

The Usage of E-Learning Platform between MyGuru Malaysia and BeSmart Indonesia towards Perceived Usefulness and Behavioral Intention to Use among Lecturers

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ABSTRACT:

As in Industry Revolution 4.0 (IR4.0), the process of studies in tertiary education has actively used the e-learning platform. Two universities were involved in this study, that are Sultan Idris University of Education (UPSI), Malaysia, and Yogyakarta State University (UNY), Indonesia, using their Learning Management System (LMS) via MyGuru and BeSmart. Both these platforms are used by educators and learners to explore the difference towards perceived usefulness based on Technology Acceptance Model (TAM) and also the relationship of attitude towards MyGuru and BeSmart. A total of 600 lecturers from UPSI and 1000 from UNY were selected by simple random sampling participated online survey, which was distributed within two months. There was a significance difference towards perceived usefulness ($t(296) = -5.955, p < 0.05$), where BeSmart has a higher usage value compared to MyGuru. There is no significance difference was seen among the lecturers' behavioral intention to use MyGuru, $r_s = 0.485 (p < 0.05)$ and BeSmart, $r_s = 0.485 (p < 0.05)$. The Pearson correlation test results between perceived usefulness (PU) and behavioral intention to use (BITU) for Myguru and BeSmart showed a positive significant and very high relationship value of $r = 0.858 (p < .05)$ and $r = .911 (p < .05)$, respectively. Therefore, the implementation of LMS needs continuous improvement to provide a better quality of higher education towards IR4.0.

Keywords: Learning Management System, Perceived Usefulness, Behavioral Intention to Use, Myguru, Besmart

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Introduction

E-learning systems have become comparatively critical technology among universities to attract students to meet their educational needs these days (Arpaci, 2015). Nevertheless, Asian students' do not participate during the virtual learning platforms compared to American students who are more familiar and prefer LMS (Ramaiah, 2014). As a result of this, it is vital to examine the perceived usefulness and attitude among lecturers in universities towards the e-learning platform. MyGuru, UPSI, and BeSmart, UNY are the platforms used as a web-based learning system. Both of e-learning platforms have a similar function to communicate among lecturers and students in a virtual environment. Even Fathema and Sutton (2013) noted that there are various issues for utilising LMS. Henceforth, among the

key factors to have a successful and efficient LMS is how users adopt and perceive the learning platform (Emelyanova and Voronina, 2014). Even Cidral et al. (2018) stated that LMS is a web-based learning ecosystem practically used to share information, knowledge, and communication for education and training.

The education system is adapting to the advancement of technology with new values and methods. As in this study, MyGuru and BeSmart are among the e-learning platforms used in UPSI, Malaysia, and UNY, Indonesia, by lecturers and students. Most universities started using LMS in the late 1990s since the traditional method of delivery has been seen as less applicable in the current education system. It is because preventing students from developing their learning methods and techniques (Razak, 2017). In 2004, the

MyGuru platform replaced the previous LMS under the Computer Based Learning Unit during June 1999 due to more additional features such as online discussions, announcements, file sharing, and monitoring. The same goes for the BeSmart platform too. Lecturers can control and modify the appearance and content of the aligned system with the topics being taught.

The benefits of e-learning among lecturers and students are the improvement of the user's attention span towards learning, the tenacity of training and learning also boosts interaction as well as collaboration (Chen & Tseng, 2012; Ozdamli & Uzunboylu, 2014; Mutereko, 2019; Mothibi & Mncayi, 2019; Niymanira & Sabela, 2019). It is vital to determine the relationship between e-learners' experiences, perceptions, and behavioural intentions to use the system to measure the system's success (Li, 2012). There

are many models developed to understand the factors influenced to adopt and use technology such as the Technology Acceptance Model (TAM), Theory of Reasoned Action (TRA), Innovation Diffusion Theory (IDT), Unified Theory of Acceptance and Use of Technology (UTAUT) and more. This study TAM has been used to analyse perceived usefulness and attitude among the lecturers using MyGuru, UPSI, and BeSmart, UNY. TAM was conceived to explain and predict the individual's acceptance of technological advances, which has been used worldwide in business, information systems, and educational settings. As Davis (1993) mentioned, it is crucial to determine the factor of user acceptance for an information system project to be successful or failure. The following Figure 1.1 shows the first modified version of TAM by Davis (1989)

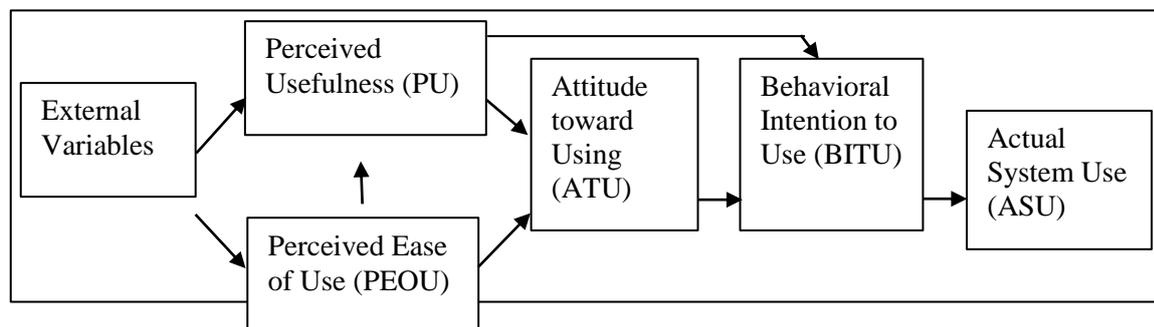


Figure 1.1: TAM Model (Davis et al., 1989)

TAM Model

This model is built from the Theory of Reasoned Action (TRA) and is intended to predict information technology acceptance across diverse groups and technologies. The technology acceptance model is an influential research model in the information systems field used to study user's acceptance of technology that interrelates between Perceived Ease of Use, Perceived Usefulness, Attitude, Intentions, and Behaviours. The study focuses on perceived usefulness (PU) and attitude toward using (BITU) MyGuru and BeSmart among the lecturers. Attitude towards

target system use is directly affected by two distinct constructs, perceived usefulness (PU) and perceived ease of use (PEOU). Also, PEOU was found to have a direct impact on PU. Nevertheless, behavioural intention directly affects actual system use. Indeed, behavioural intention to use a system is determined by the user's attitude towards using the system, and the belief of using the system would enhance his or her job performance (perceived usefulness).

2.1 Perceived Usefulness (PU)

Many studies explored on educators' perspectives and attitudes towards e-learning. The PU is among

one of the factors that impact the level of e-learning participation. It is mainly influenced by the materials used during teaching. Moreover, the content delivery also noted that an individual's intention in using e-learning is PU (Al-Rahmi et al., 2015). PU is the degree where an individual believes that using a particular system to enhance his or her productivity (Davis, 1989). In TAM, user acceptance of any technology is measured by a person's behavioural intention to use the technology. It is a vital factor to determine if users will eventually use the technology or not.

According to Chinyamurindi and Shava (2015), the notion of usefulness refers to how much an individual believes technology can improve their performance. Furthermore, the notion of usefulness is necessary to be taken into account since it significantly impacts the formation of attitudes and intentions using e-learning (Ibrahim et al., 2017). Nevertheless, individuals' behavioral intention to use the technology is predicted by PU and attitude. TAM is usually used to study and explore learners' behavioral intentions. It even suggested that users' continuance intention is highly influenced by their satisfaction, mainly measured by PU. Besides, Teo (2011) and Seif et al. (2012) also found a direct impact between PU and attitude in accepting e-learning. Perceived usefulness is one of the essential factors that can impact the level of e-learning participation. As mentioned by Al-Rahmi et al. (2015), together with the content, perceived usefulness is reported as an indicator of an individual's intention to make use of e-learning. These factors do affect educators and students to use technology. Therefore, this study examines the relationship between PU and attitude factors in LMS.

2.2 Behavioral Intention to Use (BITU)

In TAM (Davis, 1989), individuals' behavioral intention to use the technology is predicted by attitude and PU. Thus, BITU is an attitude that an individual demonstrates when using a system and

promoting it in the learning process, as Davis (1993) refers to BITU as the degree to which an individual evaluates and associates the target system with his or her job. Attitudes consist of influences, cognitions, and behaviors that lead to positive reactions and can form the intention to use the system (Hussein, 2017). Knowledge of lecturers' attitudes towards the use of technology and the impact on their work performance is beneficial in integrating technology into the teaching process (Elkaseh et al., 2015).

Adoption or usage of technology heavily depends on a positive BITU and the Behavioral Intention to Use the system (Tsai et al., 2013). Even a study conducted by Elkaseh et al. (2015) mentioned that in higher education, the implementation of e-learning to achieve success, the critical factor is attitude. Nevertheless, new technology enhances more BITU, which provides greater intention to use the system. Besides, successful e-learning adoption needs users to have a positive BITU. As mentioned TAM model postulates that when perceiving technology is easy to use and helpful, the BITU a system like LMS tends to have positive attitudes on technology. Hereby, the positive or negative BITU on MyGuru and BeSmart are directly impacted by the perceptions of the PU and PEOU. Thus, the study is to examine the difference between PU and BITU among both these LMS platforms from MyGuru, UPSI, and BeSmart, UNY.

Research Methodology

In this LMS survey, the most suitable survey instruments are used as the basis for data gathering, analysis, and subsequent action planning. The determination of instruments helped to clarify not only the definitions and sources of data indeed on their limitations as well. For this LMS survey, the comprising of questionnaire design involves a questionnaire survey and statistical analysis of the data. The selected LMS survey focuses on comparing MyGuru and

BeSmart upon questionnaire design and a quantitative questionnaire survey.

At the beginning of this study, the qualitative method via interview was conducted among lecturers from UPSI and UNY. It is to identify the new factor in the development of a questionnaire based on the TAM theory. The purpose of the interview was to determine the point of view, experience, belief, or motivation on specific issues. The interview was conducted with a set of partially structured questions, and the session took around 20 minutes with each participant. All the interviews were recorded via audio, and word by word was transcript from the recording to analyse the data. The process of copying offers a transition point between data collection and analysis as part of data management and preparation (Langley, 1999). Content analysis is used to interpret data in this research study.

The population involved were 600 lecturers from UPSI and 1000 lecturers from UNY. According to Krejeie and Morgan (1970), the sample size for UPSI and UNY population were 234 and 278 lecturers. The respondent rate achieved from UPSI was 63%, as 234 questionnaires were distributed but returned by 148 questionnaires. Meanwhile, 278 questionnaires are sent to the respondents, and the returned questionnaires were 148, where the response rate was 53% from UNY.

Results

Table 1 shows the difference in perceived usefulness (PU) and attitude toward using (BITU) e-learning between UPSI (MyGuru) with UNY (BeSmart) based on the research questions.

Research question 1: Is there any difference on PU upon e-learning at UPSI (MyGuru) and UNY(BeSmart)?

The min value for PU upon the e-learning platform of MyGuru at UPSI noted 3.32 with a standard deviation of 0.62. The mean value of PU upon the BeSmart e-learning platform at UNY recorded 3.80, with a standard deviation of 0.67. Based on the analysis noted that there is a significance difference for e-learning ($t(296) = -5.955, p < 0.05$), with BeSmart having PU more than MyGuru, as shown in Table 1.

Research question 2: Is there any difference in BITU e-learning at UPSI (MyGuru) and UNY(BeSmart)?

T-test was used to determine the difference in attitude among respondents towards e-learning between UPSI (MyGuru) and UNY (BeSmart). The min value for BITU MyGuru e-learning recorded 2.09 with a standard deviation of 0.75. As for the min value for BeSmart, e-learning recorded 2.15 with a standard deviation of 0.81. The analysis results showed that there is no significant difference among the respondents, $p > 0.05$. The findings stated that the attitude among respondents was almost similar for both MyGuru and BeSmart

Table 1. Independent T-test Analysis on PU and BITU E-learning platform between MyGuru and BeSmart

Variables	n	M	SD	t	Sig-t
PU					
E-learning of MyGuru	148	3.32	0.62	7.250	0.000
E-learning of BeSmart	148	3.80	0.67		
BITU					
E-learning of MyGuru	148	3.51	0.64	1.671	0.096
E-learning of BeSmart	148	3.64	0.79		

Table 2 and Table 3 shows the relationship between PU and BITU e-learning between MyGuru, UPSI, and BeSmart, UNY, upon the research questions.

Research question 3: Is there a relationship between PU and BI Myguru among UPSI lecturers?

The results of the Pearson correlation test, as in Table 2, showed a positive significant and very high relationship between PU and BITU MyGuru usage among UPSI lecturers, $r=0.858$ ($p < .05$). The findings found that there is a relationship between PU and BI Myguru at UPSI. Thus, the hypothesis is accepted.

Table 2. Relationship between PU and BITU Myguru

Variables	BI	Interpretation	Hypothesis
PU	0.858**	Very High	Accepted

** $p < 0.05$

Research question 4: Is there any relationship between PU and BITU BESMART among UNY lecturers?

Based on the results obtained from the Pearson correlation test in Table 3, displays that there is a positive significant and very high relationship

between PU and BITU BESMART among UNY lecturers, $r = .911$ ($p < .05$). The findings showed that there is a relationship between PU and BITU MyGuru at UPSI. As a result of this, the hypothesis is accepted.

Table 3. Relationship between PU and BI BESMART

Variables	BI	Interpretation	Hypothesis
PU	0.911**	Very High	Accepted

** $p < 0.05$

Discussion

Based on the results achieved upon this study, it is proven that there is a significant difference for PU between MyGuru and BeSmart but no significant difference for BITU both MyGuru and BeSmart. This shows that the BeSmart learning management system is better than the Myguru based on the perceived usefulness on the aspect of motivate the learning process, ease of communication with the students, how to assignment and monitor the task given to the students, the system capacity on upload and download the material of assignment and lecture notes and the effectiveness of the LMS system. Therefore, the MyGuru required room of improvement to provide better service and provide

the high speed of internet to ensure that the lecturer is easy to access and fast to disseminate the information regarding the teaching and learning to the students.

On the other hand, the behavioral intention to use the LMS shows that both the content delivery in MyGuru and BeSmart has made an individual's intention to use the e-learning platforms in same manner. As mentioned by Al-Rahmi et al. (2015) that PU is achieved when the content delivery attracts the individual to use it.

In the light, there was a positive significant and very high relationship between PU and BITU for MyGuru and BeSmart. This shows that PU and BITU are related and affected on the usage of the LMS. Therefore, the PU required improvement

and will create the positive behaviour on the use of the LMS.

Conclusion

The perceived of usefulness to the MYGURU and BeSmart generally plays a very vital role in influencing the level of educators' acceptance and create the behavioral intention to use the LMS towards positive perception. Through feedback from the respondents, the behavioral intention to use of MYGURU and BeSmart certainly has a strong influence on the perceived usefulness of the lecturers. There is a significant result on the high relationship between the two behavioral intention to use variables and their perceived usefulness. The successful factor of the used of LMS required a multifunction system that could cater the administration roles on the communication aspects, managed the documentation on lecture notes and assignments, able to track the flow LMS, help to report the needs of the system, and delivery of blended learning. Therefore, it was found that the notion of usefulness is very much related to the formation of the lecturer's behavioral intention to use which in turn will determine the behavioral intention of the lecturer whether motivate the positive or negative to the use of LMS.

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References

- [1] Al-Rahmi, W.M., Othman, M. S. and Yusuf, L. M. (2015). The Effectiveness of Using E-Learning in Malaysian Higher Education: A Case Study Universiti Teknologi Malaysia. *Mediterranean Journal of Social Sciences*, 6(5), 625- 637.
- [2] Arpaci, I. (2015). A comparative study of the effects of cultural differences on the adoption of mobile learning. *British Journal of Educational Technology*, 46(4), 699–712.
- [3] learning. *British Journal of Educational Technology*, 46(4), 699–712.
- [4] Chen, H. R., & Tseng, H. F. (2012). Factors that influence acceptance of web-based e-learning system for the in-service education of junior high school teachers in Taiwan. *Evaluation and Program Planning*, 35, 398–406.
- [5] Chinyamurindi, W., & Shava, H. (2015). An investigation into e-learning acceptance and gender amongst final year students. *South African Journal of Information Management*, 17(1), 1-9. doi:10.4102/sajim.v17i1.635.
- [6] Cidral, W. A., Oliveira, T., Di Felice, M., & Aparicio, M. (2018). E-learning success determinants: Brazilian empirical study. *Computers & Education*, 122(July), 273-290. doi:10.1016/j.compedu.2017.12.001.
- [7] Davis, F.D., 1993. User acceptance of information technology: System characteristics, user perceptions and behavioral impacts. *International Journal of Man-Machine Studies*, 38(3), pp. 475-87.
- [8] Davis, F. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- [9] Elkaseh, A. M., Wong, K. W., & Fung, C. C. (2015). The acceptance of e-learning as a tool for teaching and learning in Libyan higher education. *International Journal of Information Technology*, 3(4), 1-11. <http://www.ipasj.org/IJIT/IJIT.htm>.
- [10] Emelyanova, N. and Voronina, E., 2014. Introducing a learning management system at a Russian university: Students' and teachers' perceptions. *The International Review of Research in Open and Distance Learning*, 15(1), pp. 272-289.

- [11] Fathema, N. and Sutton, K.L., 2013. Factors influencing faculty members' learning management systems adoption behaviour: An analysis using the technology acceptance model. *IJTEMT* 2(4), pp. 20-28.
- [12] Hussein, Z. (2017). Leading to intention: The role of attitude in relation to technology acceptance model in e-learning. *Procedia Computer Science*, 105(2017), 159-164. doi:10.1016/j.procs.2017.01.196.
- [13] Ibrahim, R., Leng, N. S., Yusoff, R. C. M., Samy, G. N., Masrom, S., & Rizman, Z. I. (2017). E-learning acceptance based on technology acceptance model (TAM). *Journal of Fundamental and Applied Sciences*, 9(4), 871-889. doi: 10.4314/jfas.v9i4s.50.
- [14] I.-C. Tsai, I.-P. Tung, and J. Laffey, (2013). "Exploring the impact of students' motivation and self-regulation on the social nBITure of online learning experiences," *International Journal of Learning Technology*, vol. 8, pp. 86-108
- [15] Li, Y., Duan, Y., Fu, Z., & Alford, P. (2012). An empirical study on behavioral intention to reuse e- learning systems in rural China. *British Journal of Educational Technology*, 43(6), 933-948.
- [16] M. H. Seif, M. R. Sarmadi, I. Ebrahimzadeh, and H. Zare. (2012). "A Model for Predicting Intention to Use E-learning based on Epistemological Beliefs," *Life Science Journal*, vol. 9, pp. 926-929
- [17] Mothibi, L., & Mncayi, P. (2019). Investigating the key drivers of government debt in South Africa: A post-apartheid analysis. *International Journal of eBusiness and eGovernment Studies*, 11(1), 16-33.
- [18] Mutereko, S. (2019). Accountability Through Continuous Professional Development: Perceptions Of Educators In Umgungundlovu District, South Africa. *International Journal Of Business And Management Studies*, 11(1), 74-100.
- [19] Niymbanira, R. N., & Sabela, P. T. (2019). Gender Dynamics In Employment And Labour Force Trends In South Africa. *International Journal Of Economics And Finance Studies*, 11(2), 36-54.
- [20] Ozdamli, F., & Uzunboylu, H. (2014). M-learning and perceptions of students and teachers in secondary schools. *British Journal of Educational Technology*. <http://dx.doi.org/10.1111/bjet.12136>.
- [21] Razak, R. A. (2017). Strategi pembelajaran aktif secara kolaboratif atas talian dalam analisis novel bahasa melayu. [Active learning strategies in a collaborative online novel analysis of the Malay language]. *JuKu: Jurnal Kurikulum & Pengajaran Asia Pasifik*, 1(3), 34-46. <https://juku.um.edu.my/article/view/7961>.
- [22] T. Teo. (2011). "Factors influencing teachers' intention to use technology: Model development and test," *Computers & Education*, vol. 57, pp. 2432-2440.