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Students' Satisfaction and Encouragement of Learning Using Google Classroom during the COVID-19 Pandemic

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ABSTRAK

Tujuan penelitian ini yaitu untuk menginvestigasi kepuasan dan dorongan belajar menggunakan google classroom di masa pandemi COVID-19 pada institusi. Penelitian ini merupakan penelitian kuantitatif dan metode analisis data yang dipakai yakni Structural Equation Modeling-Partial Least Square (SEM-PLS) melalui aplikasi SmartPLS 3.0. dengan jumlah sampel penelitian sebanyak 130 responden yang terdiri dari mahasiswa yang telah menggunakan platform Google Classroom selama pandemi COVID-19. Hasil menunjukkan variable confirmation dan perceived usefulness secara positif signifikan mempengaruhi variable satisfaction dan continuance intention dalam penggunaan google classroom di masa pandemi COVID-19. Penelitian ini dapat memberikan wawasan baru dalam memelihara literatur keberlanjutan penggunaan teknologi pembelajaran online di masa depan.

ABSTRACT

This study attempted to investigate the satisfaction and encouragement of learning using Google classroom during the COVID-19 pandemic in institutions. This research is quantitative research of which data were analyzed using Structural Equation Modeling-Partial Least Square (SEM-PLS) with the help of the SmartPLS 3.0 application. The 130 respondents consisting of students who have used the Google Classroom platform during the COVID-19 pandemic participated in the study. The results showed that the confirmation and perceived usefulness variables positively and significantly affected the satisfaction and continuance intention variables in the use of Google Classroom during the COVID-19 pandemic. This research can provide new insights into maintaining the literature on the sustainability of the use of online learning technology in the future.

INTRODUCTION

The emergence of coronavirus disease or COVID-19 at the end of 2019 has shocked the world. To reduce the risk of COVID-19 transmission, the government has issued some policies, including lockdown and physical quarantine. The Directorate of Higher Education of the Ministry of Education and Culture has issued Circular Letter Number 1 of 2020 concerning the implementation of online learning. Independent learning activities at home, widely known as Study from Home (SFH), have been implemented since March 2020. Educational institutions have

to make adjustments to technological media in supporting learning so that students can access learning materials easily (Lestari and Nugraha, 2021).

The existence of technology has a positive impact on learning activities, especially during the COVID-19 pandemic. Conventional teaching and learning activities are now shifted to online learning. According to Pokhrel & Chhetri (2021), online learning, distance education, and continuing education are the most powerful ways during a pandemic that have never been done before and make the transition from traditional learning to online learning the most different experience for both educators and students. Therefore, an alternative adjustment in this newly perceived learning is needed. In the implementation of online learning, it is necessary to determine the learning media or platforms that can support learning activities. By an online learning platform, lecturers can post teaching materials for students. Sezer & Yilmaz (2019) define a Learning Management System (LMS) as a technology that connects e-learning to the learning process in the classroom. The advantages of using LMS are that students can study longer and more focus, increase self-confidence, and address the barriers to using technology and the gap between ICT literacy and mobile literacy (Rizal et al., 2020). The global pandemic has resulted in the implementation of remote learning at UNESA by utilizing the Learning Management System. The most commonly used LMS among UNESA students is Google Classroom due to its free access from both mobile phones and computers. A previous study by Oktaria & Rahmayadevi (2021) found that Google Classroom was very useful in improving students' abilities, skills, order, and independence in learning and some factors affected students' online learning activities during the COVID-19 pandemic. The Google Classroom can be accessed from a smartphone in which each student needs to have their own account to log in in order to access materials or assignments from lecturers with automatic notifications (Bhat et al., 2018). Pangestika et al. (2021) found that the majority of students (50%) felt that learning with Google Classroom during the COVID-19 pandemic could make learning effective, foster students' independent learning initiatives, increase students' interest in learning, and provide flexible and efficient learning even if done remotely.

Although Google Classroom offers such interesting features, some factors can interfere with its use and success of Google Classroom. In contrast to previous studies, some students felt that using Google Classroom can exacerbate stress and cause fatigue when accessing the system (Yasir & Rusmala, 2021). However, the success in using Google Classroom in learning depends on students' perceptions and experiences, meaning that if students assume the system is useless, they do not want to use the system (Salsabilla & Ayuntari, 2020). One of the factors of student acceptance of information technology during the learning process is satisfaction with the system used. Khan et al. (2020) also investigated the factors influencing the satisfaction with using technology.

LMS has been widely studied. Some concern various LMS platforms such as MOOC, Moodle, E-learning, and Cloud, focusing on variables of service quality, system quality, perceived ease of use, and recommendation (Cheng, 2018; Daneji et al., 2019 and Al-Maroof et al., 2021). However, studies focusing on Google Classroom are still limited. More studies focus on the intention to use Google Classroom. Therefore, this study aims to examine the effect of the use of technology on students' knowledge and satisfaction as well as continuance intention in using google classroom in the learning process in the future. The significance of this study covers some aspects. First, lecturers need to understand students' perceptions of using LMS as it can influence their involvement in the learning process. Second, previous studies concerning LMS, such as Yalcin & Kutlu, (2019); Dash, (2019), do not discuss variables of satisfaction, confirmation, perceived usefulness, and continuance intention. Therefore, this study tries to address the gap of the previous study focusing on factors affecting satisfaction and continuance intention in using the system. Third, this study involves office administration students as the subjects. A previous study

by Dash (2019) involves biology studentset al.et al., while another study by Salsabilla & Ayuntari (2020) involves accounting students as the subjects. This study aims to investigate students' satisfaction and encouragement in using the Google Classroom platform in the learning process during the COVID-19 pandemic.

METHODS

This study uses a quantitative approach with numerical data obtained from the survey of the population/sample and then analyzed statistically (Sugiyono, 2017). The research instrument used a questionnaire. The questions in the questionnaire were adjusted to constructs and indicators adopted from Cheng (2018). The questionnaire used a Likert scale model. The population of this study was S1 students of Office Administration Education Study Program, Faculty of Economics and Business, UNESA in the academic year of 2019-2021 who used the google classroom platform. The determination of the sample used purposive sampling.

Data were analyzed using the SmartPLS application, and a more specific reliability test used the SmartPLS 3.0 application. PLS analysis covered two stages, namely, the outer model and the inner model. This study included four variables, namely Confirmation (X), Perceived Usefulness (Y1), Satisfaction (Y2), and Continuance Intention (Y3). Before distributing the questionnaire to all target samples, reliability and validity tests were carried out on 40 respondents outside the sample and obtained Cronbach's alpha and composite reliability values of >0.7, so all items were declared valid and reliable. The aspects and indicator for operational variables are presented in Table 1.

Table 1. Operational variables

Variable	Indicator	Source
Confirmation	My experience using Google Classroom is better than what I expected	Cheng (2018)
	The level of service provided by Google Classroom is better than what I expected	
	My expectations have been fulfilled after using Google Classroom	
	I suggest friends try using Google Classroom	
	The use of Google classroom makes the learning process more efficient to promote a more well-organized learning	
Perceived Usefulness	Using google classroom improves my learning	Cheng (2018)
	Using google classroom can improve my learning performance	
	Using Google Classroom can make me have more control over my learning	
	Google Classroom is useful and helpful for my learning process	
	Using Google Classroom allows me to complete academic assignments faster	
Satisfaction	I am satisfied with the performance of Google Classroom	Cheng (2018)
	I am happy with the experience of using Google Classroom	
	I am happy with the functions provided by Google Classroom	
	I am satisfied with all the facilities of Google Classroom	
	I did the right thing by deciding to use Google Classroom in the learning process	
Continuance Intention	I will not stop and intend to continue using Google Classroom	Cheng (2018)
	I have the intention to continue using Google Classroom instead of looking for other LMS alternatives	
	If it is possible, I will continue to use Google Classroom	
	I will use Google Classroom frequently	
	I plan to keep using Google Classroom	

Source: Processed Data (2021)

Based on explanation above, the research design is presented in Figure 1.

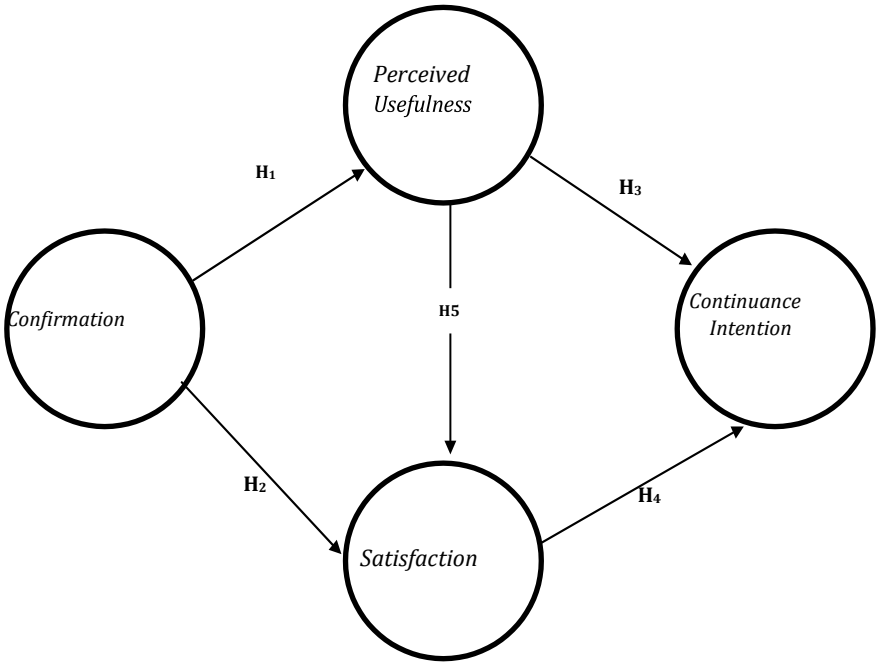

Figure 1. Research design

RESULT

Characteristics of respondents

Table 2. Demographics of respondents

Category	Frequency (f)	Percentage
Sex:		
Male	12	9.2%
Female	118	90.8%
Total	130	100%
Age		
≤ 18 years old	40	30.8%
19-23 years old	90	69.2%
≥ 23 years old	-	
Total	130	100%

Source: Processed Data (2021)

Based on Table 2, in terms of sex, most respondents are females, with a total of 118 (90.8%). For the age category, most respondents are in the 19-23 years old category (69.2%). Based on the sample calculation formula, the sample was 140 students, but the rate of return of the questionnaire was 93% (130 students).

Measurement model (outer model)

The outer model assessment was carried out by collecting all respondent data to be tested for validity using the SmartPLS covering convergent validity and discriminant validity criteria, composite reliability, Cronbach alpha, and average variance extracted. The output of the SmartPLS is presented in Figure 2.

A test that measures the validity of an item has to get a score higher than 0.7. Based on the results of loading factor and cross-loading, with a value of higher than 0.7, then the data are considered valid if the value is 0.5 and convergent validity is valid with Average Variance Extracted (AVE) as Table 3 presents that each construct value is higher than 0.5, so it represents a valid convergent validity.

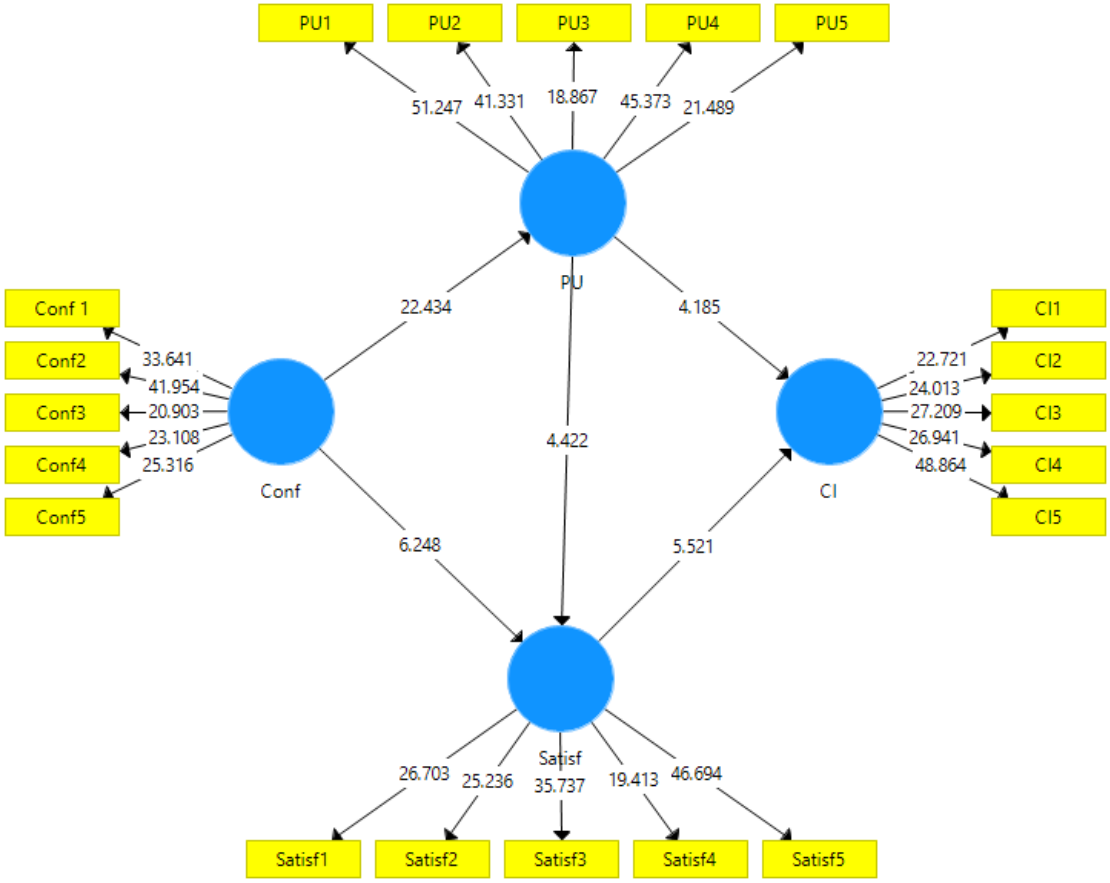

Figure 2. Loading factor

Table 3. Cross Loading

	CI	CONF	PU	SATISF
CI1	0.852	0.567	0.535	0.534
CI2	0.818	0.501	0.523	0.502
CI3	0.872	0.548	0.611	0.624
CI4	0.859	0.642	0.596	0.644
CI5	0.905	0.561	0.528	0.574
Conf 1	0.525	0.869	0.638	0.649
Conf2	0.577	0.898	0.649	0.715
Conf3	0.611	0.792	0.629	0.628
Conf4	0.491	0.802	0.617	0.650
Conf5	0.566	0.854	0.740	0.648
PU1	0.570	0.724	0.888	0.617
PU2	0.568	0.691	0.869	0.630
PU3	0.527	0.606	0.793	0.619
PU4	0.600	0.657	0.901	0.660
PU5	0.486	0.603	0.772	0.653
Satisf1	0.652	0.646	0.627	0.845
Satisf2	0.588	0.644	0.687	0.838
Satisf3	0.502	0.701	0.642	0.865
Satisf4	0.503	0.607	0.580	0.834
Satisf5	0.617	0.734	0.670	0.894

Source: Processed Data (2021)

After testing the convergent validity, the next step was the discriminatory validity testing by comparing the value of cr square root of AVE using the correlation value. In discriminant validity, it has requirements in general, namely the square root of the AVE is higher than the correlation

value between variables. If all values in the AVE square value are higher than the correlation values connecting the variables, then the discriminant validity can be accepted and further analyzed. The square root value of AVE has to be higher than the value of the construct of Continuance Intention (0.862> 0.657; 0.652 ;0.673); Confirmation (0.844>0.657; 0.777; 0.780); Perceived Usefulness (0.846>0.652; 0.777; 0.751); and Satisfaction (0.797>0.673; 0.780; 0.751) (see Table 4). The next stage was the Discriminant Validity test using the Heterotrait-Monotrait Ratio (HTMT) value. To declare discriminant validity of each construct is reflective, the HTMT value is lower than 0.9 (Table 5). The *HTMT* table shows results of 0.9. Therefore, all constructs based on *HTMT* calculation are discriminantly valid. The next step was the final stage of outer model assessment to test the unidimensionality of the model based on the indicators of *Cronbach's alpha* dan *composite reliability* (*Cronbach's alpha* > 0.7). The estimated values of 0.6 to 0.7 are acceptable (Table 6). The Table 7 shows that there is no unidimensionality as the value of Cronbach's alpha and composite reliability is > 0.7. Therefore, the research is declared valid and reliable.

Table 4. Average variance extracted

Construct	AVE
Confirmation	0.742
Perceived Usefulness	0.712
Satisfaction	0.716
Continuance Intention	0.732

Table 5. Discriminant validity

	CI	***Conf***	***PU***	***Satisf_***
CI	0.862			
Conf.	0.657	0.844		
PU	0.652	0.777	0.846	
Satisf.	0.673	0.780	0.751	0.856

Table 6. Heterotrait-monotrait ratio (HTMT)

	CI	***Conf***	***PU***	***Satisf***
CI				
Conf.		0.723		
PU		0.715	0.863	
Satisf.		0.730	0.862	0.831

Table 7. Composite reliability

	Cronbach's alpha	***Composite Reliability***
CI	0.913	0.935
Conf.	0.898	0.925
PU	0.900	0.926
Satisf.	0.908	0.932

Table 8. R Square

	R Square	***Adjusted R Square***
CI Y1	0.502	0.494
PU Y2	0.604	0.601
Satisf Y3	0.662	0.656

Table 8 shows the R square data. R square is used to measure predictive accuracy with the value of CI: 0.502, PU: 0.604, and Satisf: 0.662. The value of R square in the table explains that the Continuance Intention (CI) variable is 50.2% which can be influenced by Perceived Usefulness

(Y2) and Satisfaction (Y3), while the value of 49.8% is influenced by independent variables outside of this study. The value of the Perceived Usefulness (PU) variable of 60.4% is influenced by the Confirmation variable (X), while 39.6 is influenced by independent variables outside of this study. The satisfaction value of 66.2% is influenced by Confirmation (X) and Perceived Usefulness (Y2) variables, while 33.8% is influenced by independent variables outside this study.

In the inner model stage, if R^2 < 0.5 then the independent variable is quite weak for the dependent variable and if R^2 > 0.5 then the independent variable is strong enough for the dependent variable.

Calculation of Q^2 *value*

Q^2= 1 - (1-$R1^2$)(1-$R2^2$)(1-$R3^2$)
= 1 - (1-0.502)(1-0.604)(1-0.662)
= 1 - (0.498)(0.396)(0.338)
= 0.933

Meanwhile, the *GoF* value is =$\sqrt{AVE\ x\ R^2}$ =$\sqrt{0.726\ x\ 0.590}$ = 0.655 (1)

Referring to (1), the Godness of fit value is 0.655. This means that the model is in a large category. The values of R^2, Q^2 and GoF can form a robust model. The value of RR^2, Q^2 dan GoF is be said very good if the result is > 0.1. These calculations can be a reference for making a hypothesis decision.

Hypothesis testing

The hypothesis testing stage can be found in the t-statistic and p-value. Research is said to have a positive and significant effect if the t-statistic value >1.96 and the p-value <0.05. However, if the t-statistic value <1.96 and the p-value >0.05, it does not have a positive and significant effect. The Table 9 shows that each variable has a significant positive effect, and each hypothesis is accepted.

Table 9. Path Analysis

	Original Sampel	T Statistic	P Values	Description	Decision
Conf→PU	0.777	22.434	0.000	Significant	Accepted
Conf→Satisf	0.497	6.248	0.000	Significant	Accepted
PU →CI	0.336	4.185	0.000	Significant	Accepted
PU →Satisf	0.364	4.422	0.000	Significant	Accepted
Satisf →CI	0.420	5.521	0.000	Significant	Accepted

Source: Processed Data (2021)

DISCUSSION

Effects of confirmation on perceived usefulness

A previous study by Pramesty & Anindita (2021) showed that confirmation has a positive effect on the perceived usefulness in the use of the open learning system, in which, based on the results of the distributed questionnaire, Google Classroom is in accordance with the students' expectation and is easy to be followed. Another study by Ayu et al. (2021) showed a significant measurement of the confirmation variable on the perceived usefulness of e-wallet users. Moreover, Khotimah (2021) analyzed the effect of the perceived risk and expectation confirmation model on repurchase intention through an application that revealed that perceived confirmation had a significant positive effect on perceived usefulness and satisfaction. Other studies that support the confirmation variable positively affecting perceived usefulness in using the system are Daneji et al. (2019) and Ouyang et al. (2017).

Based on previous studies, it can be said that the results of observations showed that S1 students of the office administration study program at UNESA feel the benefits when using Google Classroom according to their expectations. It is also proven that accessing Google Classroom can

make learning effective due to the good level of service provided by the google classroom system. Not all students can access Google Classroom via a laptop or computer, so some use an Android device. One of the advantages of using this LMS is that students can easily access Google Classroom by first downloading the application for free on the Playstore. Using Google Classroom via smartphones can help students when there are assignments from the lecturer, and then they immediately do the assignments as Google Classroom also provides Google Docs features. Even, they can submit their work directly without taking a long time. Google Classroom is very useful for students in online learning. Thus, based on the explanation above, the researcher can conclude that there is a positive and significant effect of confirmation and perceived usefulness on the use of Google Classroom during the COVID-19 pandemic.

Effects of confirmation on satisfaction

During COVID-19, students utilize Google Classroom to access learning materials, follow tests, and others activities online. Using Google Classroom is an effective alternative in the online learning process. When students have questions about the materials, they can easily ask the teacher by writing the question in the comment section during the lesson. Then, the questions can be answered by the lecture. Google Classroom provides learning features that can be accessed by students easily so that they feel satisfied with the performance of Google Classroom. These results are supported by Cheng (2018) that confirmation positively affects satisfaction with the performance of the system. Erawan & Pambudi (2017) analyzed the acceptance of Google Drive and showed that confirmation significantly affects satisfaction in which users feel satisfied as their confirmation is fulfilled. Therefore, for the second hypothesis, it can be said that confirmation has a positive and significant effect on satisfaction with the use of Google Classroom during the COVID-19 pandemic.

Effects of perceived usefulness on continuance intention

In online learning, many factors affect the *continuance intention* in using Google Classroom. One example is that Google Classroom can improve effectiveness in learning so that it motivates students to keep using the platform more than the other alternatives. Students can do the assignment using Google Classroom easily, so they use it frequently to access materials. *Google Classroom* can be accessed freely without spending money to purchase the application. Students only need to have internet access to use this platform. This makes them have no intention to change to other platforms. This is in line with some other studies, for example, Arfat et al. (2018) have proven that *perceived usefulness* is significantly positively related to *continuance Intention*. Al-Maroof et al. (2021) also showed that student and teachers' continuance intention in using *e-learning* is directly influenced by *perceived usefulness*. Another study by Muqtadiroh et al. (2019) also supports this hypothesis concerning factors affecting *continuance intention* in using e-*learning* shows that the ease of use of the application affects the continuance intention to use the application. Therefore, for the third hypothesis, it can be concluded that p*erceived usefulness* positively and significantly influences the *continuance intention* in using G*oogle Classroom* during the COVID-19 pandemic.

Effects of perceived usefulness on satisfaction

Students are used to using google classroom in online learning because it is veneficial in learning activities, and some students are satisfied with the experience of using google classroom. Google Classroom is practical and can be used anytime and anywhere. This means that Google Classroom can fulfill the students' expectations as Google Classroom provides features that greatly facilitate students in the learning process. One of its features helps lecturers provide learning information to students, namely the announcement feature, which contains the deadline for submitting the assignments, time for tests, or other important information. The information can be accessed by students when they join the class. Through this feature, the teacher can find out the students who have submitted assignments so that the teacher can immediately correct and

provide feedback for the assignment. To attract and meet consumer satisfaction, the performance offered has to be improved by Google Classroom. The results of the study prove that students feel that the google classroom system can be relied on to complete assignments quickly, so they are satisfied in using this platform. A study by Mamun et al. (2020) also shows that perceived usefulness has a strong positive effect on cognitive and emotional satisfaction in using technology. In social trade, perceived benefits also have a positive effect on satisfaction for women. It can be concluded that perceived usefulness has a significant and positive effect on satisfaction in using google classroom during the COVID-19 pandemic. Thus, the fourth hypothesis is accepted.

Effects of satisfaction on continuance intention

Satisfaction relates to the customer's favorable feelings concerning the relationship with the company. Choosing a learning platform needs to consider whether the use meets the user's expectations or not and continuance intention to use the platform. Based on observations during online learning activities using the Google Classroom, the students were satisfied, so they did not stop their intentions, and continued to use Google Classroom. They also felt happy with the functions provided by Google Classroom, so if possible, they will continue to use it since Google Classroom can automatically connect with other applications such as code.org, Quizizz, and Excite, making it easier for online learning activities with richer material. Feelings of boredom in learning can be overcome because the material received by students can be accessed directly via YouTube and Google Drive. The results of the analysis show that satisfaction affects continuance intention in using google classroom during the COVID-19 pandemic.

The above hypothesis is supported by Maroof & Salloum (2020) that satisfaction in the use of Google Classroom affects students' continuance intention to use Google Classroom. Satisfaction also has an influence on continuance intension in using electronic money as described by Sasongko et al. (2021). Another study by Ouyang et al. (2017) proves that satisfaction can affect continuance intention to use the system. This study shows that easy access to the Google Classroom system can trigger feelings of satisfaction in using Google Classroom. It can be concluded that the fifth hypothesis that satisfaction has a positive and significant effect on continuance intention in using Google Classroom during the COVID-19 pandemic is accepted.

CONCLUSION

This study investigates students' satisfaction and learning encouragement using variables that affect the use of google classroom during the COVID-19 pandemic. The results show that confirmation has a significant positive effect on perceived usefulness in using Google Classroom during the COVID-19 pandemic. Then, confirmation has a significant positive effect on satisfaction in using google classroom during the COVID-19 pandemic, and perceived usefulness has a significant positive effect on continuance intention in using Google classroom during the COVID-19 pandemic. Moreover, satisfaction has a significant positive effect on continuance intention in using Google Classroom during the COVID-19 pandemic. Perceived usefulness has a significant positive effect on satisfaction in using Google Classroom during the COVID-19 pandemic.

Google Classroom has a positive impact on educational institutions, including lecturers to continue using Google Classroom as an online learning tool. Lecturers need to convey information about the advantages and functions of Google Classroom and establish students' perceptions about the easy access to Google Classroom. This study has some limitations, for example, the limited variables studied, namely, confirmation, perceived usefulness, satisfaction, and continuance intention variables. Besides, the subjects of the study are from one study program, so future studies are expected to be diverse in subjects.

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