

## The Influence of Information Technology Toward Interest in Utilization of The Virtual Learning Environment

Wildoms Sahusilawane, Lilian Sarah Hiariey  
Universitas Terbuka, Ambon Regional Office, Indonesia

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### ABSTRACT

This research aims at examining the effect of Ease, Affect, Flexibility and Accessibility of information technology on utilizing virtual learning environment at Universitas Terbuka. The population of the research consists students of Bidikmisi scholarship in Non Basic Education program of Accounting that include of 145 respondents. The sampling method is purposive sampling with 141 eligible samples. The questionnaires are measured with Correlation and Multiple Regression analysis that covers descriptive statistics, reliability test and validity test. Classical Assumption Test which includes multicollinearity test is later conducted. Hypothesis testing and discussion are presented at the end. Result of research with t test or partially indicate that, variable of ease of use have positive relation and have significant influence to interest of utilization of virtual learning environment, t test result for accessibility variable have positive relation and no significant effect to interest of utilization of virtual learning environment. The result of the research on the affect variable has a positive relationship and has a significant effect on the interest of utilizing the virtual learning environment. While the flexibility variable shows have a negative relationship and no significant effect on the interest of utilization of virtual learning environment.

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### Corresponding Author:

Wildoms Sahusilawane,  
Universitas Terbuka, Ambon Regional Office,  
Jl. Wolter Monginsidi, Ambon, Indonesia.  
Email: wildoms@ecampus.ut.ac.id

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## 1. INTRODUCTION

Distance learning system at Universitas Terbuka is completely different from face-to-face learning system. Students at Universitas Terbuka are obliged to be able to learn independently by using the provided facilities and exposing the students' full potentials to achieve the desirable goals. As a distance-education platform, one of the prominent characteristics of Universitas Terbuka refers to an educational process between students and teachers separated by physical distance. The distance is overcome by relying on information technology as a learning and communication platform that helps support the distance education.

The role of information technology in every aspect of education, both formal and non formal, counts on managing and processing information system via computing technology in its various forms. Information technology provides any information required by education system fast, aptly, relevantly and accurately. It generates faster work as well as relevant and accurate outputs in respect of data processing in organizational activities [1]. The interest in using technology is highly related to the users' attitudes. By their very nature, individuals are interested in operating technology to their liking. According to Aaker and Myers [2], individuals' attitude toward a certain product clearly shows their like or dislike of the product.

A research by Sagung [3] analyzes factors that affect the use of information technology in Bank Perkreditan Rakyat in Tabanan Regency. He finds that social factor and facilities positively and significantly effect the use of information technology. Affect, task conformity and long-term consequence have positive

and insignificant impact, while complexity has negative and insignificant impact on the use of information technology.

Furthermore, the rapid increase of information technology users improves the benefit value of the virtual learning environment itself. This therefore enables students to acquire as much information related to majors they are in through facilities that include digital contents accessible and exchangeable anywhere and anytime. Zeithaml [4] defines the factors that measure the quality of online service, which are accessibility, ease of navigation, efficiency, site aesthetics and personalization.

Based on the above explanation, Universitas Terbuka as one of the universities that implement the distance learning system is the utilization of information technology in this case the internet to do the learning process. From the condition that there are still many students who have not utilized the internet as a learning environment due to lack of existing infrastructure, so that students can not access the internet maximally.

According to O'Brien [5], technology is a computer network that consists of numerous components of information processing which applies myriad hardwares, softwares, data management and network information technology.

According to Antasari and Yaniartha [6] system information can be a success if the system can run with good, easy to implement, and in accordance with existing technology. One will be interested in using a new information technology when the users are convinced by using the information technology will improve its performance, using information technology to do with ease, and the user is getting the environmental effects surrounding the use of information technology [7].

According to Handayani [8], an organization applies technology to provide information for both internal and external users in decision-making. Technology that generates information is defined as information technology, which is a combination between computing technology and telecommunication which involves such other technology as hardwares, softwares, databases, network technology, etc.

Online service in education, degree or non degree, is generally to provide education service for users (students, in this sense) by using the Internet as the ultimate platform. The online service consists of various phases, which include registration, entrance test, payment, assignments, discussions, examinations, assessments, announcement, and so on. Distance education could make use of the Internet optimally, which in turn provides the students control of time and place and even optimizes the quality of education.

Online distance education overcomes the limit that any other types of distance education suffer (which have actually been technologically-based education). The limit refers to such technologies as satellites and televisions. With both technologies, students still have to attend the education facilities with special and costly equipments. Online education via the Internet, on the other hand, enables the students to study independently at home by using their own computers.

According Jogiyanto [9], Interest in the utilization of information systems is a desire (interest) someone to perform a particular behavior by utilizing information systems. One will be interested in using a new information technology if the user believes by using information technology will improve its performance, using information technology can be done easily, and the user gets the influence of the surrounding environment in using the information technology [7].

Virtual learning refers to a Web-based learning process by including Cyberspace and Internet [10]. It aims at removing the barrier of space and time between students and teachers via computers. Students are able to obtain learning materials designed in learning packages available in the Internet.

Accessibility refers to the easiness to reach a certain purpose that can provide comfort in performing a certain activity [11]. To enable the students to look up information fast, aptly and accurately, information technology and communication are available to create greater access to such information and communication. Furthermore, the ever-increasing Internet, which has covered rural areas, makes it all the easier for them to look up extensive range of information spread all over the world without traveling.

Affect is defined as personal feeling or emotion, either pleasant or unpleasant. Agus [12] proves that an individual's feeling has positive and significant impact on the use of information technology. In other words, if an individual feels content doing his/her work by using information technology, he/she tends to improve the use of it.

The flexibility of an information system indicates that the information system is considered successful if the system users can meet their needs flexibly and away from the difficulty and comfortable in using the system [13]. Based on the aforesaid description, this research aims at examining the effect of Ease, Affect, Flexibility and Accessibility of the use of information technology on the interest in using virtual learning environment. The objective of the research is to empirically examine such factors as Ease, Affect, Flexibility and Accessibility of the use of information technology on the interest in the development of virtual learning environment at Universitas Terbuka.

## 2. RESEARCH METHOD

The sampling method applied in this research is purposive sampling, which is selected based on the characteristics of a population, data source and the purpose of the research. Data sources encompass primary data directly obtained from the field. The data testing technique is Correlation and Multiple Regression analysis. The analysis result is presented in descriptive statistics, data quality test, classical assumption test, regression analysis and hypothesis test to find out the interrelationship between independent variables and dependent variables.

## 3. RESULTS AND ANALYSIS

Primary data in this research is collected by delivering 150 questionnaires to respondents who take advantage of the virtual learning environment. Those respondents are students at 6 UPBJJ, among which are Ambon, Denpasar, Ternate, Palembang, Gorontalo and Surakarta. Those questionnaires are directly delivered to them by UPBJJ staff.

The number of questionnaires returned is 145 exemplars or 96,6% of the total distributed questionnaires, which is 150 questionnaires. The number of which that can be processed is 141 exemplars or 94%, where the remaining 4 are not eligible due to incomplete answers and damage. The researcher classifies those respondents based on sex, age, the type of virtual service that they use, the duration and the location of accessing the Internet. The complete data can be seen in Table 1.

The number of respondents eligible for the data processing in this research is 141 people. The overview of the respondents' profiles are shown in Table 1.

Table 1. The Profile of Respondents

Description	Total	Percentage (%)
Sex:		
a. Male	38	26,95 %
b. Female	103	73,05 %
Age:		
a. 17 - 21 years old	128	90,78%
b. 22 - 30 years old	13	9,22 %
The Use of Virtual Learning Environment		
a. Tutorial Online	48	34,04%
b. Digital Library	8	5,67%
c. Dry Lab	0	0
d. Independent Exercises	65	46,10%
e. Others	20	14,18%
Places of accessing the Internet		
a. Campus	13	9,22%
b. Internet cafe	70	49,65%
c. House	50	35,45%
d. Hotspot	8	5,67%

Table 1 displays that out of 141 respondents, females outnumber males, where there are 103 females (73,05%) and 38 males (26,95%). Meanwhile, based on age, there are 128 respondents aged 17-21 years old while there are 13 students aged 22-30 years old.

Based on the use of virtual learning environment, the table shows that the most attended service by students is Latihan Mandiri with 65 students (46,10%). The second most attended service is tutorial online with 48 students (34,04%). Students who attend other services are 20 students (14,18%), while the least attended is digital library with only 8 students (5,67%).

Based on the places at which they access the Internet to make use of the virtual learning environment, Internet cafe is the most visited with 70 students (49,65), followed by house with 50 students (35,46%). Campus and hotspot comprise 13 students (9,22%) and 8 students (5,67%) respectively.

Based on the aforesaid analysis method, the first test conducted in this research is data quality test. Data quality test includes validity test and reliability test.

A variable is declared reliable, if Results  $\alpha > 0.6$  = Reliable, Results  $\alpha < 0.6$  = unreliable [14]. Validity indicates the extent to which the measuring instrument capable of measuring what is measured [15].

Table 2. Result of Reliability

No	Variabel	Cronbach's Alpha
1	Ease	0,683
2	Affect	0,746
3	Accessibility	0,618
4	Flexibility	0,778
5	Interest in utilizing the virtual learning environment	0,678

As shown in Table 3, the Cronbach's alpha for the overall scale is equal to 0.700. All the measures employed in this study demonstrated good internal consistency, ranging from 0.618 to 0.778. A test of validity showed that the correlation coefficients between each statement and the total score were between 0.523 and 0.848, all of them being significant at  $p < 0.05$ . It can be concluded that every question for the variables in this research is valid.

Multiple linear regression attempts to detect the relationship between an independent variable and a dependent variable. The relationship between independent variable and dependent variable are to be simultaneously calculated in multiple regression equation.

Table 3. Multiple Linear Regression Test

Model	Unstandardized Coefficients	
	B	Std. Error
1 (Constant)	4.483	1.580
KTI	.409	.092
ACC	.061	.095
AFF	.342	.053
FLK	-.060	.069

Based on the table, the regression equation is as follows:

$$Y = 4,483 + 0,409 X_1 + 0,061 X_2 + 0,342 X_3 - 0,060 X_4$$

Based on the regression equation, the constant ( $\beta_0$ ) is ( $\beta_0$ ) 4,483 which indicates that there is no sign of change in variables of Ease ( $X_1$ ), Accessibility ( $X_2$ ), Affect ( $X_3$ ) and Flexibility ( $X_4$ ). This accordingly means that the interest in utilizing the virtual learning environment is 4,483.

Coefficient of determination ( $R^2$ ) is principally a measure used to assess how well a model explains the dependent variable. The coefficient of determination ranges from 0 to 1. Lower  $R^2$  means less capability of the independent variables to explain the dependent variable. A value close to one independent variable provide almost all the information needed to predict the dependent variable [14]. The result of the coefficient of determination test is presented in the following Table 4:

Table 4. Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.690 <sup>a</sup>	.477	.461	1.383

a. Predictors: (Constant), FLK, KTI, AFF, ACC  
b. Dependent Variable: MTI

Table 4, model summary, reveals that the adjusted  $R^2$  is 0,461 or 46,1%. This indicates that each of the independent variables-Ease, Accessibility, Affect and Flexibility-is able to explain the dependent variable-Interest in utilizing the virtual learning environment-which is 46,1%. As for the remaining 53,9%, it is explained by other factors or variables unknown and excluded in the regression analysis.

F Test is a measure used to find out the simultaneous effect of independent variables (free variables) on dependent variables (bound variables). The following Table 5 represents the result of simultaneous significance test (Statistic-F Test):

Table 5. Result of F Test

ANOVA <sup>b</sup>						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	237.035	4	59.259	30.982	.000 <sup>a</sup>
	Residual	260.128	136	1.913		
	Total	497.163	140			

a. Predictors: (Constant), FLK, KTI, AFF, ACC

b. Dependent Variable: MTI

Table 5 reveals that F calculate is 30,982 with 0,000 significance level. Since 0,000 significance is much lower than 0,05, it can be concluded that  $H_0$  is rejected. That means there is a simultaneous effect of Ease, Affect, Accessibility and Flexibility on Interest in utilizing virtual learning environment.

Statistic-T test is a measure to discover the effect of one independent variable, one at a time, in explaining the variance of dependent variable. The result of the partial test (T-test) is shown in the following Table 6:

Table 6. Result of Statistic-T Test

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.483	1.580		2.837	.005
	KTI	.409	.092	.329	4.459	.000
	ACC	.061	.095	.046	.642	.522
	AFF	.342	.053	.452	6.430	.000
	FLK	-.060	.069	-.054	-.867	.387

The result of T-test on variable Ease shows that the level of significance stands at 0,000, which is below 0,05. That indicates that  $H_0$  is accepted which means the easy operation of information technology has a partially significant impact on the use of virtual learning environment.

The result of T-test on variable Accessibility reveals that the level of significance stands at 0,522, higher than 0,05, which leads  $H_0$  to be accepted. That means variable Accessibility partially does not have significant impact on the interest in utilizing the virtual learning environment.

The T-test on variable Affect generates 0,000 significance level, which is less than 0,05.  $H_0$  is therefore rejected which leads to the fact that partially Affect has a significant impact on the interest in utilizing the virtual learning environment.

As for variable Flexibility, the T-test reveals that the level of significance stands at 0,387, which is greater than 0,05. Hence,  $H_0$  is accepted, which leads to the conclusion that Flexibility partially has an insignificant impact on the interest in utilizing the virtual learning environment.

### 3.1. Discussion

The finding of the research reveals that the easily-operated information technology has provided positive and significant effect on the interest in utilizing virtual learning environment. The easier the operation of the information technology in the virtual learning environment, the easier for students as users to access online services provided by Universitas Terbuka to conduct virtual learning process.

The use of information technology is increasingly high in the learning process requires ease of access to services available so the higher the ease of using the system, the higher the level of utilization of information technology in the learning process. The results of this study also support the results of research conducted by Elistya Rimawati and Sri Harjanto [16] which states that the ease of significant and positive influence on the dependent variable interest of junior high school teachers use the Internet as a source of learning partially. This research is also in line with the research conducted by Fitri Imandari [17] there was significant influence between the perception of the ease of use of behave in interest towards e-learning.

The research points out that accessibility does not significantly affect the interest in utilizing virtual learning environment. This proves that the accessibility to the digital resources available at Universitas Terbuka has yet to be fully utilized due to the fact that most students are more likely to access the Internet in such other places as the Internet cafe at their own expenses. It is recommended that the hotspot access be

extended to UPBJJ-UT campus or office surrounding areas. The technology's integration enables them to easily access any virtual services at UT necessary to sustain their education.

The research sets out that affect has positive and significant effect on the interest in using virtual learning environment. Students who are profoundly content and keen on studying with technology services are to expand the use of the virtual learning environment, which in turn allows them to improve their academic achievement. This is in line with a research by Wulandari [18] which claims that affect, showing to its positive and insignificant impact, has been closely associated in utilizing information technology.

The research proposes that flexibility does not significantly affect the interest in utilizing virtual learning environment. For the most part, technology infuses learning environment with digital learning tools that enable online learning opportunities and increase educational productivity. However, merely having some sort of technological devices is an outdated standards. Keeping up with the technology does not necessarily means keeping up with the students' needs. That means most students feel discontented with the fact that the information technology system available at Universitas Terbuka is not yet flexible when it comes to adapting the students' needs.

That flexibility of the use of internet-based learning media can support efforts to expand access and learning services for students wherever located. The results of this study do not support the research conducted by Sidiq, Zulkilfi [19] which states that 54.35% of the SDLB teachers view the information technology-based learning media give a good influence in making the learning process becomes more flexible.

#### 4. CONCLUSION

The research verifies the effect of easy use, accessibility, affect and flexibility on the interest in utilizing the virtual learning environment. The conclusion is as follows:

- a. Variable of ease of information technology as to the interest in utilizing the virtual learning environment is empirically proven with T-test as significant.
- b. Variable of accessibility is empirically proven with T-test as insignificant for the interest in utilizing the virtual learning environment owing to the limited Internet access that leads the respondents to inevitably fall behind the virtual learning environment.
- c. Variable of affect is empirically proven with T-test as significant for the interest in utilizing the virtual learning environment. This denotes that the respondents feel tremendously content and determined to get engaged in the online learning process.
- d. Variable of flexibility is empirically proven with T-test as insignificant for the interest in utilizing the virtual learning environment, which does not meet the respondents' needs and expectations with respect to the digital learning services.

The research raises a number of future opportunities and is open to scrutiny and challenge. The aforementioned findings are expected to be taken into a deep consideration as regards the management of distance-education in order to improve the virtual learning process that heavily relies on information technology system.

- a. This research provides indications and contributions regarding a number of notable issues in utilizing information technology that Universitas Terbuka is dealing with in order to carry out as well as to improve the desirable and necessary virtual-learning environment.
- b. This research sets a number of opportunities for forthcoming researches in PTJJ, both in terms of theory development and concept validation, which especially concern with the development of information technology in learning process.

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