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INVESTIGATING INDONESIAN PRE SERVICE TEACHER'S BARRIERS IN ONLINE LEARNING DURING COVID-19 PANDEMIC

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Abstract

This research was conducted to investigate the Indonesian pre-service teachers' barriers in online learning during covid 19 pandemi. The research was used qualitative method research approach. The questionnaire and interview used as the instrument of research to the 186 Indonesian EFL pre service teachers of STKIP Muhammadiyah Bogor. The research discovered that the most problems in online learning of EFL pre service teaching during covid 19 pandemic is lack of eksternal infrastructure such as unstable of internet connection, there is not enough of internet data and lack of device.

INTRODUCTION

Covid 19 disaster changed world life order, every aspect of life are affected such as healthy, economic, either in the educational field. Due to social distancing regulation, in order to avoid covid 19 transmission widely. Therefore, educational learning and teaching model are changed from entering classes psychically become study at home or online learning(Soni, 2020).

Those covid 19 disaster have been coming unavoidable and unexpectable, and result to unreadiness, and unpreparednessin education major models, such as in online learning, because it need to adjust and adopt a new model of learning from a traditional classroom based education to online learning and it's caused various barriers are faced by a teacher and a student itself during teaching and learning(Srichanyachon, 2014).

It is well known in the educational system, that teachers take an important role in a teaching and learning proces. Besides that,there are also some supporting of successful learning factors especially in online learning or E-learning; ICT knowledge, Media Technology, and infrastructure on the online learning, and it has a significance effect in the learning and teaching process, particularly, in new learning and teaching adaptation models such as in online learning and teaching(Srichanyachon, 2014), (Volery & Lord, 2000), (Freeman & Urbaczewski, 2019).

However, according to Naveed et all (2017, pp. 94–107) in his research "Barriers effecting successful implementation of E-learning in Saudi Arabia University" there are four major barriers that affected to the successful of E-learning teaching in Saudi Arabia university such as student, instructor, infrastructure, and technology. And the result revealed that the infrastructure and technology was the most significant which was affected and influenced through to the successful of E-learning.

In other hands, study conducted by Shirkhani et all (2016, pp. 353–362) in "Identifying Barriers of E-learning Implementation by M.Sc. Students in Agricultural Faculty of Islamic Azad University, Ilam Branch" this study was aimed to exams the most significant factors from five factor categories in E-learning barriers there are infrastructure, attitudinal, technical, professional, human, educational-skills barriers. The result covered that, the infrastructure barriers is most barriers which was encountered by students during E-learning for lack of preparing facilities and tools relating to E-learning.

Indonesia as a developing country, it's more possible for Indonesia to face barriers in adopting online learning and teaching in practices due to geographical issues, such as in rural, even in the big cities for the sake of lack of ICT literate, Technology use or Technology media, and infrastructure of online learning and teaching. Thus things need the readiness of all stakeholders involved in dealing with online learning such as the government, educational institutions, teachers, students, etc(Abidah et al., 2020).

Related to the previous researched above, the research would be focused on investigation of Indonesian pre-service teacher students'barriers level in online learning during covid 19 pandemics for the successful of online learning.

PREVIOUS STUDY

Since the development of Information and Communication Technology into 4.0, it grew rapidly and massive. The ICT is not an option or alternative in education but, ICT as a necessary and a needed which is unavoidable in education systems as a model of teaching and learning. ICT as a helpfully and an ease means for teaching and learning, which is using of ICT considered more interesting, effective, and efficient for teaching and learning (Umar & Jalil, 2012)(N et al., 2012).

However, the use of ICT in online learning and teaching can be a terrible which is against from the explanation above, that ICT gives an advantages and helpful and meaning full in education system. According to Pavel et all (2015, p. 710) in "ICT and E-Learning – Catalysts for Innovation and Quality in Higher Education" that technological literary is one of required skills on conducting online learning or E-learning that impacted to the process and system of educational. Therefore, ICT knowledge, skills and competency are key important role to organize online teaching and learning and also it affects to the successful or unsuccessful online teaching and learning practically.

In other hands, Gillet-Swan (2017, pp. 20–30) in "The Challenges of Online Learning: Supporting and Engaging the Isolated Learner" that, the online environment presents challenges to the user which is required an increasing and high level of

technological competency and proficiency. It can be concluded that the competency and proficiency of technological knowledge as the basic point for student and teacher related to online learning and teaching, contrary with two paragraphs above, instead of having a competency, skills, and knowledge at ICT it can be problems and barriers if without having ICT knowledge, competencies, and skills.

However, a technology as supporting success factors in online learning and teaching. It's appropriate with Freeman (2019, p. 3) in "Review of E-Learning Technology" that, there are some success factors such as a technology, technology usage, and instructor as a critical success factors. Therefore, a technology is one of the elements that can't be separated in online teaching and learning. Nowadays, along with development of technology there are more than one media technology that can be used in online teaching such a computer based but also smartphone or gadgets, and so on are used as a media technology in E-Learning.

Moreover, the effectiveness of delivering E-learning depends on or influenced by quality, reliability, and compatibilities of technology during online teaching and learning. According to Volery (2000, p. 218) in "Critical Success Factors in Online Education" there are three main variables effect the effectiveness of online delivery; technology, instructor characteristic, and student characteristic. Therefore, the compatibility of technology or hardware and software is key point for success factors in E-learning.

In advanced, more new technology used as an extended from online learning is M-Learning or mobile learning, where, mobile phone used as a media in online education by stakeholders (Teachers, and Students). It is appropriate with the research conducted by Marinakou (2014, pp. 176–199) in "M-Learning in middle east: the case of Bahrain". This research aimed to support and developed instructor knowledge, competency, and skill through using new technology such an appropriate and effective way. Then, at least there are two main media technologies commonly used in E-learning.

One of the factors that might inhibit in E-learning as a barrier is IT infrastructure. The readiness and availability of good infrastructure from the education institution, or from all external stakeholders such as the government, and telecommunication service providers who take a responsibility of IT infrastructure. According to Blinco (2004, p. 2) infrastructure in E-learning related to E-learning Infrastructure, Technical infrastructure, and ICT infrastructure, therefore, the meaning of infrastructure so broadly and widely. However, for the technical way the meaning of infrastructure in E-learning tend to describe as networks, hardware components, communication process, services and protocols.

However, the quality of E-learning is closely related to the operational infrastructure of ICT technology available, so that, teachers and students have an effective, comprehensive and communicative experience during online learning and teaching. According to McDougall (2003, pp. 13–14) in "Operational Infrastructure for Quality Distance and Online Geospatial Programs" that, the quality of Online learning influenced by operational infrastructure provided whether from the educational institution or from external

stakeholders (government and telecommunication service provider).

Based on the researches above, there are several factors lead to the success of online learning or e-learning such as ICT knowledge, Technology used, and Infrastructure. It might be contrary if there are some lacks from thus several factors, that, the problems might be occurred and become barriers during online teaching and learning. Therefore, the research should be conducted to examine level of barriers that probably happened in online teaching and learning during covid – 19 pandemic through Indonesian pre-service teacher students.

METHODOLOGY

This study participated by Pre-service teacher students of STKIP Muhammadiyah Bogor all among semester from English Language Education, Indonesia Language Education, Educational Administration, and Training Teachers for Childhoods as the participants. 185 participants were taken as a sampling technique for the sample during covid 19 pandemic.

The research employed a qualitative method, the questionnaire used as the instrument for gathering data and five likert model (strongly disagree, disagree, undecided, agree, and strongly agree) employed to measure three variables such as ICT knowledge, Technology use, and IT infrastructure barriers that encounter by pre-service teacher students in online learning during pandemic.

In order to identify the pre-service teacher barriers level, the questionnaire was employing to collect the data. The first questionnaire variable related to pre-service teacher barriers on ICT competency or knowledge. The second variable related to pre-service teacher barriers on Technology are used, and the last variable related to pre-service teacher barriers on ICT operational infrastructure. To ensure the questionnaires are qualified the validity and reliability tested employed by using SPSS program. Cornbach's alpha coefficient was used to examine the validity and the reliability for each items and variables.

FINDING AND DISCUSSION

1. Level of barriers in ICT knowledge, skills, and competencies.

Table1

No	ICT knowledge, skills and competency barriers	SDA	DA	N	A	SA
1	I have low knowledge in ICT	53 (28.6%)	50 (27%)	62 (33.5%)	14 (7.6%)	6 (3.2%)
2	I feel confuse for the first time using E application/platform during online learning	43 (23.2%)	48 (25.9%)	57 (30.8%)	20 (10.8%)	17 (9.2%)
3	I am not familiar with the platform/application which is used during online teaching	38 (20.5%)	55 (29.7%)	58 (31.4%)	23 (12.4%)	11 (5.9%)
4	I have no idea how to use the application/platform which is used during online teaching	63 (34.1%)	54 (29.2%)	50 (27%)	9 (4.9%)	9 (4.9%)
5	I have no idea how to access the materials or to get the subject materials that given in E-learning	50 (27%)	54 (29.2%)	50 (27%)	23 (12.4%)	8 (4.3%)
6	I have no idea how to access or to get the task that given in E-learning	54 (29.2%)	66 (35.7%)	35 (18.9%)	26 (14.1%)	4 (2.2%)
7	I have no idea how to download the materials that given in E-learning	65 (35.1%)	59 (31.9%)	33 (17.8%)	25 (13.5%)	3 (1.6%)
8	I have no idea how to upload or submit the task into E-learning	63 (34.1%)	58 (31.4%)	30 (16.2%)	26 (14.1%)	8 (4.3%)

As it shown in the table above the ranges of strongly disagreed and disagreed is the huge percentage compared with agreed and strongly agreed throughout Students pre service teacher STKIP Muhammadiyah barriers on knowledge, skills and competency level which encountered during online learning. The only point 3 that is shown the lowest level about 20% in strongly disagreed related to the familiar of application used in online learning. From this variable or level of ICT knowledge barriers for the student pre service teachers seems don't have any problem related to ICT knowledge, skills and competency which is appropriate with research conducted by Behroozian (2017),

Shirkhani (2016), and Naveed (2017). The Perceived of Usefulness.

2. Level of barriers in Technology use (Devices)

Table 2

No	Technology use (Devices) barriers.	SDA	DA	N	A	SA
1	I don't have a device (computer, gadget, etc) as medium in online learning.	79 (42.7%)	42 (22.7%)	32 (17.3%)	19 (10.3%)	13 (7%)
2	The device (computer, gadget, etc) that I have is not compatible or unavailable in accessing E-Learning application.	39 (21.1%)	57 (30.8%)	36 (19.5%)	25 (13.5%)	28 (15.1%)
3	The device (computer, gadget, etc) that I have always run out/low battery during online learning	37 (20%)	43 (23.2%)	39 (21.1%)	25 (13.5%)	41 (22.2%)
4	The device (computer, gadget, etc) that I have always gasped or lagging during online learning.	20 (10.8%)	36 (19.5%)	41 (22.2%)	46 (24.9%)	42 (22.7%)
5	Devices' memory always full during online learning	13 (7%)	20 (10.8%)	29 (15.7%)	38 (20.5%)	85 (45.9%)
6	I always failure during downloading an assignment due to dis-compatible the device or not supporting	20 (10.8%)	45 (24.3%)	49 (26.5%)	33 (17.8%)	38 (20.5%)
7	I always failure during uploading an assignment due to dis-compatible the device or not supporting	29 (15.7%)	50 (27%)	42 (22.7%)	31 (16.8%)	33 (17.8%)
8	The device (computer, gadget, etc) that I use is not compatible or not supporting in virtual meeting during online teaching	46 (24.9%)	45 (24.3%)	50 (27%)	26 (14.1%)	18 (9.7%)

As we can see at the table above there are no significant problems that encounter by Students pre service teacher toward devices or technology that they were used during online learning but it still noticed that for the item number 4 and 5 it's contrary with another items of problems that faced during online teaching surprisingly which is indicated that the most device problem happened during online teaching where the device or technology which were used always gasped or lagging and devices' memory were full of data, it's about 46% for the item 4 and 65% for the item 5 both of agreed and strongly agreed. These results are consistent with finding of Srichanyachon (2014), Blinco (2004) and Shirkhani (2016).

3. Level of barriers in Operational Infrastructure

Table 3

No	Level of barriers in Operational Infrastructure	SDA	DA	N	A	SA
1	I have no enough data quota for online learning	17 (9.2%)	27 (14.6%)	49 (26.5%)	47 (25.4%)	45 (24.3%)
2	The internet connection network always unstable in my location	10 (5.4%)	18 (9.7%)	35 (18.9%)	41 (22.2%)	81 (43.8%)
3	I always failure during uploading an assignment due to unstable of internet connection	9 (4.9%)	26 (14.1%)	51 (27.6%)	50 (27%)	49 (26.5%)
4	I always failure during uploading an assignment due to unstable of internet connection	12 (6.5%)	28 (15.1%)	50 (27%)	49 (26.5%)	46 (24.9%)
5	The internet connection network is worse in my location	22 (11.9%)	33 (17.8%)	51 (27.6%)	49 (26.5%)	30 (16.2%)
6	The internet provider or phone card that I use is inadequate or does not have a good signal to support online learning in my location	25 (13.5%)	35 (18.9%)	56 (30.3%)	44 (23.8%)	25 (13.5%)
7	Little or no infrastructure (signal mast) at my location	29 (15.7%)	38 (20.5%)	53 (28.6%)	36 (19.5%)	29 (15.7%)
8	Frequent cutouts at my location	32 (17.3%)	28 (15.1%)	51 (27.6%)	38 (20.5%)	36 (19.5%)

Thus results above figure out contrary with the two variable results preceded which is surprisingly pre service teacher much more encountered the problem toward infrastructure in supporting online learning during pandemic. It's highly noticed that, most of them tends to agreed and strongly agreed about no less than 50% both of agreed and strongly agreed. So the infrastructure barriers most the significant results of Students barriers level rather than ICT knowledge and Technology are used. The finding of Behroozian (2017), Shirkhani (2016), Naveed (2017), Srichanyachon (2014), and Blinco (2004) confirm these results.

CONCLUSION

According to the research results, the most significant barriers were the pre-service teacher's students STKIP Muhammadiyah encountered in online teaching during the covid-19 pandemic was infrastructure. Meanwhile, the second variables such as the device or the technology are used some highlight barriers that arise only in two items in online learning during a pandemic such as lack device acceleration or lagging and insufficient of device's memories so it's seemed meaningless. Contrary with both of variable mentions before that, the pre-service

students in their online learning during covid-19 related to ICT knowledge level of barriers encountered most the lowest or had no problems with ICT knowledge, skills and competency.

The maturity of the Students College more exposure to the ICT literature and experiences helps them dealing with online learning during a pandemic (Behroozian & Sadeghoghli, 2017), but yet still the readiness of providing good infrastructure the most important thing which is all stakeholder should pay attention such as government, and internet provider etc. due to provide better students experiences during online learning for the future Shirkhani (2016), Naveed (2017), Srichanyachon (2014), and Blinco (2004).

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