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Readiness, acceptance, and social presence in full online learning

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Abstract: This study aimed to examine the effect of lecturer readiness in online learning on the acceptance of lecturers in online learning applications, and the effect of lecturer acceptance in online learning applications on the lecturer's perception of social presence. The subjects of this study were the lecturers at the Faculty of Economics, Universitas Negeri Medan which was taken by a total sampling technique. This study used a survey method with electronic questionnaires to collect data. Of the 113 lecturers, 81 responses were returned, and there were two incomplete questionnaires. This study had 79 responses that met the requirements of the analysis. The data were analyzed using Variance-based SEM. The results of the data analysis indicate that perceived usefulness is a critical variable in getting social presence in online learning. Meanwhile, the readiness of lecturers in online learning is an essential antecedent of the acceptance of the use of online learning applications.

Keywords: *online learning, social presence, MOOC*

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INTRODUCTION

The use of information technology (IT) in learning in higher education has been researched and implemented for a long time. Various studies have reported the effectiveness of using IT in improving the quality of learning. Interestingly, due to the Covid-19 pandemic, IT mediation has become immensely dominant, as it completely replaces the full time face-to-face classroom meetings (Hardini, Setyarini, & Harto, 2021; Sagala, Hasibuan, & Suharianto, 2021; Siswanto, Kartanegara, & Chuan, 2021). Nevertheless, online learning remains a different concept from the IT-integrated approach aimed to optimize learning. A full-time online learning method has long been known with the term "massive online open course (MOOC)". In its development, studies related to MOOC show struggles in the method, including low student participation and involvement in the learning activities which lead to frustrations due to their inability to achieve the learning outcomes (Bonifacio, 2013; Dumford & Miller, 2018; Hamann, Pollock, & Wilson, 2012; Hayashi, Garcia, & Maddawin, 2020; Mayende, Prinz, Isabwe, & Muyinda, 2017; Swan & Shih, 2005). It is suspected that low participation and involvement is affected by low social presence among students and lecturers in online learning (Cobb, 2009; Nurharjanto & Widyantoro, 2020; Swan & Shih, 2005). Social presence serves an important variable in learning because the notion of physical presence in a social environment may provide the necessary pressure to study, as well as generate fruitful two-way communication responses, recognition of one's existence and their knowledge, and the learning satisfaction due to the growth or development of knowledge (Lave & Wenger, 1991; Swan & Shih, 2005; Vygotsky, 1978). On the other

hand, online learning itself is by nature vulnerable to low social presence due to interactions mediated by electronic devices. In addition, researchers and education experts also argue that the sensation of learning in the classroom cannot be replaced by IT-mediated learning (Arends, 2006; Roehl, Reddy, & Shannon, 2013) due to the emotional element in learning activities that make student-teacher interaction an important part in learning.

Issues of online learning become even more complex in developing countries as the limitations in access to infrastructures as well as IT literacy contribute to the increasing occurrences of awkwardness in using IT in learning (Effiyanti & Sagala, 2018). Essentially, there are a number of variables that may influence the success of individuals or organizations in managing information technology for learning activities, such as acceptance and attitude toward IT, the organization's capacity to absorb, the availability of infrastructure, IT-alignment, the individuals' readiness to shift toward IT-based work culture, as well as the availability of literature and references on best practices of using IT in learning (Effiyanti & Sagala, 2018; Sagala, Zainal, & Effiyanti, 2017; Sagala, Hasibuan, *el al*., 2021).

Previous research findings indicate that the attitude of educators in Indonesia is in fact quite open to accepting the demands of learning innovation through using IT (Budiyani & Sujarwo, 2020; Damayanti, Santyasa, & Sudiatmika, 2020; Fauziyah & Triyono, 2020; Sagala, Zainal *et al*., 2017; Sagala, Hasibuan, 2021). At the higher education level, the Ministry of Education and Culture of the Republic of Indonesia published the Guidelines for the Implementation of Learning in the Even Semester of 2020 in Higher Education (Ministry of Education and Culture, 2020). Previously, the Ministry of Research, Technology, and Higher Education of the Republic of Indonesia had also published the Guidelines for the Development of Higher Education Curriculum in the 4.0 Industrial Era (Ministry of Research, Technology, and Higher Education, 2018). Therefore, higher education institutions have in fact had basic references for online learning implementation. In addition, the accessibility or availability of IT-supporting infrastructures at the higher education level are generally adequate. In general, every lecturer has owned and used a computer and a mobile device to support the implementation of the higher education objectives as academic personnel, as well as the development of research on educational technology at the higher education level, especially at teacher training colleges. In regard to this, Traxler (2007) suggests that higher education tends to have better readiness for IT integration in academic programs due to better availability of infrastructures and accessibility to knowledge. Further, Sagala, Hasibuan, *et al*. (2021) similarly find that the readiness of higher education teaching staff for online learning is quite adequate, despite a few technical problems during the early process of shifting to a new learning mode.

Nevertheless, these studies have yet to examine whether the attitude of educators toward IT is associated with their readiness in delivering online learning and its impact on social presence in online learning. Meanwhile, online learning during the Covid-19 pandemic has the opportunity to create a model that is different from the IT-integrated learning situation in face-to-face classroom meetings. The state of full-time online learning has caused social interaction to be limited and indirect (Cobb, 2009). Indirect social interaction has a risk of reducing social presence in the learning process (Cobb, 2009; Leh, 2001; Naciri, Baba, Achbani, & Kharbach, 2020). Meanwhile, social presence is a key instrument in student participation in learning (McGuinness & Fulton, 2019; Neamtu, 2013). Therefore, this study attempted to explore further the readiness and acceptance responses among university

lecturers to full-time online learning and its impact on the social presence sensation that they experience.

IT acceptance in online learning can reflect the self-efficacy of IT users in using IT (Davis, 1989; Effiyanti & Sagala, 2018). Acceptance of information system is formed by the cognitive belief within the the individuals which results in the way they perceive information technology as useful (perceived usefulness), easy (perceived ease of use), and enjoyable (perceived enjoyment) when being used (Davis, 1989; Venkatesh & Davis, 2000). The cognitive belief serves as the assumption in Technology Acceptance Model (TAM) in proxy with the self efficacy construct based on the Social Cognitive Theory (Bandura, 2001; Davis, 1989; Davis, Bagozzi, & Warshaw, 1989).

This suggests that when examining how well an IT application is received by its users, TAM requires that the users be individuals with computer self-efficacy. Therefore, in certain conditions, the TAM construct can even reflect one's attitude toward the use of IT. In online learning practices, using the TAM construct is beneficial to examine an educator's attitude in using IT for learning (Effiyanti & Sagala, 2018). The attitude toward IT certainly indicates the educator's capabilities in online learning, in which learning is fully mediated by IT (Effiyanti & Sagala, 2018). Further, the lecturers' readiness to integrate IT in their academic activities becomes key to the readiness and success of higher education institutions in online learning (Lu & Price, 2018; Petko, Prasse, & Cantieni, 2018). Meanwhile, the lecturers' belief in their personal capabilities (personal belief) is also instrumental in their readiness for online learning (Lu & Price, 2018; Petko *et al*., 2018; Sagala, Hasibuan *et al*., 2021). In this case, personal belief serves as the indicator of cognitive belief of IT users personally and the proxy of lecturer readiness in online learning (Cheon, Lee, Crooks, & Song, 2012). The belief helps lecturers to be more prepared in facing various challenges that may emerge during the process of shifting to the online platform, which allows their attitude to be more accepting of the use of various IT tools, whether software or hardware, in online learning. This becomes crucial as learning activities are complex, which means that the shifting process requires adaptations and adjustments, despite the lecturers having good technology literacy, as well as guidelines for online learning and sufficient IT infrastructures (Demuyakor, 2020; Sandars *et al*., 2020). There is a pedagogical aspect that is dynamic and constantly developing in the online learning implementation, especially the issue of social presence as mentioned in the early paragraphs. This condition requires the instructor's personal belief that they are ready to implement online learning (Sagala, Hasibuan *et al*., 2021). Therefore, personal belief is believed to be an important antecedent in forming the acceptance of online learning implementation which further impacts the sustainability of social presence in online learning.

In order to obtain an empirical perspective on the readiness of university lecturers and their acceptance in online learning which influence the social presence in online learning, this study aims to examine the effect of lecturer readiness for online learning on the lecturer acceptance of online learning applications and the effect of lecturer acceptance of online learning applications on their perceived social presence. This study adapts the information system acceptance model developed by Venkatesh (2000) and the readiness for using mobile learning as studied by Cheon *et al*. (2012). However, this study is designed in a simpler construct framework by referring to parsimony. This study is imperative for educators and higher education institutions in determining the appropriate online learning design. IT should

not be viewed as the only solution to learning innovation, especially for the post-Covid-19 world. There are more prominent variables in preparing effective learning, such as the lecturers' competency in creating meaningful social interaction in learning. The attainment of meaningful learning sensation becomes a key issue in learning that is irreplaceable even in online learning.

METHOD

This study is a quantitative study with a survey method. The research subjects were lecturers at the Faculty of Economics of Medan State University. Among 113 active lecturers at the Faculty of Economics of Medan State University, 81 responses were obtained, with 79 of them filled out completely. The total sampling technique was used to obtain appropriate responses in representing the lecturers' perceptions on the implementation of online learning (Cooper, Schindler, & Sun, 2006).

In summary, the sample demographics can be seen in Table 1, which consists of 54.4% male. Based on the education background, 81.0% have a master's education, whereas 19.0% have a doctoral degree. Furthermore, 46.8% have participated in the dissemination and training of using LMS, whereas 53.2 % never participated in such training. Based on the demographic figures of the sample, the composition of the sample in this study is relatively heterogeneous with an even gender distribution, with representations from every level of education, and an even distribution of LMS training experience. The demographics of the sample can be seen in Table 1.

Table 1. Sample demographics

Demographics Variable		n	%
Gender			
	Male	43	54.4%
	Female	36	45.6%
		79	
Education Background			
	Master's	64	81.0%
	Doctoral	15	19.0%
		79	
Attended LMS dissemination and training			
	Yes	37	46.8%
	No	42	53.2%
		79	

Data in this study were collected by questionnaires with a 5-point Likert scale. The research instruments were adapted from former studies. The instrument for the variable of attitude toward using IT (Davis *et al*., 1989; Venkatesh & Davis, 1996), whereas the readiness for IT integration variable (Cheon *et al*., 2012), and the instrument for the social presence variable (Swan & Shih, 2005).

The data collected was then tabulated and then analyzed using a variance-based structural equation model with the help of the SEM-PLS application. This study used variance-based SEM due to the limited amount of data in the structural model analysis. In this case, SEM-

PLS is able to analyze the structural model in a reliable way despite a limited number of samples (Bollen, 1989; Thatcher & Perrewe, 2002).

Prior to conducting the structural model analysis, first an analysis of the outer model must be done. It refers to the validity analysis of the constructs which form the structural model (Hair, Black, Babin, & Anderson, 2009). Construct validity is done in three stages, namely convergent validity, discriminant validity, and reliability (Hair *et al*., 2009). Convergent validity is examined by observing the loading factor number of each item in the latent variables. Critical score of each loading factor is >0.7 (Hair *et al*., 2009). Based on the critical score indicator, there are three items dropped from the readiness for IT integration construct, namely item IR 3 and IR 8, as well as item PEU3 from the PEU construct. Items of other constructs have met the convergent validity criteria.

For the discriminant validity test, this study used the Fornell and Larcker criteria (1981). The analysis process with this criteria is done by inputting the root value of average variance extracted (AVE) into the correlational matrix diagonally. This number is then observed and compared to the correlation coefficient values below it (Fornell & Larcker, 1981). If the root value of the AVE is bigger than other correlation coefficient values in the correlation matrix, the constructs meet the discriminant validity criteria. Based on the criteria, all constructs in this study have met the discriminant validity followed by the construct reliability test. The construct reliability test is done by observing the results of Composite Reliability (CR) and Cronbach's Alpha (CA) tests. If the results of the CR and CA calculations >0.8, the construct meets the reliability criteria (Hair *et al*., 2009). As shown in Table 2, the results of discriminant validity test and reliability test indicate that each construct has met the construct reliability (Table 3).

FINDING AND DISCUSSION

The analysis of research data used the variant-based SEM. The result of tests can be observed in Figure 1 and Table 4. SEM Analysis aims to test the first and second research objectives. The significance of the effect was tested by reviewing the t-statistics critical score of >1.96 and p-value with a critical score of <0.05. The results of tests show that the readiness for online learning has a significantly positive effect on the acceptance of online learning applications. Moreover, the positive effect of online learning readiness on perceived usefulness is significant with a path coefficient of 0.658 and a p-value of 0.000 (α=5%), while the positive effect on perceived ease of use is significant with a path coefficient of 0.169 and a p-value of 0.085 (α= 10%), and the positive effect on perceived enjoyment is significant with a path coefficient of 0.745 and a p-value of 0.000 (α=5%). Based on the path coefficient values, online learning readiness has a very high effect on perceived usefulness and perceived enjoyment, while its effect on perceived ease of use is relatively weak. This finding strengthens the findings of previous studies on how normative belief, which represents individual readiness to use IT in productive work, plays an important role in shaping the attitude towards IT acceptance (Cheon *et al*., 2012; Dray, Lowenthal, Miszkiewicz, Ruiz-Primo, & Marczynski, 2011; Park, Nam, & Cha, 2012).

Referring to the TAM construction (Davis, 1989; Davis *et al*., 1989), the attitude of users to adopt certain IT tools is formed by the users' pre-existing normative beliefs. In this case, Cheon *et al*. (2012) represents this notion with the variable of readiness to use to measure the normative belief. Lecturers with readiness to use IT in learning will experience the benefits of using a learning management system (LMS) and subsequently the attitude of acceptance

Table 2. Cross-loading (Convergent validity)

Items	Perceived Ease of Use	Perceived Enjoyment	Perceived Usefulness	Readiness for Online Learning	Social Presence
IR1				0.848	
IR2				0.798	
IR4				0.855	
IR5				0.739	
IR6				0.733	
IR7				0.813	
IR9				0.781	
IR10				0.753	
PE1		0.861			
PE2		0.920			
PE3		0.868			
PE4		0.841			
PE5		0.843			
PEU1	0.865				
PEU2	0.859				
PEU4	0.841				
PEU5	0.846				
PEU6	0.916				
PU1			0.903		
PU2			0.892		
PU3			0.917		
PU4			0.881		
PU5			0.921		
SP1					0.792
SP2					0.826
SP3					0.799
SP4					0.781
SP5					0.795
SP6					0.839
SP7					0.768
SP8					0.790

Table 3. Discriminant validity and construct reliability

No.	Variable	CA	CR	AVE	PEU	PE	PU	RI	SP
1.	Social Presence	0.919	0.934	0.639	0.799				
2.	Readiness for Online Learning	0.914	0.930	0.626	0.543	0.791			
3.	Perceived Ease of Use	0.916	0.937	0.750	0.523	0.709	0.866		
4.	Perceived Enjoyment	0.917	0.938	0.752	0.543	0.745	0.850	0.867	
5.	Perceived Usefulness	0.943	0.957	0.815	0.649	0.658	0.784	0.769	0.903

Figure 1. Test result of structural equation model

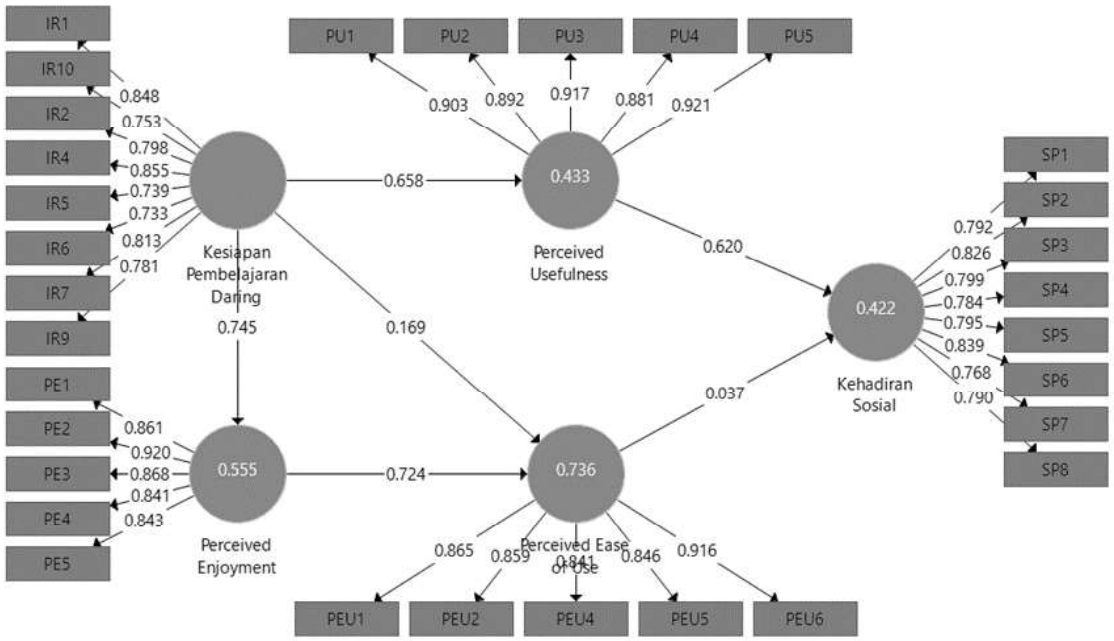

Table 4. Test result of structural equation model

No.	Path	Coef.	t-stat	p-value	Result
1.	Readiness for Online Learning → Perceived Usefulness	0.658	6.759	0.000**	Supported
2.	Readiness for Online Learning → Perceived Ease of Use	0.169	1.724	0.085*	Supported
3.	Readiness for Online Learning → Perceived Enjoyment	0.745	8.202	0.000**	Supported
4.	Perceived Enjoyment → Perceived Ease of Use	0.724	8.762	0.000**	Supported
5.	Perceived Usefulness → Social Presence	0.620	4.026	0.000**	Supported
6.	Perceived Ease of Use → Social Presence	0.037	0.209	0.835	Not Supported

and adoption to support the learning process and create meaningful online learning (Cheon *et al*., 2012; Lu & Price, 2018).

In this case, lecturers are assumed as individuals with good technology literacy. This assumption is built from learning activities that have been long integrated with technology. However, when the data were collected, the learning format has transformed into full-time online learning. Therefore, the lecturers' perceived readiness in dealing with full-time online learning becomes an important phenomenon to observe. The confirmation on the proficiency level of the literacy can be observed based on the normative belief of the lecturers' computer literacy (Cheon *et al*., 2012). Those who believe in their computer competencies will certainly view themselves as ready to implement full-time online learning (Cheon *et al*., 2012). This

perceived readiness is what subsequently serves as the early thinking foundation for a lecturer in forming their attitude to applications that may be used in full-time online learning. Such an attitude becomes important as it will form acceptance of online learning (Davis, 1989; Davis *et al*., 1989; Venkatesh & Davis, 2000). This acceptance will in turn create a learning sensation in online learning, namely a learning process that is able to generate social interaction in learning to reproduce a sense of social presence typically experienced in face-to-face learning in the classroom (Swan & Shih, 2005; Tu & McIsaac, 2002).

In this regard, in the field of education, the perceived usefulness and perceived ease of use constructs have long been studied and found to be feasible to determine the acceptance of using e-learning and mobile learning (Cheon *et al*., 2012; Park, 2009; Park *et al*., 2012; Widhiastuti & Yulianto, 2017). Many studies have consistently reported that both perceived usefulness and perceived ease of use are associated with perceived acceptance, whereas perceived enjoyment is found to be an important antecedent of perceived ease of use (Venkatesh & Davis, 2000). The lecturers' readiness to implement online learning will lead them to accept and experience the benefits of online learning applications, such as the LMS application, virtual conference applications, learning videos, games, e-modules, etc. Their readiness will also instill the perception that an application will be good to use as it assists the online learning process and subsequently generates the perception that the learning application is easy to use. These positive perceptions will lead to acceptance to the use of information systems in full-time online learning.

Further, perceived usefulness has a significantly positive effect on the lecturers' perceived social presence with a path coefficient of 0.620 and p-value of 0.000 (α=5%). However, perceived ease of use does not have a significant effect on the lecturers' perceived social presence with a path coefficient of 0.037 and p-value of 0.835. This finding is quite unique and different from previous findings. In this study, the endogenous variable examined is highly specific, namely social presence. By specific, it means that the variable is not necessarily the action of using IT, but more than that, namely the use of IT that can generate the sense of social presence in online learning. This study does not use the intention of use as variable because the use of online learning applications during the data collection of the research is mandatory. As a result, the critical point of the application of online learning is not in the intention of use of the online learning applications, but the social interaction value that occurs in the online learning process.

Based on the perspective of online learning assignment criteria, the use of IT in this aspect is for utilitarian purposes (Sagala & Sumiyana, 2020). Therefore, it is accurate to assume that the users' tendency in achieving certain learning quality is built by the perceived attitude of whether the system is useful to create meaningful learning or not. If a lecturer views an online learning application as useful in generating the type of learning they are expecting, they will be able to stimulate the occurrence of good social interaction in online learning which can lead to the formation of the lecturers' perceived social presence of the students. On the contrary, the perceived ease of use of online learning applications indeed supports the use of applications for utilitarian purposes (Venkatesh & Agarwal, 2006; Venkatesh & Davis, 1996). The emphasis of perceived ease of use is to optimize the acceptance of an information system (Venkatesh & Agarwal, 2006). In a mandatory information system, the ease of use no longer serves as a dominant variable because the users cannot refuse the information system. Moreover, in the case with information system users with good IT literacy, it is possible

that ease of use is not a variable that is given a lot of attention by users. The findings of this study indicate this notion through the lack of effect that the online learning readiness has on the perceived ease of use, and the lack of effect that perceived use has on the social presence perceived by lecturers. In mandatory online learning, it is assumed that lecturers give all their attention to the usefulness of an online learning information system to create quality learning. Therefore, social presence can be generated from information systems that can provide such benefits.

CONCLUSION

The research findings show that lecturer readiness for online learning has an important role in the perceived usefulness and enjoyment in using online learning applications. The key variable that generates the lecturers' perceived social presence is perceived usefulness, whereas perceived ease of use does not play a role in creating perceived social presence among lecturers. Therefore, perceived usefulness is the variable that must be given special attention in order to create meaningful online learning.

The results of this study has an implication on the design of the learning information system, which must be developed in particular ways in order to facilitate the success of implementation of various learning programs. Moreover, lecturers must possess pedagogical capability and competency that are oriented to the use of online platforms. This competency is necessary to stimulate students to participate actively in the online class in order to generate good social presence perceived by both the lecturers and students. A lecturer's capability and competency represents their readiness in implementing online learning.

This study recommends higher education institutions to develop the lecturers' capabilities and competencies in managing various online learning applications in order to build their readiness in delivering learning in the digital age, especially the full-time online learning that serves as a learning alternative during the Covid-19 pandemic and/or blended learning, which may be implemented post-Covid-19. Further, higher education institutions must also evaluate the design of the learning application by putting the emphasis on the usefulness in the learning implementation holistically which allows the use of various learning features. Lastly, future studies may develop online learning design or technology-integrated learning that can generate quality social interaction so that students may experience a meaningful learning process.

REFERENCES

Arends, R. I. (2006). *Learning to teach: Belajar untuk mengajar*. Pustaka Pelajar.

Bandura, A. (2001). Social cognitive theory: An agentic perspective. *Annual Review of Psychology*, *52*(1), 1-26.

Bollen, K. A. (1989). *Structural equations with latent variables Wiley*. John Wiley & Sons, Inc.

Bonifacio, A. L. (2013, June 16-19). *Developing Information Communication Technology (ICT) curriculum standards for K-12 schools in the Philippines*. The Sixth Conference of MIT's Learning International Networks Consortium (LINC), MIT, Cambridge, Massachusetts, USA.

Budiyani, W., & Sujarwo, S. (2020). Interactive learning multimedia: Enhancing vocabulary mastery for junior high school students. *Jurnal Kependidikan: Penelitian Inovasi Pembelajaran*, *4*(2), 295-307.

Cheon, J., Lee, S., Crooks, S. M., & Song, J. (2012). An investigation of mobile learning readiness in higher education based on the theory of planned behavior. *Computers & Education*, *59*(3), 1054-1064.

Cobb, S. C. (2009). Social presence and online learning: A current view from a research perspective. *Journal of Interactive Online Learning*, *8*(3).

Cooper, D. R., Schindler, P. S., & Sun, J. (2006). *Business research method*. McGraw-Hill.

Damayanti, S. A., Santyasa, I. W., & Sudiatmika, A. (2020). Pengaruh model problem based learning dengan flipped classroom terhadap kemampuan berfikir kreatif. *Jurnal Kependidikan Penelitian Inovasi Pembelajaran*, *4*(1), 83-98.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319-340.

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.

Demuyakor, J. (2020). Coronavirus (COVID-19) and online learning in higher institutions of education: A survey of the perceptions of Ghanaian international students in China. *Online Journal of Communication and Media Technologies*, *10*(3), e202018.

Dray, B. J., Lowenthal, P. R., Miszkiewicz, M. J., Ruiz-Primo, M. A., & Marczynski, K. (2011). Developing an instrument to assess student readiness for online learning: A validation study. *Distance Education*, *32*(1), 29–47.

Dumford, A. D., & Miller, A. L. (2018). Online learning in higher education: exploring advantages and disadvantages for engagement. *Journal of Computing in Higher Education*, *30*(3), 452–465.

Effiyanti, T., & Sagala, G. H. (2018). Technostress among teachers: A confirmation of its stressors and antecedent. *International Journal of Education Economics and Development*, *9*(2), 134-148.

Fauziyah, S., & Triyono, M. B. (2020). Pengaruh e-learning edmodo dengan model blended learning terhadap minat belajar. *Jurnal Pendidikan*, *4*(1), 112-124.

Fornell, C., & Larcker, D. F. (1981). *Structural equation models with unobservable variables and measurement error: Algebra and statistics*. Sage Publications Sage CA.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2009). *Multivariate Data Analysis 7th Edition Pearson Prentice Hall*. JOUR.

Hamann, K., Pollock, P. H., & Wilson, B. M. (2012). Assessing student perceptions of the benefits of discussions in small-group, large-class, and online learning contexts. *College Teaching*, *60*(2), 65-75.

Hardini, T. I., Setyarini, S., & Harto, S. (2021). Remote learning implemented by bipa teachers during Covid-19 pandemic. *Jurnal Kependidikan: Penelitian Inovasi Pembelajaran*, *5*(1).

Hayashi, R., Garcia, M., & Maddawin, A. (2020). *Online learning in Sri Lanka's higher education institutions during the COVID-19 pandemic*. Asian Development Bank.

Kemendikbud. (2020). *Kemendikbud Terbitkan Pedoman Penyelenggaraan Belajar dari Rumah.* https://www.kemdikbud.go.id/main/blog/2020/05/kemendikbud-terbitkan-pedoman-penyelenggaraan-belajar-dari-rumah

Kemenristekdikti, D. J. P. dan K. (2018). *Panduan Penyusunan Kurikulum Pendidikan Tinggi di Era Industri 4.0-Dirjen Belmawa- Ristekdikti*. Dirjen Belmawa-Kemenristekdikti.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge university press.

Leh, A. S. C. (2001). Computer-mediated communication and social presence in a distance learning environment. *International Journal of Educational Telecommunications*, *7*(2), 109-128.

Lu, J., & Price, J. (2018). Chinese students' ICT readiness for a blended teaching and learning environment. *Eurasia Journal of Mathematics, Science and Technology Education*, *14*(7), 2907-2914.

Mayende, G., Prinz, A., Isabwe, G. M. N., & Muyinda, P. B. (2017). Learning groups in MOOCs: Lessons for online learning in higher education. *International Journal of Engineering Pedagogy (iJEP)*, *7*(2), 109-124. https://doi.org/10.3991/ijep.v7i2.6925

McGuinness, C., & Fulton, C. (2019). Digital literacy in higher education: A case study of student engagement with e-tutorials using blended learning. *Journal of Information Technology Education: Innovations in Practice*, *18*, 1-28.

Naciri, A., Baba, M. A., Achbani, A., & Kharbach, A. (2020). Mobile learning in Higher education: Unavoidable alternative during COVID-19. *Aquademia*, *4*(1), ep20016.

Neamtu, R. (2013). The classroom as an extension of our society: Empowering students through technology in service learning to bridge the global digital divide. *Procedia - Social and Behavioral Sciences*, *106*, 2636-2644. https://doi.org/10.1016/j.sbspro.2013.12.304.

Nurharjanto, A. A., & Widyantoro, A. (2020). The effect of students'language learning strategy and use of technology in their productive skills'performance. *Jurnal Kependidikan: Penelitian Inovasi Pembelajaran*, *4*(2), 213-225.

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.

Park, S. Y., Nam, M.-W., & Cha, S.-B. (2012). University students' behavioral intention to use mobile learning: Evaluating the technology acceptance model. *British Journal of Educational Technology*, *43*(4), 592-605.

Petko, D., Prasse, D., & Cantieni, A. (2018). The interplay of school readiness and teacher readiness for educational technology integration: A structural equation model. *Computers in the Schools*, *35*(1), 1-18.

Roehl, A., Reddy, S. L., & Shannon, G. J. (2013). The flipped classroom: An opportunity to engage millennial students through active learning strategies. *Journal of Family \& Consumer Sciences*, *105*(2), 44-49.

Sagala, G. H., Hasibuan, A. F., & Suharianto, J. (2021, June). Readiness to implement digital learning. In 6th Padang International Conference on Economics Education, Economics, Business and Management, Accounting and Entrepreneurship (PICEEBA 2020) (pp. 331-338). Atlantis Press.

Sagala, G. H., & Sumiyana. (2020). The intersection of hedonic and utilitarian values on integrated-social media retailers. *International Journal of Business Information Systems*, *33*(4), 505–530.

Sagala, G. H., Zainal, A., & Effiyanti, T. (2017). Attitude toward computer-based statistics among pre-service teacher candidates. *Proceedings of MAC*, *366*.

Sandars, J., Correia, R., Dankbaar, M., de Jong, P., Goh, P.-S., Hege, I., Masters, K., Oh, S.-Y., Patel, R., Premkumar, K., Webb, A., & Pusic, M. (2020). Twelve tips for rapidly migrating to online learning during the COVID-19 pandemic. *MedEdPublish*, 3068.

Siswanto, S., Kartanegara, M. A. R., & Chuan, L. S. (2021). Pengaruh penerapan asynchronous learning dan motivasi belajar terhadap hasil belajar. *Jurnal Kependidikan: Penelitian Inovasi Pembelajaran*, *5*(1).

Swan, K., & Shih, L. F. (2005). On the nature and development of social presence in online course discussions. *Journal of Asynchronous Learning Networks*, *9*(3), 115-136.

Thatcher, J. B., & Perrewe, P. L. (2002). An empirical examination of individual traits as antecedents to computer anxiety and computer self-efficacy. *MIS Quarterly*, 381-396.

Traxler, J. (2007). Defining, discussing and evaluating mobile learning: The moving finger writes and having write. *The International Review of Research in Open and Distributed Learning*, *8*(2).

Tu, C. H., & McIsaac, M. (2002). The relationship of social presence and interaction in online classes. *International Journal of Phytoremediation*, *21*(1), 131-150. https://doi.org/10.1207/S15389286AJDE1603_2.

Venkatesh, V., & Agarwal, R. (2006). Turning visitors into customers: A usability-centric perspective on purchase behavior in electronic channels. *Management Science*, *52*(3), 367-382.

Venkatesh, V., & Davis, F. D. (1996). A model of the antecedents of perceived ease of use: Development and test. *Decision Sciences*, *27*(3), 451-481.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, *46*(2), 186-204.

Vygotsky, L. S. (1978). Socio-cultural theory. *Mind in Society*, *6*, 52-58.

Widhiastuti, R., & Yulianto, A. (2017). Analysis of technology acceptance model in understanding of students behavior intention in use of Sikadu. *Dinamika Pendidikan*, *12*(1), 20-27.