the Google Classroom platform as a biology learning medium is included in the excellent category with a percentage of 66.2%.

The results of the questionnaire revealed that the factors supporting the use of the Google Classroom online learning platform were in the excellent category with a percentage of 66.2% because many students answered that they were more active in independent learning during online learning through Google Classroom, collecting biology learning assignments through Google Classroom was more accessible, and flexible to time and place. In other words, the supporting factors for using the Google Classroom platform as a biology learning platform are excellent in these three aspects. This shows that the use of the Google Classroom platform facilitates user participation in online learning. The findings of this study corroborate the findings of Khomisah et al. (2021) with the title "Google Classroom as an Alternative E-Learning Platform for SKI Learning During the Covid-19 Pandemic at MA Hidayatullah," which concluded that research on the use of the Google Classroom platform in SKI learning for the eleventh gradeI MA Hidayatullah was successful because of the ease of finding sources, the flexibility of time and location, and ease of understanding.

Analysis of Aspects of Inhibiting Factors in Using the Google Classroom Platform as a Biology Learning Media

From the data obtained, the highest and dominant percentage of obstacles is found in the 32nd question with a percentage of 73%, i.e., many students answered that the absence of a smartphone becomes a barrier in participating in online biology learning in the category of quite inhibited. After calculating the average to assess the aspects of the inhibiting factors with a proportion of 33.2 per cent, the use of the Google Classroom platform as a biology learning medium is quite limited.

The results of the questionnaire show that the inhibiting factors for using the Google Classroom online learning platform are in the moderately hampered category, with a percentage of 33.2 per cent, because many students indicate that the lack of smartphones is an obstacle to

participating in online biology learning, being left behind in biology subject matter due to complex internet networks when using Google Classroom for online learning the available internet capacity is limited. This situation shows that, in addition to supporting features, Google Classroom also has inhibiting problems, especially inadequate facilities, slow internet connectivity, and limited internet allocation. This study corroborates the findings of Khomisah et al. (2021) entitled "Google Classroom as an Alternative E-Learning Platform for SKI Learning During the Covid 19 Pandemic Period at MA Hidayatullah". Research using the Google Classroom platform in learning SKI the eleventh gradeI MA Hidayatullah went well because of finding sources, the flexibility of time and place, and ease of understanding, while obstacles were obtained due to lack.

CONCLUSION

Based on the research conducted at State Senior High Scool 1, Kotanopan, after being analyzed, it can be concluded that research on the use of Google Classroom as an online learning platform for biology subjects in the eleventh grade: 1) Analysis of user experience using the Google Classroom platform as a medium for learning biology is considered very good, with an overall score of 81,48 percent. 2) With a score of 66.22 percent, the analysis of factors supporting using the Google Classroom platform as a biology learning medium is in acceptable/good terms. 3) With a percentage of 33.2 percent, the analysis of the obstacles to using the Google Classroom platform as a biology learning medium is moderately inhibited. Google Classroom can be used as an alternative learning platform during the Covid-19 virus epidemic and is the right choice. This is because Google Classroom has advantages such as punctuality in the learning process, increasing student participation and independence in learning, facilitating access to virtual teacher and student communication, and facilitating task collection. Although there are still shortcomings such as facilities/tools, internet access and internet quota used by students in online learning are inadequate.

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