

5th ICI  A

2016

INTERNATIONAL CONFERENCE ON INFORMATION TECHNOLOGY & ENGINEERING APPLICATION



Book 1

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PROGRAM PASCASARJANA





UNIVERSITAS KATOLIK MUSI CHARITAS

VERITAS ET SCIENTIA NOBIS LUMEN

SURAT TUGAS
Nomor: 71/II/A-KP10003/2/16

Rektor Universitas Katolik Misi Charitas memberikan tugas kepada,

NO.	Nama, NIDN	Judul
1.	Sri Andayani, S.Kom.,M.Cs. 0222077601	<i>Diabetic Retinopathy Stages Classification Using 3D-GLCM</i>
2.	Andri Wijaya, S.Kom.,M.T.I. 0209078401	<i>Analysis of Factors Affecting The Use of Google Classroom to Support Lectures</i>

Untuk mengikuti Seminar Internasional "Conference of Technology and Business Application (ICIBA)" yang diselenggarakan oleh Universitas Bina Darma, pada hari Jumat-Sabtu, tanggal 19-20 Februari 2016.

surat tugas ini dibuat untuk dilaksanakan dengan penuh tanggung jawab.

17 Februari 2016

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SLAMET SANTOSO SARWONO, MBA.,DBA
NIP. 82 86 201

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Nama lengkap, tanda tangan dan stempel dari pihak yang berwenang

Kampus Bangau (Rektorat)

Jl. Bangau No. 60 Palembang 30113

Telp. +62 711-378171

Sumatera Selatan - Indonesia

Website : www.ukmc.ac.id | Email : rektorat@ukm.ac.id

Kampus Burlian

Jl. Kol. Burlian Lrg. Suka Senang No. 204 Km.7 Palembang 30152

Telp. +62 711-412806

Sumatera Selatan - Indonesia

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This is to certify that

Andri Wijaya

has presented the paper in parallel session of

**International Conference on Information Technology and Engineering Application
2016 in Palembang, South Sumatera**



Palembang, February 19-20th 2016

Prof. Ir. H. Bochari Rachman, M.Sc

Rector Bina Darma University

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Analysis of Factors Affecting the Use of Google Classroom to Support Lectures

Andri Wijaya

Fakultas Sains dan Teknologi, Universitas Katolik Musi Charitas
Jalan Bangau No. 60, Palembang, Indonesia
e-mail: andri0907@gmail.com

Abstract

The rapid development of information technology in recent years has changed the paradigm of society. One field that is getting a significant impact is the field of education, where education is a process of communication and information from teachers to students that contains the information education, that sparked the birth of the idea of e-learning. The use of any e-learning system is always followed by a push factors, as well as e-learning launched by Google, the Google Classrooms that currently used by the majority of students in STT Musi. TAM (Technology Acceptance Model) is a model of user acceptance of information systems and information technology assume that there are two individual beliefs, they are perception of benefit (Perceived Usefulness abbreviated as PU) and ease of use (perceived ease of use, abbreviated as PEOU). Therefore, this study was developed by adopting the model of TAM to see from both the perception in the TAM that affect the use of Google Classroom by some students STT Musi. Population of this research is the students who are already using Google Classroom in the lecture. Data obtained as much as 90 questionnaires distributed by using purposive sampling technique to all students active in the odd academic year 2014-2015. Results from this study showed that the perception of perceived Easy of Use and perceptions of perceived usefulness positively affect the use of Google Classroom. And both these perceptions also jointly affect the use of Google Classroom.

Keywords : Google classroom, TAM, PU.

1 INTRODUCTION

The development of information technology in recent years has changed the paradigm of society in the search for and obtain information, which is no longer limited to information on newspapers, audio-visual and electronic, but also other information sources, one of them is through the internet network. One field that is getting a significant impact in the development of this technology is the field of education, where education is essentially a process

of communication and information from educators to students that contain educational information, which has elements of educators as a source of information, media as a means of presenting ideas, ideas and educational materials as well as learners themselves [1].

New technologies, especially in the field of ICT has an increasingly important role in learning. Many people believe that multimedia will be able to bring us to the learning situation in which "learning with effort" would be replaced with "learning with fun". e-Learning means learning with the help of the electronic services, particularly computer software [2]. Because of that e-learning is often referred to as the on-line course. IT offers many benefits to learning systems. It has changed the way of learning styles and approaches. IT dominantly uses to support IT based university. Some technology to support IT learning environment are e-Learning and blogs [3]. The growth of various types of applications of e-learning at the moment is getting a lot, recently, Google launches e-learning application named Google Classroom. Classroom use of Google is expected to improve quality and providing assistance in education.

STT Musi is one of the colleges that already use e-learning, especially Google Classroom in the learning process. Use of Google Classroom has been applied starting from the beginning of the first semester of 2014/2015 in early September 2014. Google Classroom have not been fully used, therefore to provide a policy to fully using Google Classroom for lecturers and students, it takes the right reasons to produce the right decision as well. In making of decision to use these applications, a research need to be conducted to examine some of the reasons and factors that affecting it. Therefore to determine the factors that affecting the use of Google to support lectures in STT MUSI, the author intends to conduct research using TAM (Technology Acceptance Model). TAM was first introduced by Davis in 1986 [4] is an adaptation of the TRA (Theory Of Reason Action) made specifically for modeling acceptance of information systems and information technology. TAM initially made specifically for modeling the information system user adoption. Davis [4] explains that the main objective of TAM is to establish the basic tracking the influence of external factors on beliefs, attitudes (personalization), and the destination computer users. TAM assume that two individual beliefs are perceived benefit (Perceived Usefulness abbreviated PU) is defined as the level at which a person believes that using a particular system can improve its performance, and ease of use (perceived ease of use, abbreviated PEOU) is defined as the degree to which a person believes that using the system is not required any effort is the main factor affecting the behavior of the reception computer. According to Venkatesh and Morris [5], perceived easy of use can be defined as the level of trust people that use a technology would be free of effort. According to Davis [4] as quoted by Wijaya [6] perceived usefulness as a predictor of usage behavior, will be influential in the development of the system because the user believes in the existence of Use Performance relationship.

This study aims to find empirical evidence that there is a positive influence factors of TAM, the usefulness and ease of use to use Google Classroom to support lectures on STT Musi. Research Benefits of this study are : 1) This study is expected to contribute to the development of science and technology, particularly in terms of research using variables derived from TAM to be able to prove empirically the behavior of the use of an IS and IT especially IS/IT used in the world of education, and 2) In addition, the results of this study are also expected to provide information for STT Musi regarding the positive factors on the use of Google Classroom lectures. The information generated from this study can be used as

decision support in terms of policy implementation to use Google Classroom in all lectures.

2 RESEARCH METHODOLOGY

2.1 Sampling Method

In this study, student of STT Musi used as the population. STT Musi has four majors (Architectural Engineering, Industrial Engineering, Computer Science and Information Systems). Sample selection using purposive sampling techniques with the requirement that the samples have been using Google Classroom and active in the 2014-2015 semester. After the population selection was done, the number of samples included in the requirements and can be used as samples are 96 students consisting of three majors namely Industrial Engineering, Computer Science and Information System. The number of samples of each study program can be seen in Table 1 below:

Table 1: Reliability Test Results.

Major	Total Sample
Teknik Industri	26 Mahasiswa
Teknik Informatika	21 Mahasiswa
Sistem Informasi	43 Mahasiswa

2.2 Data Collection Method

In studies using primary data which is data obtained directly from the source of the information. The data is obtained by using a questionnaire given to respondents were included in the study sample. Questionnaires used were consisted of three parts where each part represents a research variables. The first part contains six questions relating to the variable perceived usefulness, the second part deals with variable perceived ease of use, and the third part deals with variable use of Google Classroom.

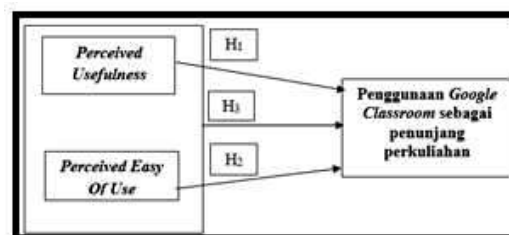


Figure 1: The framework of the research

2.3 Research Variables

There are two variables in this research : 1) Dependent Variable: The dependent variable in this study is the use of Google Classroom (PGC). These include the attitudes, interests

and behaviors and measured with three questions (Likert scale) were adopted from Agustinus [7] which have adjusted to the topic of this study, and 2) Independent Variable: There are two independent variables namely the perceived usefulness (PU) and perceived ease of use (PEOU). Questions used were adopted from research conducted Agustinus [7] who have adjusted to the topic of this study.

2.4 Research Variables

The framework forming hypotheses of this study, they are : 1) H1 : Google Classroom expediency causes a significant effect on the use of Google to support lectures, 2) H2 : Google Classroom ease of use factor causes a significant effect on the use of Google to support lectures, and 3) H3 : Both of Google Classroom expediency and ease of use causes a significant effect on the use of Google to support lectures. Figure 1 is a hypothetical framework adopted from the TAM framework.

3 RESULTS AND DISCUSSIONS

3.1 Validity and Reliability Testing

Measurement instrument in this study is a questionnaire, there are variables in the questionnaire which are represented by a couple of questions for each variable. The quality of research data depends on the measuring instruments used. Thus the validity test is performed to determine whether the measuring instruments used are totally valid to measure the variables studied. Measuring tool measurement in this study using Correlated Item-Total Correlation. Santoso (2004) [8] states that if the value of r count (Correlated Item-Total Correlation (CI-CT) on SPSS output) is positive and greater than the value of r table, than the question in the questionnaire is said to be valid. Reliability test is performed to measure the stability and consistency of measuring devices, measuring instruments used are reliable and consistent if the measurement is repeated and the extent to which the results of a measurement can be trusted. While the questionnaire said to be reliable if the answers of respondents to the question is consistent or stable over time. In this study the reliability test using Cronbach's Alpha method. Reliability test measuring instrument can be seen from the Cronbach alpha values for each variable. Cronbach's alpha is used to determine the consistency reliability interitem or to test the consistency of the respondents in response to the whole item. Inconsistencies can occur because of differences in the perception of respondents, or lack of understanding of the respondents in answering the question items. Sekaran (2006) [9] argued that if the alpha value of less than 0.6 is said poor reliability of measuring instruments, around the 0.7 range measuring instrument reliability is still acceptable, and if the value is more than 0.8 alpha reliability of measuring instruments said to be good. Validity and reliability of test results in this study can be seen in Table 2.

Summary of validity and reliability test result shown in table 2 using SPSS version 22.0 statistical application. To test the validity of the value of r table in accordance with a sample of 90 respondents to the formula $df-2 = 88$. So for the value of r table is 0, 2072. On validity and reliability of the 13 questions given to respondents, 2 (two) of them is invalid, they are the 4th question on PEOU variables and the 3rd questions on PGC variables. So the question that can be used as many as 11 questions. Based on Table II Alpha values of all variables have a good level of reliability.

Table 2: Factors and Willis Deutsch

Variabel	Kode Item	CI-CL	Alpha Croanbachs
Perceived Usefulness (PU)	PU1	0,419	0,772
	PU2	0,598	
	PU3	0,574	
	PU4	0,553	
	PU5	0,564	
	PU6	0,422	
Perceived of Use (PEOU)	PUOU1	0,608	0,701
	PUOU2	0,561	
	PUOU3	0,398	
Penggunaan Google Classroom (PGC)	PGC1	0,490	0,647
	PGC2	0,490	

Table 3. Result Of Correlation Between Variables

		Total PGC	Total PEOU	Total PU
Pearson Correlation	Total PGC	1,000	,326	,582
	Total PEOU	,326	1,000	,326
	Total PU	,582	,326	1,000
Sig. (1-tailed)	Total PGC		,001	,000
	Total PEOU	,001		,001
	Total PU	,000	,001	
N	Total PGC	90	90	90
	Total PEOU	90	90	90
	Total PU	90	90	90

3.2 Data Analysis

Normality testing is intended to test whether the regression model, the residue variable having a normal distribution or not. On testing normality in this study using a test for normality with the Kolmogorov-Smirnov approach (KS). The basic of decision making of the normality test with this approach is assuming the normal distribution of data if a significant value (Sig) $KS Z_i > 0.05$, and vice versa if the data were not normally distributed then the value Significant (Sig) $KS Z_i < 0.05$. Based on the normality test with the Kolmogorov-Smirnov (KS) results obtained Asymp.Sig value of 0.56 is greater than 0.05, it can be concluded the data were normally distributed. See the results in Table 3 and Table 4.

Results of correlation analysis to demonstrate the value of influence of each independent variable on the dependent variable. In Table 3 shows the correlation matrix between the variables ease of use on the use of Google Classroom to demonstrate the value of $r = 0.326$ with probability = 0.001 less than 0.05 while for the variable benefit to the use of Google Classroom to demonstrate the value of $r = 0.582$ with probability = 0.000 less than 0.05. In

Table 4. Multiple Regression Test Result

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	67,298	2	33,649	24,458	,000 ^a
	Residual	119,691	87	1,376		
	Total	186,989	89			

Table 4 above to clarify whether there is any real effect (significant) and PEOU PU variables simultaneously (together) against the PGC. Of output in the second model shows that the Fhitung 24.458 with a significant level or probability of 0.000 smaller than 0.05, then the regression can be used to predict the PGC (Use Google Classroom). Based on the analysis and the testing of the hypothesis testing results can be seen in Table V below.

Table 3: Hypothesis Test Result

Result Hypothesis	Result
H1 : Google Classroom expediency causes a significant effect on the use of Google to support lectures	Accepted
H2 : Google Classroom ease of use factor causes a significant effect on the use of Google to support lectures	Accepted
H3 : Both of Google Classroom expediency and ease of use causes a significant effect on the use of Google to support lectures	Accepted

3.3 Discussions

Discussion of the results of the analysis of the testing that has been done and look at the literature on previous studies with similar variables and methods that can be described as follows:

1. Perceived Easy Of Use. Variable Perceived Easy Of Use (PEOU) has positive effect on the use of Google as supporting Classroom lectures. The results have largely supported by many studies [10-12] It can be interpreted that the students as Classroom Google users can feel that all the facilities and features provided is easy to use, easily accessible so as to ease in completing tasks lectures. The statement was supported also by Davis [4] and Wahid [13] which says that the perception of the ease of use of an information technology is defined as a measure of where one believes that computers can be easily understood and used. Other research conducted by Augustinus [7] precisely obtain opposite results. The study was conducted in the same context that e-learning. However the authors have not found an adequate explanation of these findings.
2. Perceived Usefulness. Perceived usefulness variables also affect the use of Google as supporting Classroom lectures. In this study, these variables have the greatest influence on the variables previously. This finding is in line with the findings made by some

previous authors [10-12]. This variable has a great influence with the explanation probably most users are accustomed to using information technology, especially e-learning so that they are already feeling the benefits provided by the e-learning itself. And also means that students benefit when using Google Classroom. Respondents also said that Google Classroom can also increase the effectiveness in completing the tasks assigned faculty. It also saves time and money because it can be accessed anywhere desktop and mobile. The statement is also in accordance with the opinion of Davis (1989) [4] and Wahid (2007) [13] which says that the perceived usefulness is defined as a measure of where the use of a trustworthy technology will bring benefits to those who use it.

3. Perceived Easy Of Use dan Perceived Usefulness together affect the use of google classroom. This study found that both variables jointly affect the use of google as supporting classroom lectures. These findings as well as research conducted by Augustinus [7] and Yulianto [12] they declared the result that the perception of ease of use and perceived usefulness jointly influence user behavior in the use of information technology. And may mean that users can feel the ease google classroom and benefit in using and assist them in completing tasks and communication with teachers.
4. As presented in the results of research conducted by Molnar [14] who say Besides classic forms of learning, because today's changing the way of life and society, atypical forms of learning has an increasing role. It represents the progressive forms of learning are not necessarily linked to the institution and not in the traditional sense of the lessons, lectures and seminars. In atypical learning individuals learn choose an academic environment in accordance with the purpose and motivation. So this is a good platform for students who wish to continue to update their knowledge, attitudes most characteristic for studying non-formal and informal. Thus the variable perceived easy of use and perceived usefulness was instrumental to alter the characteristics of the students to a better one.

4 CONCLUSIONS

Several conclusions that can be generated from this study are:

1. Perception perceived Easy of Use positively affect the use of google classroom by some students in STT Musi who already use it.
2. Perception positively perceived usefulness also affect the use of google classroom by some students in STT Musi who already use it.
3. Perception perceived Easy of Use and Perceptions perceived usefulness jointly affect the use of google some students in the classroom.

References

- [1] B. S. D. Oetomo and J. Priyogutomo, *Kajian Terhadap Model e-Media dalam Pembangunan Sistem e-Education*, in *Seminar Nasional Informatika*, 2004.
- [2] E. Soekartawi, *E-learning di Indonesia dan Prospeknya di Masa Mendatang*, in *Seminar Nasional di Universitas Petra*, Surabaya, 2003.

- [3] L. A. Abdillah, Students learning center strategy based on e-learning and blogs, in *Seminar Nasional Sains dan Teknologi (SNST) ke-4 Tahun 2013*, Fakultas Teknik Universitas Wahid Hasyim Semarang 2013, pp. F.3.15-20.
- [4] F. D. Davis, Perceived usefulness, perceived ease of use, and user acceptance of information technology, *MIS quarterly*, pp. 319-340, 1989.
- [5] V. Venkatesh, et al., User acceptance of information technology: Toward a unified view, *MIS quarterly*, vol. 27, pp. 425-478, 2003.
- [6] P. S. M. Wijaya, Pengaruh Computer Self-Efficacy dan Task-Technology Fit Terhadap Penerimaan Penggunaan Internet, *Jurnal Riset Akuntansi dan Keuangan*, vol. 2, 2005.
- [7] A. Agustinus, Analisis Faktor-Faktor yang Mempengaruhi Penggunaan Learning Management System (Portal Akademik) pada STT Musi Palembang, *Sarjana Skripsi*, STT Musi, Palembang, 2015.
- [8] S. Santoso, *Buku Latihan SPSS Statistik Parametrik*. Jakarta: Elex Media Komputindo, 2000.
- [9] U. Sekaran, *Research methods for business: A skill building approach*: John Wiley & Sons, 2006.
- [10] A. A. Lutfi, et al., Pengaruh Kemudahan Penggunaan terhadap Kemanfaatan pada Sikap Pengguna e-Learning, *Jurnal Administrasi Bisnis*, vol. 6, 2013.
- [11] N. Dalimunthe and H. Wibisono, Analisis Penerimaan Sistem e-Learning SMK Labor Pekanbaru dengan Menggunakan Technology Acceptance Model (TAM), *Jurnal Sains dan Teknologi Industri*, vol. 11, pp. 111-117, 2014.
- [12] S. E. Yulianto, Pengaruh Persepsi Kemudahan dan Persepsi Kemanfaatan terhadap Pemanfaatan e-learning dengan Model TAM di SMK Muhammadiyah 3 Yogyakarta, *Jurnal Sistem Informasi*, vol. 1, 2011.
- [13] F. Wahid, *Teknologi Informasi dan Pendidikan*. Yogyakarta: Ardana Media dan Rumah Produksi Informatika, UII, 2007.
- [14] G. Molnar, Teaching and Learning in modern digital Environment, in *Applied Machine Intelligence and Informatics (SAMI), 2015 IEEE 13th International Symposium on*, 2015, pp. 213-217.

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