

ASSESSMENT OF THE BLENDED LEARNING IMPLEMENTATION IN HIGHER EDUCATION: STUDENTS' READINESS PERSPECTIVE

¹Norazlina Mohd Yasin, ²Mohd Hanafi Azman Ong, ³Nurul Nadia Abd Aziz

¹*School of Professional and Continuing Education (UTMSPACE), Universiti Teknologi Malaysia, 81310 Skudai, Johor, Malaysia.*

²*Department of Statistics and Decision Sciences, Faculty of Computer and Mathematical Sciences, Universiti Teknologi MARA (Segamat Campus), 85000 Segamat, Johor, Malaysia.*

³*Faculty of Business and Management, Universiti Teknologi MARA (Raub Campus), 27600 Raub, Pahang, Malaysia.
norazlina@utmSPACE.edu.my*

Abstract

Blended learning is widely recognized as new teaching method in providing 21st century learning skills. The growing body of literatures emphasis the use of technology in the classroom to enhance their learning experience. However, initial efforts often meet challenges due to resistance for change. Thus, there is a need to examine the readiness of blended learning practice among undergraduates in university and critical successful factors as enabler conditions. Structured equation analysis using Partial Least Square (PLS) provided significant support for the theoretical model. In specific, we found that technology access, online communication self-efficacy, online media and attitudes are significant to readiness. However, technical usage self-efficacy has no significant support on readiness. This study provides insightful perspectives for Higher Education Institutions to intensify the technology usage effectively in classroom for better performance.

Keywords: *Readiness; Blended Learning; Undergraduates Students; PLS-SEM.*

1 INTRODUCTION

Blended learning is rapidly emerging as a popular approach to teaching and learning and has been used in school, university, workplace as well as institution for training and development. Notably, this approach incorporate a range of different learning techniques with the combination of traditional face-to-face model and online learning (Ho, Nakamori, Ho and Lim, 2016; Wong, Tatnall and Burgess, 2013), digital tools (Dawn, 2017; Kintu and Zgu, 2017), and flipped classroom (Roux and Nagel, 2018). Blended learning combines access of information transfer and interaction method that has been measured in different aspects such as conceptualizing and measuring (Horzum, Kaymak and Gungoren, 2015), critical success factors and enabling conditions (Blayone, Mykhailenko, Kavtaradze, Kokhan, van Oostrveen and Barber, 2018). The research on readiness for online learning is emerging due to the fact that it has been contributed by numerous readiness model (Alaaraj and Ibrahim, 2014), instruments (Dray, Lowenthal, Miskiewicz, Ruiz-Primo, and Marczyński, 2011), and empirical studies (Aldhafeeri and Khan, 2016; Chipembele, Chipembele, Bwalya, and Bwalya, 2016; Gay, 2016; van Rooij and Zirkle, 2016).

In contrast, little studies on readiness for online learning have been carried out in macro-level perspectives especially among developing nations. Several concerns has been addressed: What is the current state of readiness among students in Public University in Malaysia? Which factors are crucial in students' readiness? Given that students are important participants in the university's blended learning system, this study considers to evaluate students' readiness to implement blended learning in higher education institution by focusing on students attitude, technical self-efficacy, online communication self-efficacy, technology access and online media. Hence, the aim of this study is to identify different factors that contributing to students' readiness of blended learning implementation.

2 LITERATURE REVIEW

2.1 Blended Learning

Blended learning is defined as an approach that combines online educational materials and opportunities for interaction online with traditional place-based classroom methods as complimenting each other (Zainol, MohadZahari, Mazlan andMohamad Shah @ Abdul Kadir, 2018). It requires physical presence of both teacher and student with some elements of student control overtime, place, pace and amount. Learning in blended mode; which refers to a process of linking the instructors, the learners, teaching tools, techniques, technologies, and arts and artifacts provide integrated environment for instructors and students to produce their desired results. The blending activity may happen at any stages of the process. This means blending is not restricted at the delivery-end which resides in the hands of the instructors; it may also happen at the receiving end which lands in the hands of the learners. Therefore, enhancing student learning experiences is important in higher education due to increased student enrollment and diversification (Ibrahim and Nat, 2019; Wei and Chang, 2018). Such an approach should, therefore, influence students' perceptions and motivation of the learning environment such as technology, teacher and environmentand, subsequently, their study approach (Kintu et al. 2017), and learning outcomes (Akguntuz and Akinoglu, 2017; Tseng and Walsh, 2016). It is thus expected that there is a significant relationship between blended learning, student learning experiences, and ultimate achievement (Nortvig, Petetrssen and Balle, 2018).

2.2 Student Readiness

Components such as students, lecturers, technology and the environment, must be prepared to formulate a coherent and achievable strategy (Mosa, Mahrin andIbrahim, 2016). It is worthwhile for an institution to first determine whether students are ready to adopt a new type of teaching, before taking action to change the teaching format of a higher institution (Düzeyleri, 2019).The readiness of students to use blended learning will lead them to develop a culture that includes blended learning as a tool to enhance teaching and learning. Overall student who are more technology ready do place higher utility on enrolling in mixed classes. Moreover students are much more likely to succeed when their instructors are teaching using a range of tools. This allows more learning styles to be catered for. Many students find that they learn far better when they are able to use dynamic presentational and online learning tools like these. The impact of blended learning environment to students isdetermined by positive attitude towards lesson and internet, supported learning and exam success rate are high.

2.3 Attitude

Understanding the skills of key participants and their attitude towards new learning technologies is crucial to guide the development of appropriate innovation. The success of technology use in education depends largely on the attitude of students and their willingness to explore new technologies. Recent researchers found that most students have a positive attitude towards application of new technologies in the educational process (Kolo and Zuva, 2019; Tuparov, Alsabri, andTuparova, 2015), which specifically demonstrates the belief that blended learning improves their productivity and enables them to achieve their learning more effectively than traditional classroom-based approaches.Their studies' findings are consistent with a study done by Hammoud, Love, Baldwin and Chen (2008) who found that students often have a positive attitude towards blended learning that eventually has positive influences on students' achievements and their outcomes. Drawing upon these literatures, the current study expects that students' readiness is influenced by their attitude towards blended learning. Thus, this study postulates that:

H1: Attitude is significantlyinfluence students' readiness for blended learning.

2.4 Technical Usage Self-Efficacy

Self-efficacy is referred to as the students' perception of related abilities, knowledge and skills to use such technology in education. The current study refers to the definition of ICT engagement (Dray et.al, 2011), which measures technology skills, such as the ability to use certain applications in certain ways (e.g., E-mail, Internet, spreadsheets, and documents). Mutambik, Leeand Foley(2019) found that students who have higher self-efficacy will increase the frequency computer usage which then considered themselves more ready to study using blended learning compared to those whose perception is low. In other words, students who use computers more often have a higher level of readiness. On the basis of the above arguments, this study postulates that:

H2: Technical self-efficacy is significantly influence students' readiness for blended learning.

2.5 Online Communication Self-Efficacy

Online learning requires communication using computer and quality in the learning experience in this media, competence in learning activities, student interaction and active participation (Engin, 2017). Individuals with high social skill and well-being emotional intelligence levels could have more self-confidence in online communication self-efficacy behavior to communicate with others efficiently, expressing themselves in written communications (emotions and jokes), and asking questions in online discussion environment. In contrast, students who are shy to communicate in a traditional learning environment will tend to actively participate in an online learning environment. Introvert students may not like talking, discussing, or asking questions in the face-to-face classroom for a variety of reasons, but they become very articulate in an online learning. This aspect can set the stage for more uninhibited behavior; rather, it would highly occur in face-to-face conversations leading to the wrong conception of ideas. Therefore, online communication self-efficacy can be considered as an important dimension in the removal of the limitations related to online learning (Engin, 2017; Hung, 2010). Hence, we expect that online communication self-efficacy may influence students' readiness for blended learning. Based on these arguments, this study postulates that:

H3: Online communication self-efficacy is significantly influence students' readiness for blended learning.

2.6 Technology Access

Accessibility to information is an essential variable in the quality of education for today's learners. Technology access relates to the availability of equipment, i.e. computer and internet access, not only in the school but also at home. The more access students have to the equipment and technology, the more control they have over when, where and how they can pursue their studies. The widespread adoption of smart phones suggests that students have access to technology in basic and advanced applications (Al-Husain, Dalal and Hammo, 2015). Internet access and mobile device data capabilities are able to break traditional classroom boundaries and move classes beyond the boundaries of location and time. Therefore, it may influence the readiness for using technology in education. Following these arguments, this study proposes that:

H4: Technology access is significantly influence students' readiness for blended learning.

2.7 Online Media

For this study, online media refers to the use of video and audio in online learning. Yilmaz (2017) highlighted that students are required to watch lecture videos before they come to the class in order to be successful in blended learning. Similarly, (Hao, 2016) argued that students can view live lessons on the Internet before coming to class, using PowerPoint slides and online video content that prepared in advance by their lecturers. In blended learning platform, digital videos are the most commonly used form of media used by students to preview material before attending class (Bergmann and Sams, 2012). It is an exciting method since designing the videos to be used for online classes interactively

will contribute to both the development of the student-content interaction and to increase student self-efficacy, which eventually may influence sub-dimensions of students' readiness which are self-directed learning towards online learning(Yilmaz, 2017). In addition, the activities that are familiar to students can also be used to accomplish an educational goal. Thus, the following proposition is:

H5: Online media is significantlyinfluencestudents' readiness for blended learning.

By referring to the stated hypothesis, Figure 1 shows the proposed conceptual framework of this study.

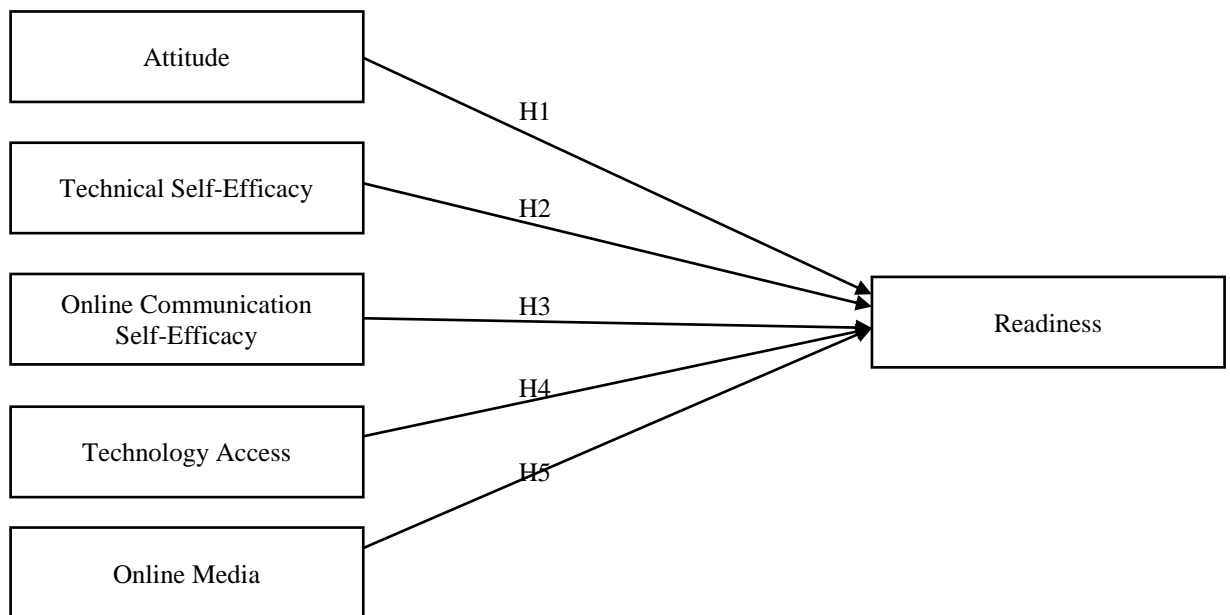


Figure 1: Conceptual Framework of the Study

3 METHODOLOGY/MATERIALS

In general, a combination of quantitative analysis and survey methodology were utilized in this study. Both methods can be considered as good methods since the technique for measuring the targeted variables in this study was using the structured questionnaire (Creswell, 2014). A total of 305 respondents from the selected public university were participated in this study and all of the respondents gave a complete answer since the researchers used face to face data collection approach for ensuring all questions were answered by the respondents (Saunders et al., 2009). In this study, five independents variables and one dependent variable, which consists of 22 items adapted from the previous study, were used to explore the current phenomena by using 5-point Likert scale, ranging from 1 as “Strongly Disagree” to 5 “Strongly Agree”. In addition, Structural Equation Modeling with Partial Least Squares (i.e. PLS-SEM) estimation multivariate data technique was employed as a data analysis tools since the primary objective of this study is about to explore the factors that might be a good factor that can be used for increasing the level of student readiness to use Blended Learning method as their common approach for learning style (Hair et al., 2017; Ong and Puteh, 2017). By using this statistical method, the significance test was computed using the Bootstrapping method (Hair et al., 2012; Henseler and Chin, 2010). Hence, 5000 replication of samples were computed as suggested by Hair et al (2017) for getting reliable results for empirical t-statistics and Bias Corrected and Accelerated (i.e. BCa) bootstrap. As mentioned by Henseler and Chin (2010) as well as Ong and Puteh (2017), bootstrapping analysis can be viewed as sensitive to the extremely non-normal data distribution and extremely outliers value because the procedure to obtain the standard error of the parameter was using the bootstrapping procedure, extremely non-normal data distribution can give an

unrepresentative standard error of parameter estimates (Hair et al, 2017). Therefore, by examining both statistics values, the data can be considered approximately normally distributed and no presents of extremely outliers since Skewness and Kurtosis statistics are in the range of ± 1.0 (Hair et al., 2017).

4 RESULTS AND FINDINGS

4.1 Measurement Model Analysis

Table 1 indicated that, all indicators meet the minimum threshold value of .70 factor loading (Hair et al., 2017). In addition, the Average Variance Explain (i.e. AVE) for each construct was above .50 (Hair et al., 2017), as well as both reliability tests (i.e. Composite Reliability and Cronbach's Alpha) for each targeted construct were also above .70 (Hair et al., 2017; Hair et al., 2010). Therefore, it confirms that each variable have a good unidimensionality validity.

Table 1: Convergent Validity for Measurement Model

Variable / Indicator	Loading	AVE	γ	α
Technology Access				
I know how to access the online help desk (TA1)	.739			
I receive emails sent to my online campus email address even though it may not be my primary account (TA2)	.843			
I have access to the internet for substantial periods of time (TA3)	.702	.570	.841	.747
I have access to a dedicated network connection or have an Internet Service Provider/ ISP (TA4)	.729			
Technical Usage Self-Efficacy				
I have the basic skills to operate a computer (e.g. saving files, creating folders) (TU1)	.853			
I have the basic skills for finding my way around the internet (e.g. using search engines, entering passwords) (TU2)	.843			
I can send an email with a file attached (TU3)	.914	.765	.928	.897
I feel confident in performing the basic functions of Microsoft Office programs (e.g. MS Word, MS Excel, and MS PowerPoint) (TU4)	.886			
Online Communication Self-Efficacy				
I feel confident in responding to questions in online discussions (OC1)	.836			
I feel confident in posting questions in online discussions (OC2)	.797			
I feel confident in using online tools (e.g. email, discussion) to effectively communicate with others (OC3)	.850	.656	.884	.825
I think I would be to carry on a conversation with others using the internet (e.g. internet chat, instant messenger) (OC4)	.755			
Online Media				
I think I would be able to relate the content of short video clips (e.g. 1-3 minutes typically) to the information I have read online or in books (OM1)	.790			
I think that I would be able to take notes while watching a video on the computer (OM2)	.821	.705	.877	.791
I think that I would be able to understand course related information when it's presented in video formats (OM3)	.904			
Attitudes				
I am always ready to accept new ideas related to the use blended learning tools (AT1)	.790	.693	.900	.852

I am very interested in making blended learning tools related to my study / readings as learning preparations (AT2)	.823			
I feel that students need to be exposed to a new approach in the teaching and learning process especially regarding the use of blended learning tools (AT3)	.863			
I'm always ready to use blended learning tools in the learning process (AT4)	.851			

Readiness

I have a private place in my home or at work that I can use for extended periods (LR1)	.814			
I have adequate time that will be uninterrupted which I can work on my online course (LR2)	.851	.643	.843	.720
I value and / or need flexibility (e.g. It is not convenient for me to come to campus two or three times a week to attend a traditional class) (LR 3)	.736			

Note: AVE = Average Variance Explained; γ = Composite Reliability; α = Cronbach's Alpha.
Table 2 indicated that, each latent variable was totally discriminate to each other's, since HTMT ratio test indicated that, each ratio value reported in Table 2 was below than .90 (Henseler et al., 2015). Hence, the indicators that were used to measured targeted construct were totally discriminate for the respectively construct.

Table 2: HTMT Discriminant Analysis for Measurement Model

Variable	TA	TU	OC	OM	AT	LR
TA	-					
TU	.710	-				
OC	.786	.720	-			
OM	.658	.560	.708	-		
AT	.618	.612	.736	.608	-	
LR	.746	.607	.795	.847	.700	-

Note: TA = Technology Access; TU = Technical Usage Self-Efficacy; OC = Online Communication Self-Efficacy; OM = Online Media; AT = Attitudes; LR = Readiness.

4.2 Structural Model Analysis

The structural model analysis indicated that, these five independent variables were able to give around 54.1% variance explained toward Readiness. In terms of effect size and predictive relevance analysis, Table 3 indicated that, these five variables give relatively small effects (Hair et al., 2017) toward respectively dependent variable except for the Online Media independent variable which is can be considered give a medium effect toward Readiness for both effect size and predictive relevance measurements.

Table 3: Structural Model Assessment

Path	β	t-statistic	p-value	95% BCa Bootstrap	f^2	q^2	Remark
TA → LR	0.148	2.374	.018*	(0.025, 0.266)	.025	.022	Small
TU → LR	0.017	0.296	.767 (NS)	(-0.088, 0.127)	.001	.001	Small
OC → LR	0.207	3.416	<.01**	(0.086, 0.322)	.039	.036	Small
OM → LR	0.369	6.819	<.01**	(0.263, 0.473)	.179	.132	Medium
AT → LR	0.153	2.544	.011*	(0.038, 0.274)	.028	.026	Small

Note: TA = Technology Access; TU = Technical Usage Self-Efficacy; OC = Online Communication Self-Efficacy; OM = Online Media; AT = Attitudes; LR = Readiness; NS = Not Significant; β = Standardized Beta Coefficient; f^2 = Effect Size; q^2 = Predictive

*Relevance; The bootstrap samples was 5000 samples; * $p < .05$; ** $p < .01$*

On the other hand, Table 3 also indicated that, simultaneously, Technology Access ($\beta = 0.148$, $t = 2.374$, $p = .018$), Online Communication Self-Efficacy ($\beta = 0.207$, $t = 3.416$, $p < .01$), Online Media ($\beta = 0.369$, $t = 6.819$, $p < .01$) and Attitude ($\beta = 0.153$, $t = 2.544$, $p = .011$), did gives a positively significant effect toward Readiness. However, the analysis also indicated that, Technical Usage Self-Efficacy ($\beta = 0.017$, $t = 0.296$, $p = .767$) did not give any significant effect toward Readiness. All these analysis findings basically align with the findings of 95% of Bias-Corrected (BCa) Bootstrap confidence interval, where the significant paths of the confidence interval did not include zero. Figure 2 and Figure 3 shows the analysis of PLS-SEM accordingly to theoretical framework.

5 CONCLUSION AND DISCUSSION

Overall, the survey found significant and positive relationship between all variables on readiness except for technical usage self-efficacy. On other words, if the average levels of technology access, online communication self-efficacy, online media and attitude were increase simultaneously, then it will give a significant increase toward the level of readiness. In the same way, the increment or decrement of technical usage self-efficacy, will not affected the level of readiness. The analysis also showed that, the most influence factor that will increasing the level of the readiness should be an online media factor, since it produce the highest significant value of standardized beta coefficient, followed by online communication self-efficacy, attitude and lastly technology access factors. On the contrary, they found that the level of familiarity and competency level associated with computer applications indicates a weak and insignificant relationship. Students who are proficient in the use of computers and the internet show a significant difference in students' readiness to blended learning. Without doubt there are many benefits of using blended learning. One of the real benefits of blended learning is that it allows students to have access to a much wider range of learning resources (Mosaet.al, 2016). The idea of blended learning is to expose student with newly teaching process from the using of technology channel such as internet, intranet, email and satellite broadcast where they were found can enhance the learning among the students. The rapid innovations and quality in blended learning researchers believed that the most effective method is to evaluate students learning outcome. In reaction to questions about the utility of a blended learning portal, respondents preferred to access to blended learning advice and live blended learning consulting not merely on acquiring information or reports. More importantly, instructors should look designing the course content in detail with emphasis on case study or scenario based learning to trigger more engagement and participation from student for future research. Another interesting framework dimension to be explored is examining the effect of learning design to the learning outcome as part of the whole blended learning framework after the implementation. These results will give variety in blended learning continuum that could be expanding to the use of emerging technology that will most greatly impact the delivery of blended learning across higher institutions.

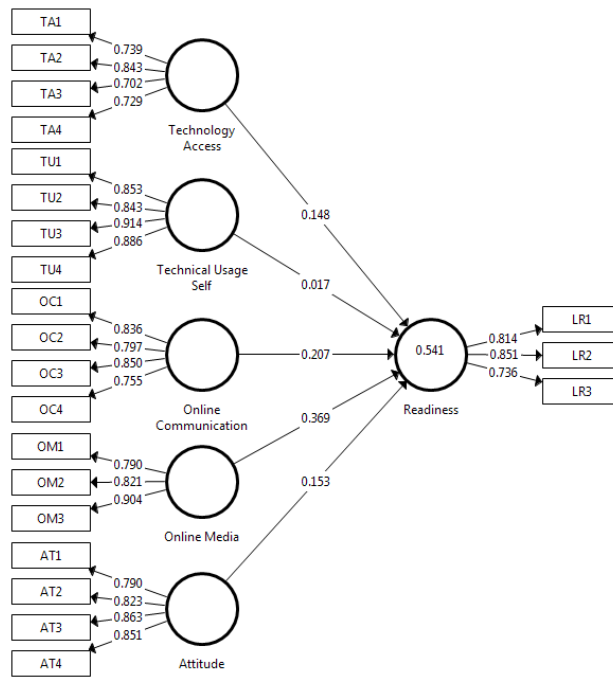


Figure 2. Loading Value

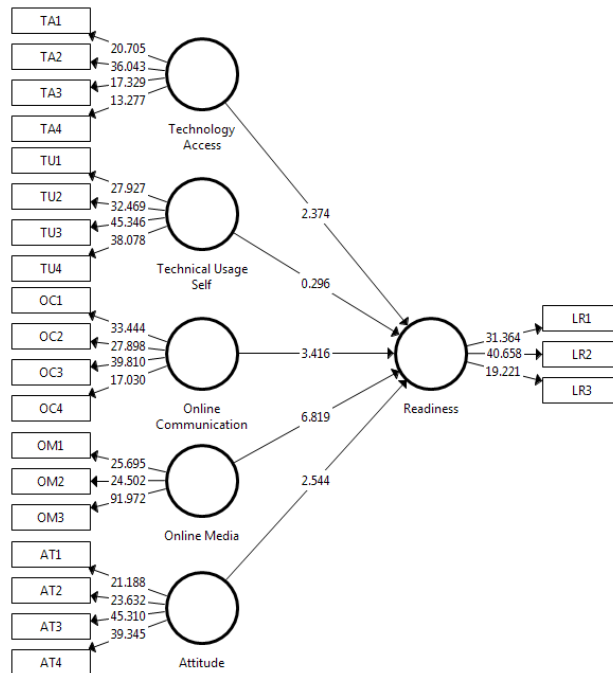


Figure 3. Bootstrapping Value

REFERENCES

- [1] Alaaraj, H., & Ibrahim, F. W. (2014). An overview and Classification of e-Readiness Assessment Models. *International Journal of Scientific and Research Publications*, 4(12), 1–5.
- [2] Aldhafeeri, F. M., & Khan, B. H. (2016). Teachers' and Students' Views on E-Learning Readiness in Kuwait's Secondary Public Schools. *Journal of Educational Technology Systems*, 45(2), 202–235.
- [3] Al-Husain, Dalal and Hammo, B. H. (2015). Investigating the Readiness of College Students for ICT and Mobile Learning: A Case Study from King Saud University. *International Arab Journal of E-Technology*, 4(1), 48–55.
- [4] Akguntuz, D., & Akinoglu, O. (2017). The Impact of Blended Learning and Social Media-Supported Learning on The Academic Success and Motivation of The Students in Science Education. *Education & Science*, 42(19), 69-90.
- [5] Bergmann, J., & Sams, A. (2012). *Flip Your Classroom: Reach Every Student in Every Class Every Day*. International Society for Technology in Education. 120-190
- [6] Blayone, T., vanOostveen, R., Mykhailenko, O., & Barber, W. (2018). Reexamining Digital-Learning Readiness in Higher Education: Positioning Digital Competencies as Key Factors and A Profile Application as A Readiness Tool. *International Journal of Educational Technology in Higher Education*, 15(37), 2-22.
- [7] Chipembele, M., Chipembele, M., Bwalya, K. J., & Bwalya, K. J. (2016). Assessing e-Readiness of TheCopperbelt University, Zambia: Case Study. *The International Journal of Information and Learning Technology*, 33(5), 315–332.
- [8] Creswell, J.W. (2014). *Educational Research: Planning, Conducting, and Evaluating Quantitative and Qualitative Research* (4th ed.). London: Pearson New International Edition.
- [9] Dawn, L. (2017). Online, Blended and Technology Enhancement Learning Tools to facilitate Community College Student success. Assesed on <https://search.proquest.com/docview/2009559356?accountid=407>
- [10] Dray, B. J., Lowenthal, P. R., Miszkiewicz, M. J., Ruiz-Primo, M. A., & Marczyński, K. (2011). Developing an Instrument to Assess Student Readiness for Online Learning: A Validation Study. *Distance Education*, 32(1), 29–47.
- [11] Düzeyleri, H. (2019). Students' Readiness Levels towards Online English Courses in Higher Education. *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü Dergisi* Haziran, 23(2), 783–795.
- [12] Engin, M. (2017). Analysis of Students' Online Learning Readiness Based on Their Emotional Intelligence Level. *Universal Journal of Educational Research*, 5(12A), 32–40. <http://doi.org/10.13189/ujer.2017.051306>
- [13] Gay, G. (2016). An Assessment of Online Instructor e-Learning Readiness Before, During, and After Course Delivery. *Journal of Computing in Higher Education*, 28(2), 199–220.
- [14] Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling. (PLS-SEM)* (2nd ed.). Thousand Oaks: Sage Publications.
- [15] Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An Assessment of The Use of Partial Least Squares Structural Equation Modeling in Marketing Research. *Journal of the Academy Marketing Science*, 40(3), 414–433.
- [16] Hair, J.F., Ringle, C.M., & Sarstedt, M. (2011). PLS-SEM: Indeed A Silver Bullet. *Journal of Marketing Theory and Practice*, Vol. 19 (2), 139-151.
- [17] Hammoud, L., Love, S., Baldwin, L., & Chen, S. Y. (2008). Evaluating Web ICT Use in Relation to Students' Attitude and Performance. *International Journal of Information and Communication Technology Education*, 4(2), 26-43. doi:10.4018/jicte.2008040103
- [18] Hao, Y. (2016). Middle School Students' Flipped Learning Readiness in Foreign Language Classrooms: Exploring Its Relationship with Personal Characteristics And Individual Circumstances. *Computers in Human Behavior*, 59, 295–303. <http://doi.org/10.1016/j.chb.2016.01.031>
- [19] Henseler, J., & Chin, W. W., (2010). A Comparison of Approaches For The Analysis of Interaction Effects Between Latent Variables Using Partial Least Squares Path Modeling. *Structural Equation Modeling* 17 (1), 82–109.

- [20] Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). "A New Criterion for Assessing Discriminant Validity in Variance-Based Structural Equation Modeling." *Journal of the Academy Marketing Science*, 43(1), 115–135.
- [21] Ho, V.T., Nakamori, Y., Ho, T.B., & Lim, C.P. (2016). Blended Learning Model on Hands on Approach For in Service Secondary School Teachers : Combination Of E-Learning And Face To Face Discussions. *EducInfTechnol*, 2016(21), 185-208.
- [22] Horzum, M.B., Kaymak, Z.D., & Ungoren, O.C. (2015). Structural Equation Modeling toward Online Learning Readiness, Academic Motivations and Perceived Learning. *Educational Science :Theory and Practices*, 15(3), 759-770.
- [23] Hung, M. (2010). Learner Readiness for Online Learning: Scale Development and Student Perceptions. Min-Ling Hung, Chien Chou, Chao-Hsiu Chen, Zang-Yuan Own, 93(5), 193–197. <http://doi.org/10.1016/j.compedu.2010.05.004>
- [24] Hung, M.L. (2016). Teacher Readiness for Online Learning: Scale Development and Teacher Perceptions. *Computers & Education*, 94(1), 120–133.
- [25] Ibrahim, M.N., & Nat, M. (2019). Blended Learning Motivation Model for Institutions in Higher Education Institution. *International Journal of Educational Technology in Higher Education*, 16(12), 1-21.
- [26] Kintu, M.J., Zhu, C., & Kagambe, E. (2017). Blended Learning Effectiveness : The Relationship Between Student Characteristics, Design Features and Outcome. *International Journal of Educational Technology in Higher Education*, 14(7), 1-20.
- [27] Kolo, I., & Zuva, T. (2019). Comparison between The E-Learning Readiness Of Educators and Learners In South African Schools. 2018 International Conference on Intelligent and Innovative Computing Applications, ICONIC 2018, 1–6. <http://doi.org/10.1109/ICONIC.2018.8601266>
- [28] Mosa, A.A., Mahrin, M. N. and Ibrahim, R. (2016). Technological Aspects of Technological Aspects of E-Learning Readiness in Higher Education: A Review of The Literature. *Computer and Information Science*, 9(1), 2016.
- [29] Mutambik, I. M., Lee, J., & Foley, Y. (2019). Identifying the Underlying Factors of Students' Readiness For E-Learning in Studying English as A Foreign Language in Saudi Arabia: Students' And Teachers' Perspectives. *Advances in Intelligent Systems and Computing*, 857, 265–279. http://doi.org/10.1007/978-3-030-01177-2_19
- [30] Nortvig, A.M.N., Petersen, A.K., & Balle, S.H. (2018). A Literature Review of the Factors Influencing E-Learning and Blended Learning in Relation to Learning Outcome, Student Satisfaction and Engagement. *The Electronic Journal of e-Learning*, 16(1), 46-55.
- [31] Ong, M.H.A., & Puteh, F. (2017). Quantitative Data Analysis: Choosing Between SPSS, PLS, and AMOS in Social Science Research. *International Interdisciplinary Journal of Scientific Research*, Vol. 3 (1), pp. 14-25.
- [32] Roux, I.I., & Nagel, L. (2018). Seeking the Best Blend For Deep Learning in A Flipped Classroom-Viewing Student Perceptions Through The Community Of Inquiry Lens. *International Journal of Educational Technology in Higher Education*, 15(6), 1-28.
- [33] Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research Method for Business Students* (5th ed.). New York: Prentice Hall Publications.
- [34] Tuparov, G., Alsabri, A. A. A., & Tuparova, D. (2015). Students' Readiness for Mobile Learning In Republic of Yemen - A Pilot Study. *Proceedings of 2015 International Conference on Interactive Mobile Communication Technologies and Learning, IMCL 2015*, (November), 190–194. <http://doi.org/10.1109/IMCTL.2015.7359584>
- [35] Tseng, H., & Walsh, E.J. (2016). Comparing Student's Motivation, Learning Outcome and Preference. *Quarterly Review of Distance Education*, 17(91), 43-56.
- [36] van Rooij, S. W., & Zirkle, K. (2016). Balancing Pedagogy, Student Readiness and Accessibility: A Case Study in collaborative Online Course Development. *The Internet and Higher Education*, 28(1), 1–7.
- [37] Wei, Z., & Chang, Z. (2018). Comparing Learning Outcomes of Blended Learning and Traditional Face To Face Learning of University Students in ESL Courses. *International Journal on E Learning*, 17(2), 251-273.
- [38] Wong, L., Tatnall, A., & Burgess, S. (2013). A Framework for Investigating Blended Learning Effectiveness. *Education and Training*, 55(2/3), 233-251.

- [39] Yilmaz, R. (2017). Exploring the Role of E-Learning Readiness on Student Satisfaction and Motivation in Flipped Classroom. *Computers in Human Behavior*, 70, 251–260.
<http://doi.org/10.1016/j.chb.2016.12.085>
- [40] Zainol, Z., MohdZahari, M.O.I., Mazlan, M.H., & Abdul Kadir@Mohamad Shah, H. (2018). Digital Disruption in Higher Learning Education: The Implementation of Blended Learning For Undergraduate. *Global Business and Management Research: An International Journal*, 10(3), 579-588.