

Culture, Environment and E-learning as Factor in Student Performance (Case Studies in Management Accounting Study Programs)

Rima Rachmawati^{1,*}, Evi Octavia¹, Shinta Dewi Herawati¹, Obsatar Sinaga²

¹Widyatama University, Indonesia

²Padjadjaran University, Indonesia

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Abstract The aim of the study is to solve the problem of decreasing student academic performance which is influenced by satisfaction in using e-learning, the quality of e-learning systems, environment, and organizational culture. The research method used is verification by using structural equational modeling test with partial least square approach, primary data obtained from questionnaires designed by researchers. Respondents are students who are in management accounting courses with the number of samples using the power analysis. The results of the study answer the problems that occur that there is no evidence of environmental uncertainty, organizational culture towards e-learning. But, e-learning affects user satisfaction, and user satisfaction influences student academic performance. The results of the study are expected to provide input for managers to consider the application of e-learning system learning in management accounting courses. The uniqueness of this research is the development of a success model of information systems from DeLone & McLane, shown by the addition of exogenous variables, namely the environment and organizational culture that were not previously present in the model.

Keywords E-learning, Student Performance, Culture

1. Introduction

Indonesia is currently experiencing a crisis in the education sector (Okumura, 2017;Utami, 2017), the quality of education in Indonesia is currently still far from other countries in Southeast Asia. According to UNESCO data, education in Indonesia is ranked 10th out of 14 developing countries. While an important component in education is the teachers ranked 14th out of 14 developing

countries in the world.

This condition is very alarming and needs to be reformed. Therefore, the Ministry of Education and Culture (Kemendikbud) continues to improve its achievements in government priority programs in the fields of education and culture. Various efforts have been taken to improve access and quality of education services. The role of distance education has also continued to be strengthened as a strategic step to increase national productivity and competitiveness. In addition, the influence of culture in national education is carried out as part of efforts to strengthen national character and provide a foundation for sustainable development (Effendy, 2016; Onukwufor & Chukwu, 2017;Owolewa & Adepoju, 2018).

Distance Education is one of the solutions offered by the government, namely education by using information and communication technology as educational facilities and infrastructure. Distance Education is the choice for the community to gain access to education that has a wide range of space, time and socio-economic resources that open access to education for anyone (Pannen et al., 2016).

The Indonesian government through the Ministry of Education and Culture (Kemendikbud) makes rules for learning using an electronic approach (e-learning). E-learning actually knows no age, place and space. This learning is planned, structured and open. Planned reflected in e-learning learning has been prepared before the teacher uploads it to the site. Structuralization means that the stages to be uploaded in e-learning have been prepared, for example, material for meetings 1 to 3 will study material A and workout training will be given a deadline. Valuation is done in real terms by displaying the results of the acquisition of values in accordance with the answers made. While what is meant by open is e-learning can be done anywhere as long as it is connected to the internet. The students will continue to be encouraged to see the value

that they get in each exercise (Setiawan, 2005; Okon & Richard, 2017; Okpechi, 2018).

Education knows no age, no matter how old it can get education, both formal and informal education. Learning with the e-learning approach is present to meet the demands of people who have limited time that requires attending class. Since 2012 at Widyatama University in particular the accounting study program began to organize education with an e-learning approach.

Widyatama University organizes lectures using an information technology approach in the teaching and learning process or known as the e-learning approach. The e-learning approach is provided for students who have limited time due to having to work while those interested in studying at Widyatama University are quite high. The learning system with e-learning approach is one of the efforts of Widyatama University to carry out the mandate of Law No. 20 of 2003 concerning National Education System, namely education is an effort so that humans can develop their potential through a learning process or other means known and recognized by society.

This research is a continuation of previous research that in 2009 before the implementation of the e-learning system in the management accounting class (Rachmawati, 2012; Pervin & Khan, 2017; Phouthaphone, Dahuai & Jing, 2017; Rashid, 2017; Riyanti, 2018).

Based on the background above the authors are interested in conducting research by identifying problems whether there are cultural, environmental and e-learning system influences on system user satisfaction and their impact on student performance.

2. Literature Review, Theoretical Framework, Hypothesis Development

2.1. Organizational Culture

Culture in relation to organization (corporate culture) is defined as the ways in which human resources (HR) are carried out within the organization. Culture is another element that is the glue of social relations that combines an organization so that it unites. Culture is a daily internal environment that is seen and felt by those who work in it. The corporate culture is not written and is how HR practices in a company.

(Naik, 2012) states that organizational culture is a system that is formed jointly by members of the organization that differentiates it from other organizations. The same thing (Wallace, 1974) has added to organizational culture is the norms, beliefs, principles and typical ways of behaving that combine to give each organization a different character.

Four functions of organizational culture according to

(Naik, 2012), determine organizational boundaries and separate one organization from another organization, communicate a sense of identity to employees, offer a sense of belonging to a group to one's personal interests and offer stability to the social system. The researcher connects between organizational culture and the use of e-learning with findings showing the relationship of organizational culture as a mediator to make policies so that the use of e-learning can be implemented (Czeniewicz & Brown, 2009). (Wallace, 1974) his thesis states that there is a relationship between culture and education and learning.

2.2. Environmental Uncertainty

Organizations must be able to assess their unique environment and then adapt according to the policies of managers because effective managers are managers who can determine the suitability of ideal conditions between the environment and the organization, maintaining harmony between organization and environment is the key to manager's work (Griffin, 2002).

Users of e-learning systems must have the ability to adapt to environmental changes that occur around them, this capability will also be an indicator of the extent to which users of e-learning systems are able to use the system to meet their needs. When students will download lecture material, work on cases through the internet, current students have the ability regarding e-learning systems and also have the ability if the e-learning system changes the appearance of features.

Based on the understanding that e-learning systems are an information system, the success of e-learning systems will have an impact on user satisfaction. As a statement (Doll & Torkzadeh, 1988) that end-user satisfaction information systems can be used as a benchmark for the success of an information system. This end-user satisfaction then becomes part of the development of the success model of e-learning systems in this study.

2.3. E-learning System

Basically an e-learning system is an information system that can provide satisfaction to users as said (Delone & Mclean, 1992) who developed a model of success called the D&M Success Model. D&M models base on the process of the relationship between six dimensions, namely the quality of the system, the quality of information, usage, user satisfaction, individual impact and organizational impact. (Liaw, 2008) examined the success factors of implementing e-learning systems with the D&M model.

E-learning is defined by (Sun, Tsai, Finger, & Chen, 2008) is the use of telecommunications technology to deliver information for education and training, with the advancement of information and communication technology, e-learning emerged as a paradigm of

education.

The application of e-learning in universities is needed to multiply variety, display a lot of information and be able to increase student learning and e-learning systems can help lecturers to save time and pay more attention. E-learning learning systems do not have to come to class directly and feel uncomfortable with their teachers, students can study at home using several electronic devices such as computers, and cellphones (Thin, 2016). The same thing is defined by (Llc, 2014) that e-learning is a computer-based education or system that allows us to learn anywhere and anytime, nowadays with the information technology the e-learning system is delivered via the internet (Ahmed, Umrani, Qureshi & Sarmad, 2018; Ali & Haseeb, 2019; Haseeb, Abidin, Hye, & Hartani, 2018; Haseeb., 2019; Suryanto, Haseeb, & Hartani, 2018).

Four elements of e-learning according to (Sangra, Vlachopoulos, & Cabrera, 2012) are driven by technology, delivery-oriented, communication-oriented and education-oriented paradigm. (Llc, 2014) adds his opinion that e-learning utilizes many technologies specifically developed such as email usage, message forums, social networking. E-learning also utilizes database and content management technology systems (CMS). Data is stored in the database and CMS provides user face-to-face content and adds content to add and delete data. A good e-learning system provides reporting tools for generating and storing reports.

2.4. User Satisfaction

Satisfaction is one of the factors that influence the use of e-learning systems which also directly affect user performance. (Yengin, Karahoca, & Karahoca, 2011) call it the user satisfaction success model, which is a model that is based on social, intellectual and technical interactions of e-learning system users.

Satisfaction is defined as user acceptance of information systems and the comfort level involved in their use or satisfaction is defined as the pleasure or satisfaction someone feels when a person gets what he needs through the use of the system (Liaw & Huang, 2013).

Research that connects e-learning system user satisfaction has been carried out, among others, implying that the perceived efficacy is very important which is a factor that influences student satisfaction with e-learning systems, and e-learning user satisfaction is influenced by multimedia and e-learning system quality (Liaw, 2008).

The relationship between end-user satisfaction information systems and individual performance has been tested by (Delone & Mclean, 1992) in the information system success model. They stated that between the

impacts of the use of information systems on individual performance with the level of user satisfaction (user satisfaction) has a reciprocal relationship. The D&M model is also used in (Mulyani & Rachmawati, 2016)'s research.

E-learning content and instructional methods delivered on a computer (whether on CD-ROM, the Internet, or intranet), and designed to build knowledge and skills related to individual or organizational goals. According to (Scalise, 2007) four principles of scoring systems in e-learning are useful information for both teachers and students to improve learning outcomes. It is means that the use of el-earning systems can improve student performance.

As the results of the study (Davies & Graff, 2005) which states that students who interact in e-learning systems have increased to achieve graduation. The results of other studies state that students who use computer tutorials in mathematics, natural sciences and social scores are significantly higher than students who do not use computers (Higgins, Xiao, & Katsipataki, 2012).

The results of the study (Topagur, 2010) concluded that accounting students as respondents in this study who used the e-learning system had good academic results compared to those who did not use the e-learning system.

Other studies, namely (Oye, Iahad, & Rahim, 2012) the results of the study prove that the use of e-learning has a significant influence on student academic achievement because the use of technology in e-learning systems can provide efficiency and effectiveness in the learning process. Research conducted at the Ljubljana University showed a significant improvement after introducing e-learning systems (Umek, Aristovnik, Tomažević, & Keržič, 2015). Student academic performance is also studied by (Booth, Luckett, & Mladenovic, 1999) which states that there is a correlation between learning strategies and student academic performance, and this research is replicated by (Ismail, 2009) with the same results.

Based on the above framework and referring opinions (Hair, Hult, Ringle, & Sarstedt, 2016) that researchers can build hypotheses not only to test the indirect effects but also the direct influence of the variables being tested. So the hypothesis proposed in this study is:

1. Organizational culture influences User Satisfaction e-learning system.
2. Perception of environmental uncertainty affects the User Satisfaction e-learning system.
3. E-learning System has an effect on User Satisfaction e-learning system.
4. User satisfaction affects student performance.

3. Research Methods

The research is verification aims to find out what and how far the factors that are expected to affect a variable with the aim of testing the hypothesis. Variables are

grouped into exogenous variables and endogenous variables. Exogenous variables consist of organizational culture (X_1), perception of environmental uncertainty (X_2) and e-learning system (X_3). While, the endogenous variables are e-learning users' satisfaction, (Y) and student academic performance (Z).

Variable organizational culture consists of indicators; being a pioneer, distance from management, trust in classmates, order, hostility, integrity. Environmental variables consist of indicators; uncertainty about government regulations, uncertainty about competency lecturers, uncertainty about employment opportunities.

The e-learning system variable consists of indicators; the convenience of using e-learning, repeated use, quickly capture lessons. Variable user satisfaction consists of indicators; meet user needs, information received are accurate, timely information and information is easily understood. Performance variables consist of indicators; knowledge, comprehension and application.

Verification analysis was carried out using the Structural Equation Modeling method with the Partial Least Square approach. The SEM-PLS method is carried out with two events, namely the measurement model and structural model. The measurement model uses the first order approach.

The first factor measurement model connects the dimensions with the indicator, and the second measurement model connects the latent construct with the manifest. The structural model (inner model) connects between exogenous latent variables with endogenous latent

variables.

The population which is the region to generalize the results of the study is the Widyatama university student accounting study program where in the academic year 2016 took management accounting courses with the learning system using the e-learning approach. The research sample was determined by power analysis technique, at a significance level of 5% the number of direction of the most arrows pointed towards latent constructs amounting to 3 and statistical power 0.08 and minimum R^2 expected 0.25, the minimum sample size needed in this study 59 samples (Hair et al., 2016) the number of samples obtained 75.

Data sources were obtained directly from respondents through a list of questions / questionnaires that were distributed directly. Data quality testing techniques is using Smart PLS.

4. Findings

The aim of the study was to examine the effect of organizational culture, perceptions of environmental uncertainty and e-learning systems on e-learning user satisfaction and their impact on student academic performance.

Data analysis uses structural equation modeling with the partial least square approach. The PLS model is carried out with measurement models and structural models.

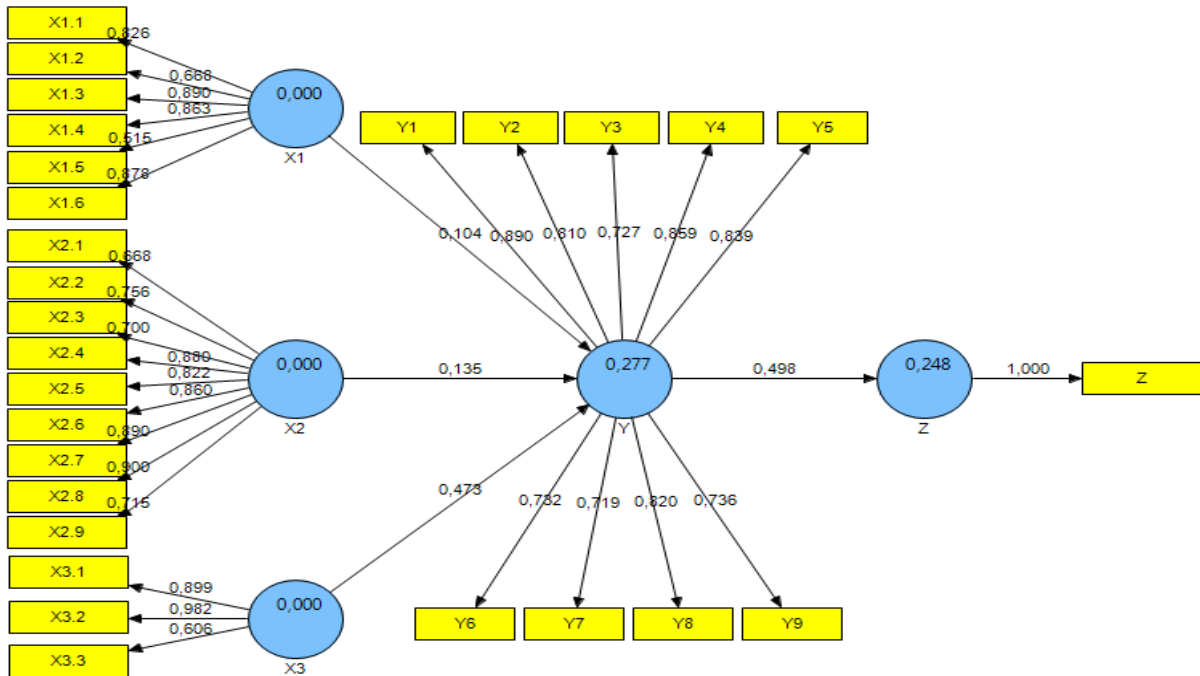


Figure 1. Path model diagram

4.1. Measurement Model

Based on the results of confirmatory factor analysis it can be seen that the factor weight of each indicator is greater than 0.5, meaning that all indicators are valid as a measure.

The composite reliability value which greater than 0.7 indicates reliable indicators in measuring the variables (Hair et al., 2016).

4.2. Structural Model

The structural model is a model that connects exogenous latent variables with latent variables.

Table 1. Summary of Statistical Test Results

Struktur	Path	Coeffisien	tcount*	p-value	R-Square
First	X1 → Y	0,104	1,241	0,215	0,277
	X2 → Y	0,135	1,066	0,287	
	X3 → Y	0,473	3,878	<0,001	
Second	Y → Z	0,498	6,271	<0,001	0,248

* $t_{critical} = 1,96$

Using the rule of value t and also a significant value (p-value), the value of t calculated greater than T critical at the level of significance is a reference for rejecting H_0 . And the p value must be less than the significance value of 5%. The structure model in this study can be explained as follows:

- Organizational culture does not affect the user satisfaction of e-learning systems.
- Environmental uncertainty does not affect the user satisfaction of the e-learning system.
- E-learning system influences user satisfaction of e-learning system.
- System user satisfaction affects student performance scores.

Two of the four hypotheses were not accepted. Using the value of the coefficient of determination (R-square) explained that the variability of organizational culture, perceptions of environmental uncertainty and e-learning systems simultaneously build the variability of e-learning user satisfaction with a variability of 27.7%. Furthermore, 24.8% of the variability of e-learning system user satisfaction builds the variability in student value performance.

5. Discussion

User satisfaction and organizational culture. Culture is an internal custom of the organization that will distinguish its uniqueness from other organizations, through this practice the organization makes regulations, which is one

of the rules in implementing the use of e-learning. The results showed no evidence that culture did not affect the satisfaction of e-learning users. It can be interpreted that at Widyatama University, especially for students, e-learning users do not make habits as a factor to determine the satisfaction of using the system. This is understandable because e-learning itself has only been implemented for several years. So there is no experience and has not become a habit in using the e-learning system.

Environmental uncertainty and user satisfaction. Environment is a place where we stand that can influence or be influenced by ourselves. The environment is unpredictable, information technology that undergoes very rapid and complex changes in technological problems causes us to be able to adapt to existing changes because humans are destined to have reason and with reason we will also adapt to existing changes. Likewise with e-learning system users who must be able to adapt to environmental changes. (Saudi et. al, 2018)

Environmental uncertainty indicates that a person's quality is marked by the extent to which he is able to deal with environmental uncertainty. Someone who is capable in t information system users who are able to survive in the use of e-learning system after being able to then continue to use. Someone who is capable of using an information system that will survive the use of the e-learning system then he will continue to use it.

When the condition of the user continues to use the system means that the person gets satisfaction. The results of this study found no evidence that the ability of e-learning users was able to influence satisfaction. Case studies in management accounting classes that we develop, this indicates that the uncertain environment is not a determining factor for e-learning users or management accounting students.

E-learning system and user satisfaction. The Delone and Mclane (DM Model) model states that quality information systems have an impact on user satisfaction. If it is assumed that e-learning is part of the information system, it means that this model can be applied. The results of the study state that e-learning systems have an influence on user satisfaction in this case students as e-learning participants. Furthermore, it was confirmed by the determination coefficient value of 27.7% in the small category interpreted that the variability of user satisfaction was formed by the variability of the e-learning system by 27.7% (Hair et al., 2016).

The quality of e-learning system is a small factor for e-learning system user satisfaction, this can be understood because without the support of a quality e-learning system it is impossible for users to utilize e-learning information even though there are other factors not examined in this study.

The results of this study are in line with (Yengin et al., 2011) that satisfaction is one of the factors that influence the usefulness of the system which also directly affects

performance

User satisfaction and student performance. DM models link user system information satisfaction to individual impacts (Delone & Mclean, 1992). The results of the PLS in this study answer the hypothesis of the influence of user satisfaction on student academic performance as evidenced in this study. Variability of student performance is formed by the variability of user satisfaction by 24.8% in the small category. This means that user satisfaction is only a small part of other factors not examined in this study. The results of this study are in line with the results of research (Ismail, 2009) and research (Booth et al., 1999) that there is a correlation between satisfaction with student academic performance. Also supported by (Yengin et al., 2011) usability or user satisfaction directly affects user performance.

6. Conclusions

The satisfaction of e-learning system users is influenced by the quality of e-learning itself, while the factors of environmental uncertainty and organizational culture are not found to be able to influence user satisfaction (Jabarullah and Hussain, 2018). The unit of analysis in management accounting class students at Widyatama University has implemented a six-year e-learning system. The impact of the six-year implementation of e-learning systems has been felt by students with increasing academic performance (Jabarullah and Hussain, 2019). This can be understood because with the provision of e-learning learning in which information technology as the basis of learning is able to improve students' technological abilities which are certainly needed in this industrial 4.0 era.

REFERENCE

- [1] Booth, P., Luckett, P., & Mladenovic, R. (1999). The quality of learning in accounting education: the impact of approaches to learning on academic performance. *Accounting Education*, 8(4), 277–300. <https://doi.org/10.1080/096392899330801>
- [2] Czeniewicz, L., & Brown, C. (2009). A study of the relationship between institutional policy, organisational culture and e-learning use in four South African universities - ScienceDirect. *Computers & Education*, 53(1), 121–131.
- [3] Davies, J., & Graff, M. (2005). Performance in E-learning: online Participation and Student Grades. *British Journal of Education Technology*, 36(4), 657–663.
- [4] Delone, W. H., & Mclean, E. R. (1992). Information Systems Success: The Quest for the Dependent Variable. *Information Systems Research*, 3(1), 60–95.
- [5] Doll, B. W. J., & Torzadeh, G. (1988). The Measurement of End-User Computing Satisfaction. *Management Information Systems Research Centre*, 12(2), 259–274.
- [6] Effendy, M. (2016). Kementerian Pendidikan dan Kebudayaan Republik Indonesia. Retrieved from <https://www.kemdikbud.go.id/main/blog/2017/06/langkah-strategis-perbaikan-sekolah-di-tahun-ajaran-baru>
- [7] Hair, J., Hult, T., Ringle, C., & Sarstedt, M. (2016). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. SAGE Publication.
- [8] Higgins, S., Xiao, Z., & Katsipatakis, M. (2012). *The Impact of Digital Technology on Learning: A Summary for the Education Endowment Foundation Full Report*.
- [9] Ismail, S. (2009). Accounting Student's Learning Approaches and Impact on Academic Performance. *Jurnal Akuntansi Dan Keuangan Indonesia*, 6(2), 140–151.
- [10] Jabarullah, N.H. and Hussain, H.I. (2018) Comparison of Higher TVET Education and 'Normal' Academic Education: The Determinants of Electrical Engineering Students' Performance, *International Journal of Engineering & Technology*, 7 (4.29), 82-85.
- [11] Jabarullah, N.H. and Hussain, H.I. (2019) The Effectiveness of Problem-Based Learning in Technical and Vocational Education in Malaysia, *Education + Training*, <https://doi.org/10.1108/ET-06-2018-0129>.
- [12] Liaw, S. (2008). Investigating students' perceived satisfaction, behavioral intention, and effectiveness of e-learning: A case study of the Blackboard system. *Computers & Education*, 51, 864–873. <https://doi.org/10.1016/j.compedu.2007.09.005>
- [13] Liaw, S., & Huang, H. (2013). Perceived satisfaction, perceived usefulness and interactive learning environments as predictors to self-regulation in e-learning environments. *Computers & Education*, 60(1), 14–24. <https://doi.org/10.1016/j.compedu.2012.07.015>
- [14] Llc, E. (2014). *E-learning Concepts, Trends, Applications*.
- [15] Mulyani, S., & Rachmawati, R. (2016). The Influence of the Quality of Management Accounting Information System, Quality of Management Accounting Information, and Quality of Service of Accounting Information System on the Information System User Satisfaction. *International Journal of Economics Research*, 13(3).
- [16] Naik, N. A. (2012). *Organisational Culture and Organisational Commitment in a Consulting Firm*. University of South Afrika.
- [17] Okon, E. O., & Richard, S. H. (2017). Gender and Transport Sector Employment: Evidence from Kogi State, Nigeria. *American Journal of Education and Learning*, 2(1), 1-13.
- [18] Okpechi, P. A. (2018). Anxieties Disorder and Deviant Behaviors among Secondary School Studies in Obubra Local Government Area of Cross River State. *International Journal of Educational Technology and Learning*, 3(1), 24-29.
- [19] Okumura, S. (2017). Homeroom Teachers or Specialist Teachers? Considerations for the Workforce for Teaching English as a Subject at Elementary Schools in Japan. *Asian Journal of Education and Training*, 3(1), 1-5.
- [20] Onukwufor, J. N., & Chukwu, M. A. (2017). Parenting Styles as Correlates of Adolescents Drug Addiction among Senior Secondary School Students in Obio-Akpor Local

- Government Area of Rivers State, Nigeria. *Journal of Education and e-Learning Research*, 4(1), 22-27.
- [21] Owolewa, O. O., & Adepoju, O. F. (2018). Basic Literacy and Attainment of Good Health and Well-Being among Young Adults in Ekiti State, Nigeria. *International Journal of Emerging Trends in Social Sciences*, 4(1), 1-8.
- [22] Oye, Iahad, A., & Rahim, A. (2012). Acceptance and Usage of ICT by University Academicians Using UTAUT Model : A Case Study of University of Port Harcourt, Nigeria. *Journal of Emerging Trends in Computing and Information Sciences*, 3(1), 81–89.
- [23] Pannen, P., Mustafa, D., Baskara, Hertono, G., Wibawanto, H., & Satriyanto, E. (2016). Pendidikan Jarak Jauh PJJ 2016. Jakarta: Ristekdikti. Retrieved from <http://spada.ristekdikti.go.id/s/file/view/d4417ca9afbe8bda61ee153ffa82f48e8ae02d40>
- [24] Pervin, N., & Khan, M. N. (2017). Sexism in Language: A Legacy of Male Thought Process. *International Journal of English Language and Literature Studies*, 6(4), 78-90.
- [25] Phouthaphone, S., Dahuai, Y., & Jing, W. (2017). Application of Marxist Philosophy in Higher Educational Institutions in Lao PDR. *International Journal of Asian Social Science*, 7(8), 674-683.
- [26] Rachmawati, R. (2012). The Implementaton Quantum Teaching Method of Graduate through Up-Grade Hard Skill and Soft Skill: (Case study on Management Accounting Class). *Procedia Social and Bhavioral Sciences*, 57, 477–485. <https://doi.org/10.1016/j.sbspro.2012.09.1214>
- [27] Rashid, R. (2017). A Study on National Girls Education Strategy Implementation, Monitoring and Evaluation. *American Journal of Education and Learning*, 2(1), 92-95.
- [28] Riyanti, M. T. (2018). Model Development of Instructional Design, Commercial Graphics-Based Planning Project, in the Faculty of Arts and Design, Trisakti University. *International Journal of Educational Technology and Learning*, 2(1), 1-7.
- [29] Sangra, A., Vlachopoulos, D., & Cabrera, N. (2012). Building an inclusive definition of e-learning An approach to the conceptual framework.
- [30] Saudi, M.H.M, Sinaga, O. Jabarullah, N.H., The Role of Renewable, Non-renewable Energy Consumption and Technology Innovation in Testing Environmental Kuznets Curve in Malaysia, *International Journal of Energy Economics and Policy*, 9(1):299-307, December 2018.
- [31] Saudi, M.H.M., Hutomo, A., Puspani, N.S. & Sinaga, O. , The effect of lean management towards sustainability performance in Indonesian Pulp and Paper industry, *International Journal of Engineering and Technology* 7(3.28):57-65, August 2018.
- [32] Scalise, K. (2007). Differentiated e-learning: Five Approaches through Instructional Technology. *International Journal of Learning Technology*, 3(2), 169–182.
- [33] Setiawan, Y. (2005). E-Learning Bagi Pendidikan Direktorat Pembinaan SMK. Retrieved from <https://psmk.kemdikbud.go.id/konten/975/e-learning-bagi-pendidikan>
- [34] Sun, P., Tsai, R. J., Finger, G., & Chen, Y. (2008). What drives a successful e-Learning ? An empirical investigation of the critical factors influencing learner satisfaction. *Computers & Education*, 50, 1183–1202. <https://doi.org/10.1016/j.compedu.2006.11.007>
- [35] Think, D. Van. (2016). The Role of E-learning. *Management, Enterprise and Benchmarking in the 21st Century*, pp. 239–250.
- [36] Topagur, R. (2010). Enhancing Students Performance with E- Learning at the Papua New Guinea University of Technology, a Papua New Guinea Experience.
- [37] Umek, L., Aristovnik, A., Tomažević, N., & Keržič, D. (2015). Analysis of Selected Aspects of Students' Performance and Satisfaction in a Moodle-Based E-Learning System Environment. *Eurasia Journal of Mathematics, Science & Technology Education*, 11(6), 1495–1505. <https://doi.org/10.12973/eurasia.2015.1408a>
- [38] Utami, S. S. (2017). Makro Kualitas Pendidikan Indonesia Masih di Bawah Vietnam. Retrieved from <http://ekonomi.metrotvnews.com/makro/MkMMqRk-kualitas-pendidikan-indonesia-masih-di-bawah-vietnam>
- [39] Wallace, L. (1974). *Culture and Language as Factors in Learning and Education*. McGill University.
- [40] Yengin, I., Karahoca, A., & Karahoca, D. (2011). E-Learning success model for instructors' satisfactions in perspective of interaction and usability outcomes. *Procedia Computer Science*, 3, 1396–1403. <https://doi.org/10.1016/j.procs.2011.01.021>
- [41] Tayebi, S., Manesh, S., Khalili, M & Sadi-Nezhad, S. (2019). The role of information systems in communication through social media. *International Journal of Data and Network Science*, 3(3), 245-268.
- [42] Pourkhani, A., Abdipour, K., Baher, B & Moslehpour, M. (2019). The impact of social media in business growth and performance: A scientometrics analysis. *International Journal of Data and Network Science*, 3(3), 223-244.
- [43] Ahmed, U., Umrani, W. A., Qureshi, M. A., & Samad, A. (2018). Examining the links between teachers support, academic efficacy, academic resilience, and student engagement in Bahrain. *INTERNATIONAL JOURNAL OF ADVANCED AND APPLIED SCIENCES*, 5(9), 39-46.
- [44] Ali, A., & Haseeb, M. (2019). Radio frequency identification (RFID) technology as a strategic tool towards higher performance of supply chain operations in textile and apparel industry of Malaysia. *Uncertain Supply Chain Management*, 7(2), 215-226.
- [45] Haseeb, M., Abidin, I. S. Z., Hye, Q. M. A., & Hartani, N. H. (2018). The Impact of Renewable Energy on Economic Well-Being of Malaysia: Fresh Evidence from Auto Regressive Distributed Lag Bound Testing Approach. *International Journal of Energy Economics and Policy*, 9(1), 269-275.
- [46] Suryanto, T., Haseeb, M., & Hartani, N. H. (2018). The Correlates of Developing Green Supply Chain Management Practices: Firms Level Analysis in Malaysia. *International Journal of Supply Chain Management*, 7(5), 316.