

After a Year of Online Learning Amid the COVID-19 Pandemic: A Survey of Indonesian Undergraduate Students' Opinions and Behaviors

R. Prita Prabawangi^{1*}, Megasari Noer Fatanti², Kun Sila Ananda³

¹²³Faculty of Social Science, Universitas Negeri Malang, Indonesia
rani.prita.fis@um.ac.id
megasari.fatanti.fis@um.ac.id
kun.ananda.fis@um.ac.id
*Corresponding Author

<https://doi.org/10.24191/ajue.v17i4.16211>

Received: 1 April 2021

Accepted: 30 September 2021

Date Published Online: 31 October 2021

Published: 31 October 2021

Abstract: Universities around Indonesia are currently adopting online lectures to keep the learning process running in the face of the COVID-19 outbreak. Online courses, thanks to the rapid advancement of ICT, allow students and lecturers to interact despite the stay-at-home policy. Because of its flexibility and modern lifestyle, this method is likely to continue to be used in the future. Therefore, this study examines the benefits and disadvantages of online learning and understands students' expectations. With a total sample of 226 undergraduate students from four cities and seven universities in Indonesia, this research uses a descriptive survey design. The data collection technique was an online survey using Google Forms during May and June 2021. The results showed that most students viewed online learning during the pandemic as going well, although some students felt that their academic needs were not being met. Students find benefits of online learning, such as flexibility, cost savings, and increased confidence in engaging in discussions. However, the respondents identified a number of obstacles to achieve the ideal learning process, including low signal quality, limited laboratory practices, and high internet network expenses. Students reported certain disadvantages of online learning, such as limited interaction, irregular class schedules, and a high number of assignments. This study also found that most students lose their concentration easily. They also multitask during synchronous learning, where the side activities are mostly academically unrelated (e.g., doing daily activities, scrolling through social media, driving, and watching movies). From the data gathered, it is important for lecturers and universities to consider the reduction in assignments, meeting frequency, and duration of online learning to maintain students' motivation and concentration

Keywords: Covid-19, higher education, Indonesia, online learning, undergraduate students

1. Introduction

Since discovering a new strain of the coronavirus in Wuhan, China, in December 2020, WHO has declared the health crisis status due to the spread of the virus has accelerated, the COVID-19 as a global pandemic, and almost all countries must develop strategies to deal with the crisis (Hatta, 2020). Several countries have reported that COVID-19 has attacked their country. The first case in Indonesia was found in Depok, West Java. This case arose from two Indonesian citizens who were positive for COVID-19 and had received intensive treatment at a local hospital. Two weeks after the first case, hundreds of people in DKI Jakarta were confirmed positive for COVID-19. One month after the case, 5,516 people were infected in Indonesia, with a mortality rate of 9% (Idhom, 2020). Until this article

was written, a total of 3.3 million people were confirmed positive for Covid-19, with the death toll reaching 92 thousand people (Kompas.com, 2021).

Some of the main sectors affected by this pandemic include health, education, economy, and politics. Quoting from Kompas.com (December 2020), it was stated that the Covid-19 pandemic had a significant impact on various aspects of life, such as cases of death of health workers due to contracting Covid-19 increasing every day; the studying process that must be carried out online; and of course, the threat of an economic recession in the third quarter of 2020. The learning process from elementary to university levels must be carried out online to avoid spreading the coronavirus, which is increasingly widespread in Indonesia. Likewise, the lecture process at universities is also carried out using an online method by utilizing digital platforms. Despite the sense of isolation and limited face-to-face interactions that remote learning might bring (Ally, 2009; Coman et al., 2020), it is one of the strategies to keep the learning process going. Taking into account the entire community's safety, the Indonesian government issued a policy to carry out work from home and study from home activities. In practice, since mid-March 2020, as many as 276 public and private universities in Indonesia have implemented online lectures.

Online learning has existed for more than two decades. According to Harasim (2000), the first entirely online course was offered in 1981. Nowadays, universities across the world have their own e-learning platform. Despite the fact that most of Indonesia's leading universities have an e-learning platform, its use in daily learning activities is still limited. Universities primarily use the face-to-face teaching technique. But when the pandemic strikes, ready or not, the university and the entire Indonesian academic community had to adapt to this new method of teaching and learning.

Online learning is probably one of the best solutions in this social distancing situation since it has proven to be effective in enabling university student understanding (Khusniyah, Hakim, 2019; Kuntarto, 2017; Agharwal, Kaushik, 2020). However, to be able to deliver its maximum benefits, online learning must be done correctly. Where it requires properly designed learning materials (Ally, 2009), high authenticity (learning within context), high interactivity, and high collaboration (Ring & Mathieux, 2002). Although it might make life easier, e-learning takes, on average, 5.5 times the amount of development as classroom courses (Shank, 2008).

According to Miarso (2007), seven principles of distance learning must be considered, namely the principles of freedom, independence, flexibility, currentness, suitability, mobility, and efficiency. These principles are synergized and connected. Furthermore, Tanis (2020) stated that in distance learning, the instructor must consider several things. Instructors must be energetic, organized and communicative. Instructors must also be active and provide learning content based on student experiences to make learning easier to accept and remember. However, in this sudden change of situation, there are chances where the lecturer has not had the time to prepare and make the required changes to create online learning friendly-materials. Lecturers are not ready to operate online learning systems in this pandemic era (Unicef, 2020a). The implementation of online learning does not seem to have been built adequately so that it impacts the effectiveness of learning.

From our literature review, previous research conducted around Covid-19 and online learning have shown conflicting results. Some studies show positive findings on various aspects such as students' satisfaction, understanding, and adaptability (Besser, 2002; Agarwal & Kaushik, 2020). While other reports problems on student's level of understanding and satisfaction (Ilias, Baidi, K.Ghanis, & M.Razali, 2020; Ningsih, 2020; Dewantara & Nurgiansah, 2021). One study done explicitly in Indonesia even found that 41% of students admit they have poor (35%) and no understanding (6%) of the subjects delivered during online learning (Bahasoan, Ayuandiani, Mukhram, & Rahmat, 2020).

Previous research has shown that online learning offers many benefits for students because it involves student-centred, more flexible (Dhawan, 2020). It can also increase interaction with students by providing asynchronous and synchronous tools such as e-mail and forums chat conferences. video (Marinoni, et.al., 2020; Anwar, et.al., 2020). Furthermore, the Internet facilitates the distribution of content at the same time to the users in a large number; online learning offers many advantages for learners such as control over the content, control over time spent studying, and thus the process can be customized according to the learner's needs and learning objectives (Suresh et al., 2018). However,

online learning also has their limitations, as it can decreased learning motivation, delayed feedback, or even feelings of isolation due to the lack of physical presence of classmates Yusuf. et al. (2013).

Although there have been earlier studies on the benefits and drawbacks of online learning, there is currently a lack of research that looks into students' preferences for online learning in the context of the COVID-19 epidemic. This study looked into students' preferences for course duration, frequency, and material in order to better understand their attitudes about online learning. Another contribution made by this research is to have a stronger insight into the disadvantages of online learning by examining students' behavior during the course. This study looked at students' tendency to multitask in addition to asking them to list their perceived benefits and cons. By taking a deeper look at students' experience and perspectives on online learning, this research could contribute to the development of effective online courses that meet students' expectations and academic needs.

2. Methods

This research was conducted as a descriptive survey by using two steps of data collection. The first data source were collected through a non-standard questionnaire containing 50 question items following the research questions. To obtain deeper information, second data collection was carried out through interviews with several students from several campuses in East Java by telephone and Google Meet. Based on the number of questionnaires filled out, 226 undergraduate students from five cities in Indonesia, namely Malang, Surabaya, Yogyakarta, Jakarta, and Padang. They have backgrounds in various fields of science, as much as 77% from the social sciences and humanities, and 23% from the nature sciences.

The main criteria for respondents to this survey are students actively participating in lectures during the Covid-19 pandemic using e-learning platforms and other digital platforms, such as Zoom, Microsoft Teams, and Google Classroom. The survey was conducted online using the Google Form application, and the questionnaire links were distributed via WhatsApp and LINE during May - June 2021. The preparation of the questionnaire was based on three research question items. The first statement item relates to the online lecture model (synchronous/asynchronous), the duration of the lecture, the digital platform used during online lectures, and whether students like the online lecture. The second question item is related to the assignment model given by the lecturer during online lectures and the extent to which students can concentrate during online lectures. The third question item is related to other activities that have been carried out by students during online lectures, for example, doing homework, doing other coursework, surfing social media, watching movies, and driving. The last part of the questionnaire contains a series of socio-demographic variables and questions about students' expectations for improving the quality of their courses in the future. This information was used only for the purpose of the descriptive analysis.

The researcher used appropriate statistical tools and techniques to validate and analyse the data collected from the sample respondents. Alpha Cronbach technique is considered in this study to measure the internal consistency of the variables. To analyze the online lecture process and determine student perceptions of online lectures during the Covid-19 pandemic, researchers used SPSS version 24. The data were analyzed using percentage technique with the following procedures: data checking, data classification, data tabulation, frequency distribution, percentage calculation, visualization in the form of tables and pie charts, and data description. This technique is used to describe how online learning is done in Indonesia, the students' attitudes and preferences toward online learning, and students' behavior during online learning.

3. Results and Discussions

3.1 Online Learning During Pandemic Covid-19 at Glance

Online learning approaches were widely employed in a hybrid learning approach to support face-to-face learning in the classroom prior to the Covid-19 epidemic. Students prefer online lectures due to the obvious flexibility of time and space, which allows them to access the material at any time and any place (Stone, 2019). In a well-designed online lectures, students could develop learning autonomy. However, the online learning that happened due to the pandemic is an emergency one. Where not all educators have enough time to adequately design their courses or adapt to this new method, which may result in poor learning quality.

From the data, we see despite the stay-at-home policy, not all lecturers implemented online learning. Although most lecturers in Indonesia employ online learning, there are small number of students (7%) said to participate in both online and offline learning.

Table 1. General Overview of Online Learning

Items	Number (%)
The Learning Method During Pandemic	
100% Online	93%
Online and Offline Learning	7%
Type of Online Learning Used	
Synchronous Learning	12%
Asynchronous Learning	2%
Both	86%
The Average duration of synchronous learning	
>40 minutes	71%
40 minutes	18%
< 40 minutes	11%
Platforms used for synchronous learning	
Zoom	95%
G-meet	85%
WhatsApp	65%
University Platform	58%
Live IG	2%
Others	14%
Platforms used for asynchronous learning	
Google Classroom	80%
YouTube	56%
Podcast	16%
University Platform	79%
Learning Materials Used	
Text (i.e.: journal, article)	81%
Slide	94%
Audio	44%
Audio Visual	81%
Others	5%

For online learning, both synchronous and asynchronous method are using various platforms. Google Classroom is the most popular asynchronous learning medium, YouTube comes in second, followed by podcast. As for synchronous learning, Zoom and Google Meet are the two most

frequently used as it facilitates real-time and audio-visual communication between students and lecturer. Aside from that, some teachers do synchronous learning via mobile instant messaging, such as WhatsApp. WhatsApp has certain educational features, as it allows exchanging ideas and materials that enable online conversation, despite the fact that it was not created for academic reasons (Susilo, 2014). The use of WhatsApp for the educational purpose could also improve students' learning achievement (So, 2016). Another advantage of utilizing WhatsApp is its familiarity; it is used by 40% of the Indonesian population (Statista Research Department, 2021), implying that both the instructor and the student are already comfortable with it. According to the students in this study, despite the platform, the typical synchronous learning meeting lasts more than 40 minutes.

In addition to the platform and duration, we also asked about learning materials during online lectures. We inquired about learning materials during online lectures in addition to the platform and time. According to the survey results, various sorts of learning materials are used. Lecturers use a variety of learning tools, including text, audio, and video.

3.2 The Benefits and Limitations of Online Learning

In line with the previous study, respondents in this study also think that flexibility is the main benefit of online learning. Online learning erases the need for an actual class as learners can access it from their bed or even a train during their trip. Students can learn without the need to look presentable or even sitting straight. Online learning allows participants to collapse time and space (Cole, 2000). Especially in asynchronous learning, students can access the online materials not only anywhere but also anytime. While synchronous learning facilitates real-time interaction between students and instructors (Ally, 2009).

Besides flexibility, another benefit of online learning perceived by students is improving students' assertiveness. More than half of students feel more confident asking or answering a question and participating in a discussion during online learning. In the follow-up question, most students feel more comfortable participating in a discussion, especially when they can respond through writing. Experts say that online learning benefits introverted students (Friedman, 2016). During an online course, primarily an asynchronous one- students have more time to construct their thoughts and words before asking a question or stating an opinion. Introverted students are generally express themselves better through writing than their extroverted friends (Zainuddin, 2016; Zaswita & Ihsan, 2020; Qanwal & Ghani, 2019); this is presumably why chat-box in synchronous lecture and discussion forums in the asynchronous meeting could help some students to participate more than traditional offline classes.

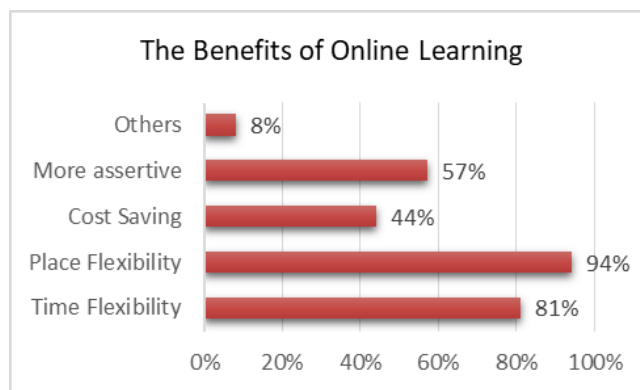


Fig. 1 The advantages of Online Learning

The next benefit of online learning is cost saving. However, we saw polarized opinions toward this financial aspect. Some respondents see online learning as a cost-saving while others see it costly. It is not a surprise, since online learning may reduce some costs such as transportation and eating expenses but it increases the internet budget.

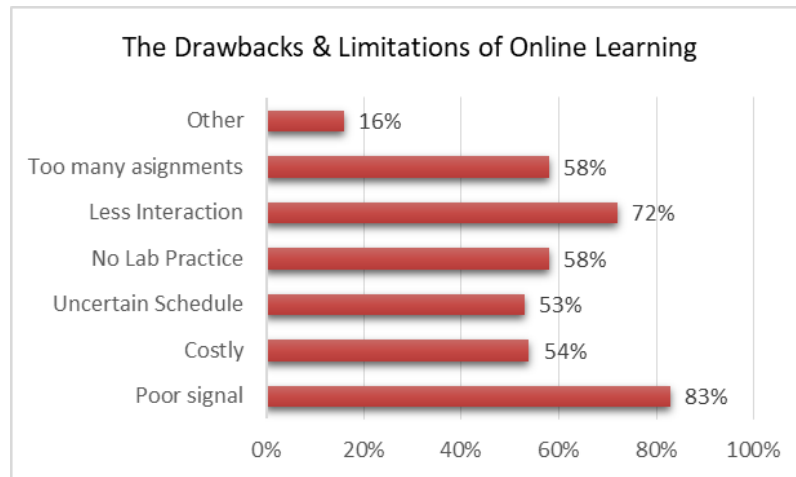


Fig. 2 The Drawbacks and Limitations of Online Learning

Although online learning offers flexibility, it may not always be accessible. Our data shows that some students are having difficulties accessing the internet due to technical and financial issues. These signal and monetary issues are also present in other developing countries such as Malaysia (Ilias, Baidi, K.Ghanis, & M.Razali, 2020; Chung, Subramaniam, & Dass, 2020) Pakistan (Adnan & Anwar, 2020). Technically, Moorhouse (2020) concludes that there are at least two common problems in online lectures. Firstly, teacher-centered courses and technical obstacles that limit access.

Another limitation of online learning is the limited interaction. Most respondents agree that less interaction is one of the online learning limitations. Despite the fact that modern information and communication technology can make long-distance learning more engaging and the communication process easier and faster, it appears that face-to-face communication is still necessary. This physical separation tends to reduce a sense of community, giving rise to feelings of disconnection, isolation, distraction, and lack of personal attention (Rovai, 2002).

Besides the lack of personal touch, online learning may facilitate lecturers to use various materials, but it cannot always meet the needs of teaching and learning practical skills. Due to the fact that they are not in the same location, material delivery and assessment may be limited (Dyment, Downing, Hill, and Smith 2017). During online learning, lecturers and students face difficulties to teach and learn practical and clinical work (Mukhtar, Javed, Arooj, & Sethi, 2020) which is fundamental for several disciplines.

Another downside of online learning from students' perspective is the high number of assignments. More than half of our respondents agree that there are too many assignments during online learning. This finding is in line with previous research where students felt that there are too many tasks given by the lecturer during online learning that it stressed them out (Hussein, Daoud, Alrabaiyah, & R. Badawi, 2020; Rahiem, 2021). The majority of students said the amount of assignments during online learning was more than before the outbreak, and some thought it was excessive. The majority of students, on the other hand, believe that assignments aid their understanding of the subject. However, no matter how beneficial, too many assignments during online learning may produce emotional difficulties (Irawan, Dwisona, & Lestari, 2020). Some researchers even advise that faculty and lecturers change the curriculum and reduce the cognitive workload in this area (Mukhtar, Javed, Arooj, & Sethi, 2020; Adnan & Anwar, 2020).

Table 2. Students' Attitude Toward Assignments During Online Learning in Pandemic Time

Attitudes	Number
<i>There are more assignments in online learning compare to normal face to face learning</i>	
Agree	79%
Disagree	21%
<i>Assignments are effective in helping to understand the subject</i>	
Agree	61%
Disagree	39%

Despite those drawbacks, most students still think that the emergency online learning during this pandemic has been going well. These positive attitudes are likely to be influenced by the level of adaptation. A study found that the main factors contributing to university students' stress are the unfamiliarity of online learning and the monotony of lecturers delivering material (Herdiana, Rudiana, & Supriatna, 2021). But since this research was done after online learning has been going on for more than a year, unfamiliarity is no longer a problem. It is safe to assume that most students nowadays have a higher level of digital literacy when it comes to accessing online learning platforms. Students that have high digital literacy have an easier time adapting to this new way of learning (Ayu, 2020).

Table 3. Student's satisfactory of online learning during pandemic Covid-19

Attitudes	Number
<i>Online learning can meet my academic needs</i>	
Agree	47%
Disagree	53%
<i>The implementation of online learning during this pandemic has been going well</i>	
Agree	72%
Disagree	28%

Although students may rates the online learning has been going well, but if we look at the numbers of how online learning can fulfil student's academic need, almost half of the respondents feel online learning cannot meet their academic needs. Besides causing stress and anxiety (Maulana, 2021; Irawan, Dwisona, & Lestari, 2020), this failure in fulfilling academic needs, may be contributory to why most Indonesian university student's longing for traditional learning (Kompas.com, 2020).

3.3 Student's Multi-tasking Activities During Online Learning

Online learning can be accessed anytime, anywhere. However, the high number of screen time and distraction, staying focused is one problem for students who experience online learning during this pandemic (Mukhtar, Javed, Arooj, & Sethi, 2020; Hussein, Daoud, Alrabaiah, & R. Badawi, 2020). Most respondents experience a concentration decline during an online meeting. Around 30% of those surveyed admit to losing their focus before the lecture even reaches 15 minutes. Although it may seem like the drawback of online learning, this problem does not exclusively occur in digital learning but also the physical classroom (Szpunar, K., Moulton, & L.Schacter, 2013). Previous research finds that student's concentration is declining after 10-15 minutes in the classroom (Mendoza, Pody, Lee, & & McDonough, 2018) and begins to show task- unrelated-thoughts (Was, Hollis, & & Dunlosky, 2019). It means, being in the same room with the teacher does not guarantee students' cognitive presence.

Table 4. Students Focus Problem and Multitasking Habits

Student's behavior during Learning	Number (%)
I have a problem maintaining concentration during synchronous learning	
Agree	95%
Disagree	5%
The minutes of students starting to lose concentration	
< 10 minutes	9%
10-14 minutes	21%
15-30 minutes	34%
>30 minutes	37%
I multitask during synchronous lecture	
Agree	90%
Disagree	10%
Other activities that students do during online learning	
Daily activities	81%
Working on assignments from other subjects	54%
Scrolling Social-Media	53%
Watching movie	9%
Driving	27%
Others	21%

What is more concerning is how studying from home makes students prone to multitasking. 90% of the surveyed students admit that they multitask during lectures. Students' type of side activities during online learning varies from doing daily activities (81%) to watching movies (9%). This situation is unavoidable since, at home, students are able and obliged to do various activities. Unlike in a classroom, where they only have one main objective: learning. Not being in the same place also makes monitoring students' learning processes even harder. This high degree of distraction at home and the lack of supervision make it hard for students to keep their integrity.

In addition to daily activities, other activities that students do along with studying are viewing social media timelines. As for the second one, it is known that mobile phones and social media distract modern human beings, especially our Gen Z students. Nowadays, even being separated from their gadgets for just 10 minutes could spike anxiety for students (Cheever, Rosen, Carrier, & Chavez, 2014). Study finds our digital native students unlock their phones around 50 to 60 times a day and use them for up to 4.5 hours (Rosen, 2017). Meaning the probability of them using a phone during a lecture is high. Some students even agreed that they used smartphones without any compelling reasons at every hour and that it induced emotional stability. Most of the time, they were surfing the internet not for academic purpose but because of their mood (Fook, Narasuman, Aziz, Mustafa, & Han, 2020). Although it is difficult to separate smart phones from student life, this lifestyle needs to be monitored considering the number spent using a cell phone is correlated negatively with academic performance (Lepp, Barkley, & Karpinski, 2015; Felisoni & Godoi, 2018).

Despite the fact that the majority of students multitask with academically irrelevant activities, more than half of them stated their side activity is working on another subject's homework. This is plausible, as it corresponds to previous findings on the high number of assignments assigned during online learning. However, this finding will almost certainly require further investigation to determine the true cause of the problem, whether it is the large number of assignments or the students' insufficient time management skills that cause them to work on assignments from other subjects during the online meeting.

3.4 Student's Expectations from Online Learning

When we asked students how long they believed the perfect synchronous learning session should be, more than half said between 30 and 40 minutes, followed by 41 to 60 minutes, and less than a quarter said more than 60 minutes. Apparently, the ideal duration of synchronous learning favored by students is shorter than what the lecturer provided. Nonetheless, estimating the appropriate duration of a lecture is difficult because little study has been done on the ideal duration of a synchronous meeting. Unlike the lecturer's video in asynchronous learning, study shows it can last anywhere from 6 to 30 minutes (Manasrah, Masoud, & Jaradat, 2021; Winstead, 2016).

Table 5. Students Preference in Online Learning

Students' Preferences	Number
Ideal duration for Synchronous Learning	
30-40 minutes	51%
More than 60minutes	23%
41-60minutes	26%
The ideal proportion between Synchronous: Asynchronous Learning	
100% Synchronous	5%
100% Asynchronous	1%
50:50	68%
Synchronous > Asynchronous	20%
Synchronous < Asynchronous	6%
The number of online meetings (asynchronous & synchronous combine) per semester	
< 5 meetings	19%
5-8 meetings	47%
9-12 meetings	23%
13-16 meetings	12%
Preference of learning materials	
Journal and Article	7%
Slide	31%
Audio	2%
Audiovisual	58%
Others	2%

Besides the shorter duration, most students believe that the number of meetings in a semester should be reduced, with an equal distribution of synchronous and asynchronous sessions. It is critical to combine synchronous and asynchronous lectures to keep students' attention and meet academic requirements. While synchronous lectures allow for interaction, asynchronous learning has its own set of advantages. A previous study discovered that students have good attitudes about asynchronous lectures, in which students prefer a pre-recorded lecture uploaded to Google Classroom or YouTube. This feature allows students to listen to recorded lectures many times in order to gain a better understanding of the material.

These respondents' desire to reduce the frequency and duration of lectures should be taken seriously and investigated further. It could be a reflection of students' boredom, stress, or the low quality of emergency online learning. According to a study conducted in Indonesia, students believed that online learning had a detrimental impact on their psychological well-being. Students felt bored, stressed, fatigued, and lonely after a long period of online learning (Rahiem, 2021). Thus, these students' expectations regarding the meeting numbers should be taken into account by the lecturer and university administration since short-term courses have higher teaching presence and students' satisfaction (Akyol, Vaughan, & Garrison, 2011).

Other than duration and frequency, lecturers also need to pay attention to the preferred type of learning materials. From the survey, audiovisual kinds of learning materials are the most popular, whereas journals and essays are the least popular. These findings are unsurprising, given that many surveys suggest that Indonesians have little interest in reading and can spend up to 9 hours on their phones (Kominfo.go.id, 2017). Because not all instructors are capable of creating good audiovisual instructional material, this problem requires the attention of lecturers and universities. As for online learning, it is critical to include a variety of materials that allow learners to select relevant activities based on their desired learning style (Ally, 2009).

4. Conclusion

One of the best ways to keep the learning process continuing throughout the Covid-19 outbreak is to use online learning. Generally, students view online learning as going well, even though a significant number of students feel their academic needs are not fulfilled. Online learning definitely has its benefits and drawbacks. The findings of this research strengthen previous research about the benefits, limitations and drawbacks of online learning. Where the benefits perceived by the students are flexibility, cost-saving, and increase students' assertiveness. And the limitations are signal quality, lack of interaction, high number of assignments, uncertain schedule, no lab practice, and costly.

From the findings, we may see a contradictory answer. Due to the wide range of student situations, in terms of economic, social, and intellectual backgrounds, the same thing can be beneficial to one student while being counterproductive to another. For example, some students may perceive the lack of face-to-face interaction as a disadvantage, but in this less-eye-contact scenario, some students gain confidence in joining in discussion. Some students also rate online learning as cost-saving, while others say it is costly. This evaluation is mainly reliant on the circumstances of the student. Online learning will save money on gas, accommodation, and even food for students who live outside of town or whose houses are far from campus. Those in a different set of circumstances, on the other hand, may find that online learning really costs them a lot of money in terms of internet usage.

Although some advantages and disadvantages are subjective, this study found concerning behaviour during online learning. Almost all students in this survey admit that they multitask and have focus problems. During online learning, students also engage in non-academic activities such as doing daily tasks, looking through social media, driving, and even watching a movie. Students also often work on other subject assignments during synchronous learning, presumably due to the excessive number of tasks. This lack of focus and commitment certainly calls for a strategy from the lecturer. A quiz at the end of the session can be one strategy to keep students' cognitive presence.

These research findings also indicate the need to reduce the number and duration of online meetings. To employ the same number and duration as offline learning is unfavorable and may be counterproductive. A significant number of students in this research even feel that there should be no more than 8 meetings with an equal proportion of synchronous and asynchronous meetings.

5. Suggestions

Online learning is unavoidable in the pandemic situation, however, this method is likely to be employed in the future even after the pandemic end due to its flexibility. To create an effective and engaging online course, the university must prepare their lecturer to be able to create content that informative, attractive, and interactive through proper training. Lecturers and universities also need to redesign the curriculum by putting the drawbacks of too much screen time and the appropriate amount of independent homework to avoid student burnout. In addition of general survey to map students preference, in the future, it would be beneficial to investigate the most effective design of online course using experimental design that mimics real-life online learning situation.

6. Co-Author Contribution

The authors affirmed that there is no conflict of interest in this article. Author1 was responsible for literature review, data interpretation, and overlook the writing of the whole article. Author2 wrote the research methodology, tables and figures, and abstract. Author3 was responsible for online survey creation and did the data entry. All three authors contributed to the survey design.

7. References

- Adnan, M., & Anwar, K. (2020). Online learning amid the COVID-19 pandemic: Students' perspectives. *Journal of Pedagogical Sociology and Psychology* 2(1), 45-51.
- Agarwal, S., & Kaushik, J. S. (2020). Student's Perception of Online Learning during COVID Pandemic. *The Indian Journal of Pediatrics* (July 2020) 87(7):554.
- Akyol, Z., Vaughan, N., & Garrison, & D. (2011). The impact of course duration on the development of a community inquiry. *Interactive Learning Environments*, 19:3, 231-246.
- Ally, M. (2009). Foundations of Educational Theory for Online Learning. In T. Anderson, *The Theory and Practice of Online Learning* (pp. 15-44). AU Press, Athabasca University.
- Ayu, I. R. (2020). Keterkaitan Literasi Dengan Adaptasi Mahasiswa Di Masa Pandemi. *Jurnal Amal Pendidikan Vol 1*, 122-128.
- Anwar, K.; Adnan, M. Online learning amid the COVID-19 pandemic: Students perspectives. *J. Pedagog. Res.* 2020, 1, 45–51
- Bahasoan, A., Ayuandiani, W., Mukhram, M., & Rahmat, A. (2020). Effectiveness of Online Learning In Pandemic Covid-19. *International Journal Of Science, Technology & Management*.
- Besser, A. F.-H. (2002). Adaptability to a Sudden Transition to Online Learning During the COVID-19 Pandemic: Understanding the Challenges for Students. *Scholarship of Teaching and Learning in Psychology*.
- Cheever, N. A., Rosen, L. D., Carrier, L. M., & Chavez, A. (2014). Out of sight is not out of mind: The impact of restricting wireless mobile device use on anxiety levels among low, moderate and high users. *Computers in Human Behavior*, 37, 290–297.
- Cole, R. A. (2000). *Issues in web-based pedagogy: A critical primer*. Westport: CT: Greenwood Press.
- Chung, E., Subramaniam, G., & Dass, L. C. (2020). Online Learning Readiness Among University Students in Malaysia Amidst Covid-19 . *Asian Journal of University Education (AJUE)* 16(2), 46-58.
- Dewantara, J. A., & Nurgiansah, T. H. (2021). Efektivitas Pembelajaran Daring di Masa Pandemi COVID 19 Bagi Mahasiswa Universitas PGRI Yogyakarta. *Jurnal Basicedu*, 367-375.
- Dhawan, S. Online Learning: A Panacea in the Time of COVID-19 Crisis. *J. Educ. Technol. Syst.* 2020, 49, 5–22.
- Dyment, J., Downing, J., Hill, A., & Smith, H. (2017). „I did think it was a bit strange taking outdoor education online“: Exploration of initial teacher education students' online learning experiences in a tertiary outdoor education unit. *Journal of Adventure Education and Outdoor Learning*, 18(1), 70-85. DOI: 10.1080/14729679.2017.1341327

- Felisoni, D. D., & Godoi, A. S. (2018). Cell phone usage and academic performance: An experiment. *Computers & Education Vol.117*, 175-187.
- Fook, C. Y., Narasuman, S., Aziz, N. A., Mustafa, S. M., & Han, C. T. (2020). Smartphone Usage among University Students. *Asian Journal of University Education (AJUE)*, 16(2), 282-291.
- Friedman, J. (2016, January 05). Examine the Benefits, Drawbacks of Online Learning for Introverts. Retrieved from USNews.com: <https://www.usnews.com/education/online-education/articles/2016/01/05/examine-the-benefits-drawbacks-of-online-learning-for-introverts>
- Herdiana, D., Rudiana, R., & Supriatna, S. (2021). Kejenuhan Mahasiswa dalam Mengikuti Perkuliahan Daring dan Strategi Penanggulangannya. *Edunesia : Jurnal Ilmiah Pendidikan*, 293-307.
- Hussein, E., Daoud, S., Alrabaiah, H., & R. Badawi. (2020). Exploring Undergraduate Students' Attitudes towards Emergency Online Learning during COVID-19: A Case from the UAE. *Children and Youth Services Review*.
- Ilias, A., Baidi, N., K.Ghanis, E., & M.Razali, F. (2020). Issues on the Use of Online Learning: An Exploratory Study Among University Student During the Covid-19 Pandemic. *Universal Journal of Educational Research*.
- Irawan, A. W., Dwisona, D., & Lestari, M. (2020). Psychological Impacts of Students on Online Learning During the Pandemic COVID-19. *Konseli Vol.7 No.1*, 53-60.
- Kominfo.go.id (2017,10 10). Masyarakat Indonesia: Malas Baca Tapi Cerewet di Medsos. Retrieved from Kominfo.go.id: https://www.kominfo.go.id/content/detail/10862/teknologi-masyarakat-indonesia-malas-baca-tapi-cerewet-di-medsos/0/sorotan_media (Diakses pada 20 Agustus 2021)
- Kompas.com. (2020, 07 09). Survei Kemendikbud: 90 Persen Mahasiswa Pilih Kuliah Tatap Muka. Retrieved from Kompas.com: <https://nasional.kompas.com/read/2020/07/09/12330921/survei-kemendikbud-90-persen-mahasiswa-pilih-kuliah-tatap-muka> (Diakses pada 15 Agustus 2021)
- <https://www.kompas.com/tren/read/2021/07/28/190900365/daftar-provinsi-dengan-kasus-harian-covid-19-tertinggi-28-juli-2021?page=all> (Diakses 27 Agustus 2021)
- <https://www.kompas.com/tren/read/2020/12/03/063000665/kilas-balik-9-bulan-pandemi-covid-19-dan-dampaknya-bagi-indonesia?page=all> (Diakses pada 15 Agustus 2021)
- Lantolf, J. P., & Beckett, T. G. (2009). Sociocultural theory and second language acquisition. *Language Teaching*, 42(4), 459-475. DOI: 10.1017/S0261444809990048
- Lepp, A., Barkley, J. E., & Karpinski, A. C. (2015). The Relationship Between Cell Phone Use and Academic Performance in a Sample of U.S. College Students. *SAGE Open*, 1-9.
- Manasrah, A., Masoud, M., & Jaradat, & Y. (2021). Short Videos, or Long Videos? A Study on the Ideal Video Length in Online Learning. 2021 International Conference on Information Technology (ICIT) (pp. 366-370,). Amman, Jordan: IEEE.
- Maulana, H. A. (2021). Psychological Impact of Online Learning during the COVID-19 Pandemic: A Case Study on Vocational Higher Education. *Indonesian Journal of Learning Education and Counseling Vol. 3 No.2*, 130-139.
- Marinoni, G.; Van't Land, H.; Jensen, T. The Impact of COVID-19 on Higher Education around the World. *International Association of Universities*. Available online: <https://www.iau->

aiu.net/IMG/pdf/iau_covid19_ and_he_survey_report_final_may_2020.pdf (accessed on 10 August 2021).

- Mendoza, J. S., Pody, B. C., Lee, S. K., & McDonough, I. M. (2018). The effect of cellphones on attention and learning: The influences of time, distraction, and nomophobia. . *Computers in Human Behavior*, 86, , 52–60.
- Moorhouse, B. L. (2020). Adaptations to a face-to-face initial teacher education course „forced“ online due to the COVID-19 pandemic. *Journal of Education for Teaching*. Terbit pertama online (hlm. 1-3). DOI: 10.1080/02607476.2020.1755205
- Mukhtar, K., Javed, K., Arooj, M., & Sethi, A. (2020). Advantages, Limitations and Recommendations for online learning during COVID-19 pandemic era. *Pakistan Journal of Medical Sciences*.
- Ningsih, S. (2020). Persepsi Mahasiswa Terhadap Pembelajaran Daring Pada Masa Pandemi Covid-19 . *JINOTEP*, 124-132.
- Qanwal, S., & Ghani, M. (2019). Relationship Between Introversion/Extroversion Personality Trait and Proficiency in ESL Writing SkillsInternational; . *Journal of English Linguistics*; Vol. 9, No. 4.
- Rahiem, M. D. (2021). Indonesian University Students' Likes and Dislikes about emergency Remote Learning during the COVID-19 Pandemic . *Asian Journal of University Education (AJUE)* 17(1), 1-18.
- Ring, G., & Mathieux, G. (2002). The key components of Quality Learning. *ASTD Techknowledge 2002 Conference*.
- Rogoff, B., Radziszewska, B., & Masiello, T. (1995). Analysis of developmental process in sociocultural activity. Dalam Martin, L. M. W., Katherine, N., & Tobach, E (Editor), *Sociocultural psychology: Theory and practice of doing and knowing* (hlm. 125-149). Cambridge: Cambridge University Press.
- Rosen, L. D. (2017). The distracted student mind—Enhancing its focus and attention. *Phi Delta Kappan* 99 (2), 8-14.
- Rovai, A. P. (2002). Sense of community, perceived cognitive learning, and persistence in asynchronous learning networks. *Internet and Higher Education*, 5(4), 319-332.
- Shank, P. (2008). Thinking Critically to Move e-Learning Forward. In S. Carliner, & P. Shank, *The E-Learning Handbook Past Promises, Present Challenges* (pp. 15- 26). San Francisco: Pfeiffer.
- So, S. (2016). Mobile instant messaging support for teaching and learning in higher education. *The Internet and Higher Education* (31), 32-42.
- Statista Research Department. (2021, July 07). WhatsApp: usage penetration in selected countries 2017. Retrieved from Statista: <https://www.statista.com/statistics/291540/mobile-internet-user-whatsapp/>
- Suresh, M.; Priya, V.V.; Gayathri, R. Effect of e-learning on academic performance of undergraduate students. *Drug Invent. Today* 2018, 10, 1797–1800
- Stone, C. (2019). Online learning in Australian higher education: Opportunities, challenges and transformations. *Student Success*, 10(2), 1-11. DOI: 10.5204/ssj.v10i2.1299

- Susilo, A. (2014). Exploring Facebook and WhatsApp as Supporting Social Network Applications For English Learning in Higher Educations. *Teaching & Learning in 21st Century* (pp. 10 - 24). Bandung: Universitas Widyatama.
- Szpunar, K., K., Moulton, S., & L.Schacter, D. (2013). Mind wandering and education: from the classroom to online learning. *Frontiers in Psychology*, 1-7.
- Was, C. A., Hollis, R. B., & Dunlosky, J. (2019). Do students understand the detrimental effects of mind wandering during online learning? *Computers & Education*, 135, 113–122.
- Wertsch, J. V. (1985). *Vygotsky and the social formation of mind*. Cambridge, MA: Harvard University Press.
- Winstead, S. (2016). What's the Optimal Length of an e-Learning Course? Retrieved from My Elearning World: <https://myelearningworld.com/whats-the-optimal-length-of-an-e-learning-course/>
- Zainuddin. (2016). The Impact of Personality: Extrovert vs. Introvert on the Ability in Syntax in Essay Writing . *Studies in English Language and Education vol 3 no. 2* , 158-169.
- Zaswita, H., & Ihsan, R. (2020). The Impact of Personality Types on Students' Writing Ability . *Jurnal pendidikan Indonesia vol 9.10* , 75-84.
- Yusuf, N.; Al-Banawi, N. The Impact of Changing Technology: The Case of E-Learning. *Contemp. Issues Educ. Res.* 2013, 6, 173–180.