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# PREPARING FOR NEW LEARNING: PUBLIC VOCATIONAL HIGH SCHOOL STUDENTS' AND TEACHERS' E-LEARNING READINESS IN THE EFL INSTRUCTION

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## Abstract
This study aimed to find out 1) the e-learning readiness level of students and teachers in Public Vocational High School Singaraja and 2) factors affecting teachers' and students' e-learning readiness level of Public Vocational High School Singaraja. It designed using mixed method through survey instrument consists of 3 dimensions (e-learning readiness, e-learning acceptance, e-learning training) and interview guide. The instruments validated by the experts and gained 0.666 from 70 students' sample and 0.231 from 7 teachers' sample. The reliability was 0.988 > 0.666 of 35 items and 0.933 > 0.231 of 38 items. The survey filled by 410 students and 15 English teachers meanwhile the interview answered by 10 students and 5 English teachers. The questionnaires showed they still need few improvements meanwhile interview results shown their e-learning readiness affected by features, benefits, challenges, familiarity, experience and personal innovativeness. Those results showing that e-learning benefits improve their readiness meanwhile e-learning challenges could lower the users' readiness. It is considered to improve their readiness by reducing e-learning challenges to create comfortable e-learning access.

Keywords: e-learning, e-learning readiness, vocational school

## Introduction
English is a language that is used to communicate internationally, making it significant in the global context Luke et al., (2008). It found that English is important to be mastered by people in the world including the students in Schools. This COVID-19 situation made almost all of educational institution shut down A. Y. Alqahtani, Rajkhan, (2020). But students' education needs to be given continuously. It was supported by the preliminary research found by the researcher that e-learning is important to be considered. There was an imbalance between the increasing of English material in 2013 curriculum and minimize time allocation given to the teachers which is only 2 hours per week in Public Vocational High Schools Singaraja. E-learning considered as the solution to help the teachers

lengthen time allocation for teaching English material. E-learning considered to be able to fulfil this situation because it could improve education in creating new learning environment via virtual class Anjana, (2018). Thus, in order to achieve the better e-learning results, it considered to find out the users' readiness toward E-learning before implementing it with the scoop of study were students and teachers as E-learning users in the schools. As the other purpose of study was improving teachers and student's quality in accessing e-learning, the consideration to find out factors that could affect their readiness needed to make a better preparation for further e-learning implementation.

## Literature Review

There were some explanation about e-learning, as it stated by Haythornthwaite, Caroline; Andrews, (2011) that E-learning is a transformative movement in learning in which the prefix 'e' stands for an emerging area of research and e-science that provides artifacts or anecdotes, which could be captured through mobile technology (Aubusson, Schuck, Burden, 2009). The use of online learning media through learning management systems and management systems is suitable as the alternative for distance problems (Wicaksono, Florentinus, Ahmadi, 2020). As it found that the equipment which needed to conduct E-learning are communication devices (ex. PC, Laptop, Mobile devices, CDs or DVDs), internet connection and e-learning software or LMS (ex. Moodle, Skype) (Nugroho, Hidayati, & Suwawi, 2014).

The system features on LMS or other Online learning platforms would help the distance teaching and learning process goes better (Chao et al., 2015). One of the features that importantly needed is discussion features to make the students and teachers easier to communicate in distance (Sumarwati et al., 2020), it makes users be able to cooperate with groups in the teaching and learning activities and engage in knowledge in sharing information (Yilmaz, 2017), therefore the discussion section will make users' active level can be seen, thus the use of Facebook as one of learning platform that provides discussion feature accepted by the society (Giannikas, 2020). It was added that E-learning method features could also be utilized to document all the scripts produced by the students (Rahmawati, Suwandi, Saddhono, Setiawan, 2019).

E-learning is the online method of learning where flexibility is one of its benefits (Anjana, 2018), it provides dynamic management of e-learning allows class managers to accepts new students that make the students could join and leave the classes flexibly (De Meo, Messina, Rosaci, Sarné, 2017), minimized access time and place (Li & Wong, 2018), it is effectively for working used in every place that has an internet connection (Ajegbomogun, Okunlaya, Alawiye, 2017). It provides more flexibility and freedom such as; physical presence, hectic and stressful teaching, and learning (Naveed, Muhammed, Sanober, Qureshi, Shah, 2017). It was added by Lin, Yu, Su, Fu, Lin, (2019) that the e-learning platform was practical because it brings solution of a low-cost learning method, redundancy of information can be recovered again by searching on the specific sources as if it has accidentally deleted, and having the feature which could provide phonograph records (Anjana, 2018), build the students' self-directed learning in which the students get a chance to search to answer the questions or find the information

through the internet by itself (Gehlen-baum , Weinberger, 2012) and it could break the time and space study limitation of offline learning (Zhou, Li, Wu, Zhou, 2020).

The other concern was about e-learning challenges (Kristanto, Mustaji, Mariono, 2017), poor connection is one of the challenges in implementing e-learning (Cheok & Wong, 2014), poor connection would make the users worried in applying e-learning (Daniels, Sarte, Cruz, 2019), the lack of facilities created a gap for the users experiencing it (Chong et al., 2016), it was added by Oluchi S, Christian I,Sebastiant .O, (2019) that underdeveloped facilities affecting e-learning readiness of users, the other focuses were a low bandwidth and poor maintenance (Ajegbomogun et al., 2017). The infrastructure needs to be provided to make the users could cope with the community (Bikram & Jongsu, 2018), thus big-budget needed to facilitate infrastructure of E-learning in which including devices, connectivity and other ICT facilities (Anjana, 2018). Besides the supporting tools to conduct e-learning, some operating system which still being problems for the users, such as; materials' speed not match for them (Hayashi, Chen, Ryan, 2020), limited browsers selection (Freeze, Alshare, Lane, Joseph Wen, 2010), hard for the students understanding the material given on the E-learning platform (Gehlen-baum, Weinberger, 2012) etc. The other challenge is the e-learning users were feeling anxious in operating because of difficulties they found (Karkar, Fatlawi, Al-Jobour, 2020), their difficulties in operating e-learning platforms make them choosing Whatsapp application instead of LMS (Tatnall, 2020).

E-learning readiness is measurement intended to rate the E-learning users' opinion and behave when they have to implement E-learning (Adiyarta, Napitupulu, Rahim, Abdullah, Setiawan, 2018),it proposed by Yilmaz, (2017) that the problem of students' satisfaction and motivation influenced by e-learning readiness. It becomes important to encounter a variety of obstacles such as resistance, computer literacy. It investigated whether an institution and its students are psychology and technically prepared to implement E-learning (Coopasami, Knight, Pete, 2017), where the students, teachers, and institutions covered there (Nugroho et al., 2014).

The measurement of e-learning readiness was using Akaslan, Law, (2011) theory that consisted of three dimensions. There was e-learning readiness dimension, acceptance dimension and training dimension with using likert scales to define the scores. Meanwhile the score gained would be compared using the scale of e-learning readiness level measurement figures proposed. This type of measurement would be made the research as quantitative method. But in order to find out the more detail about factors affecting the users' e-learning readiness level, it supposed to add qualitative method in term of interview after the quantitative method has been done.

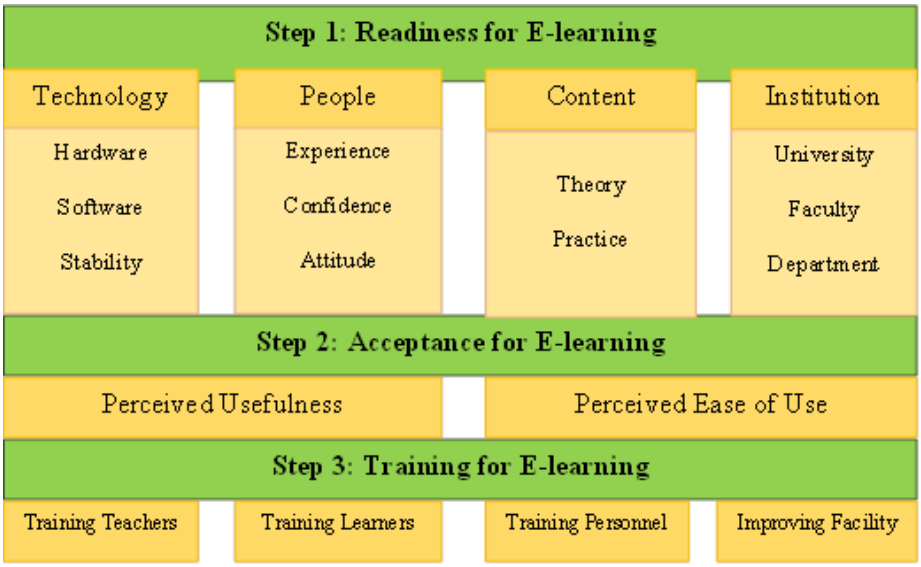



Figure 1. Table of E-learning Readiness Dimension (Akaslan, Law, 2011)

Those three dimensions use to develop the questionnaires to find out the students' and teachers' E-learning Readiness results.

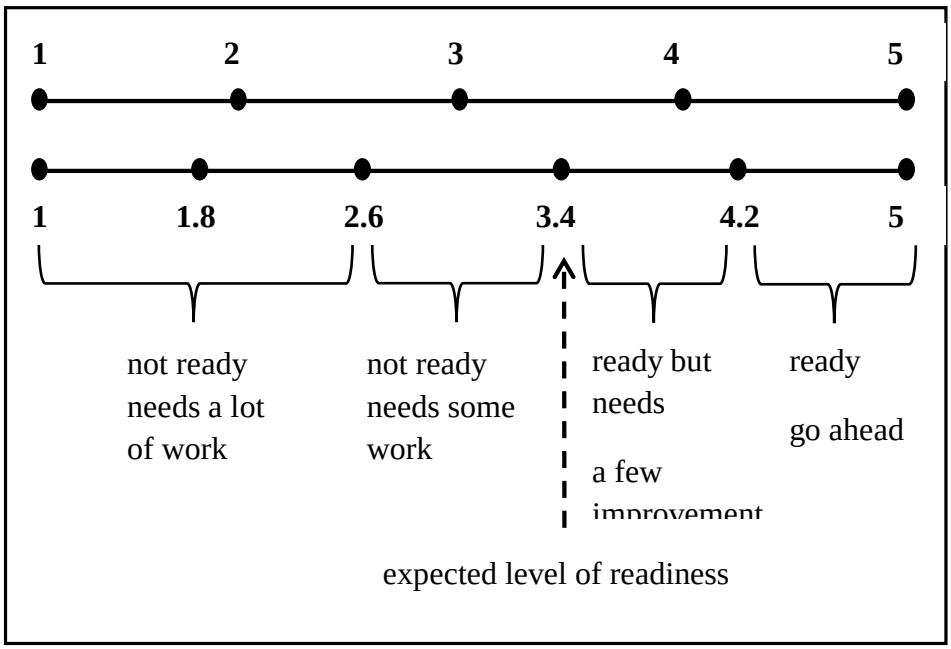



Table of E-learning Readiness Measurement Scales (Akaslan, Law, 2011)

The results of questionnaire given would be analysed using the table above to find which categorize the students' and teachers' of Public Vocational High Schools e-learning readiness belong to.

Familiarity of e-learning is considered affecting e-learning readiness level where lack of user familiarity with e-learning systems resulted users failing to take advantage of the full range of services offered by the e-learning system (Alharbi, Sandhu, 2019), it was stated clearly that familiarity was a major factor influencing their e-learning interface preferences (Bringman-rodenbarger, Hortsch, 2019).

According to Adams, Sumintono, Mohamed, Noor, (2018) someone who is more familiar with e-learning is the person who has a positive belief in technology, thus e-learning is one of the factors that independently affecting system's effectively (Kebekesanan, 2010).

The other factor considered affecting e-learning readiness is users experience (Gubiani, Cristea, Urbanˇ, 2020) the enjoyment in online interaction will make them display reciprocal behaviour (Taylor, Sánchez-franco, Roldán, 2015) because learning experience is when learning occurs as the conclusion of interaction (Talsik, 2015). Thus, more classroom teaching needs to be experienced by the e-learning participants in order to gain successful e-learning results (Rolstadås, 2013).

The other factor is Personal Innovation in which innovative person has high willingness to accept new technology (Olugbara, Imenda, Olugbara, Khuzwayo, 2019), it was supported by Baleghi-zadeh, Fauzi, Ayub, Ehsan, (2019) that personal innovativeness influences beliefs, it can be considered as an external variable. Personal Innovativeness with technology will affect a person's readiness to check new technology informatics (Yousef,Falze, Rabee, 2014),it was added by (Taylor, Al-busaidi, 2013) more users' personal innovativeness (willingness) of students likely to access e-learning will make them easy to find out the usefulness of e-learning, the more willingness to operate technology will make the participants having positive attitude toward e-learning (Fauzi, Ayub, Zaini, Luan, 2017). It was found by Margahana, (2020) that it is important to make sure analysing the antecedents of e-learning adoption in higher education institutions, it is better to re-confirm the effect of personal innovativeness so that it can be used to generalize the findings for further research.

## Method

This research was using sequential explanatory research method. The quantitative method that relied on the survey with deliberating on Akaslan, Law, (2011) survey concept. The survey method used to measure students and teachers e-learning readiness. There were 416 from 3511 students and 18 teachers participated to fill this survey. This theory used to measure e-learning readiness level from three dimensions; those are readiness, acceptance and training dimensions that specified the survey statements. The specification was; the statements on e-learning readiness dimension about the users familiarity with e-learning platforms, the statements on acceptance dimension about the way users' would accept e-learning to be implemented and the statements on training dimension about the way of users think of their skills in e-learning whether or not they need to be trained. After the questionnaire results gained, the results compiled to the e-learning readiness measurement scales to find out their e-learning readiness levels. The result reached 3.40 has categorized as 'ready' but need few improvement and 4.50 has categorized as 'ready go ahead'. Those means that the results that only reached 3.40 before 4.50 have been ready but need to be improved in some aspects.

The second method was using interview method which the guidance constructed using the students' and teachers' results on e-learning questionnaire measurement. This additional method needed to find out the factors needed to improve the students' and teachers' e-learning readiness levels. There were 10 students and 5 teachers participated in answering this interview sections. They

asked to answer the detailed questions about their opinion towards familiarity, experiences, challenge and need in e-learning implementation. The answers gained would be connected with theories, empirical studies and the survey results before in order to find the exact factors affecting the students' and teachers' of Public Vocational High Schools in Singaraja E-learning readiness levels.

**Finding and Discussion**

There were found that the students of Public Vocational High Schools in Singaraja have been reaching ready level of 3 survey dimensions. The results were 3.96 on e-learning readiness dimension which means that the students have been ready but need few improvements in term of their e-learning readiness. From the results there were 3 highest points on E-learning readiness dimensions that reaching above 4.20 which categorized as 'ready, go ahead'. The points were 4.30 for their readiness in using short message application, 4.29 for their readiness in using social media and 4.27 for their readiness in using internet to collect information. Those results proven that the students have been ready with technology and familiar with some technology use to communicate, socialize and collecting information. Meanwhile there were 3 lowest points gained from the survey results but still categorized as 'ready but need few improvements'. The result was 3.44 for their readiness in fixing computer problems, 3.72 for their readiness in implementing E-learning for English lesson and 3.72 for their readiness in implementing E-learning. These results were showing that there were some improvements needed such as students' readiness using computer, make them more familiar with e-learning and try to implement technology to facilitate education.

The other dimension that is acceptance dimension was reaching 3.78 categorized as ready but need few improvements. There were 7 points asked on the survey and every item' result categorized as ready but need few improvements. There were 2 highest results that found connected each other, 3.92 for their readiness in believing that E-learning will improve learning quality and 3.83 for their readiness in believing that E-learning brings benefits. Those results were showing that the students have a high believe on E-learning benefits that could improve their learning quality. Meanwhile there were 2 lowest score gained 3.65 for their readiness in believing their friends will be easy to use E-learning and 3.71 for their readiness in believing that E-learning will be more effective rather than traditional methods. These results shown that not all the students feeling that e-learning platform will be easy to be implemented and they still not sure about the use of e-learning would be more effective rather than traditional method. Thus, some students who were not familiar with e-learning will be very doubt about this platform effectiveness and the way to use it. This could be assumed that the students' experiences in using e-learning need to be improved.

The training dimension was reaching highest result 4.05 but still in term of ready but need few improvements. There were 5 items asked on this dimension and all of them were reaching ready level. The highest score was 4.30 that gained with the statement about internet connection that need to be improved and the lowest score gained 3.84 with a statement about the students need to be trained using E–learning platform. The highest result showed that the students were highly ready to get internet connection in the schools improved. Meanwhile the lowest result stated that the students ready to get trained using e-learning platform whether still need

some improvements. As the survey results written, the students highly need the facilities improvement to make them be able to implement and get training for E-learning.

Thus results show that the students of Public Vocational High Schools Singaraja have been ready with E-learning in term of accepting and training to use the platforms.

The overall teachers result was 3.76 showing that they have been ready with E-learning but still need few improvements. But the detailed result per dimension was fluctuated. Some results on e-learning readiness dimension were below 3.40 categorized as not ready and some results on training dimension were reaching above 4.20 categorized as ready go ahead.

There were 3 highest score results of teachers on e-learning readiness dimensions. There were 4.50 for E-learning implementation in English lesson, this score means that the Teachers have been ready and agree that E-learning need to be implemented on English class. The score 4.28 gained for supporting E-learning implementation in the School means that the teachers want E-learning to be introduced and implemented in Public Vocational High Schools. The other high score 4.11 for could use gadget every time they need. This score means that they have been ready in term of gadget accessibility but still need few improvements.

There were 3 low survey results of teachers on e-learning readiness. The lowest result was 2.67 about the use of e-mail for communicating with the students. Meanwhile another low score, 3.39 was still about using e-mail to communicate with other teachers. These results mean that e-mail was not a favourable platform to be used to communicate between students and teachers of Public Vocational High Schools Singaraja. This could be also stated that they preferred to use mobile based platform to do communication. The other low score was 3.06 about solving computer problems. This found that the teachers still lack of experiences in using computer for further use, so they need guidance to operate in other way.

For the third dimension which is about training the average score were 4.27 which already high enough crossing the ready standard. There were 5 items asked to the teachers of Public Vocational High Schools Singaraja in this training dimension. The highest result was 4.33 for facilities improvements to support E-learning implementation. This result means that the teachers urgently needed support in term of schools' facilities to make this teaching and learning process through E-learning goes well. Meanwhile the lowest score was gained by 2 items, those were 4.22 for E-learning training for the teachers. It delivered that the teachers worried about skill that they have in order to implement E-learning, so the teachers highly need to get training to improve their ability.

The result showed above that the teachers of Public Vocational Singaraja have been ready with E-learning in all dimension but some aspects need to be improved.

The students' and teachers' e-learning readiness were analysed through interview guide that has been found some factors affecting their readiness level.

The first one is about students and teachers' familiarity of e-learning. The students of Public Vocational High Schools in Singaraja stated that;

> *"I know e-learning, I usually use it for opening the material, seeing assignments and module printout"*

That statement reveals that the students' have been familiar with e-learning. They have experienced operating e-learning. The other student has given statement about the e-learning familiarity by stating examples of e-learning platforms;

> *"I have been familiar with e-learning such as Jejak Bali, Edmodo and Schoology"*

That statement makes the terms e-learning familiarity of students stronger.
As it can be found on teachers' interview result, they stated that they have been familiar with e-learning too;

> *"I have been used to access e-learning because nowadays is technology era"*

They added about types of e-learning platforms that they know;

> *"I'm familiar with e-learning such as Quipper, Edmodo and Schoology, but the problem is not all the teachers understand about technology and the students are not ready yet because they are not allowed to bring phones."*

Their statements were showing that the teachers have been familiar with e-learning and had ever accessed it before.

Those results supported by Adams et al., (2018) that the users familiarity with advances tools will increase confidence to be more active on accessing in e-learning, it was reasonable that term of familiarity is a crucial subject that full knowledge of intimacy about something or someone could increase the liking level. The familiarity won't be had by someone who never has observing about that (Sanggarini, 2019). Familiarity gives a sense that e-learning familiarity is an important thing which could affect e-learning interface preference (Bringman-rodenbarger ; Hortsch, 2019), could affect e-learning implementation and achievements (Oluchi S, Ekenze; Christian I, Okafor;Sebastiant .O, 2019).

The other interview results were showing about the students and teachers have positive perception about e-learning as an alternative for holding the lesson. The students agreed that e-learning can be applied in the school as an alternative beside of using conventional learning. The students stated;

> *"I think e-learning can be applied because we can do interaction without being shy and when the teachers can't attend the class, e-learning can be used as the alternatives. It means that e-learning has benefit for students and teachers".*

From that statement can be found that the students positively respond toward the use of e-learning, so that e-learning brings benefits that can replace conventional learning. The other student also stated;

> *"E-learning can be operated on English lesson; it makes learning be easier because it can be accessed from home"*

That statement means that the student has found that no limit of time and place to access e-learning different from conventional learning.

Based on Adams et al., (2018) it was found that increased confidence in e-learning makes the students more likely to recommend e-learning as the teaching and learning alternative, it was supported by Wicaksono et al., (2020), in this era that the students like to use internet services to communicate with the other seems that the use of learning method which integrated with technology (e-learning) can be alternative learning. As it was explained by Hassan, Habiba, Majeed, Shoaib, Hassan, (2019), -learning could cope with underdeveloped countries classrooms.

As it is also found from teachers' results that e-learning could be an alternative to deliver the lesson, it specified in term of e-learning discussion features and e-learning flexibility. There were some statements from the teachers about online discussion feature; one of the statement is;

> *"Of course I use online discussion, chatting, every time I enter the class, I will give them my number so they will be easier for them to ask me when the students find a problem."*

This shown that the teachers were already using the features in order to improve teaching and learning process. The other strong interview result about e-learning as alternative is about e-learning flexibility;

> *"Sometimes the condition makes teaching and learning process can't be done in the school so the students' data can be sent anywhere and every time that makes teaching and learning process can be done easier and faster"*

That statement given by the teachers show that e-learning flexibility could make teaching and learning process was more efficient.

As discussion session seems to be very important to be provided in teaching and learning (Giannikas, 2020), it was found that discussion features on e-learning would be able to create users' interaction (Yilmaz, 2017), it supported Hassan et al., (2019) that using discussion board as an example to share relevant content helps the users in e-learning communication. Thus, e-learning delivers flexibility in improving effectiveness of teaching and learning process through the system (Chong et al., 2016), the other type of flexibility was proposed by De Meo et al., (2017) that e-learning brings location and presence flexibility where the students could enter the class anytime they could make it. Those flexibility of e-learning considered in enhancing the educational quality and satisfy highly diverse participants' needs (Li, Wong, 2018).

The other factor affecting the students' and e-learning readiness level was also found from interview results, that is e-learning practicality. There is a student's statement;

> *"In my opinion, E-learning is practical enough because it will decrease time and learning process, cost and the interesting e-learning media will make the students understand about the lesson"*

It means that the student feels e-learning platform is practical enough to be used. The other student was also stated;

> *"It's practical because we can find out the module there"*

That statement reveals that one of e-learning platform practicality is based on their flexibility to find out the module in the platform.

It has been proposed by Zhou et al., (2020) that one of e-learning benefits is practical, it was added by Lin et al., (2019) e-learning is delivering a practical issue for them because of its online discussion feature. It was proven by the survey results by Inderawati, (2019) that the students e-learning practical level was high.

As those positive statements about e-learning before, there were some issues found by the students and teachers which make their e-learning readiness level not in a very high level. The student stated;

> *"It is hard to log in because sometimes the site would be too much people who accessed it"*

and the other student also stated;

> *"It is hard for me to send the assignment on e-learning platform."*

Those e-learning issues found by the students of Public Vocational High Schools which means there were some problem they need to learn in order to easily accessing e-learning platform. Meanwhile the teacher was also having issues about difficulties in operating e-learning and less experiences of it. There was teacher' statement about the operating issue;

> *"Besides the facilities, there is a need for teacher to master e-learning features for making teaching and learning session easier in the future"*

That statement means that the teachers were having problem in operating e-learning platform whether from the facilities and also mastering the features. The other thing added by another teacher's statement;

> *"I think my e-learning skill need to be improved to follow the technology era because I need to make my technological skill equal with the younger teachers"*

That delivered that the teachers need to learn more about e-learning because the less experience the teacher's had.

There was study found about some e-learning challenges, one of them is about e-learning method was still hard to be used (Karkar et al., 2020), students who accessed e-learning might be struggling when the technical problem happens regarding some of the students which not get in used in operating e-learning (Tatnall, 2020), those technical problems faced by the students is coming from their

lack of access or experience (Daniels et al., 2019), but it was added by Begum, Mahevish, Jabeen, Abdul, (2020) that the supportive learning environment considered in taking a role to affect e-learning result. The other challenge was about operating issue; the greatest barrier in implementing e-learning is poor internet and facilities that a lot of teachers still complained about (Cheok, Wong, 2014),it was added by Bikram, Jongsu, (2018)that internet access is very important to support this e-learning methods, the others companion such as; low bandwidth subscription, consistent power outage and poor maintenance (Ajegbomogun et al., 2017), it suggested to provide computers and network connection for e-learning participants (Ngampornchai, 2016).

Besides those physical needs, the other thing that should be considered to improve is the experience in using technology and e-learning platform as an issue that could affect users' e-learning readiness level (Aubusson et al., 2009), the users who have experienced e-learning benefit would be able to improve education and providing flexible learning (Taylor et al., 2015). Meanwhile, low experience of e-learning could make the teaching and learning process not maximally achieved (Rolstadås, 2013), as it was supported by Gubiani et al., (2020) firstly e-learning platforms appear to be complicated and hard to be operated by people without any sufficient skills. Thus, the experience seems as an important factor to be improved in order to achieve better e-learning method results.

The last factors found from the interview results were about personal innovativeness. Both students and teachers were having a high tension to learn about new technology in this research was about e-learning platform. All of the students who interviewed agreed that e-learning need to be trained to give them more experiences and get in used in using it. The teachers' result was the same where all of them stated that they need to be trained to implement e-learning so they could teach the students using this new beneficial method.

As it has been mentioned that Personal innovativeness is willingness to know and explore new technology and the intention to use it (Baleghi-zadeh et al., 2019), it inclined to make use of new technology that affects intention in using it (Yousef, Alharbi;Falze, Rabi;Rabee, 2014). This willingness factor would make the students access and learn about e-learning or increasing their confidence (Olugbara et al., 2019), their confidence will supporting the users to achieve a good result that is the correlation between (Fauzi et al., 2017).

## Conclusion

In conclusion the students and teachers of Public Vocational High Schools in Singaraja have been reaching ready level to implement e-learning with a few improvements needed. There are some factors affecting the students' e-learning readiness level, those are e-learning familiarity, e-learning as an alternative method, e-learning practicality, e-learning issues and high personal innovativeness. For teachers, there are some factors affecting their e-learning readiness too, those are; e-learning familiarity, e-learning online discussion features, e-learning flexibilities, e-learning operating issues, less experience of e-learning and high personal innovativeness.

It is strongly suggested that it is crucial to facilitate e-learning method by the facilities and experiences (training) so that e-learning users could cope together with this method improvement in facilitating teaching and learning process.

## References

Adams, D., Sumintono, B., Mohamed, A., & Noor, N. S. M. (2018). E-learning readiness among students of diverse backgrounds in a leading Malaysian higher education institution. *Malaysian Journal of Learning and Instruction*, *15*(2), 227–256.

Adiyarta, K., Napitupulu, D., Rahim, R., Abdullah, D., & Setiawan, M. I. (2018). Analysis of e-learning implementation readiness based on integrated ELR model. *Journal of Physics: Conference Series*, *1007*(1). https://doi.org/10.1088/1742-6596/1007/1/012041

Ajegbomogun, F. O., Okunlaya, R. O. A., & Alawiye, M. K. (2017). Analytical study of e-learning resources in national open university of Nigeria. *Education and Information Technologies*, *22*(5), 2403–2415. https://doi.org/10.1007/s10639-016-9548-z

Akaslan, D., & Law, E. L. C. (2011). Measuring student e-learning readiness: A case about the subject of electricity in higher education institutions in Turkey. *Lecture Notes in Computer Science (Including Subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)*, *7048 LNCS*, 209–218. https://doi.org/10.1007/978-3-642-25813-8_22

Alharbi, H., & Sandhu, K. (2019). New discoveries for user acceptance of e-learning analytics recommender systems in Saudi Arabia. *International Journal of Innovation in the Digital Economy (IJIDE)*, *10*(1), 31–42. https://doi.org/10.4018/IJIDE.2019010103

Alqahtani, A. Y., & Rajkhan, A. A. (2020). E-learning critical success factors during the covid-19 pandemic: A comprehensive analysis of e-learning managerial perspectives. *Education Sciences*, *10*(9), 1–16. https://doi.org/10.3390/educsci10090216

Anjana. (2018). *Technology for Efficient Learner Support Services in Distance Education*. Singapore: Springer Singapore. https://doi.org/10.1007/978-981-13-2300-3

Aubusson, P., Schuck, S., & Burden, K. (2009). Mobile learning for teacher professional learning: benefits, obstacles and issues. *Research in Learning Technology*, *17*(3), 233–247. https://doi.org/10.1080/09687760903247641

Baleghi-zadeh, S., Fauzi, A., Ayub, M., & Ehsan, S. D. (2019). A review of literature : The role of external variables in learning management system utilization. *International Journal of Innovation, Creativity and Change.*, *9*(12), 189–203.

Begum, M., Mahevish, S., Jabeen, N., & Abdul, M. (2020). Virtual classroom using e-learning. *International Journal of Emerging Technology and Advanced Research in Computing*, *8*, 1–7.

Bikram, A., & Jongsu, L. (2018). Users' perspective on the adoption of e-learning in developing countries: The case of Nepal with a conjoint-based discrete choice approach. *Telematics and Informatics*, *35*(6), 1733–1743. https://doi.org/10.1016/j.tele.2018.05.002

Bringman-rodenbarger, L., & Hortsch, M. (2019). *How students choose e-learning resources: The importance of ease, familiarity, and convenience*. https://doi.org/10.1096/fba.2019-00094

Chao, K. M., James, A. E., Nanos, A. G., Chen, J. H., Stan, S. D., Muntean, I., … Van Capelle, J. (2015). Cloud e-learning for mechatronics: CLEM. *Future Generation Computer Systems*, *48*, 46–59. https://doi.org/10.1016/j.future.2014.10.033

Cheok, M. L., & Wong, S. L. (2014). Teachers' perceptions of e-learning in Malaysian secondary schools. *Proceedings of the 22nd International Conference on Computers in Education, ICCE 2014*, *5*(2), 878–885.

Chong, M. C., Francis, K., Cooper, S., Abdullah, K. L., Hmwe, N. T. T., & Sohod, S. (2016). Access to, interest in and attitude toward e-learning for continuous education among Malaysian nurses. *Nurse Education Today*, *36*, 370–374. https://doi.org/10.1016/j.nedt.2015.09.011

Coopasami, M., Knight, S., & Pete, M. (2017). E-learning readiness amongst nursing students at the Durban University of Technology. *Health SA Gesondheid*, *22*, 300–306. https://doi.org/10.1016/j.hsag.2017.04.003

Daniels, M. M., Sarte, E., & Cruz, J. Dela. (2019). Students' perception on e-learning: A basis for the development of e-learning framework in higher education institutions. *IOP Conference Series: Materials Science and Engineering*, *482*(1). https://doi.org/10.1088/1757-899X/482/1/012008

De Meo, P., Messina, F., Rosaci, D., & Sarné, G. M. L. (2017). Combining trust and skills evaluation to form e-learning classes in online social networks. *Information Sciences*, *405*, 107–122. https://doi.org/10.1016/j.ins.2017.04.002

Fauzi, A., Ayub, M., Zaini, S. H., & Luan, W. S. (2017). The influence of mobile self-efficacy , personal innovativeness and readiness towards students ' attitudes towards the use of mobile apps in learning and teaching. *International Journal of Academic Research in Business and Social Sciences*, *7*, 364–374. https://doi.org/10.6007/IJARBSS/v7-i14/3673

Freeze, R. D., Alshare, K. a, Lane, P. L., & Joseph Wen, H. (2010). IS success model in e-learning context based on students' perceptions. *Journal of Information Systems Education*, *21*(2), 173.

Gehlen-Baum, V., Weinberger, A. (2012). Notebook or Facebook? How Students Actually Use Mobile Devices in Large Lectures. In Ravenscroft, A., Lindstaedt, S., Kloos, C.D., Hernández-Leo, D. (eds.) *21st Century Learning for 21st Century Skills.* EC-TEL 2012. Lecture Notes in Computer Science, vol 7563. Berlin, Heidelberg: Springer. https://doi.org/10.1007/978-3-642-33263-0_9

Giannikas, C. (2020). Facebook in tertiary education : The impact of social media in e- Learning. *Journal of University Teaching & Learning Practice*, *17*(1).

Gubiani, D., Cristea, I., & Urbanˇ, T. (2020). Introducing e-learning to a traditional university : A case-study. *Qualitative and Quantitative Models in Socio-Economic Systems and SocialWork, Studies in Systems, Decision and Control*, 225–241. https://doi.org/https://doi.org/10.1007/978-3-030-18593-0_18

Hassan, M. A., Habiba, U., Majeed, F., Shoaib, M., & Hassan, M. A. (2019). Adaptive gamification in e-learning based on students ' learning styles. *Interactive Learning Environments*, *0*(0), 1–21. https://doi.org/10.1080/10494820.2019.1588745

Hayashi, A., Chen, C., & Ryan, T. (2020). The role of social presence and moderating role of computer self efficacy in predicting the continuance usage of e-learning systems. *Journal of Information Systems Education, 15*(2), 139–155.

Haythornthwaite, Caroline; Andrews, R. (2011). *E-learning theory & practice*. London: SAGE Publication, Inc.

Inderawati, R. (2019). Developing e-learning based local-folklores for eighth graders. *Journal of English Education*, *8*(1), 101–112. https://doi.org/10.25134/erjee.v8i1.1813.Received

Karkar, A. J. M., Fatlawi, H. K., & Al-Jobour, A. A. (2020). Highlighting e-learning adoption challenges using data analysis techniques University of Kufa as a case study. *The Electronic Journal of E-Learning*, *18*(2), 136–149. https://doi.org/10.34190/EJEL.20.18.2.003

Kebekesanan, F. M. (2010). Factors affecting e-learning effectiveness in a higher learning institution in Malaysia. *Jurnal Pendidikan Malaysia*, *35*(2), 51–60.

Kristanto, A., Mustaji, M., & Mariono, A. (2017). The development of instructional materials e-learning based on blended learning. *International Education Studies*, *10*(7), 10. https://doi.org/10.5539/ies.v10n7p10

Li, K.C., Wong, B.Y.Y. (2018). Revisiting the definitions and implementation of flexible learning. In Li, K., Yuen, K., Wong, B. (eds). *Innovations in open and flexible education*. Education Innovation Series. Singapore: Springer. https://doi.org/10.1007/978-981-10-7995-5_1

Lin, C., Yu, S., Su, Y., Fu, F., & Lin, Y. (2019). Charismatic learning : Students ' satisfaction with e-learning in higher education. *Journal of Internet Technology*, *20*, 1665–1672. https://doi.org/10.3966/160792642019092005030

Luke, A., Ramirez, J. D., Wiley, T. G., De Klerk, G., Lee, E., Wright, W. E., … Fleming, M. (2008). *Teaching English as an international language*. Canada: Phan Le Ha.

Margahana, H. (2020). Adoption of educational technology: Study on higher education. *International Journal of Management*, *11*(1), 61–71.

Naveed, Q. N., Muhammed, A., Sanober, S., Qureshi, M. R. N., & Shah, A. (2017). Barriers effecting successful implementation of e-learning in Saudi Arabian Universities. *International Journal of Emerging Technologies in Learning*, *12*(6), 94–107. https://doi.org/10.3991/ijet.v12i06.7003

Ngampornchai, A. (2016). Students ' acceptance and readiness for e-learning in Northeastern Thailand. *International Journal of Educational Technology in Higher Education*. https://doi.org/10.1186/s41239-016-0034-x

Nugroho, T. Y., Hidayati, H., & Suwawi, D. D. J. (2014). Evaluasi e-learning readiness Universitas Telkom dengan menggunakan McKinsey 7s model Tigor. *e-Proceeding of Engineering*, *38*(2), 11–17.

Oluchi S, Ekenze; Christian I, Okafor;Sebastiant .O, E. (2019). High internet awareness and proficiency among medical undergraduates in Nigeria: A likely tool to enhance e-learning/instruction in internal medicine. *International Journal of Medicine and Health Development*, 9–17. https://doi.org/10.4103/ijmh.IJMH

Olugbara, C. T., Imenda, S. N., Olugbara, O. O., & Khuzwayo, H. B. (2019). Moderating effect of innovation consciousness and quality consciousness on intention-behaviour relationship in E-learning integration. *Education and Information Technology*.

Rahmawati, L. E., Suwandi, S., Saddhono, K., & Setiawan, B. (2019). E-class : Alternative for the valuation of foreign student' s writing competence using "learning management system schoology". *INCOLWIS*. https://doi.org/10.4108/eai.29-8-2019.2289123

Rolstadås, A. (2013). Experience from continuing education using e-learning. *J Intel Manuf*, (June 2010), 511–516. https://doi.org/10.1007/s10845-011-0542-4

Sanggarini, H. (2019). Hjorth descriptor as feature extraction for classification of familiarity in EEG signal. *2019 International Conference on Information and Communications Technology (ICOIACT)*, 306–309.

Sumarwati, S., Fitriyani, H., Muhammad, F., Setiaji, A., Amiruddin, M. H., & Jalil, S. A. (2020). Developing mathematics learning media based on e- learning using Moodle on geometry subject to improve students ' higher order thinking skills. *I-Jim*, 182–191.

Talsik, E. (2015). The investigation of readiness for e-learning of pre-service music teachers in Turkey. *Anthropologist*, *21*(1–2), 263–270. https://doi.org/10.1080/09720073.2015.11891815

Tatnall, A. (2020). Editorial for EAIT issue 2, 2020. *Education and Information Technologies*, *25*(2), 647–657. https://doi.org/10.1007/s10639-020-10135-1

Taylor, P., & Al-busaidi, K. A. (2013). Behaviour & information technology an empirical investigation linking learners ' adoption of blended learning to their intention of full e-learning. *Behavior and Information Technology*, (November 2014), 37–41. https://doi.org/10.1080/0144929X.2013.774047

Taylor, P., Sánchez-franco, M. J., & Roldán, J. L. (2015). *Behaviour & information technology the influence of familiarity , trust and norms of reciprocity on an experienced sense of community : An empirical analysis based on social online services*. (March), 37–41. https://doi.org/10.1080/0144929X.2014.959455

Wicaksono, A., Florentinus, T. S., & Ahmadi, F. (2020). Development of e-learning in web programming subjects for Moodle based vocational students. *Innovative Journal of Curriculum and Educational Technology*, *9*(199), 1–9.

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. https://doi.org/10.1016/j.chb.2016.12.085

Yousef, Alharbi;Falze, Rabi;Rabee, A. (2014). Understanding university student's intention to use quality could storage services. *International Journal for Quality Research*, *14*(1), 313–324.

Zhou, L., Li, F., Wu, S., & Zhou, M. (2020). *"School's out, but class's on", the largest online education in the world today: Taking China's practical exploration during the covid-19 epidemic prevention and control as an example*. https://doi.org/10.15354/bece.20.ar023.Keywords