

## Student Acceptance of E-learning to Improve Learning Independence in the Department of Computer Education

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### Abstract

E-learning is an educational system that uses information technology in the learning process. One of the platforms that can be used in developing e-learning is Moodle. This research investigates the implementation of e-learning in the learning process in the Computer Education Department. The purpose of this research is to examine the use of E-learning in supporting the learning process. The respondents of this research are 130 active students of the Computer Education Department from the 2016 to 2018 Batches. The method used is a research questionnaire whose data are analyzed using the SPSS Statistics 25 program. This research shows no significant effect of student expectation on e-learning in supporting the learning process. Meanwhile, ease of e-learning, e-learning performance, and social influence for the benefit of e-learning have a significant effect on supporting the learning process and improve learning independence.

**Keywords:** effectiveness, e-learning, moodle platform

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## 1. Introduction

Nowadays, Information and Communication Technology (ICT) is growing increasingly rapidly. The development of IT makes people innovate to utilize it to ease their daily activities. Therefore, the need for a concept and mechanism for IT-based teaching and learning becomes inevitable. Thus, many aspects of human life are influenced by the development of information technology, one of which is related to the learning process in education. The current learning process is different from the old days where classes were held directly. With the development of

IT thus, we can use many applications as supporting media for the development of learning in the classroom. One form of teaching media that is widely used today and utilizes technology (internet) is e-learning.

E-learning is one type of teaching and learning that delivers teaching materials to students using the Internet, Internet, or other computer network media (Hartley, 2001). e-learning is learning arranged to use electronic or computer systems that are needed to support the learning process (Allen, 2016); it is delivered through electronic media, such as the Internet, Intranet, extranet, CD-ROMs, interactive TV, audio, video (Engelbrecht,

2005); and it can also be delivered by any electronic media other than web-based media (Alavi & Leidner, 2001; Hiltz & Turoff, 2005). Whether an application, object, program, website, etc., can ultimately provide learning opportunities for individuals (Moore, etc., 2011). E-learning offers many media-based, student-centered, and interactive learning opportunities that support active learning (Huffaker and Calvert, 2003; etc., 2004).

Nowadays, the world community has widely accepted the concept of e-learning, as evidenced by the increasing implementation of e-learning, especially in educational institutions such as schools, training, and universities (Setyoningsih, 2015; Lee, etc., 2009). As a result, e-learning has become a necessity for academics, such as teachers, students, and educational institutions, to use computer technology in teaching and learning activities. According to Salim, the critical factors for e-learning acceptance are grouped into four categories: instructors, students, information technology, and university support (Salim, 2005).

E-learning is an educational system that uses information technology in the learning process. Based on the research (Aparicio, Bacao & Oliveira, 2017), it was revealed that the students who used an online learning system (e-learning) could increase productivity and facilitate their tasks. Therefore, the use of online learning has a positive impact on the overall success of the university. In addition, this research (Marfuatun et al, 2013, Sukmawati et al, 2020) reported that the level of implementation of the online cooperative learning method was quite good. However, it still needed adequate support for both computers and e-learning servers. The concern of developing this e-learning system is not only to bring material into a digital form that is uploaded on the webserver but

also to prioritize the principle of learning and to think about the effects or responses that come from users, whether the design that has been developed will not make them boring of accessing the e-learning system (Hidayati, 2016).

Electronic learning or e-learning has been started in the 1970s (Waller and Wilson, 2001). Lambung Mangkurat University has implemented e-learning beginning from the 2017/2018 academic year in the Even Semester. This e-learning has been developed and used as a form of learning recognized by university leaders. At present, the application of e-learning at Lambung Mangkurat University is implemented in an integrated manner through *Sistem Informasi Universitas Lambung Mangkurat Terintegrasi* (SIMARI) or the Integrated Lambung Mangkurat University Information System. Learning through SIMARI is an effort to support various activities of lecturers, students, and all interested parties, especially related to learning activities that include the delivery of learning and task assessment materials, leading to the effectiveness and improvement of the quality of learning processes and outcomes.

This research focuses on the use of E-learning using the Moodle platform developed by Lambung Mangkurat University. The purpose of this research is to determine the effect of using e-learning in supporting the learning process. The formulation of the problems is as follows: (a) How is the student acceptance of the ease of e-learning in supporting the learning process; (b) How is the performance of e-learning in supporting the learning process; (c) How is the expectation for the use of e-learning in supporting the learning process; and (d) How is the social influence on the use of e-learning in supporting the learning process.

**2. Method**

References must accompany the method used, relevant modifications should be explained. Data analysis procedures and techniques should be emphasized in the library review article. The stages of research must be clearly stated.

This survey research is conducted by collecting information from the respondents through a questionnaire (Cholid & Achmadi, 2007). The method used is a quantitative analysis research method, namely, using in-depth data analysis in the form of numbers (Istijanto, 2005). The researchers distributed the questionnaire electronically in the form of Google Form. The scale used in this questionnaire was a 4-point Likert scale.

The population in this research was the Students of Undergraduate Program in Computer Education, Lambung Mangkurat University, 2016-2018 Batches. The total was 192 students. Samples are part of the population (Sekaran & Bougie, 2017). In this research, the samples taken are based on the Slovin formula as follows.

$$n = \frac{N}{N(d)^2 + 1}$$

**Information**

- n* = number of samples
- N* = population
- d* = the precision value of 95% or sig.= 0.05

The sampling technique in this research was purposive sampling. Since there were 192 total students in the population, thus the number of samples taken was 130 students.

The data analysis technique used was validity test, reliability test, classical assumption test, multiple linear regression analysis, and hypothesis testing. The validity and reliability tests were used to measure whether the questionnaire made was valid and reliable. If the questionnaire was declared valid and reliable, the questionnaire could be used. Data for validity and reliability tests were taken from 32 different students and then processed with SPSS 25. SPSS is widely used by other researchers such as Byoung-Chan Lee (Lee etc, 2009), Din Jong (Jong et al, 2009), Al-Adwan (Al-Adwan et al, 2013), Sebjan (Sebjan, 2015), Masood (Masood et al, 2016), and Nassuora (Nassuora, 2013).

The next was a multiple linear regression analysis tests with the sample data of 130 students. Before the multiple linear regression analysis tests, the classical assumption test was done first to get the best results (Ghozali, 2006). The purpose of this classical assumption was to avoid the bias of the independent variable as an estimator of the dependent variable. Afterward, hypothesis testing was conducted.

In this research, the operational definitions of the research variables and measurement scale can be seen in Table 1.

**Table 1. Research Variables, Definitions, and Measurement Scale**

Variable	Operational Definition	Scale
Ease of E-learning (X1) (Park,2009)	Acceptance of ease is related to one's belief that using a particular system will make the person effortless (free from extra efforts) (Davis, Bagozzi, & Warshaw, 1989). In this case, perception of ease describes the e-learning that can ease students in doing several things related to the learning process. Therefore, the importance of easy familiarity with e-learning is important for students (Bringman-Rodenbarger, 2020).	Likert
E-learning Performance (X2)	Performance expectancy is related to the benefits or ease obtained in work using a particular system (Venkatesh, Morris, Davis & Davis, 2003). In this case, performance illustrates the	Likert

## Variable

## Operational Definition

## Scale

benefits obtained from e-learning in conducting the learning process.

### 3. Result and Discussion

#### a. Implementation Learning Platform

There are six main features on this platform which are as follows:

##### 1. Dashboard

The Dashboard feature (Figure 1) of the e-learning is students who are close to some of these classes. The dashboard displays all classes taught by lecturers and taken by students.

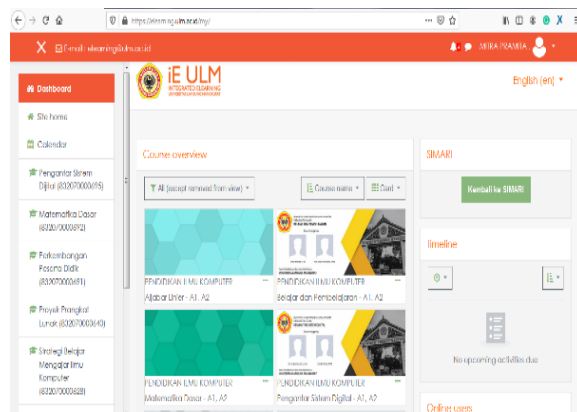


Figure 1. Dashboard

##### 2. My Courses

In My Courses (Figure 2), lecturers can send materials, assignments, quizzes, and announcements that will appear when students open the class. The material that has been given is in the form of text, audio, or video. This feature represents the material presented in lectures by the lecturer when he is in a conventional class.

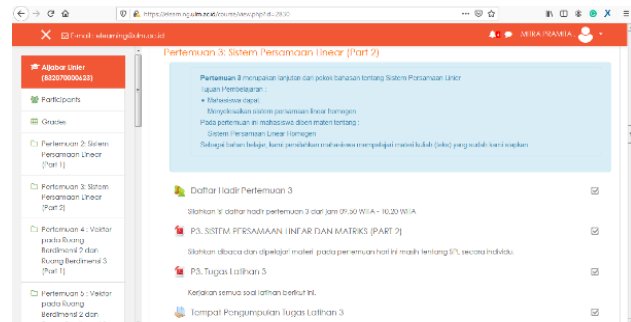


Figure 2. My Courses

##### 3. Classmates

In this feature, lecturers and students or students with other students can interact directly by adding to the existing Forum feature to exchange information (Figure 3). This feature represents discussion and question and answers when the class is conventional.

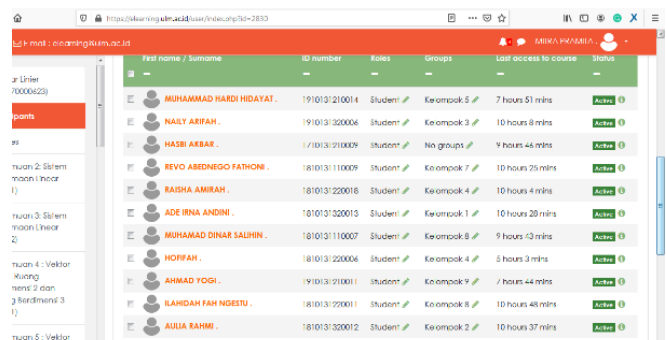


Figure 3. Classmates

##### 4. Participants

Contains the names of students who took the course, and the lecturer can see when the students access the class (Figure 4). This feature represents a written attendance list as in conventional classrooms.

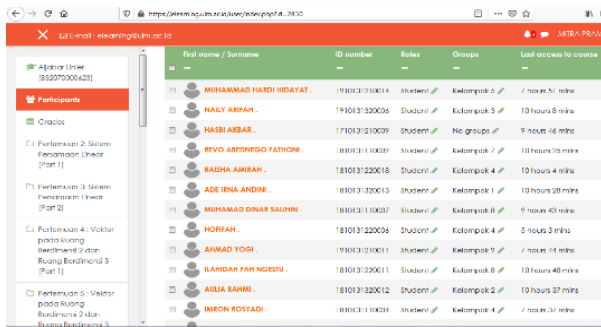


Figure 4. Participants

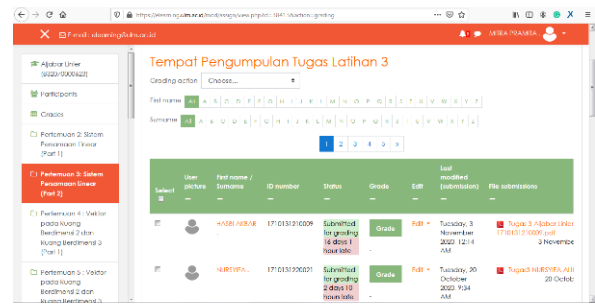


Figure 6. Assignments

5. Grades

Grades (Figure 5) in the e-learning can be used to view and rate the assignments given at each meeting. Usually, Grades can also be used to remind the deadlines of assignments given by the lecturer in question. This feature represents the activities of the lecturer assessing the conventional class.

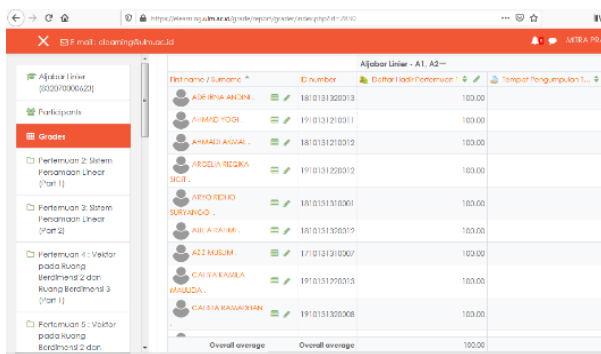


Figure 5. Grades

6. Assignments

This feature can be used to view and remind the assignments that must be immediately collected according to the maximum limit set by the lecturer. After the assignments are submitted, the lecturer can check and assess the assignments, then distribute them back to students (Figure 6). This feature represents the activities of the lecturer giving assignments to conventional classes.

b. Validity and Reliability Tests

The validity test was applied to find out whether the existing indicator measurement showed what should be measured or not. The validity test in this research was carried out by looking at the value of the degree of freedom. With data from 32 students and a significance value of 0.05, the r-value obtained was 0.349. Further, the Pearson Product Moment was employed to test the validity to obtain the Pearson correlation value for each indicator. The results obtained indicated that all indicators of each variable had a Pearson correlation value of > 0.349 (r-value); thus, it was declared valid and could be used as the next instrument.

A variable can be considered good (shows consistent result) if it has a Cronbach's Alpha value of more than 0.6. This research showed that overall variables, namely ease of e-learning, e-learning performance, e-learning expectation, social influences on e-learning and learning, had Cronbach's Alpha values of 0.970, more than 0.6. These results indicated that the reliability was good, meaning that further statistical analysis could be carried out.

c. Classical Assumption Test

1. Normality Test

The normality test aims to determine the level of normality of the distribution of samples studied. For example, the skewness ratio shows a statistical value of -0.417 with a standard of error of 0.212, meaning that the

skewness value is -1.96. Meanwhile, the kurtosis ratio shows a statistical value of 0.713 with an error standard of 0.422, which means the kurtosis value is 1.69. To conclude, the data distribution was normal because the value of skewness and kurtosis were between -2 and 2. In other words, further statistical analysis can be done.

## 2. Multicollinearity Test

The multicollinearity test aims to determine whether the regression model has a strong correlation between independent variables. A good regression model should not correlate with the independent variables. In this research, the value of each independent variable has fulfilled the requirement that there is no multicollinearity, namely the tolerance value is  $> 0.1$ , and the VIF value is  $< 10$ . The multicollinearity test results are presented in Table 2.

Table 2. Multicollinearity Test Results

Model	Collinearity Statistics	
	Tolerance	VIF
Ease of e-learning	0.275	3.641
E-learning Performance	0.353	2.829
The expectation on the use of e-learning	0.361	2.770
Social Influence on the use of e-learning	0.457	2.189

## 3. Heteroscedasticity Test

The heteroscedasticity test aims to test whether variance inequality occurs in one residual of one observation to another observation in the regression model. A good regression model is a model having no symptoms of heteroscedasticity. The present research results show that the significant values obtained by all independent variables in the regression model are  $> 0.05$ . These results prove that in the regression model, there is no symptom of variance inequality or heteroscedasticity. These results follow the heteroscedasticity theory studied by previous researchers (Long and Ervin, 2000; Muller and Stadtmuller, 2007).

## 4. Multiple Linear Regression Analysis

Multiple linear regression analysis in this research is used to find out how student acceptance of the ease of e-learning, e-learning performance, student expectation for the use of e-learning, and social influence on the use of e-learning in the learning process in the Computer Education Department. Table 3. shows the multiple linear regression test results. Based on the calculation results using SPSS, here is the result of the multiple linear regression equation obtained. These results are from previous researchers' linear regression theory (Long and Ervin, 2000; Muller and Stadtmuller, 2007).

Table 3. Multiple Linear Regression Test Results

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
	(Constant)	2.750	0.985		2.791	0.006	
Ease of e-learning	0.373	0.083	0.424	4.487	0.000	0.275	3.641
E-learning Perfor-	0.815	0.163	0.416	4.993	0.000	0.353	2.829

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
mance							
The expectation on the use of e-learning	-0.176	0.135	-0.107	-1.301	0.196	0.361	2.770

The following is the interpretation of the regression above: At constant value, the results of the ease of e-learning, e-learning performance, and social influence on the use of e-learning variables are positive, meaning that higher the levels of ease, performance, and social influence of e-learning, the more effective is the effect on the learning process.

Meanwhile, the results of expectation for the e-learning variable are negative, meaning

that the higher the expectation for the use of e-learning, the less is the effect on the learning process.

### 5. Hypothesis testing

The hypothesis testing is done to examine the extent to which the effect of one independent variable individually explains the variation of the dependent variable. The results are displayed in Table 4.

Table 4. T-Test Results

Model	t	Sig.
Ease to use of e-learning (Selim, 2002) (Elkaseh et al, 2016) (Nayanajith etc, 2019)	4.487	0.000
E-learning Performance (Venkatesh, 2001; Venkatesh and Davis, 2000)	4.993	0.000
The expectation for the use of e-learning (Paechter etc., 2010) (Sørebø, 2009) (Lee, 2010)	-1.301	0.196
Social Influence on the use of e-learning (Montgomery, 1996) (Hwang,2014)	2.238	0.027

Whether or not there is an effect of independent variables on dependent variable individually is seen based on this requirement, namely if  $T_{cal} > T_{table}$  or the significance value  $< 0.05$ . In this research, T-table with a significance level of 0.05 and Degree of Freedom with the provision =  $N-2$  or  $130 = 130 - 2$ , the result is 1.979. Thus, this present research found that the ease of e-learning, e-learning performance, and social influence on the use of e-learning variables significantly affect the learning process variable. Meanwhile, the expectation for using the E-learning variable individually does not significantly affect the learning process variable.

- **H1: Student acceptance of the ease of E-learning has a positive effect in supporting the learning process.**

Based on Table 4, the t-table value is greater than t-statistics, which indicates the student acceptance of the ease of e-learning has a **significant effect** in supporting the learning process. Therefore, the first hypothesis stating "Student acceptance of the ease of e-learning has a positive effect in supporting the learning process," is proven and supported by data.

In this research, it can be said that the ease of e-learning can support the learning process because e-learning is very clear and easy to learn and use.

If there are students who miss the class, they can still see announcements and materials. In addition, task submissions can be made more flexibly, and students can access the materials before the class through e-learning.

- **H2: E-learning Performance has a positive effect in supporting the learning process**

Based on Table 4, the t-table value is smaller than the t-statistics, indicating that e-learning performance **significantly** supports learning. Thus, the second hypothesis, which states “e-learning Performance has a positive effect in supporting the learning process,” is proven and backed by data. Furthermore, the results are in line with the research conducted by Madigan, Louw, Wilbrink, Schieben & Merat (2017), who stated that the performance of the ARTS vehicle was proven to affect its users to use the system due to ARTS vehicle can make the users easier to get transportation with the appropriate or desired destination effectively and efficiently.

In this research, it can be said that e-learning performance can support the learning process because e-learning can facilitate the students to store documents such as materials and assignments sent through e-learning. When the students do not have much time to print the documents required, they can access the materials first through their own e-learning.

- **H3: Expectation for the use of E-learning has a positive effect in supporting the learning process**

Based on Table 4, the t-table value is greater than the t-statistics, meaning that student expectation for the use of e-learning has **no significant effect** in supporting the learning process. Thus, the third hypothesis, which states, “Expectation for the use of e-

learning has a positive effect in supporting learning,” is not proven, which is supported by data. This is in line with research conducted by (Madigan, Louw, Wilbrink, Schieben & Merat, 2017), who reported that expectation for ARTS vehicles had no significant effect. This is possible because using the ARTS Vehicle system is no different from the use of public transportation in general.

In this research, it can be said that student expectation for the use of e-learning does not affect the learning process. However, when lecturers give group assignments through e-learning, facilities from e-learning are less able to accommodate group assignments online. In addition, when the lecturers give announcements or assignments, students must open the e-learning site regularly because there are no direct incoming notifications in real-time, making it ineffective and inefficient.

- **H4: Social Influence on the use of e-learning has a positive effect in supporting the learning process**

As seen in Table 4., the t-table value is smaller than the t-statistics, indicating that the social influence on the use of e-learning has a significant effect in supporting the learning process. Thus, the fourth hypothesis, “Social Influence on the use of e-learning has a positive effect in supporting the learning process,” is proven and supported by data. This is in line with Mustaqim, Kusyanti & Aryadita's (2018) research related to social influences that affected one's intention to use XYZ e-commerce.

Therefore, in this research, it can be declared that social influence affects students using e-learning. The social influence comes from lecturers, teaching assistants, friends, and campus environments that support the use of the system. When the lecturers use e-learning, students will use it too because it



can support the learning process, such as the ease of access to get materials, submit assignments, check student scores from the corrected tasks, and get direct feedback from the lecturer faster and easily. Thus, it can answer the educational challenge of the speed and demand in which lecturers provide feedback.

#### 4. Conclusion

There are some conclusions drawn in this research as follows. First, student acceptance of the ease of e-learning has a significant effect in supporting the learning process. Second, e-learning has a significant effect in supporting the learning process. Third, student expectation for e-learning has no significant effect in supporting the learning process. Fourth, social influence on the use of e-learning has a significant effect in supporting the learning process. Finally, for the development of e-learning advanced, it is expected that there be smartphone notifications regarding the material and assignments posted by the teacher. With features such as dashboards, my courses, classmates, participants, grades, and assignments, it represents the activities of the class.

#### 5. References

- Alavi, M., & Leidner, D. (2001). Research commentary: Technology mediated learning—a call for greater depth and breadth of research. *Information Systems Research*, 12(1), 1–10.
- Allen, M. W. (2016). *Michael Allen's guide to e-learning: Building interactive, fun, and effective learning programs for any company*. John Wiley & Sons. <https://books.google.co.id/books?hl=id&lr=&id=7ibWBgAAQBAJ>.
- Aparicio, M., Bacao, F., & Oliveira, T. (2017). Grit in the path to e-learning success. *Computers in Human Behavior*, 66, 388–399.
- Bringman-Rodenbarger, L., & Hortsch, M. (2020). How students choose E-learning resources: The importance of ease, familiarity, and convenience. *FASEB Bio-Advances*, 2(5), 286–295.
- Cholid, N., & Achmadi, A. (2007). *Metodologi Penelitian*. Jakarta: Bumi Aksara.
- Christidamayani, A. P., & Kristanto, Y. D. (2020). The Effects of Problem Posing Learning Model on Students' Learning Achievement and Motivation. arXiv preprint arXiv:2002.04447. *Indonesian Journal on Learning and Advanced Education (IJOLAE)*, 2(2), 100–108.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: a comparison of two theoretical models. *Management Science*, 35(8), 982–1003. <http://www.jstor.org/stable/10.2307/2632151>.
- Elkaseh, A. M., Wong, K. W., & Fung, C. C. (2016). Perceived ease of use and perceived usefulness of social media for e-learning in Libyan higher education: A structural equation modeling analysis. *International Journal of Information and Education Technology*, 6(3), 192.
- Engelbrecht, E. (2005). Adapting to changing expectations: Postgraduate students' experience of an e-learning tax program. *Computers and Education*, 45(2), 217–229.
- Ghozali, I. (2006). *Aplikasi Analisis Multivariate Dengan Program SPSS*, Badan Penerbit Universitas Diponegoro, Semarang., 2011. *Aplikasi Analisis Multivariate dengan Program IBM SPSS*, 19.
- Hartley, D. E. (2001). *Selling e-learning*. American Society for Training and Development. <https://books.google.co.id/books?hl=id&lr=&id=jcnh8Vcw0-IC>.
- Hidayati, N. (2016). Sistem E-learning Untuk Meningkatkan Proses Belajar Mengajar: Studi Kasus Pada SMA Negeri 10 Bandar Lampung. *Telematika MKOM*, 2(2), 153–170. <https://journal.budiluhur.ac.id/index.php/telematika/article/view/171/165>.
- Hiltz, S. R., & Turoff, M. (2005). Education goes digital: The evolution of online le-

- arning and the revolution in higher education. *Communication of ACM*, 48(10), 59–64  
<https://doi.org/10.1016/j.chb.2016.10.009>.
- Huffaker, D. A., & Calvert, S. L. (2003). The new science of learning: Active learning, metacognition, and transfer of knowledge in e-learning applications. *Journal of Educational Computing Research*, 29(3), 325-334.
- Hwang, Y. (2014). Understanding social influence theory and personal goals in e-learning. *Information Development*, 32(3), 466-477.
- Istijanto, M. M. (2005). *Aplikasi Praktis Riset Pemasaran*. Jakarta: Gramedia Pustaka Utama.
- Jong, D., & Wang, T. S. (2009). Student acceptance of web-based learning system. In *Proceedings. The 2009 International Symposium on Web Information Systems and Applications (WISA 2009)* (p. 533). Academy Publisher.
- Kang, M., & Shin, W. S. (2015). An empirical investigation of student acceptance of synchronous e-learning in an online university. *Journal of Educational Computing Research*, 52(4), 475-495.
- Lee, B. C., Yoon, J. O., & Lee, I. (2009). Learners' acceptance of e-learning in South Korea: Theories and results. *Computers & Education*, 53(4), 1320-1329.
- Lee, B. C., Yoon, J. O., & Lee, I. (2009). Learners' acceptance of e-learning in South Korea: Theories and results. *Computers & Education*, 53(4), 1320-1329.
- Lee, M. C. (2010). Explaining and predicting users' continuance intention toward e-learning: An extension of the expectation–confirmation model. *Computers & Education*, 54(2), 506-516.
- Long, J. S., & Ervin, L. H. (2000). Using heteroscedasticity consistent standard errors in the linear regression model. *The American Statistician*, 54(3), 217-224.
- Madigan, R., Louw, T., Wilbrink, M., Schieben, A., & Merat, N. (2017). What influences the decision to use automated public transport? Using UTAUT to understand public acceptance of automated road transport systems. *Transportation research part F: traffic psychology and behaviour*, 50, 55-64.
- Marfuatun, M., LFX, E. W., & Suwardi, S. (2013). Pengembangan Metode Pembelajaran Kooperatif secara Online pada Kuliah Kimia Fisika II. *Jurnal Pendidikan Matematika dan Sains*, 1(2), 125-133.  
<https://journal.uny.ac.id/index.php/jpms/article/view/2479/2066>.
- Masood, A., & Lodhi, R. N. (2016). Determinants of behavioral intentions to use SPSS among students: Application of Technology Acceptance Model (TAM). *FWU Journal of Social Sciences*, 10(2), 146.
- Montgomery, M. R., & Casterline, J. B. (1996). Social learning, social influence, and new models of fertility. *Population and Development Review*, 22, 151-175.
- Moore, J. L., Dickson-Deane, C., & Galyen, K. (2011). e-learning, online learning, and distance learning environments: Are they the same?. *The Internet and Higher Education*, 14(2), 129-135.
- Muller, H. G., & Stadtmuller, U. (1987). Estimation of heteroscedasticity in regression analysis. *The Annals of Statistics*, 15(2), 610-625.
- Mustaqim, R. N., Kusyanti, A., & Aryadita, H. (2018). Analisis faktor-faktor yang memengaruhi niat penggunaan e-commerce XYZ menggunakan model UTAUT (Unified Theory Acceptance and Use of Technology). *Jurnal Pengembangan Teknologi Informasi dan Ilmu Komputer*, 2(7), 2584-2593.
- Nassuora, A. B. (2012). Students acceptance of mobile learning for higher education in Saudi Arabia. *American Academic & Scholarly Research Journal*, 4(2), 24-30.
- Nayanajith, G., Damunupola, K. A., & Ventayen, R. J. (2019). Impact of Innovation and Perceived Ease of Use on E-learning Adoption. *Asian Journal of Business and Technology Studies*, 2(1), 19-27.

- Paechter, M., Maier, B., & Macher, D. (2010). Students' expectations of and experiences in e-learning: Their relation to learning achievements and course satisfaction. *Computers & Education*, 54(1), 222-229.
- Park, S. Y. (2009). An analysis of the technology acceptance model in understanding university students' behavioral intention to use e-learning. *Journal of Educational Technology & Society*, 12(3), 150-162.
- Selim, H. M. (2007). Critical success factors for e-learning acceptance: Confirmatory factor models. *Computers & Education*, 49(2), 396-413.
- Šebjan, U., & Tominc, P. (2015). Impact of support of teacher and compatibility with needs of study on the usefulness of SPSS by students. *Computers in Human Behavior*, 53, 354-365.
- Sekaran, U., & Bougie, R. (2017). Metode Penelitian untuk Bisnis: Pendekatan Pengembangan-Keahlian. *Jakarta Selatan. Penerbit Salemba Empat*.
- Selim, H. M. (2003). An empirical investigation of student acceptance of course websites. *Computers & Education*, 40(4), 343-360.
- Setyoningsih, S. (2015). E-learning: Pembelajaran Interaktif Berbasis Teknologi Informasi. *Elementary: Islamic Teacher Journal*, 3(1).  
<http://journal.stainkudus.ac.id/index.php/elementary/article/viewFile/1443/1319>.
- Sukmawati, R. A., Pramita, M., Purba, H. S., & Utami, B. (2020). The use of blended cooperative learning model in the introduction to digital systems learning. *Indonesian Journal on Learning and Advanced Education (IJOLAE)*, 2(2), 75-81.
- Sørebo, Ø., Halvari, H., Gulli, V. F., & Kristiansen, R. (2009). The role of self-determination theory in explaining teachers' motivation to continue to use e-learning technology. *Computers & Education*, 53(4), 1177-1187.
- Venkatesh, V. (2001). Determinants of perceived ease of use: integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research*, 11(4), 342-365.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: four longitudinal field studies. *Management Science*, 46, 186-204.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 425-478.
- Waller, V. and Wilson, J. (2001). A definition for e-learning. *TheODL QC Newsletter*, pp. 1-2.
- Wingard, A. K., Hermawan, H. D., & Dewi, V. R. (2020). The Effects of Students' Perception of the School Environment and Students' Enjoyment in Reading towards Reading Achievement of 4th Grades Students in Hong Kong. *Indonesian Journal on Learning and Advanced Education (IJOLAE)*, 2(2), 68-74.
- Zhang, D., Zhao, J. L., Zhou, L., & Numanaker, J. F. Jr., (2004). Can e-learning replace classroom learning? *Communications of the ACM*, 47(5), 75-79