Digital Communication in Online Learning during Mobility Restriction

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Abstract

The Corona virus Disease 2019 (Covid-19) pandemic has created difficulties in implementing the traditional didactic curriculum and forced a shift to a space mediated by digital technology. Large-scale Lockdown and Social Restrictions programs limit in-person encounters and increase use of the home learning model. This study is an extension of previous research that evaluated the Home Learning Program with Digital Communication media during the prevention of the Covid-19 pandemic spreading with a special sample of vocational schools. This research is extended by evaluating students from various universities in Indonesia. The purpose of this research is to obtain Learning from Home Responses using Digital Mediated during the Mobility Restriction from students at various universities in Indonesia. This research applies quantitative descriptive research methods. Convenience samples were taken from 247 university students from various universities in Indonesia. The results showed 95.5% of students used cell phones as a medium of communication; 75.5% of students use a mobile modem (limited) for internet connection; the average student spends his time studying online approximately 4 hours a day; According to some students, the time for giving and collecting assignments was considered inadequate. Most students, namely 58.3%, felt it was difficult to follow the learning program from home; Most students use what application in two-way communication with the lecturer and at least once; and according to most students, 86.6% respondents of learning at home for 3 weeks was still inadequate.

Keywords: 1. Digital technology, 2. ICT, 3. Teleconferencing Technology.

1.0 Introduction

COVID-19 cases in Indonesia were reported in early March 2020 (Antara News, 2020; Bangkok Post, 2020). For the increasing number of people confirmed with the corona virus, in mid-March in Indonesia, social relaxation began to be carried out to slow the spread and impact of the Corona virus. (The Jakarta Post, 2020). In response to the outbreak, restrictions were held for travel restrictions, trade restrictions especially imports and the closure of public places, offices and schools were implemented. All schools including the University canceled classes and were unable to implement the traditional didactic curriculum. The COVID-19 pandemic has created difficulties to the implementation of the traditional didactic curriculum(Beer et al., 2020) and demand people to shift to technology-mediated spaces rather than face-to-face contexts (Dwidienawati et al., 2020; Magsamen-Conrad & Dillon, 2020). The Lockdown program limits face-to-face meetings and increases use of the home learning model. With all its limitations, education must continue. Educational institutions must continue to provide education to their students using teleconferencing technology, web-based resources, and other innovative tools (Beer et al., 2020).

COVID-19 demands most individuals to adopt technology to work, maintain relationships, even participate in education (Magsamen-Conrad & Dillon, 2020). The importance of information and communication technology (ICT) is even higher in crisis than usual (Király et al., 2020). The coronavirus pandemic is killing public life on
the streets but creating a new kind of life online (Newitz, 2020), so that learning responses from home digitally are considered important to find out the phenomena of the learning life carried out by students.

2.0 Literature Review

The COVID-19 pandemic has had profound impacts on education globally. For almost all students stopped learning in classrooms and continue their studies remotely using ICT. The importance of information and communication technology (ICT) is even higher in crisis than usual (Király et al., 2020).

ICT has been crucial not only in keeping parts of the economy going, allowing large group of people to work and enhancing social connectedness but also allowing large group of students to study from home (Király et al., 2020; Magsamen-Conrad & Dillon, 2020). Students should use ICT for remote conferencing by making use of web-based resources, and other innovative tools (Beer et al., 2020) in digital or online technology-mediated learning.

Some of the ICT infrastructure and media needed in online learning include computer equipment and internet connection (Gandasari & Dwidienawati, 2020). Computer devices include personal computers, laptops or cell phones. Internet connection is a means of connecting that allows computer devices to be connected to other computer networks in the world via the internet such as a wifi access point or mobile modem from a commercial internet provider (Simarmata, 2006; Surjono, 2020).

The rapid development of ICT makes a person more adaptive and easier to access various information via the internet (Gandasari & Dwidienawati, 2020; Király et al., 2020). Maybe for the vast majority ICT use is adaptive and should not be pathologized (Király et al., 2020), especially students who are a generation that is adaptive to ICT.

Student as a young generation are ICT adaptive for they are the Hyper connected generation (Koulopoulos & Keldsen, 2014) and active in digital behaviour (Dwidienawati & Gandasari, 2018; Gandasari et al., 2020). They spend 6.5 hours daily in front of electronic screen (Messarra et al., 2016). It is reported that the young generation write and receive 109.5 texts per day (Koulopoulos & Keldsen, 2014). They use technology in carry out every task (Berkup, 2014).

With the technology advancement, online learning, as a new method in teaching, is gradually used at all levels of education (Dwidienawati et al., 2020) but is still more of a supplement to education (Zhou et al., 2020) and finally becomes the main learning in covid-19 pandemic.

Online learning programs evaluation is needed in order to determine its quality as a program, how well it will run when the program is implemented (Gandasari & Dwidienawati, 2020). Evaluation, in the Deming wheel quality cycle, is one way to improve and improve quality.

The definition of quality in the context of education is a condition where the services provided are in accordance with the expectations and / or desires of consumers (Tribus, 1995). According to Safruddin (2020) quality or effective learning includes the support by good learning media, effective material delivery processes and systematic assignments (Safruddin, 2020).

In order to find out whether the evaluation of online learning programs meet the expectations of students as users, when the online learning program process is running, students should also be included in the evaluation process that has been, is currently and will be running (Safruddin, 2020) for the feedback from students is needed to improve the design of the next lecture (Safruddin, 2020) in an effort to improve the quality of education.
3.0 Materials and Method
This is a quantitative research study and aims to see student responses to home learning programs using digital communication media in Indonesia. The survey method was used. The survey was conducted in May-June 2020. Respondents were undergraduate students (S1) from various universities in Indonesia. Sampling by convenience and obtained as many as 247 responses. It applies similar questions as the previous research (Gandasari & Dwidienawati, 2020). There are 23 questions and 16 of them are questions about media and the online learning process which consists of closed and open questions.

4.0 Results and Discussion
The home learning response survey was conducted on 247 undergraduate (S1) students from various universities in Indonesia. The following is a graph of the percentage of the number of students by grade, university and location (Figure 1 and Table 1).

Some of the ICT infrastructure and media for online learning are computer device and internet connection. Computer devices include personal computers, laptops or cell phones. Internet connection is a means of connecting that allows computer devices to be connected to other computer networks in the world via the internet such as a wifi access point or a mobile modem from a commercial internet provider. The following are graphs of the number of users based on the type of network used during learning at home and the devices used in digital technology mediated spaces by students at various universities in Indonesia (Figure 2 and 3).
The result of the survey responses showed that most users use limited data packages as the internet network and cell phone is the most widely used device. In the response in the form of open questions, some of the problems faced during the digital learning period were the unstable internet network, limited data plan, quite expensive data plan and the unreachable home location that was difficult to receive signals. There was no response stating technical difficulties in using digital communication devices / media.

There was no response stating the problem of using digital communication media because these students belong to the Z generation known as digital naivety (Koulopoulos & Keldsen, 2014). They are the first generation to have broad access to digital communication technology in the form of mobile phones and Wi-Fi (Bassiouni & Hackley, 2014).

Below is graph of total time spent for home learning. The time spent by students in digital learning was mostly less than 2 hours, namely 44.7%, but 22% spent more than 5 hours. There were no responses stating problems in time spent learning at home with digital communication because this generation spends an average of 6.5 hours each day in front of electronic screens (Berkup, 2014). They type and receive 109,5 texts daily (Koulopoulos & Keldsen, 2014) and consider the digital communication as their part of life (Ozkan & Solmaz, 2015).

Figure 4: The Total Amount of Time Spent in Home Learning

Figure 5 and 6 show the students' responses toward the assignment time and assignment submission time during home learning.
The results of the research on the effectiveness of assignment time in Figure 5 showed that according to 57.6% of students, the assignment time was considered quite effective, 24.8% of students considered it ineffective, and only 17.5% of students considered it effective. The results of the research on the assignment submission time in Figure 6 showed that the submission time according to 57.3% or 379 students is considered sufficient and 42.7% or 282 students think the time given is insufficient.

According to the research results it can be stated that students feel less effective and almost some students feel the time given to collect assignments is not enough. Based on the open questions, several responses were obtained as follows.

**What is your suggestion / critics regarding the assignment time and submissions time?**

- Extended collection time
- Given a long time because at home we also have to help our parents, there are obstacles beyond expectations
- Some courses gave impromptu assignment with very soon deadline, but not often, only sometimes.
- There must be enough time for some students have signal problem and limited data plan.
- Number of assignments and deadline must be adjusted logically.
- It is better to have coordination in giving the assignment. There were many miscommunication since the first time of online learning.
- All learning can provide contact info to the committee and provide information every time an assignment will be given so students can also be notified because we are still in the early semester and are still getting used to viewing assignments via the web online
- It is better to not have too many tasks in a short period of time, because if you are at home not all of your time is spent making assignments
- It is expected that the assignment submission will be adjusted to class schedules, assignments during lectures and collected next week during class.
- In the case of giving assignments, it is better if you have time in advance to complete in terms of collecting it should also be given at least 3 days.
- It is better not to make assignments as college absences because students are not in the same situation, some of them have to help their parents and do other things.
- Too many assignments and ineffective and inefficient collection due to network constraints and limited / inadequate mobile devices
- Need help from the campus to purchase data plan, because students have difficulty to buy the data plan, especially during Covid like this.
- It is better if the assignment submission time is adjusted to the level of difficulty based on the
The results of research on the ease of taking part in the home learning program is in the Figure 7. The results showed that most of the students found it difficult to take part in the learning program from home, namely 58.3% of students and only 41.7% of students who did not experience difficulties in learning from home. follow a home learning program.
Figure 7. The Difficulties of Following Home Learning Program

Based on the research, most of students found difficulties in the home learning program. Based on the open ended questions, there are some responses as follow.

<table>
<thead>
<tr>
<th>What are the difficulties for you in joining the home learning program?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Internet network</td>
</tr>
<tr>
<td>• Data plan</td>
</tr>
<tr>
<td>• Do not understand the materials given for not having detail explanation.</td>
</tr>
<tr>
<td>• The materials are too difficult to understand.</td>
</tr>
<tr>
<td>• Cannot see the lectures or friends to dig deeper information and knowledge.</td>
</tr>
<tr>
<td>• Until then, there is no problem but the network and the devices used.</td>
</tr>
<tr>
<td>• Unsupported internet network and less effective learning.</td>
</tr>
<tr>
<td>• Difficulties to understand the materials.</td>
</tr>
<tr>
<td>• Signal</td>
</tr>
<tr>
<td>• It is more difficult to understand compared to face to face interaction.</td>
</tr>
<tr>
<td>• Materials were given without explanation.</td>
</tr>
<tr>
<td>• Less focus and did not understand the material.</td>
</tr>
<tr>
<td>• Less explanation of the lectures.</td>
</tr>
<tr>
<td>• I have difficulty in learning without face to face interaction.</td>
</tr>
<tr>
<td>• It is difficult to understand the learning without suitable example; I am learning by example so I don’t understand.</td>
</tr>
<tr>
<td>• Unstable internet connection cause difficulty for understanding</td>
</tr>
<tr>
<td>• Might be too many assignments.</td>
</tr>
<tr>
<td>• Network and data plan.</td>
</tr>
<tr>
<td>• Limited data plan and difficulty for communication.</td>
</tr>
<tr>
<td>• Noise or unstable network during online course in the apps, it made me don’t understand the materials given.</td>
</tr>
<tr>
<td>• Have to check the information in the phone all the time.</td>
</tr>
<tr>
<td>• Expensive data plan.</td>
</tr>
<tr>
<td>• It is difficult for me to understand the materials in online learning because I prefer direct learning and face to face; sometimes the assignment time is too short; my eyes are tired for staring at the screen for hours.</td>
</tr>
<tr>
<td>• Expensive data plan, unstable network.</td>
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</tbody>
</table>
Ineffective online learning due to limited time, including unstable internet network and limited data plan, inadequate family economy making it difficult to meet the need for an internet connection.

- Poor network in online learning and cannot understand the material
- Limited insight to capture the material provided by the lecturer. And, it is difficult to ask questions to lecturers about the material given.
- My phone does not meet the minimum requirement.
- Because I have to help my parents work, sometimes I just go absent without taking online lessons
- The knowledge we learn does not absorb into our minds
- Cannot receive materials or ask questions directly
- I need data plan and definite schedule from the lecture, there mustn’t be postpone or unclear schedule. I understand that the lecturers have many works to do but could they spend their time to inform us if they were busy and the schedule is delayed? I hate lectures who is difficult to contact for a course and they do not keep their promise.
- Mostly cannot connect to the network and slow network of phone.
- Minimum requirement of the devices and network.
- The difficulty is I do not understand the lessons given because of lack of explanation. The material should have been given first and then explained
- Course schedule is irregular and very wasteful when using online lecture applications
- Too many applications while limited package / quota.
- The existing material is not necessarily conveyed well; the material is only given without explanation.
- The home internet network does not support online lectures and do not have a laptop so if you have class hours you have to leave the house to go to your place

Based on the open questions, it was found that the difficulties in participating in the home study program for most students were inadequate and unstable communication networks, financial problem for purchasing data plan and the price is quite expensive, inadequate ownership of communication media infrastructure, the time for online meetings are limited and not as effective as face-to-face meetings. This is in line with the findings of previous studies (Gandasari & Dwidienawati, 2020).

According to Islamiyah & Widayanti (2016) about the learning method that the online learning is not as good as the conventional method. Based on Yuliana & Zuliana (2019) the conventional learning method has the advantage of transmitting large amounts of knowledge to students by systematic logic and with strong emotional contact between teachers and students.

The quantity and form of two-way communication between lecturers and students for 3 weeks is the amount of communication between lecturers and students using online communication media applications for 3 weeks of learning at home. The results of the research on the quantity and form of two-way communication can be seen in Figures 8 and 9.
The research results in Figure 8 showed that most of the students communicated with the lecturer more than 2-3 times, namely 40.5% of the students, followed by 25.5% of the students as 4-5 times, 17.4% more than 5 times, 13.4% students once and there are 3.2% students who never communicate with the lecturer. This means that in 3 weeks of learning at home, at least students communicate with the lecturer once in 3 weeks of learning at home.

The research result in Figure 9 showed that most of students use what's application for communication, there were 170 students, video call 116 students, email 105 students, voice call/cell phone 14 students, other ways 93 students and no two-way communication as many as 11 students. Other applications that are used in communicating apart from assigning are using the zoom platform, edmodo, discord, google classroom, google meet, moodle, skype.

In order to dig deeper about two-way communication, open-ended questions were applied. The results of the responses to open-ended questions about student expectations about two-way communication are as follows.

<table>
<thead>
<tr>
<th>What are your expectations regarding the communication between faculty and students in the Learning from Home program?</th>
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<tbody>
<tr>
<td>Your answer....</td>
</tr>
<tr>
<td>- Quite satisfied with lecturer communication.</td>
</tr>
<tr>
<td>- There must be a better consideration about the internet needs of students, maybe many feel limited by the problem of not having enough data plan.</td>
</tr>
<tr>
<td>- Lecturers do continuous supervision to the materials provided.</td>
</tr>
<tr>
<td>- We have various kinds of lecturers and not all of them can apply online learning well. Hope that the future will be even better.</td>
</tr>
<tr>
<td>- I hope that lecturers and students can communicate well through the application that is already available without any obstacles.</td>
</tr>
<tr>
<td>- My hope is that the communication will be even better and more effective.</td>
</tr>
<tr>
<td>- Lecturers should not give too many assignments and the communication must be clearer.</td>
</tr>
<tr>
<td>- My hope is that for some courses, the interaction between lecturers and students during online lectures will be even more active.</td>
</tr>
<tr>
<td>- It is better to do face-to-face learning because it is more effective and don't have to meet difficulties with data plan or signals</td>
</tr>
</tbody>
</table>
• Increase the time in face-to-face activities for there's some problem with the lecturing, it only has 40 minutes' time limitation.
• Lecturers should pay more attention to task coordination and explain tasks clearly. In order to avoid misunderstanding, then a lecturer did not want to know. In fact, the misunderstanding occurred because of the lecturer. However, students may not blame the lecturer directly.
• Don’t have to assign assignments to every meeting.
• The material being taught can be understood by students.
• The forms of communication used mustn’t be monotonous.
• mutual respect and respect for each other.
• In order to have better understanding about the condition and situation of students.
• I hope the communication will not be too monotonous because this will make it boring. The lecturer needs to give a little effort in the communication to explain the material, so that students can pay attention to the lecturer’s explanation.
• My hope is that lecturers can communicate well and deliver a clear and understandable for students.
• When the lecturer finishes explaining the course material, it is better to ask whether the students have heard or not because the variety of the students’ network situation and that makes some students hear explanations and some not.
• Lecturers should give assignments in a way that makes it easier for students, so that students don’t send them wrongly or don’t understand.
• Hope the lectures understand the students better, because this online lecture has just been conducted, so students may not get used to it or usually forget if there is a lecture today or the assignment given.
• My hope is that students and lecturers can understand each other. Students understand that in giving assignments, lecturers also do a lot of things. And lecturers must understand that students sometimes experience problems in collecting assignments, for example the network or running out data plan.
• Hopefully the lecturer understands that the student’s data plan is limited so that online lectures don’t take too long and hopefully there are not too many assignments because students have assignments from other courses as well.

The student opinion regarding the assignment / learning given for 3 weeks was that 49.8% of students said it was quite good, 37.8% of students said it was good, and 13.4% of students said it was not good. According to most students, the learning for 3 weeks was still inadequate due to one-way communication, do not implementing active students, too many assignments, and problems with inadequate communication networks.

Covid-19, which forces a change from implementing a traditional didactic curriculum to a technology-mediated space, illustrates the unpreparedness of lecturers and students. From the responses given, it shows that communication between lecturers and students is still inadequate, teaching readiness is still considered inadequate, there’s a lack of readiness in the use of technology, time management and assignments are still inadequate and a sense of empathy is still inadequate. It is along with the previous research (Gandasari & Dwidienawati, 2020) Some of the students’ expectations regarding the communication of lecturers and students in the home study program are that communication is more effective, both in quantity and quality; more varied learning materials; better time management or assigning tasks on schedule; When giving assignments and collecting assignments that are adequate and more empathetic, especially during Covid-19, due to several obstacles faced by students, both infrastructure and inadequate financing so that the online
learning process is hampered. According to Bojovic et al. (2020) the Educational institutions need to understand organizational and technical changes that educational institutions need to implement to enable different methods of interaction, to ensure continuity, and to provide high quality of the teaching process and must quickly adapt to the new situation.

5.0 Conclusion

The COVID-19 pandemic has had profound impacts on education globally. For almost all students stopped learning in classrooms and continue their studies remotely using ICT. Covid-19 has created difficulties in implementing the traditional didactic curriculum and forced a shift to digital technology-mediated spaces. Students and educators are encouraged to be active in the use of online-based information media because they have to carry out learning activities at home. The results showed 95.5% of students used cell phones as a medium of communication; 75.5% of students use a mobile modem (limited) for internet connection; the average student spends his time studying online approximately 4 hours a day; According to some students, the time for giving and collecting assignments was considered inadequate. Most students, namely 58.3%, felt it was difficult to follow the learning program from home; Most students use what application in two-way communication with the lecturer and at least once; and according to most students, 86.6% of learning at home for 3 weeks was still inadequate.

In order to improve the quality of learning, the characteristics of lectures must be student-centered, interactive, holistic, integrative, scientific, contextual, thematic, effective, and collaborative (Mendikbud RI, 2020). Interactive learning, effective, using various forms of student-centered learning not only to prevent the spread of Covid-19 but to develop 21st century skills / life skills.

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