

# The Influence of Satisfaction Using Learning Management System on the Competencies of Digital Talent Scholarship Thematic Academy Participants

Yan Andriariza Ambhita Sukma<sup>1,\*</sup>, Qur'ani Dewi Kusumawardani<sup>2</sup>, Feki Pangestu  
Wijaya<sup>3</sup>

<sup>1,2,3</sup>Ministry of Communication and Information Technology Republic of Indonesia

\*Corresponding author. Email: [yana001@kominfo.go.id](mailto:yana001@kominfo.go.id)

## ABSTRACT

The development of information and communication technology facilitates learning even in the pandemic era through integrated online learning. Online learning is primarily determined by the Learning Management System model (LMS). LMS was developed to obtain optimal, effective, and efficient learning benefits. The Ministry of Communication and Information Technology, Republic of Indonesia, offers the Thematic Academy Digital Talent Scholarship (DTS) to produce skilled workforce in Information and Communication Technology (ICT) to improve the nation's productivity and competitiveness in industrial era 4.0. The thematic academy program is explicitly aimed at specific industrial sectors. This research was conducted to find out the effect of satisfaction of LMS usage on the competence of DTS thematic academy participants. The research method used is quantitative approach by distributing online questionnaires to all DTS thematic academy participants, especially to digital marketing training (DIGIMAR), big data for social science (BDFSS), and information technology project management program (ITPM). The results obtained from this study indicate that participant satisfaction in using LMS significantly affects training participants' competence with a significant value for the relationship is 0.003.

**Keywords:** Learning Management System, Digital Talent Scholarship, Competence, User Satisfaction.

## 1. INTRODUCTION

Covid-19 pandemic has driven the world to structural changes that have affected Indonesia's map and education system. The Indonesian education system must prepare itself to leap; to transform into online learning model. It is due to the fact that many schools have been temporarily closed to reduce the spread of the COVID-19 virus. This situation has enforced the need for technology-based learning to be taken into account.

The rapid development of Information Technology has certainly contributed positively to education, particularly in the invention of e-learning. One of e-learning platforms which will be discussed in this study is Learning Management System (LMS). Learning Management System, in simple definition, is a software application which automates the administration, tracking, and reporting of training events [1].

Digital Talent Scholarship 2020 is an intensive training scholarship program held by Ministry of

Communication and Information Technology of the Republic of Indonesia. This program is addressed to 60,000 participants to improve their skills and competitiveness of human resources in the information and communication technology sector as part of the national priority development program. It is intended to increase the nation's productivity and competitiveness in the Industrial 4.0 era. The DTS 2020 program is broadly divided into seven academies, namely:

1. Fresh Graduate Academy (FGA), an industry-based training program for S1 graduates in the field of ICT and Mathematics and Natural Sciences, open to persons with disabilities;
2. Vocational School Graduate Academy (VSGA), a national competency-based training program for graduates of SMK and Vocational Education in the fields of IT, Telecommunications, Design, and Multimedia;
3. Coding Teacher Academy (CTA), a training program is a human resource development training

- program aimed at 2,000 teachers at the SMA / SMK / MA / SMP / SD level
4. Online Academy (OA), an online training program for the general public including civil servants, students, and industry players;
  5. Thematic Academy (TA), the TA training program is a multi-disciplinary training program for human resource development aimed at 3,000;
  6. Regional Development Academy (RDA), the RDA training program, is a human resource development training program to increase the competence of 2500 civil servants in priority tourism areas and 122 development priority districts.
  7. Digital Entrepreneurship Academy (DEA), the DEA training program, is a human resource development training program aimed at 22,500 digital talents in the fields of Micro, Small, and Medium Enterprises (MSMEs).

In this research, the focus of analysis is on the theme of the thematic academy. The Thematic Academy (TA) program is one of the 2020 Digital Talent Scholarship academies, explicitly intended to specific industrial sectors, where the curriculum has been adjusted to industry needs. The Thematic Academy program aimed at producing a skilled workforce in the field of Information and Communication Technology (ICT) to increase the productivity and competitiveness of the nation in the industrial era 4.0. In its implementation, the Ministry of Communications and Information Technology involves several related parties ranging from academics industry to several communities according to each theme.

This training is intended for 2000 people, (diploma and bachelor degree graduates) who wish to improve information and communication technology skills following the industry needs. It is hoped that through the implementation of this TA program, diploma and bachelor degree graduates can be provided with ready-to-use abilities. It is also expected that the unemployment rate can be reduced since the needs for skilled workers in the ICT field have been fulfilled.

In implementing this TA training, the Ministry of Communication and Information Technology seeks to create a balanced ecosystem in maximizing the role of the triple helix (government agencies, private sector, and educational institutions) to become facilitators and accelerators to support digital economy. The Thematic Academy program in 2020 focuses on training themes that can reach all aspects and groups of society.

This paper discusses the influence of satisfaction in using LMS toward participants' competence. Satisfaction is an experience of being able to fulfill an expected outcome which is influenced by prior expectations regarding the level of quality [2]. According to Cambridge Dictionary (2020), an online

dictionary published by Cambridge University, satisfaction is a pleasant feeling you get when receiving something you wanted, or when having done something you wanted to do [3].

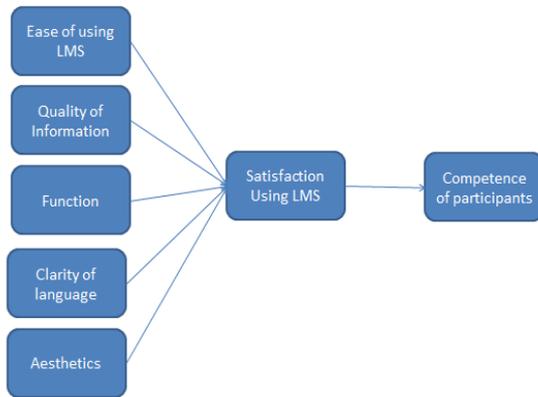
Meanwhile, competence according to Cambridge Dictionary (2020) is an important skill that is needed to do a job [4]. Competency is a series of knowledge, abilities, skills, experiences, and behavior which leads to the effective performance of individual's activities. Competency is measurable and could be developed through training. It can be divided into smaller criteria. In this study, the researchers observe the effect of using LMS in three training themes, namely Digital Marketing (Digimar), Information Technology Project Management (ITPM), Big Data for social science (BDFSS). The Learning Management System contains materials in pedagogic and professional competencies made in multimedia packaging (text, animation, video, and sound) and is provided as supplements and enrichments for the development of learner competencies.

From the existing data in previous studies, it is revealed that the present study is different from previous ones. Some of the previous studies which have correlation with this research are: 1) Research conducted by Hanuraga which states that "an information system can be said to be qualified if the designed system meets user satisfaction through the ease of using the information system" [5]. 2) Research conducted by Fradana shows a relationship between the ease of usage and user satisfaction [6]. 3) In [7], the quality of information positively affects user satisfaction. If the information produced is complete, relevant, accurate, timely, and presented clearly, the user will be satisfied [8]. 4) Another study was conducted by [9]. They examined the success of e-Learning usage. The result showed that information quality affects the satisfaction of use and will impact individual performance. In another study, it is said that aesthetics design has a significant positive effect on customer satisfaction in e-commerce in the Tokopedia application marketplace business model in Surabaya [10].

The purpose of this research is: 1). to determine the factors that significantly affect the satisfaction of using LMS; 2). to determine whether the satisfaction of using LMS has a significant effect on the escalation of competence of participants. This research area is interesting because the effect of satisfaction and escalation of competence do not occur linearly. After all, the implementation of LMS, many challenges arise. Teachers must prepare and find ways so that learning material can be conveyed and received correctly and effectively by the learners. In the perspective of the learners, tremendous efforts are required to receive learning materials optimally including concentration,

psychological readiness, and consistency for participating in the training.

**1.4. Research Framework**



**Figure 1** Theoretical framework

The figure above is the framework of this study. There are 5 variable which can affect satisfaction quality when using LMS, they are; 1) the ease of using LMS, 2) the quality of information, 3) the function, 4) the clarity of language, and 5) the aesthetics. These variables can impact the satisfaction quality which eventually influences competence of the participant.

**2. METHOD**

The research method used in this research is quantitative approach by collecting data in the form of survey and using linear regression data analysis. This study is aimed at measuring the significant effect between satisfaction and the competence of training participants and the factors that significantly influence satisfaction.

**2.1. Data Collection**

The data in this study were obtained from an online survey (using questionnaire) from participants who were trained in the Thematic Academy, Digital Talent Scholarship 2020. The total participants who already filled the questionnaire are 296 participants which consists of three training themes, namely Digital Marketing, Big Data for Social Science, and IT Project Management.

**2.2. Data analysis**

This study uses multiple linear regression to analyze the data. The use of regression analysis is to determine the correlations between two or more variables having cause-effect relations, and to make predictions for the topics by using the relation [11]. Multiple regression is an extension of simple linear regression. It is used to predict the value of a variable based on the value of other two or more variables. The predicted variable is

called the dependent variable (or sometimes, the outcome, target or criterion variable). The variables which are used to predict the value of the dependent variable are called the independent variables (or sometimes, the predictor, explanatory, or regressor variables). Formula and Calculation of Multiple Linear Regression:

$$y_i = \beta_0 + \beta_1x_{i1} + \beta_2x_{i2} + \dots + \beta_px_{ip} + \epsilon \tag{1}$$

Where, for  $i = n$  observation:

$y_i$  = dependent variable

$x_i$  = explanatory variables

$\beta_0$  =  $y$  - intercept (constant term)

$\beta_0$  = slope coefficients for each explanatory variable

$\epsilon$  = the model's error term (also known as residual)

The variables used in this study were X1 (Ease of using the application), X2 (Quality of Information), X3 (Function), X4 (Language Clarity), X5 (Aesthetics), Y (Satisfaction using LMS), Z (competence of training participants). The data were analyzed using SPSS 25.0 and Microsoft Office Excel 2016.

**2.3. Hypothesis**

- H1: The ease of using LMS has a significant effect on satisfaction using LMS
- H2: Information quality has a significant effect on satisfaction using LMS
- H3: Function of LMS has a significant effect on satisfaction using LMS
- H4: Language clarity has a significant effect on satisfaction using LMS
- H5: Aesthetics have a significant effect on satisfaction using LMS
- H6: Satisfaction using LMS has a significant effect on the competence of training participants

**3. FINDING AND DISCUSSION**

**3.1. Validity and Reliability Test**

The validity test is conducted by comparing the value of  $R_{observed}$  and  $R_{table}$ . If  $R_{observed}$  is greater than  $R_{table}$ , the variable is therefore said to be valid.

**Table 1.** Validity and Equation reliability 1

Variable	Rhitung	Rtabel	Decision
Ease of using the application (X1)	.815	0.115	Valid
Quality of Information (X2)	.840	0.115	Valid
Function (X3)	.836	0.115	Valid

Language Clarity (X4)	.841	0.115	Valid
Aesthetics (X5)	.803	0.115	Valid
Satisfaction using LMS(Y)	.726	0.115	Valid
Competence of training participants (Z)	.204	0.115	Valid

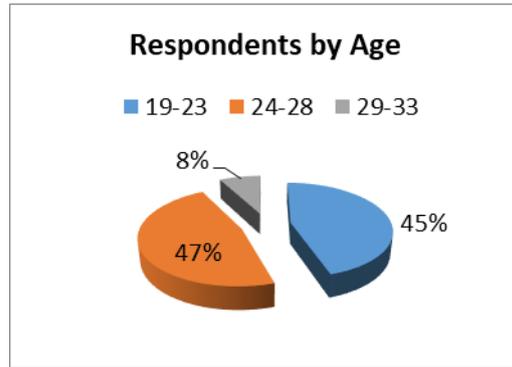


Figure 2. Respondents based on age variable

Meanwhile, the reliability test is conducted by comparing the value of Cronbach's Alpha and  $R_{table}$ . If the value of Cronbach's Alpha is greater than  $R_{table}$  then the variable is reliable. In the following table, it can be seen that all variables are reliable.

Table 2. Validity and Equality reliability 1

Variable	Cronbach's Alpha if Item Deleted	Rtabel	Decision
Ease of using the application (X1)	.837	0.115	reliable
Quality of Information (X2)	.829	0.115	reliable
Function (X3)	.830	0.115	reliable
Language Clarity (X4)	.829	0.115	reliable
Aesthetics (X5)	.837	0.115	reliable
Satisfaction using LMS(Y)	.851	0.115	reliable
Competence of training participants (Z)	.900	0.115	reliable

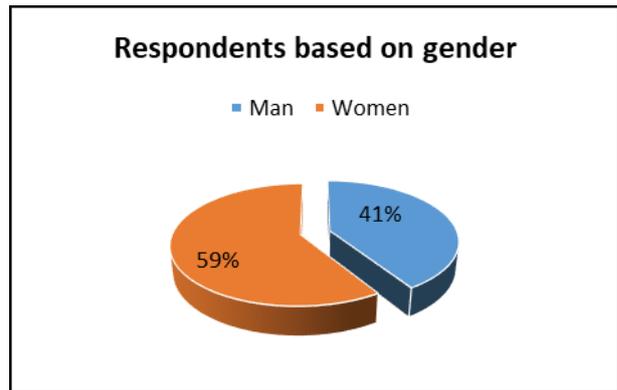


Figure 3 Respondents based on gender variable

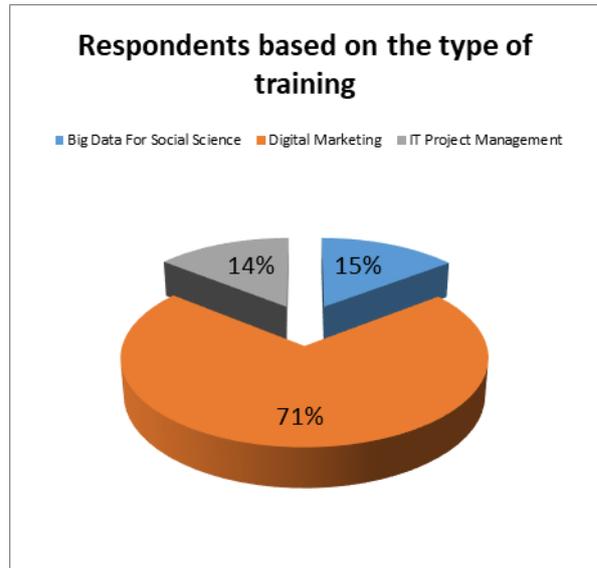


Figure 4 Respondents based on the type of training

### 3.2. Respondent Demographics

When it is viewed from age variable, most of the respondents were in the age ranging from 24 to 28 years (47% of the total respondents, it can be seen in Fig. 2). Meanwhile, when it is observed from gender variable, most of the respondents were women with 59% (Fig. 3). The respondents of this study were all participants from the Digital Marketing, ITPM, and BDFSS training for batch 1 and batch 2, with 295 respondents, and the largest number of respondents is from Digital Marketing 71% (Fig. 4).

### Relationship between the Ease of Using LMS (X1) and the Satisfaction Using LMS (Y)

Based on the analysis, it was found that the significance value is greater than the probability value (0.05). This indicates that the ease of using the LMS variable does not influence the satisfaction of using LMS. This result is different with the results of previous research which concludes that the ease of use of the application has a significant effect on the satisfaction of using the application (Fradana, 2011). This discrepancy

is possibly occurred because the participants already felt that they are helped by the LMS in supporting their learning. It is proved by the fact that 96% percent of participants were satisfied using the LMS. Therefore, it is not an issue for the participants whether or not the LMS is easy to use. Another plausible reason is that because all participants are millennial generation who are already accustomed to use applications. In addition, the millennial generation is also fast learner in operating new applications. Based on the survey results it appears that 90% of participants agree with its ease using LMS (Fig. 5).

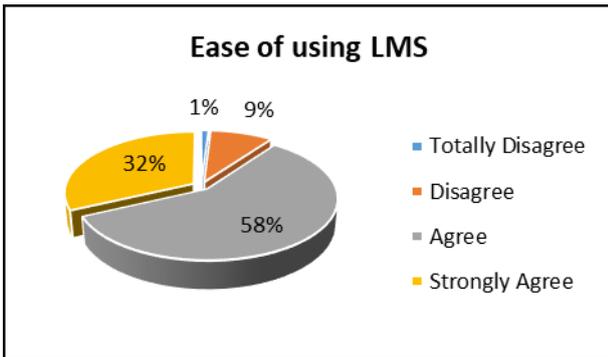


Figure 5 Ease of using LMS

**Relationship between Information Quality Variables (X2) and Satisfaction Using LMS (Y)**

Based on the analysis, it was found that the significance value for the relationship between information quality and satisfaction using LMS (0.007) is smaller than the probability value (0.05). This result is in line with the results presented by Kirana (2010). The existence of information in the LMS is the main component that participants look for to support their learning. The information could be various including teaching materials, assignments, training schedules, grades, etc. Thus, if the quality of information delivered in the LMS good, it will significantly impact the satisfaction of using the LMS itself, and vice versa.

**Relationship between Function Variables (X3) and Satisfaction Using LMS (Y)**

Based on the analysis, it was found that the significance value for the relationship between function and satisfaction using LMS (0.014) is smaller than the probability value (0.05). This means that function variable has a significant effect on satisfaction using LMS.

LMS itself has several functions such as providing a link to enter online classes, providing discussion facilities between participants and instructors, providing material storage functions, and etc. This function helps trainees in carrying out the training series from starting phase to finishing phase. Thus, the functions variable that exist in this LMS has a significant influence on LMS user satisfaction

**Relationship between Language Clarity Variables (X4) and Satisfaction Using LMS (Y)**

Based on the analysis, it was found that the significance value for the relationship between language clarity and satisfaction using LMS (0.000) is smaller than the probability value (0.05). This means that language clarity has a significant effect on satisfaction using LMS.

Language clarity is one of the important things in LMS because the use of inappropriate language can result in misunderstanding among participants in receiving the information provided. Thus, the clarity of language has a significant effect on the satisfaction of using the LMS.

**Relationship between Aesthetic Variables (X5) and Satisfaction Using LMS (Y)**

Based on the analysis, it was found that the significance value is greater than the probability value (0.05). This indicates that the aesthetic variable is not significant for LMS satisfaction. This study's result is contradictory with the results of previous studies which found that aesthetics variable has a significant effect on the satisfaction of using these applications (Andani, 2019). This discrepancy can occur because of aesthetics variable is not the main focus in using an LMS. Aesthetics variable does not significantly affect satisfaction with LMS use. In this case, the training participants do not care about screen display because the most important thing is the LMS's information and usefulness to support their learning during online training.

**Relationship between Satisfaction Variables Using LMS (Y) and Training Participants' Competencies (Z)**

Based on the analysis, it was found that the significance value for the relationship between satisfaction using LMS and participant competence (0.003) is smaller than the probability value (0.05). This indicates that satisfaction using LMS has a significant effect on escalation of participant competence. LMS is important in oneline learning because, through the LMS, participants can access the learning materials and videos they need. They can also take advantage of other functions in the LMS to support their learning process. Therefore, the existence of an LMS has a significant effect on improving participants' competence. It results in situation whereas participants are satisfied with the LMS.

#### 4. CONCLUSION

Based on the results of this research and its discussion, the following conclusions were made: Factors that significantly influence the satisfaction of using an LMS are the quality of information, clarity of language, and function of the LMS. In addition, satisfaction with the use of LMS has a significant impact on increasing the competence of training participants, with a significance value for the relationship between satisfaction using LMS with participant competence (0.003), smaller than the probability value (0.05).

The recommendations for this research are: 1). This study's results can be used by LMS service providers to further improve their services by focusing more on enriching LMS functions according to training needs. 2). LMS service provider should provide a forum to accommodate much information needed by participant, and to improve grammar so that it is easily understood. Besides, recommendations can also be aimed at training providers by providing training-related information, such as training materials and other information, with attention to quality and good grammar.

#### AUTHORS' CONTRIBUTIONS

Study conception and design: Yan Andriariza Ambhita Sukma & Qurani Dewi Kusumawardani; data collection: Feki Pangestu Wijaya; analysis and interpretation of results: Yan Andriariza Ambhita Sukma; draft manuscript preparation: All author. All authors reviewed the results and approved the final version of the manuscript.

#### ACKNOWLEDGMENTS

This research was supported by Ministry of Communication and Informatics of Republic of Indonesia. We thank our colleagues Emmyana Ruth Sirait, Lidya Agustina, Agung Harimurti, Argasi Susena who provided insight and giving permission for us to develop the data from thematic academy digital talent scholarship program into our research. Their generosity and expertise of one and all have improved this study in innumerable ways.

#### REFERENCES

- [1] Ellis, Ryan K, *A Field Guide to Learning Management Systems*, American Society for Training & Development, ASTD In, 2009
- [2] Eyiah-Botwe, E, *Assessing Housing Project End-Users Satisfaction in Ghana: A Case Study of SSNIT Housing Flats in Asuoeyboa-Kumasi*, *Civil and Environmental Research* (2015) Vol.7, No.3, 2015
- [3] Cambridge University, *Satisfactoin*, <https://dictionary.cambridge.org/dictionary/english/satisfaction> (Access 05 September 2020)
- [4] Cambridge University, *Competency*, <https://dictionary.cambridge.org/dictionary/english/competency> (Access 05 September 2020)
- [5] Hanuraga, Risang, *Pengaruh Kebermanfaatan dan Kemudahan E-Learning Be Smart Terhadap Penerimaan Pengguna Pada Mahasiswa Akuntansi UNY*, 2011
- [6] Fradana, Aditya, *Pengaruh Kualitas Sistem Informasi, Perceived Ease of Use, dan Perceived Usefulness terhadap 27 Kepuasan Pengguna Software Akuntansi*, 2011
- [7] Kirana, Gita G, *Analisis Perilaku Penerimaan Wajib Pajak terhadap Penggunaan E-filing (Kajian Empiris di Wilayah Kota Semarang)*, in: Univesitas Diponegoro, Semarang, 2010
- [8] Ginting, Dahlia BR dan Marlina, Meidina Riana, *Analisis Pengaruh Kualitas Sistem, Kualitaslayanan, Kualitas Informasi, Kemudahan Penggunaan, dan Persepsi Manfaat Terhadap Kepuasan Pengguna Fasilitas E-Filing (Studi Kasus: Wajib Pajak KPP Pratama Pondok Gede)*, *Media Informatika* Vol.16 No.1, 2017
- [9] Holspple, W and Lee-Post Anita, *Defining, Assesing, And Promoting ELearning Success, An Information System Perspective*, *Decision Sciencen Journal of Innovative Education*, Vol. 4 No. 1, 2006
- [10] Andani, Amanda Tri, *Estetika Desain, Kualitas Pelayanan, Pembayaran Elektronik Mempengaruhi Kepuasan Pelanggan Tokopedia di Surabaya*, in: *Sekolah Tinggi Ilmu Ekonomi Perbanas, Surabaya*, 2019
- [11] Kaya Uyanik, Gülden and Güler, Neşe, *A study on multiple linear regression analysis*. *Procedia – Social and Behavioral Sciences* 106 (2013) 234-240, 2013