An analysis of students’ learning pattern: a study on the new learning paradigm by using virtual technology in covid-19 pandemic

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Abstract. The purpose of this research is to find out the obstacles, solutions, and e-learning projections of Besuki Residency universities students during covid-19 pandemic. The research method uses survey method contains eight questions for one hundred and forty seven respondents. Respondents are determined by using probability sampling technique. Probability sampling is one of many techniques used to determine sample by giving equal opportunity for every element (individual) in a population to be chosen as the sample. The Probability sampling determines the respondents randomly within the population. Based on the data found, fifty seven point one percent of the students already accustomed with e-learning, whereas forty two point nine percent of the students state that they are not accustomed with this system. E-learning system uses five media; zoom tops the list with fifty point seven percent. This system is a solution for a particular circumstance even though ninety one point two percent of the students find obstacles during e-learning itself while the rest of eight point eight percent of the students find no issues during e-learning. In the state of covid 19 emergency, e-learning is a solution by considering the condition between lecturers and students and how to get both parties adapted. In force majeure situation, e-learning is a solution as well as additional experience during learning activity despite many obstacles, lecturers and students are expected to overcome this situation in the future as evaluation and experience.

1. Introduction
COVID-19 (Coronavirus Disease-2019) is another term for SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2) which impacts many aspects of human life, namely respiratory or hard to breathe as well as another aspect such as economy and education [1], and politic [2]. In education, 46 countries suffored from the virus and ultimately applying learning from home [1]. Indonesian government requires the teaching and learning activity from home for all level of education, started from PAUD or playgroup to university.

It is reported that from mid-March 2020 Indonesian Government through its Education and Culture Ministries and the Ministry of Religious affair issued a policy to study from home, in cooperation with private course companies such as Meja Kita, Ruang Guru, Kelas Pintar pintar [2]. Several campuses which are under supervision of the ministry of education and culture and the ministry of religious affair in Besuki Residency follow this policy based on the instruction. This circumstance demands the campus across Besuki Residency to apply long distance learning activities through various social media apps, namely whatsapp, google classroom, youtube, zoom, or any other social media available to support the teaching and learning activities for both students and lecturers.
University is one of many institutions which are affected directly by the spread of covid 19. Education institutions such as preschools, elementary schools, junior high, and senior high schools are also affected by the pandemic. All the institutions from the basic level until universities under the supervision of The Ministry of Education and Culture as well as institutions under the supervision of The Ministry of Religious Affairs are greatly impacted because the learning activity should be done at home instead of conventional face to face in the classroom due to anticipation of the virus spread while in reality students are not fully ready yet to study through e-learning activity. There are many teachers or lecturers who are not compatible with online teaching, particularly those who are in urban or rural area. Dabbagh [3] states that the traits of students within e-learning activity are as follow:

a) Learning Spirit: students must be enthusiastic during learning activity for independent learning. In e-learning, college students should determine by their own about the material comprehension till the end of the subject. The college students should be independent and demanded to find knowledge on their own, this may cause the difference among college students’ success.

b) Tech literacy: in addition for students’ own enthusiastic toward learning, the comprehension how to operate gadgets are very important because know how to operate such media is pre requirement before conducting e-learning activity. Generally, those media are laptops, computers, smartphones, and any other tech-based devices. In the rapid development of 4.0 technology, those devices offer many features which support the e-learning activities.

c) Intrapersonal communication skill: interpersonal skill and communication skill are essential skillset which college students have to posses to ensure the high success of e-learning. Interpersonal skill is required among students for interaction despite independent learning should be done by a student, as a social creature, interaction with others are necessary. Therefore communication skill and interpersonal are required to live properly within society in daily activity.

d) Collaboration: students should understand and optimize interaction learning and collaboration. E-learning activity is conducted by the college students, college students organize the schedule, therefore proper communication among students and in addition with the lecturers are mandatory to set up a conducive activity with the platform available. Students who have any issues in understanding material should interact among students or with the lecturer. This interaction itself is to keep their social manner and interaction normal as it was and to keep them out of individualism and antisocial behavior during e-learning activity as well as understanding collaboration. College students are trained to be adaptive with the environment or any system which support the e-learning activity.

e) Independent learning skill: one of the main skill in e-learning is independent learning skill because in e-learning, the college students should search, find, and conclude all materials on their own as Kirkman [4] states that independent learning is a process where the students should identify the material learning within the learning process. When the college students learn independently, motivation is essential to support the rate success of the learning process.

Apparently many campuses find difficulties to integrate social media network during teaching and learning process. It is difficult for both students and lecturers to calibrate with the chosen app [5] and definitely takes time and concentration just to adapt the new tools [6]. Many issues during the learning process may harm the students’ psychologically.

Several researchers have studied about online learning in the past. (1) Darmalaksana, et all [7] mention that based on the recent data of online learning analysis, covid-19 pandemic WFH is a challenge for 21st century digital leader; (2) Sanjaya [8] conducted the study about twenty one reflections of online learning during covid-19, and (3) Yanti, et al [9] studied about utilization of the ministry of education and culture’s house of learning portal as online media learning activity in elementary school. Based on the studies above, it is evident that there is no study about issues and solutions of online learning system for universities students.

The issue during learning process may cause students lose their interest of learning [10]. Pangondian et.al [11] reported that the important factors of online learning are the availability of facilities and infrastructures. Rusdiana dan Nugroho [10] confirmed that main support from universities and lecturers
determine the success of online learning. Harjanto dan Sumunar [6] also confirm that online learning is transformation process from conventional to digital along with its challenges and opportunities. Therefore, any issues and challenges of online learning require solutions.

The research emphasizes on three main aspects, they are Obstacles, solutions, and e-learning projections. Obstacles during learning process may lower the college students’ learning enthusiasm [10]. As reported by Pangondian et al [11], who state that among the success factors are the availability of facilities and infrastructure. Rusdiana and Nugroho [10], mention that the support from universities and lecturers are very important for the e-learning success. Harjanto and Sumunar state that e-learning is a transformation process from conventional learning into digital learning with its challenges and opportunities. Therefore any issues in conducting e-learning should be resolved immediately so LPTK (manpower education institute of teacher training) is able to mapping the e-learning projection in the future. Vigorous research concerning the obstacles, solutions, and e-learning system projection is needed for a better responds from the parties involved within the process of e-learning system during covid 19. The result from this research is expected to be optimized by the related institution to define the best e-learning policy.

All the information above are compatible with the purpose of this research which describes the utilization of technology for education during pandemic. Another purpose of this research is to identify any issues during teaching and learning process from home and determine the solution during covid-19 pandemic.

2. **Methods**

The researcher uses descriptive qualitative method and the technique is survey technique. Survey technique is used to collect information from a group of people about a particular topic or issue (Gunawan, 2017). The research is conducted in June 2020 with one hundred and forty seven respondents of college students and si universities across Besuki Residency. Respondents are chosen by using probability technique sampling. Probability sampling is one of many techniques used to determine sample by giving equal opportunity for every element (individual) in a population to be chosen as the sample. The Probability sampling determines the respondents randomly within the population.

Components within the questionnaire consist of questions such as the university that the respondents study, (1) what kind of media used for online learning; (2) are respondents comfortable with online learning; (3) is there any issue during the process; (4) what is the best solution for the issues mentioned earlier.

3. **Results and Discussion**

3.1. **Respondents’ Brief Profile**

The respondents of this research are universities students across Besuki Residency universities namely Jember University, Jember IAIN, Abdurrachman Shaleh Situbondo University, Al-Falah Assunniah Kencong Jember IAI, and Universitas Terbuka or open University. The respondents are one hundred and forty seven students. The distributions of the respondents are as follows:
Figure 1. The Name of University

Table 1. The Name of University

| The Name of University                                      | 51% | 17% | 15,6% | 8,8% | A Few | A Few |
|-------------------------------------------------------------|-----|-----|-------|------|-------|-------|
| Universitas Jember                                         |     |     |       |      |       |       |
| IAIN Jember                                                 |     |     |       |      |       |       |
| Universitas Abdur Aahman Saleh Situbondo                   |     |     |       |      |       |       |
| STAI Nurul Huda Kapongan Situbondo                         |     |     |       |      |       |       |
| IAI Al-Falah Assunniah Kencong Jember                      |     |     |       |      |       |       |
| Universitas Terbuka                                        |     |     |       |      |       |       |

Based on the picture above, Jember University respond the most of the questionnaire by fifty one percent, followed by Jember IAIN with seventeen percent, the third is, Al-Falah Assunniah Kencong Jember IAI with eight point eight percent, followed by Abdurrahman Shaleh Situbondo University and the last is Universitas Terbuka.

3.2. The Condition of Online Learning

The discussion of this chapter is about the condition of the online learning process which consisted of the online learning media, the students’ adaption toward the online learning system, the issues with the system and the best solutions to overcome the issues mentioned earlier. The picture below is the complete data:

Figure 2. Adaptable students with e-learning
Table 2. Adaptable students with e-learning

| Adaptable students with e-learning | Yes | No |
|-----------------------------------|-----|----|
| 57.1%                             | v   |    |
| 42.9%                             | v   |    |

There are responses based on the picture above. Picture 2 shows that fifty seven point one percent students are comfortable with the online learning process, but the rest of forty two point nine percent are not comfortable with the system. Based on the data nearly half of the respondents are not comfortable with the online learning system. The comfort and adaptation of the system will determine whether the system works or not. If respondents are comfortable with the system of online learning, then comfort is the fundamental to determine whether the system works for the students. Basically, the students must be able to operate the app chosen for the online learning system because it is the media to learn.

Figure 3. E-learning Media

Table 3. E-learning Media

| E-learning Media  | moodle | whatsapp | google classroom | youtube | zoom |
|-------------------|--------|----------|------------------|---------|------|
| 50.7%             | v      |          |                  |         |      |
| 25.3%             | v      |          |                  |         |      |
| 21.9%             | v      |          |                  |         |      |

Figure 3 shows the media used for online learning which indicates that Zoom is dominating the chart with fifty point seven percent. Based on the data in the picture there are 5 media used by the respondents. Multiple media are the suitable technique to succeed in online learning system. Zoom is easily accessible. Generally, each institution has particular media to support the system of online learning activity.

Rusdiana dan Nugroho (2020) mention on their research that both universities’ and lecturers’ support is essential to the success of online learning activity. The universities must accommodate the facilities and infrastructures and the lecturers must prepare the suitable teaching materials for online learning system.
3.3. **Issues and Solutions of Online Learning Activity**

The object of this research is the issue of online learning system throughout Besuki Residency universities. The picture below shows the respondents’ issues during online learning activity.

![Figure 4. E-learning Obstacles](image)

**Table 4. E-learning Obstacles**

| E-learning Obstacles | Yes | No |
|----------------------|-----|----|
| 91.2%                | v   |    |
| 8.8%                 |     | v  |

Based on picture 4 above, ninety one point two percent of the students have issues with the online learning system. The rest of eight point eight percent have no issue. One of the issues is limited internet access, limited internet data, overwhelming tasks, capability on operating technology, late for online class due to lack of adaptation, unstable network in rural area, etc.

The respondents explain the issues based on the last question within the questionnaire in the solution section. The respondents’ issue is similar and this issue is the limited internet data. The main issue for the students is limited internet data and both students and universities must soon find solution for this issue. Universities may facilitate the students with friendly internet data online learning system, such a platform that does not consume a lot of internet data.

Unstable network is another issue during online learning activity process. The proper network facility is essential because this is the main factor which directly affects the process online learning system. The respondents who are in rural area find it difficult to obtain the materials from lecturers due to unavailability or bad connection of the internet and some of the students will find a place where Wi-Fi is available when the learning schedules come.

Unavailability of gadgets such as neither Smartphone or laptop makes the students difficult to receive the materials given during online learning process. The students normally learn and interact with their classmate inside and outside the classroom, but now they have to learn from home and do not interact with their friends. This circumstance make the students frustrated. Online learning consumes massive internet data which mean more fund for the students. This system should be evaluated especially for those who live far from city or far from the place with improper signal connection as such those have to find out signal just to learn with system. There is a case in Sulawesi where a student died for signal due to fall from a mountain.

The following are two biggest issues of online learning process during covid-19 pandemic:

a) **Network issue**

Network is the main issue during online learning process. Students who live far from cities have this issue. Some area near cities have improper network. This issue directly puts the interaction on hold or lost. Some students live in a frequently blackout area. When the blackout comes during the online
learning process, then all connection are shut down. Improper network may cause the students not able to upload their work and this is the main concern for the students as they fear for the unexpected grades.

b) 2. Students spend more fund
The students complain a lot about the more fund they have to pay for the internet data. The students need more internet data during pandemic, and yet when they don’t really understand a particular subject, they should find the related materials for the subjects from other source. Students are not able to receive the material optimally with the online learning system compared with conventional face to face learning process. Practical work or lab work is delayed for further announcement and this means more time it consumed. For this reason the students are required to join mediator subject semester.

The researcher offers a solution to address the issue. It is advised that universities distribute free internet data on monthly basis to its students. The Exemption of UKT for senior students who take proposal seminar only. The exemption of UKT for regular students who take particular subjects. The adjustment of UKT for fresh students is proposed based on the mechanism prepared by the universities’ bureaucracy.

Indonesia is a supportive country toward young generation’s education through online learning system amid the COVID-19 outbreak across the globe. This online learning system is based on technology considered taboo by public, particularly for those who live in rural area or remote area. However, despite pros and cons, the young generations should study by using the system. Parents have pivotal role to guide and aid their children to stay focus on learning and keep appreciating their children’s spirit of learning by consoling them amid frustration.

The online learning system has a potential of controversy among students due to the issue during the process. I also demands the students to stay online and thus requires a proper network. Therefore, preparation is important for online learning. One of the issues is the students should prepare a proper network. Real government’s aid and support are needed to help students to achieve this goal by installing more wifi.id. Human resources are needed to support the lecturers to operate the online learning system. Extending deadline for students’ duties is one of many solutions.

Steps and Strategies to address the issues are as follows:

a) Giving education and socialization to the related parties, such as students, lecturers/teachers to coordinate thoroughly so that the learning and teaching process can be conducted effectively.

b) Giving space and trust to college students so they can create innovations for education due to the impact of COVID-19.

c) Government and providers should seriously distribute the signal equally across the archipelago, and particularly remote area.

4. Conclusions
All aspects are affected by covid-19 pandemic, namely: economy, tourism, and education. All activities do not run normally as it was before the outbreak. These are the impacts of the outbreak, such as economic crisis, social distancing, mobility, etc. especially in education where the teaching and learning process should be conducted from home or using online learning system.

The online learning activity apparently causes issues and needs to be solved immediately amid the pandemic. The only solution to stabilize the teaching and learning activity is by contributions and cooperation among all parties such as college students, lecturers/teachers, and particularly government as the authority who holds control of policy.

Evaluation of the obstacles in conducting e-learning is needed for the better preparation in the future, in case there will be similar unique event with the current situation. This research recommends the essence of creativity in highly educated e-learning leader for the better and effective e-learning system which compatible with WFH due to the effect of the covid 19 spread.
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