

User Satisfaction Analysis on Microsoft Teams and Google Classroom as E-Learning Media Using the E-ServQual Method

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Abstract

The development of technology opens up great opportunities for the education industry from Elementary School, Junior High School, Senior High School to College so that the learning system can be done online using the E-Learning or Electronic learning method. E-Learning is carried out to reduce face-to-face activities due to the Covid-19 pandemic so that every activity that will be carried out is shifted online. E-Learning is developed through mobile applications and websites that are bridged by information technology, and the E-Learning process can use platforms such as Microsoft Teams and Google Classroom, which are online classrooms that can facilitate lecturers and students in communication. To assess to effectiveness of both platforms are used as a medium of learning and to see which better platform to be used as a medium of online learning, then do research by using E-ServQual or Electronic Service Quality as a measure to compare the level of user satisfaction in when using Microsoft Teams and Google Classroom that is used in the process of E-Learning. After the researchers conducted an analysis of the comparison of user satisfaction by looking at the level of effectiveness owned by Microsoft Teams and Google Classroom as a medium of online learning used by students of the Faculty of Computer Science and Unklab Business School that exist in Klabat University, the result found is that the use of Google Classroom is more effective to use on online learning in comparing Microsoft Teams, which means that students are more satisfied in compare or comfortable when using Google Classroom than Microsoft Teams when learning online.

Keywords: E-Learning, Microsoft Teams, Google Classroom, E-ServQual

INTRODUCTION

Education is a process in learning so that we can get knowledge to increase the potential of a student. Education is divided into two parts, namely formal education and informal education. Formal education is a structured education starting from elementary schools, junior high schools, senior high schools, and tertiary institutions, while informal education is education obtained from outside formal education. (Ilma, 2015).

E-Learning is a means that can be accessed online using technology that develops through mobile applications or via the web, which is channeled through the internet network in order to reduce face-to-face meetings in class as usual (Munir, 2009).

Klabat University or commonly known as UNKLAB, is a private university located in North Sulawesi, has 7 Faculties and 13 Study Programs, including the Faculty of Computer Science and Unklab Business School. Unklab has a main website which is located at www.unklab.ac.id, which is used to provide information services from the University of Klabat regarding the history, vision, mission of the University of Klabat (About Us University of Klabat, 2016)

Beginning in 2020 until now, globally, the world has been influenced by the Covid-19 Virus pandemic, which results in every activity that is carried out online, whether it is doing work or learning activities. The online learning process at Klabat University, especially at the Faculty of Computer Science and Unklab Business School, uses two platforms, namely Microsoft Teams and Google Classroom. To assess the effectiveness of the two platforms used as online learning media and to see which platform is better to use for online learning, research was conducted using the E-ServQual or Electronic Service Quality method as a measuring tool.

The E-ServQual method is a method or technique used to measure the quality of a service based on user perceptions. E-ServQual (Electronic Service Quality) is the latest version of Service Quality or ServQual, which is an evaluation technique regarding the assessment of expectations and perceptions of customers who use electronic services (Megawati & Rabayati, 2020).

Theoretical Basis

Microsoft Teams

Microsoft Teams is a new experience provided by Microsoft that can bring people together, have conversations, create content, and use the tools needed by a team so that they can collaborate easily, in addition to using Microsoft Teams work that has been made shareable and can be seen by each team member. Apart from that, members can also find out the latest updates from the team (Introducing Microsoft Teams, Chat-Based Workspace in Office 365, nd).

Google Classroom

Google Classroom is a part of G Suite for Education which is now available on mobile (Get to know Google Classroom, nd). Google Classroom is a classroom application in cyberspace that can be a place of learning to make it easier for lecturers and students to collect assignments and assess students' assignments in real-time and can be accessed from anywhere. (Daughter & Goddess, 2019). In order to access Google Classroom, users can also use the website or use an application that is already installed on a smartphone and then log in using a student account so that when the lecturer provides material, assignments, or announcements, students can get notifications automatically. (Diplan & Alkindi, 2020). In Google Classroom, there are several features that can be used by users, including google drive, Google docs, sheets and slides, and Gmail that can help educational institutions provide learning (Angel & M, 2019).

User Experience

User experience is an attitude, behavior, or emotion of a user when doing or using a product, service, or system related to the perception of a person or individual related to the perceived benefits and convenience obtained when using the product. (Nugraheny, 2016). ISO 9241-210

(2009) states that user experience is "a person's perception and response resulting from the use or anticipated use of a product, system or service." So, it can be said that the user experience is subjective and focuses on the use of the user (Wiryawan, 2011).

E-ServQual

Electronic Service Quality or better known as E-ServQual is the latest release of Service Quality or ServQual, which was developed in order to evaluate the services provided on the internet network that we use. (Jonathan, 2013). E-Service Quality has 3 main dimensions, namely efficiency, availability, and fulfillment. These three dimensions are the core scale of E-ServQual, which can be used to measure customer perceptions about the quality of existing services. (Ulum & Muchtar, 2018). E-ServQual has 7 variables, namely:

1. Efficiency, relating to the ease of users when searching for information that is in the application that is used without experiencing problems.
2. Availability provides what is needed by the user or what the user will use.
3. Fulfillment, resulting in the success of an application for users who use the application.
4. Privacy, relating to the security provided by the application used by users.
5. Responsiveness is a response that can be measured based on the timeliness of an application to respond to users.
6. Compensation is compensation or compensation provided by the company or the party concerned.
7. Contact, how an application provides service features for users

However, in this study, researchers used six variables from the seven existing variables. These are efficiency, availability, fulfillment, privacy, responsiveness, and contact variables to measure the effectiveness of the Microsoft Teams and Google Classroom platforms as online learning media or E-Learning.

RESEARCH METHODS

This research uses the associative method, which aims to determine the influence and relationship between two or more variables. The influence or relationship of associative research looks for the cause and effect of the independent variable (X) on the related variable (Y)(Research Methodology, nd). In this study, researchers examined two objects, namely Microsoft Teams and Classroom. Then the related variables to be studied are divided into 2, namely Microsoft Teams (Y_1) and Google Classroom (Y_2).

Method of Data Collection

In this study, researchers used primary data. Data primary is a collection of data obtained from research using instruments carried out at certain times, and the results can also be generalized (Primary Data and Secondary Data, nd). And primary data in this study was obtained from questionnaires that have been distributed to users of Microsoft Teams and Google Classroom at the Faculty of Computer Science and Unklab Business School at the University of Klabat.

Data Analysis Technique

Testing of Hypotheses 1 and 2, which are to see the effect of the independent variable on the dependent variable, are using multiple analysis techniques. Hypothesis 3 is tested using a t-test to observe the difference between satisfaction using Microsoft Teams and Google Classroom in E-Learning.

RESULTS AND DISCUSSION

Microsoft Teams

Table 1: Results of the F Statistical Test on Microsoft Team

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	16,599	6	2,766	429,671	.000b
	Residual	.567	88	.006		
	Total	17,165	94			

a. Dependent Variable: Microsoft Teams (Y₁)

b. Predictors: (Constant), contact, privacy, availability, responsiveness, efficiency, fulfillment

Independent variables comprised of efficiency, availability, fulfillment, privacy, responsiveness, and contact together affect user satisfaction in Microsoft Teams are presented in Table 1.

Table 2: Determinant Coefficient Table

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.983a	.967	.965	.08024

Predictors: (Constant), contact, privacy, availability, responsiveness, efficiency, fulfillment

The adjusted R² value in Table 2 is 0.965 or 96.5%. It shows that the diversity in using Microsoft Teams caused by the independent variable is 96.5%. This coefficient value is close to 100%, indicating that the model has an almost perfect fit.

Table 3: T Statistical Test Result on Microsoft Teams

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.039	.078		-.502	.617
	efficiency	.175	.021	.212	8,356	.000
	availability	.164	.014	.287	11,781	.000
	fulfillment	.167	.022	.202	7,466	.000
	privacy	.166	.016	.254	10,620	.000
	responsiveness	.148	.015	.227	9,884	.000
	contact	.190	.018	.255	10,690	.000

a. Dependent Variable: Microsoft Teams (Y1)

The influence of independent variables on Microsoft Teams user satisfaction in E-Learning

In Table 3, the sig value for each independent variable is 0.000, which is <0.05 . This shows a significant influence on the variable efficiency, availability, fulfillment, privacy, responsiveness, and contact on Microsoft Teams user satisfaction in E-Learning. Each value on each variable has a positive value which causes user satisfaction in Microsoft Teams to increase by 1 unit.

Table 4: Table of Coefficient B values for each variable

Variable	The value of the coefficient B
Efficiency	0.175
Availability	0.164
Fulfilment	0.167
Privacy	0.166
Responsiveness	0.148
Contact	0.190

Google Classroom

Table 5: Result of the F Statistical Test on Google Classroom

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	17,043	6	2,840	749,236	.000b
	Residual	.334	88	.004		
	Total	17,376	94			

a. Dependent Variable: Google Classroom (Y2)

b. Predictors: (Constant), contact, effective, privacy, availability, responsiveness, fulfillment

Table 5, which is an ANOVA table, shows the number sig = .000 < 0.05, this shows that all independent variables, namely efficiency, availability, fulfillment, privacy, responsiveness, and contact, together have an effect on the satisfaction of using Google Classroom.

Table 6: Determinant Coefficient

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.990a	.981	.979	.06157

Predictors: (Constant), contact, privacy, availability, responsiveness, efficiency, fulfillment

The adjusted R² value in Table 6 is 0.979 or 97.9%. It shows that the diversity in using Microsoft Teams caused by the independent variable is 97,9%. This coefficient value is close to 100%, indicating that the model has an almost perfect fit.

Table 7: T Statistical Test Result on Google Classroom

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.216	.058		3,706	.000
	effective	.183	.016	.245	11,353	.000

	availability	.178	.014	.287	13,154	.000
	fulfillment	.161	.018	.222	8,750	.000
	privacy	.133	.011	.199	11,851	.000
	responsiveness	.142	.017	.184	8,482	.000
	contact	.152	.011	.228	14,104	.000

a. Dependent Variable: Google Classroom (Y2)

The influence of the independent variable on Google Classroom user satisfaction in E-Learning

In Table 7, the sig value for each independent variable is 0.000, which is < 0.05 . It shows a significant influence on the variable efficiency, availability, fulfillment, privacy, responsiveness, and contact on Microsoft Teams user satisfaction in E-Learning. Each value on each variable has a positive value which causes user satisfaction in Microsoft Teams to increase by 1 unit.

Table 8: The Coefficient value of B on each variable

Variable	The value of the coefficient B
Efficiency	0.175
Availability	0.164
Fulfilment	0.167
Privacy	0.166
Responsiveness	0.148
Contact	0.190

CONCLUSION

Based on the test results, the following conclusions can be drawn:

Efficiency has a positive effect on user satisfaction using E-Learning media using the Microsoft Teams and Google Classroom platforms. This is evidenced by the significance value of each platform, namely on Microsoft Teams of $0.000 < 0,05$ and the value of t count $8,356 > t$ table 1,987 and Google Classroom of $0,000 < 0,05$ and the t value is $11,353 > t$ table 1,987, which means that H_a is accepted and H_0 is rejected. So, it is concluded that efficiency has a significant effect on E-Learning both Microsoft Teams and Google Classroom.

Availability has a positive effect on user satisfaction using E-Learning media using the Microsoft Teams and Google Classroom platforms. This is evidenced by the significance value of each platform, namely Microsoft Teams of $0.000 < 0, 05$ and the value of t count $19,286 > t$ table

1,987, which means that H_a is accepted and H_0 is rejected, Google Classroom is $0,000 > 0,05$ and the value of t count $15,953 < t$ table 1,987, which means that H_a is accepted and H_0 is rejected. So, it is concluded that availability has a significant effect on E-Learning in both Microsoft Teams and Google Classroom.

Fulfillment has a positive effect on user satisfaction using E-Learning media using the Microsoft Teams and Google Classroom platforms. This is evidenced by the significance value of each platform, namely Microsoft Teams of $0,001 < 0,05$ and the value of t count $13,341 > t$ table 1,987 and Google Classroom of $0,000 < 0,05$ and the value of t count $13,500 > t$ table 1,987, which means that H_a is accepted and H_0 is rejected. So, it is concluded that fulfillment has a significant effect on E-Learning in both Microsoft Teams and Google Classroom.

Privacy has a positive effect on user satisfaction using E-Learning media using the Microsoft Teams and Google Classroom platforms. This is evidenced by the significance value of each platform, namely on Microsoft Teams of $0,000 < 0,05$ and the value of t count $14,350 > t$ table 1,987 and Google Classroom of $0,000 < 0,05$ and the value of t count $21,758 > t$ table 1,987, which means that H_a is accepted and H_0 is rejected. So, it is concluded that privacy has a significant effect on E-Learning in both Microsoft Teams and Google Classroom.

Responsiveness has a positive effect on user satisfaction using E-Learning media using the Microsoft Teams and Google Classroom platforms. This is evidenced by the significance value of each platform, namely on Microsoft Teams of $0,000 < 0,05$ and t count value $18,683 > t$ table 1,987 and Google Classroom of $0,000 < 0,05$ and the value of t count $17,324 > t$ table 1,987, which means that H_a is accepted and H_0 is rejected. So, it is concluded that responsiveness has a significant effect on E-Learning both Microsoft Teams and Google Classroom.

Contact has a positive effect on user satisfaction using E-Learning media using the Microsoft Teams and Google Classroom platforms. This is evidenced by the significance value of each platform, namely on Microsoft Teams of $0,000 < 0,05$ and the value of t count $14,354 > t$ table 1,987 and Google Classroom of $0,000 < 0,05$ and the value of t count $20,955 > t$ table 1,987, which means that H_a is accepted and H_0 is rejected. So, it is concluded that contact has a significant effect on E-Learning in both Microsoft Teams and Google Classroom.

Efficiency, availability, fulfillment, privacy, responsiveness, and contact have an overall positive effect on user satisfaction using E-Learning media using the Microsoft Teams and Google Classroom platforms. This is evidenced by the significance value of each platform, namely on Microsoft Teams of $0,000 < 0,05$ and the value of F count $40,098 > F$ table 2,05, which means that H_a is accepted and H_0 is rejected and Microsoft Teams is $0,000 < 0,05$ and the value of F count $47,432 > F$ table 2,05, which means that H_a is accepted and H_0 is rejected. So, it is concluded that the two platforms, both Microsoft Teams and Google Classroom, have a significant effect on E-Learning.

After the researchers analyzed the comparison of user satisfaction by looking at the effectiveness of Microsoft Teams and Google Classroom as E-Learning media, the critical finding in this research is that the use of Google Classroom was more effective than Microsoft Teams, which means that students are more satisfied/comfortable when using Google Classroom than Microsoft Teams when learning online.

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