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## **Indonesian Students' Perception about the Effectiveness of E-Learning Implementation During COVID-19**

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### **Abstract**

Due to social distancing measures imposed by the COVID-19 epidemic, universities all over the world have predominantly moved to online teaching and e-learning. In order to investigate the effectiveness of the current e-learning course, the qualitative online-survey study was carried out to assemble data on students' perceptions. In this article we present the result of empirical research in Indonesia during pandemic. The research focused on the e-learning tools, encountered obstacles, physical problems, and preferable learning methods. The outcomes gained in the research can be provided to the constitutional agencies, educational institutions, and other participants to expand the progression of e-learning.

**Key words:** *e-learning, the effectiveness of distance education, e-learning in Indonesia, e-learning during Covid-19, Indonesian students*

### **Introduction**

The World Health Organization stated that Covid-19 was a global emergency and a global pandemic on March 11<sup>th</sup>, 2020 (Gates, 2020; Phelan et al., 2020). The Indonesian government's policy is to stop the spread of the disease by urging all people to carry out all their activities at home, including studying, working and worshipping. Before the pandemic, most of the learning systems in Indonesia took place face-to-face, in the form of a meeting between lecturers and students in

class at any given time. Students are used to studying directly in the classroom under the supervision of the teacher (Azhari & Fajri, 2021). The learning process is usually done with a class discussion. However, there are drastic changes when the Covid-19 pandemic occurs. Meetings between lecturers and students in one space and time do not happen but are replaced with online meetings with video media or online presentations (Griffiths, 2016). The conventional learning system that has been going on for many years turned into an online learning system to maintain the learning process.

Changes in this learning system did not entirely run smoothly. Still, they encountered many obstacles, such as the lack of infrastructure availability, poor connectivity, and other constraints that caused the learning process not to run optimally (Biedroń et al., 2021; Setiyawan et al., 2020). The diversity of geographic areas where students live in Indonesia varies. Moreover, Indonesia's most critical challenges were the lack of knowledge and skills of students in e-learning and their lack of connectivity to computers and Internet connectivity (Mailizar et al., 2020).

E-learning has been measured as the most excellent method to continue the teaching. E-learning is promoted as a teaching method in many colleges and students have great respect for it. (Govindasamy, 2001; Martín-Blas & Serrano-Fernández, 2009). E learning is generally suitable for students because of two reasons; they feel comfortable in using it and e-learning itself is available in their college. E-learning allows students to explore their learning independently. E-learning also makes learning more flexible because it reduces learning meetings in the classroom (Zhang et al., 2006). So, e-learning cares for teachers and students; thus, students can study from home.

Nevertheless, despite its many benefits, there are some problems of e-learning, for example, social separation, the nonexistence of student and teacher communication and connectivity matters, etc. (Kwary & Fauzie, 2017; Saeed, 2020). The application of e-learning does not always run well. Although many schools and universities have tried to use e-learning or online learning, not all of them applied it successfully due to a lack of resources, such as teachers who did not understand the various online learning applications (Zaharah & Kirilova, 2020).

Studies examining e-learning usage through pandemics are rare (Ash & Davis, 2009). This study was carried out in Indonesia. More than 7.3 million students in 3000 universities in Indonesia are using online lectures during the current pandemic. Of these, the economic, social, and student domicile conditions varied. This situation results in the possibility of differences in student perceptions when using e-learning during the lecture process. As one of the several education schemes that have applied e-learning through the virus occurrence, it is crucial to examine

the students' perception of the effectiveness of e-learning through the lockdown because of Covid-19. This study investigates student perceptions in the application of e-learning during the pandemic Covid-19. The researchers want to answer the following research questions:

1. What are the most common e-learning tools used by students in the Covid-19 pandemic?
2. What are the obstacles faced by students in the Covid-19 pandemic?
3. What are the physical problems during e-learning?
4. What learning method is chosen by the student?
5. What mental problems do students face during e-learning?

## **Methodology of Research**

### **Research Design**

The study used a qualitative online-survey study design. It used primary data, which were gained by distributing questionnaires to respondents that aimed to get information about the most used e-learning tools, the obstacles faced, the physical and mental problems, the learning method chosen by students during e-learning. The respondents came from some colleges in Indonesia. There were 921 respondents taking part in the survey. The data was gathered in the following phases: (a) collecting and distributing the list of queries in the Google Form for students, (b) analyzing the data.

### **Population and Sample**

Students of universities in Indonesia who attend lectures online took part in the survey. Simultaneously, the study sample is a portion of the mentioned population who are willing to fill out a questionnaire.

### **Data Collection and Data Analysis**

Data were collected by questionnaire. Questionnaire consists of two main parts. The first part deals with respondents' demographic information, and the second part is about students' perceptions of online learning. The aspect of questionnaire has been presented in Table 1.

The researcher used Gregory's content validity (Gregory, 2004), two experts were selected to determine the content validity. In this research, the validity value was estimated to be 87,5%, which was in the category valid with very high criteria. Furthermore, the relevance of the two experts will determine the reliability value in

**Table 1.** Aspect of questionnaire

Aspect	Number Item	Total Item
Demographic information	1,2,3,4	4
Tools of e-learning	6	1
Learning method	5,7,16	3
Obstacles faced by students	8,9,15	3
Physical problems during e-learning	10,12	2
Mental problems during e-learning	11,13,14	3

the form of the internal consistency coefficient of the content (content reliability). Reliability value was calculated as 81,25%. Researchers distributed questionnaires using Google Form. The data collection process was carried out for two weeks and succeeded in capturing 921 students from 36 universities in Indonesia. Data were analyzed using the Miles and Huberman model (Miles et al., 2014).

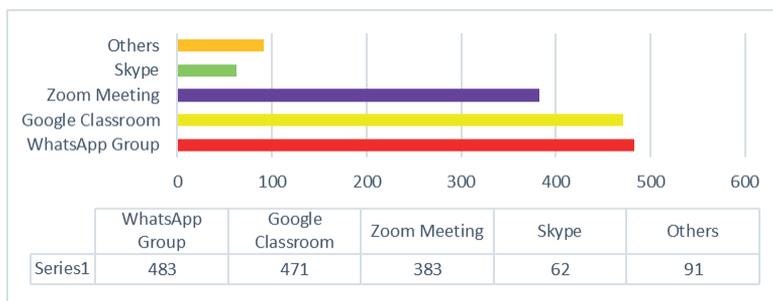
## **Results and Discussion**

The distribution of demographic data of respondents has been presented in Table 2.

**Table 2.** The demographic data of respondents

Demographic information	Frequency	Percentage (%)
Age	18-20	40
	21-23	646
	24 above	235
Domicile	Urban area	378
	Rural area	543
Internet access package	Wi-Fi	185
	Private internet package	632
	Campus internet package	104
Technological devices	Computer or laptop	388
	Smartphone	468
	Tablet	65
Total	921	100

### E-learning Tools Used by Students



**Figure 1.** Chart of e-learning tools used by students

The most widely used e-learning tool by students is WhatsApp Group. WhatsApp has succeeded in establishing interactions between students and lecturers so that it also supports collaborative-based learning. The study showed that WhatsApp generates collaborative learning among undergraduates to a great extent (Udenze & Oshionebo, 2020). In Indonesia, the government has provided several sites supporting learning activities such as Learning House, Smart House, Teacher’s Room, Zenius, etc. However, the materials on these sites are for the school level, not for college level.

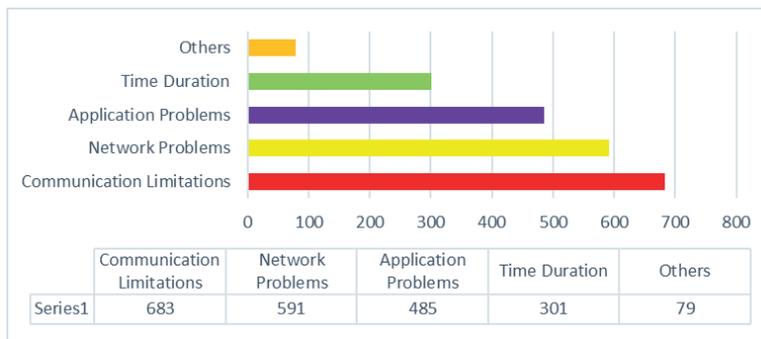
In HEI, the selection of learning methods is agreed upon by lecturers and students. If students and lecturers choose synchronously, most of them combine WhatsApp with other platforms like Google Classroom. Based on data and signal limitations, many lectures also encourage students to use low-internet data applications (Tuli et al., 2020) and free sites, such as low-cost e-learning (Azhari et al., 2020; Brown et al., 2020; Jackson et al., 2020), as not every HEI provides internet data subsidy for students and lectures.

Multiple features and lack of quota usage data make WhatsApp Group one of the main selection methods for students and faculty when conducting online lectures. Lectures with group WhatsApp media are carried out with asynchronous discussions. At the beginning of courses, lecturers and students are given the freedom to agree on how the online lecture system will be implemented, be it synchronous and asynchronous. Although the synchronous system provides advantages in explaining the material directly between lecturers and students, the quota used is larger. Therefore, the asynchronous lecture system using WhatsApp group media is still a favourite choice for lecturers and students. So, the WhatsApp

group can be the most popular media among students in Indonesia because few students live in villages with weak internet signal strength.

Another learning tool that respondents widely use is Google Classroom. The benefits of using Google Classroom are as follows: easy to use, saves time, cloud-based, flexible, free, mobile-friendly, facilitates collaborative learning, encourages cooperation between students (Crawford, 2015; Janzen, 2014; Keeler, 2014). One study at Pangasinan State University, Philippines, stated that the respondents highly recommend Google Classroom. 94.9% of students agree that Google Classroom is a good tool for online learning (Ventayen et al., 2018). Moreover, 383 students chose zoom meeting as the application used when studying during a pandemic. The zoom meeting application provides a live video conference feature that facilitates interaction between teachers and students. In the research conducted in West Bengal, India, as many as 34.2% of students chose the zoom application for online lectures (Kapasia et al., 2020). Furthermore, 62 students used Skype as a medium for distance learning, and 91 respondents used other applications such as Canvas, Schoology, Edmodo, and platforms facilitated by their campus.

### Obstacles Encountered



**Figure 2.** Chart of obstacles encountered

Although e-learning makes distance learning easy, the students have obstacles in using it. 683 students stated that communication limitations were among the barriers faced when learning during the pandemic Covid-19. Communication in e-learning is more complicated than face-to-face learning due to the lack of verbal and nonverbal cues. Medical students in the Philippines experienced poor communication with lecturers when studying online during the pandemic. They were

disappointed that the lecturers did not provide feedback during the assessment process (Baticulon et al., 2020).

About 591 students complained about network problems as obstacles encountered when using e-learning. The main problem of online learning during the pandemic is poor connectivity either to low coverage or servers and network overload (Biedroń et al., 2021). On the other hand, 485 students also complained about application problems. Students had problems using e-learning applications that had not been used before, making it difficult for them to learn. The choice of an application used in e-learning also affects the comfort of student learning.

Furthermore, 301 respondents stated the duration of time spent on e-learning became longer. Learning to use e-learning takes longer than face-to-face learning because teachers use no specific time, so students feel the learning time during e-learning is one of the obstacles. Furthermore, as many as 79 other respondents experienced other problems such as social distraction when studying at home, technical adaptations related to the use of new platforms, and the excessive quantity of assignments by lecturers while learning using e-learning pandemic Covid-19.

### Physical Problems

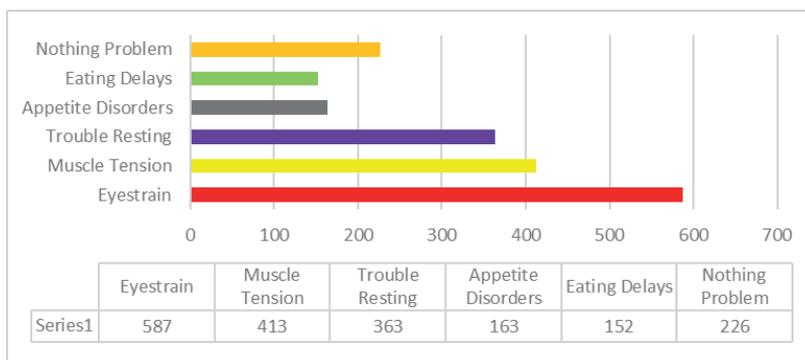


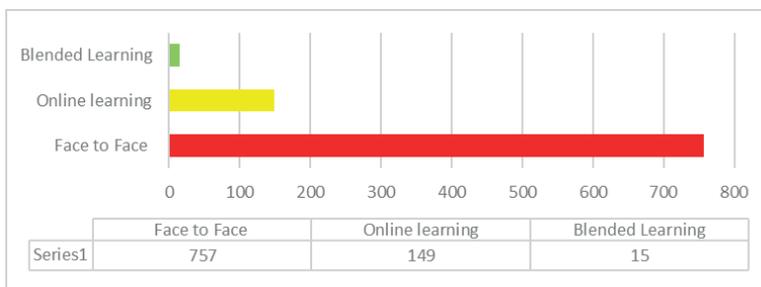
Figure 3. Chart of physical problem

Physical problems are also experienced by students while studying online using e-learning during the Covid-19 pandemic. About 587 students experienced eye strain problems while learning online. The use of excessive eyes and continued staring at the laptop, and mobile phone screen will cause eye strain. Many students have smartphones with small screens (less than 5 inches), and most of them use

glasses, which may be the reason for eye strain after continuously staring at the mobile phone screen (Gon & Rawekar, 2017). This finding was also proven in a study of medical students in the Philippines who experienced eye strain and headaches due to prolonged use of gadgets while studying online during the pandemic (Baticulon et al., 2020).

Sitting for a long time while staring at a laptop and mobile phone also causes muscle tension. About 413 students expressed muscle tension during an online-based distance learning, 363 students' recess time are interrupted due to the uncertain study schedule, 163 students had appetite disorders. Furthermore, 152 students experienced eating delays while studying online during the pandemic Covid-19. This situation is the same as in the research conducted by (Soysal et al., 2020) who said that health problems are also experienced by students while studying at home, such as increased sleep time during the day, lack of sleep at night, loss of appetite, reduced physical activity which causes obesity. These physical problems are found to cause a decrease in enthusiasm for learning. This finding is also reinforced by a study in India which stated that the isolation in the home, including work and study at home, causes some physical symptoms to appear, namely digestive problems, insomnia due to an increase in the duration of naps, headaches, hormonal imbalance and excessive fatigue (Majumdar et al., 2020).

### Choices of Learning Method

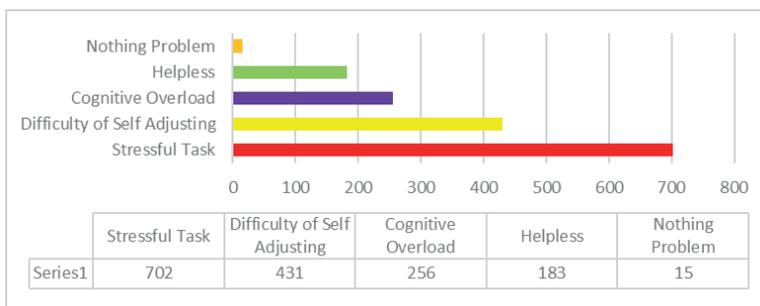


**Figure 4.** Chart of choices of learning method

During the Covid-19 outbreak students in Indonesia had to learn online using e- learning and as a result they felt less interested than when learning face to face. Students' limitations are the difficulty of signal, technical adaptation, and the limitation of their smartphone/laptop specification when accessing e-learning. About 757 students preferred face to face learning compared to online learning

and blended learning. From the results of the questionnaire, students felt more comfortable when lecturing face to face. So, face to face learning is still the primary choice for students compared to online learning and blended learning, both of which still carry the internet as a medium. This finding is also consistent with research conducted by Giatman in Padang State University, Indonesia. Nearly all respondents still agree that face-to-face learning is much easier than online learning, and 94.4% still want face-to-face learning (Giatman et al., 2020).

### Mental Problems



**Figure 5.** Chart of mental problems

Students also experience mental problems while studying online. 702 students experience stressful tasks that disrupt learning comfort. Many students who participate in online classes during a pandemic feel the workload of online courses is more considerable than face-to-face courses, which causes them to be stressed by more assignments (Angdhiri, 2020). The difficulty of adjusting was also felt by 431 students while studying online during the pandemic Covid-19. Learning online full-time using e-learning is new in Indonesia, so students are still unfamiliar with it and have no experience, especially in remote areas. Our study found that students felt unprepared to adopt e-learning as a learning tool during the pandemic. Medical students in the Philippines also found it challenging to adapt to online learning styles during the pandemic, with a composition of 32% always, 40% often, 25% sometimes, and 3% never (Baticulon et al., 2020). Around 256 students complained because the lecturer gave a lot of material and many assignments simultaneously (cognitive overload) when using e-learning. Continuous tasks and information overload during online learning also lead to cognitive overload. They experienced excessive cognitive load when studying online during the pandemic Covid-19 because the workload was too much

compared to face-to-face classes (Baticulon et al., 2020). About 183 students complained that being helpless due to students' mental problems while studying during the pandemic. Pandemic Covid-19 caused mental issues caused by various things, such as quarantine, self-isolation, the impact of social media, concerns with personal and family health, economic problems, sudden lifestyle changes, and lack of knowledge about mental health and psychology (Salari et al., 2020). This condition causes stress, depression, anxiety, fatigue, loneliness, sadness, hopelessness, and helplessness, including students who study online during the pandemic so that students do not focus on learning.

## **Conclusions**

Overall, all respondents who participated in the survey revealed that they had carried out an online learning process through several platforms/applications. The most used e-learning tool by students during the Covid-19 pandemic is the WhatsApp group. E-learning results in many problems, namely communication limitations, network problems, application problems, and time duration. Furthermore, the respondents' physical issues are eyestrains, muscle tension, trouble resting, appetite disorders, and eating delays. At the same time, the mental problems experienced by respondents include, among others, stressful tasks, difficulty of self-adjusting, cognitive overload, and feeling helpless. Face to face learning is still more preferred method of learning for respondents than online learning and blended learning. This study has some limitations. As mentioned earlier, the participants of this research were students of higher education. Research can be carried out with the participation of lecturers in higher education, teachers and parents. Further, student mental health conditions are also a severe concern when learning online during the pandemic. They should be provided with mental health counseling services from higher education institutions as distance learning supporters.

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