Evaluation of Online Learning with Digital Communication media during the COVID 19 Pandemic

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Abstract
The COVID 19 pandemic (Covid-19) led to the closure of schools in affected countries in a bid to limit its spread. The policy was taken by the government and educational institutions for the safety of students and educators. Therefore, students need to carry out learning activities at home by using various online media. In Indonesia, a total of seven vocational schools under The Ministry of Agriculture, have proactively implemented online learning that have been running for the past 3 weeks. This study, therefore, aims to obtain data on the use of digital communication media for students to study from home. This is a descriptive research with data obtained from 665 students located in Bogor, Medan, Yogyakarta, Magelang, Malang, Gowa, and Manokwari. In-depth interviews were conducted on 5 cases using communication ethnography. The results showed that 95.8% of students used mobile phones, while 87.8% used modems for internet connection with an average study time of approximately 4 hours a day. In addition, 57.7% stated that the assignment time was quite effective, while 42.6% reported it was insufficient. Approximately 63% found it difficult to follow the learning program from home, while 85.4% used WhatsApp application to communicate with their lecturer. In conclusion, over the past 3 weeks of learning from home students, have communicated with the lecturer at least twice, and 77.8% reported that the learning process is inadequate.

Keywords: 1. E-learning, 2. Google classroom, 3. WhatsApp, 4. Zoom.

1.0 Introduction
The evolution of industry 4.0, led to the change from conventional to digital-based technology. Therefore, educators need to continuously improve their skills to in line with the new era. Learning materials and methods need to be adapted, using online or digital-based techniques (Handitya 2018 in Marzuki, 2020; Dahlan, 2018).

The spread of the Covid-19 pandemic has increased the dynamic nature of education to adapt to the situation and conditions. Schools have been temporarily closed to prevent the spread of the virus, thereby leading to the use of digital-based learning technology. Students and educators are encouraged to be active in distance learning method (Dwidienawati et al., 2020) or online-based information media to carry out learning activities from the comfort of their homes.

Learning is an interactive process, using the right educational resources in a confined environment. During this pandemic, the emphasis is placed on active students that tend to obtain educational material from other resources. However, educational institutions need to ensure that students are included in the evaluation process of any adopted teaching medium to provide the necessary feedback to improve the process. The purpose of this study is to obtain adequate information from students on learning programs from home using digital communication media.
2.0 Literature Review
The rapid development of internet technology has increased accessibility to various information. The ease of internet access, through personal computers, laptops, and smartphones, provides opportunities for the use of online learning applications. Digital-based learning is not only aligned with the digital Industry 4.0 era; instead, it is also following the prevention efforts of Covid-19 (Handitya 2018 in Marzuki, 2020; Dahlan, 2018).

The media and infrastructures needed in online learning are computer devices such as personal computers (PC), laptops, and smartphones, as well as internet connections, which allows the interconnection of computers through networks such as wifi or mobile modems from commercial internet providers (Surjono, 2020). According to Flack (2016) actual use of Information System has a significant association with user satisfaction and quality.

Online learning has developed into an important means of income because of its ability to improve the quality of education with minimum resources and infrastructure (Aldholay et al., 2019). However, while academics have not yet studied the support and use of online learning in a variety of settings and compatibility effects (Aldholay et al., 2019). So, the current online learning programs due to the presence of Covid-19 need to be evaluated to determine its success and failure rates.

Subali (2020) defined evaluation as the process used to determine the quality of a program when implemented. In the Deming wheel quality cycle, evaluation is one way to improve quality. According to Tribus (1995), quality is a condition where the services provided meets consumers' needs. In terms of education, quality lectures are those that meet the expectations of all students by transforming a number of resources to achieve effective learning goals (Safruddin, 2020). Quality learning is supported by an effective material, good delivery process, and systematic assignments (Safruddin, 2020).

According to Parker et al. (1995) in Safruddin (2020) and Marzuki (2020), the characteristics of quality lecturing management are 1) continuous improvement based on feedback and 2) process-orientation. Each process is described, mapped, measured, and improved to produce the desired learning.

A quality lecture is an education process that meets the expectations of students. Therefore, they need to be included during the implementation process for proper evaluation, which is needed to improve the design (Safruddin, 2020).

3.0 Materials and Method
This is a quantitative and descriptive research, which aims to determine students' ability to learn from home using digital communication media. The survey method conducted from 9-22 April 2020 on 665 students in vocational schools under the Ministry of Agriculture located in Bogor, Medan, Yogyakarta, Magelang, Malang, Gowa, and Manokwari, was used to carry out this research. A descriptive statistical analysis was used with Microsoft Excel 2010 for data analysis. For better understanding, in-depth interviews were conducted on 5 cases using communication ethnography. There were a total of 22 questions with 16 based on devices, connections, time, and limitations associated with learning from home.

4.0 Results and Discussion
The respondents were vocational school students in Bogor, Medan, Malang, Jogjakarta, Magelang, Manokwari, Gowa, and others that majored in agriculture, animal husbandry, plantation, extension, agribusiness, and seed technology as shown in figure 1.
Figure 1: Respondent location

Media and infrastructure needed in online learning are computer devices and internet connections. Computer devices can be personal computers, laptops, or smartphones, as shown in Figure 2.

Based on communication media 95.8% (637) of the students use mobile phones, 44.1% (293) laptops, 4.7% (31) PCs and 0.6% (4) iPad / tablets. Previous study Dwidienawati et al. (2020b) showed that mobile usage for not only for online shopping activity, social media, entertainment and finding information, but also for studying. Most of them doing the more activities on their mobile phone (Dwidienawati, Abdinagoro and Gandasari, 2020). This study showed that the problems encountered in terms of communication media are broken laptops and cellphones that do not support online learning. According to Petter & McLean (2009) one of the qualities of a system is the extent to which users of the system think that certain systems are comfortable to use and connect.

The following are in-depth interviews conducted from some students. Jun only makes use a mobile phone during the home study because she doesn't have a laptop. Eno prefers the use a laptop to carry other assignments because it's easier, faster, and better. According to her, it is much better because there are no notifications as opposed to the use of a mobile phone. Eno carried out online learning in the bedroom using a desk. However, unlike Eno, Haz and Sit prefer using mobile phones when learning at home because to them it is easier, cheaper, and saves quota. Haz usually sits in the living room to learn, and when the house is filled with people, Haz goes to the mosque or musholla. Har uses laptop and mobile phone to receive various
educational materials. The laptop is used for video conferencing, and to carry out assignments, meanwhile phones are used to fill out the questionnaire, read the pdf material provided, etc. Har carried out educational learning activities in the bedroom.

Figure 3 shows the various types of internet connections used to study online from home. Based on the type of internet connection, 87.8% (584) students use a mobile modem (limited), 6.8% (45) use access point wifi, 4.4% (29) mobile modem (unlimited) and 1.1% use others. Problems encountered in terms of internet connectivity are; poor connection quality, no internet connection due to location, limited quota, and cost-expensive quota fees.

The total online learning time is the average time spent by students on a daily basis, as shown in Figure 4. The result showed that 33.5% (223) of the students spent more than 5 hours daily, 23.8% (158) 2-3 hours, 22.7% (151) 4-5 hours, are 17.3% (115) 1-2 hours and 2.7% (18) less than 1 hour. Therefore, the average student spends approximately 4 hours a day studying online.

Figures 5 and 6, shows the effectiveness and adequacy associated with assignment and collection time. The results showed that 57.7% (384), 24.7% (164), and 17.6% (117) of the students considered the assignment time, quite effective, ineffective, and effective, respectively. According to 57.4% (382) of the students, the assignment time was sufficient, while 42.6% (283) stated that it was insufficient.
The study shows that students feel less competent in conducting the task given to them, with the majority stating that the collection time is inadequate. It was obtained from the open-ended question that the task given comprises unclear information, and assignments were scheduled and unscheduled with limited time. This was because each lecturer assigned tasks to each course, with constraints in the communication network, thereby hampering the video quality during the sending process. Internet quotas are also very expensive, and the locations of a residence make it challenging to obtain adequate communication networks between students and lecturers. Some of the suggestions provided by students are as follows: 1) a minimum of one week should be given for the submission of assignments; 2) online media compatible with students' tools should be utilized. Previous studies have revealed the determinants of e-learning satisfactions are students-instructor interaction (Marks, Sibley and Arbaugh, 2005), timely response and feedback (Holsapple and Post, 2006), informations quality and delivery method (Dwidienawati et al., 2020).

Figure 7 shows the result associated with the ease of joining the learning program at home. The results showed that 63% (419) of the students find it difficult to participate in the learning program from home, while 37% (246) had no difficulty.
From the open questions, it was found that the difficulties in attending a home study program for most students were inadequate communication networks, limitations in funding for quota purchases, inadequate infrastructure, and limited meeting time. This is in line with the research by Islamiyah & Widayanti (2016), which states that online learning is not better than the conventional method. According to Yuliana & Zuliana (2019), conventional teaching methods transmit large amounts of knowledge to students through systematic logic and a strong emotional connection. Previous studies (Ziaullah et al., 2014; Laumer, Maier and Weitzel, 2017; Aldholay et al., 2019) showed that satisfaction is influenced by the quality of information such as completeness, accuracy (Ziaullah et al., 2014; DeLone and McLean, 2015), timeliness and comprehensiveness (DeLone and McLean, 2015).

According to in-depth interviews carried out on Eno, Haz, Har, Eno, and Jun, online learning is less effective. Haz stated that face-to-face learning is more effective because it is easy, inexpensive, and enables students to directly acquire information from the educator. Har further stated that face-to-face learning is more effective because it has a greater ability to build a comfortable and educational atmosphere. This study confirms the previous study (Yuliana and Zuliana, 2019).

Figure 8 shows the results of the two-way communication carried out between lecturers and students for 3 weeks. The results showed that 85.4% (568) of the students used the application, email 44.5% (296), video calls 34.4% (229), voice calls/telephone 3.6% (24), other way 36.1% (240) and no two-way communication of 3.3% (22). Other applications used in communicating are google classroom, discord, zoom, and moodle.
The quantity of learning from home is dependent on the amount of communication within 3 weeks, as shown in Figure 9. The results showed that the 47.7% (317), 23.5% (156), 23% (153), 3.5% (23) and 2.4% (16) of the students communicated more than 5 times, 2-3 times, 4-5 times, once and none, respectively using the two ways communication method. This means that in 3 weeks of learning at home, students communicated at least twice with the educator.

Some students' stated that they tend to establish good relationship with their teachers in the home study program, with more varied learning materials using videos. It also has better time management in assigning and collecting assignments. However, some of the constraints are inadequate infrastructure and financing, thereby hampering the online learning process.

Approximately 53.8% (358) of the students stated the process of giving assignment for the first 3 weeks was good enough, while 23.2% (154), 20.2% (134) and 2.9% (19), stated that it was well, good and not good, respectively. According to the majority of students learning for 3 weeks is still inadequate due to lack of two-ways communication, less varied methods, and poor communication networks.

There are various forms of learning methods; therefore, it is not fully student-centered. The use of various
literacy (information, media) needs to be added to develop the abilities of the 21st century and the Industrial 4.0. In addition, the application of various learning methods such as group discussions, simulations, case studies, collaborative learning is still inadequate.

5.0 Conclusion

The education system has become dynamic with the implementation of new government strategies due to the rapid spread of the covid-19. Students and educators are encouraged to be active in the use of online-based information media to carry out learning activities at home. The results showed that 95.8% (633) of the students used mobile phones as communication media, while 87.8% (584) used modem (limited) for internet connection. On the average, students spend approximately 4 hours a day studying online. The assignment time was quite effective for 57.7% (384) of the students, and insufficient for 42.6% (283). Regarding assignment collection, 63% (419) found it difficult to follow the learning programs from home, while 85.4% (568) need to communicate with their lecturers at least twice a week. Overall 77.8% of the students stated that their communication time with educators was inadequate.

According to Permendikbud No.3 of 2020, Article 11-14 on Process Standard, lecture characteristics need to be interactive, holistic, integrative, scientific, contextual, thematic, effective, collaborative, and student-centered. Variety of student center learning-models suitable for the prevention of Covid-19 is needed in this 21st Century. Efforts to create varied and interesting learning media are expected to support students’ activeness and creativity, which aims to improve their learning outcomes (Komarudin et al. 2018). Bojovic et al. (2020) stated that educational institutions need to understand organizational and technical changes to enable different methods of interaction and for the provision of high-quality teaching models.

The limitation of this study is the diversity of respondents. Further study with a more diverse respondent needs to be explored. Further study with a more diverse respondent to understand more about how the diverse students feel about Online Learning with Digital Communication media during the COVID 19 Pandemic.

References

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