

Measurement of Usability online storage in Cloud Computing for University Users

I Wayan Yudha Saputra, Gilbert Watae, Nancy Runtukahu

Department of Information Technology and Communication Education, Universitas Negeri Manado

Corresponding author: wayanyudha@gmail.com

Abstract

Cloud computing technology or often known as Cloud Computing is present as an impact of changes in the cultural environment and competitive ecosystem on Higher Education in the world, including Indonesia. Cloud computing is actually a combination of the use of computer technology ('computing') and Internet-based development ('cloud'). This research was conducted at Manado State University, the respondents themselves include lecturers and students. This study uses a use questionnaire that has aspects of effectiveness, efficiency and satisfaction. In collecting data the researchers used a questionnaire with the number in this study there were 21 respondents with 10 attributes of the questions asked. After collecting data, the analysis will be carried out using the Likert Scale method.

Keyword : *Cloud Computing, Google Drive, Usability, Manado State University, Use questionnaire, Likert Scale*

Introduction

Cloud computing (cloud computing) is currently quite pampering modern people in working online. Cloud computing technology that is quite widely used by people in the world in particular is cloud storage (cloud storage). Archives that used to be paper media, have now developed into archives whose media are presented in the form of new media such as: films, cassettes, videos, electricity, CDs, DVDs, flash drives, hard disks, and others. Currently, many students use electronic media in managing their documents.

The use of cloud computing can overcome existing problems, namely minimizing the occurrence of data duplication, managing the archiving system for the better and facilitating data processing with many users.

It is known that Google Apps is better in terms of product utilization, effectiveness and cost savings but based on usability evaluation users are more comfortable using Office 365 because users are more familiar with MS applications. Office such as Word, Excel, and many other Office applications so it is easier to adapt compared to Google Apps. Applications that have been installed on each user's computer on average use MS. Office, making it easy to edit offline and only need internet access to sync it in the cloud. One of Google's Cloud Computing implementations is Google Apps for Education. Google Apps for Education (GAPE) is a Google service for the world of education starting from kindergarten, elementary, junior high, high school / MA / vocational and college.

To meet the needs of users whose mobility level is very high, many cloud storage system service providers have emerged, including Dropbox, Virtualbox, Github, Sky Drive, Google Drive. And with the gadget / smartphone trend and "build in" the Google Drive cloud storage system is increasingly being loved by gadget / smartphone owners.

Usability testing is an attribute to assess how easy something is to use. Usability comes from the word usable which means it can be used properly. This refers to how users can use something to achieve a goal, and their satisfaction in using it.

High usability has a close relationship with the popularity and high utilization of the system or software by users in achieving their goals. Usability testing has the benefit of collecting objective feedback on usability such as user satisfaction and in terms of the interface. According to Jacob Nielsen (2003) in suggesting five aspects of usability or five usability attributes, namely:

1. Easy to learn (learnability) The quality of the system that indicates whether the system is easy to learn and use in completing certain tasks.
2. Efficiency The way the system can support users in doing their work, has simple steps to get the same results. Example: oneclick shopping: Amazon.com
3. Easy to remember (memorability) The ability of the system to be easy to remember, both in terms of features or menus that exist as well as how to operate.
4. Errors and security (errors) Protection and assistance to users against unwanted and dangerous conditions and situations when operating the system, for example: help menu to provide solutions, and confirm file deletion.
5. Satisfaction Refers to a situation where the user feels satisfied after using the system because of the convenience possessed by the system. The more users like a system, they are implicitly satisfied with the system in question [10].

Method

Sample And Population

The population is a group of research objects that have predetermined characteristics. The number of respondents involved in this study were 21 respondents from a population, namely lecturers and students at the Manado State University. The respondents include students and lecturers at the Manado State University.

Method of collecting data

The primary data collection method was carried out by distributing questionnaires through google forms to obtain data. In this study, researchers used a Likert Scale. The Likert scale is a psychometric scale that is most widely used in research in the form of surveys Research - research on personal behavior that measures individual traits always uses a measuring instrument designed by the

researcher himself, either through pre-test or eliciting (ask the expert).) because there is no definite measuring instrument. Usually five scale options are provided in a format such as: 1 = Less easy, 2 = Less easy, 3 = Fairly easy, 4 = Easy, 5 = Very easy.

Table 1. Scoring Scale

PK	KMS	KM	CM	M	MS
	1	2	3	4	5

To get data that is ordinal and scored as follows:

Description :

PK : Questionnaire Question

KMS : Not so easy

KM : Not Easy

CM : Pretty Easy

M : Easy

SM : Very Easy

In this study, the initial step taken was to identify the problem, then an initial study/library study related to Usability Testing was carried out.

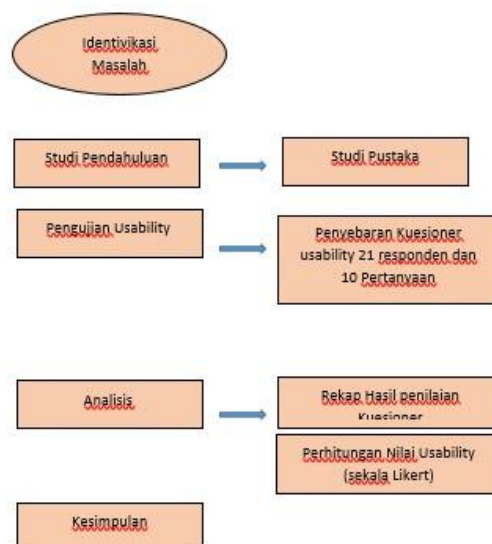


Figure 1. Research Flow

Results and Discussion

In this study, researchers distributed questionnaires to lecturers and students at Manado State University which contained 10 questions that represented the five aspects of usability using google forms media. Users fill out a questionnaire that has been shared based on their experience (what they see and feel) when using Google Drive Cloud Computing. Each question from the questionnaire has the aim of measuring the level of usability according to user acceptance, which will then be assessed using a Likert scale. These questions have represented the five aspects of usability, including learnability, efficiency, memorability, errors, and satisfaction. From the questionnaires that have been given to the respondents, the data were analyzed using a Likert scale model.

Index formula $\% = \text{Total Score} / Y \times 100\%$

Y = Highest score likert x number of respondents (Highest Number 5) "Pay attention to the weight of scores"

X = lowest score likert x number of respondents (lowest number 1) "Pay attention to the weight of scores"

Percentage Value

Answer Description

0 – 20%	Less Easy
20–40 %	Less Easy
40-60%	Pretty Easy
60-80%	Easy
80-100%	Very Easy

The highest score for the VERY EASY item is $5 \times 21 = 105$, while the LESS EASY item is $1 \times 21 = 21$. So, if the total

The respondent's score is 105, so the assessment of the respondent's interpretation of Google Drive's Cloud Computing is the result of the value generated by using the Index % formula.

Usability Analysis

After distributing the questionnaires to 21 respondents, then a recapitulation of the results of the questionnaires was carried out.

Table 2. Usability Value

NO	Question	Percentage	Desc
1	The Google Drive application is easy to install and runs well on smartphones	38.1%	SM
2	Application easy to use	42.9%	CM
3	Applications are easy to understand	33.3%	CM
4	In terms of interface appearance	52.4%	M
5	Speed of processing data	47.6%	CM
6	Accuracy of displaying data	42.9%	CM
7	Is the displayed data up to date?	33.3%	CM
8	Are you satisfied with the use of the application?	52.4%	CM
9	Is the application worth using?	39%	SM
10	Is the application easy to remember?	42.9%	M

The table above shows the value of user satisfaction/acceptance (acceptance) to each question item posed. It can be seen that for "an easy-to-recognize android display" has a percentage value of 84% (already above 3 / above the middle value) on the Likert scale. This means that the Android operating system is easily recognized by the user in terms of the interface.

If adjusted for each usability aspect in table 2, the data says that Google Drive's Cloud Computing has usability values, namely, learnability, efficiency, memorability, errors, satisfaction which is quite good. This is indicated by the value of usability results on the five attributes as follows

a) The value of the attribute "In terms of interface appearance" is 52.4% which indicates that Google Drive already has an aspect value

Learnability.

b) The value of the attribute "Google Drive application is easy to install and runs well on smartphones" of 38.1% indicating that Google Drive already has an Efficiency aspect value.

c) The value of the attribute "Is the application Easy to Remember" of 42.9% indicates that Google Drive already has a Memorability aspect value.

d) The attribute value "Is the data displayed up to date" of 33.3% and the attribute "Application is easy to understand" of 33.3%, making Google Drive quite minimalistic.

Errors.

e) And from all the attributes that have an average value above 3, it shows that Android has a good Satisfaction aspect.

Conclusion

The results of the Usability Measurement show that all attributes have usability by the user, the average value is Good, so it can be said that Google Drive Cloud Computing used by users already has a Usability aspect value and is widely used by people because Google Drive is easy to learn and understand. by the user. This system needs to be simplified again so that users can use this cloud service easily and safely.

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