

## Higher Education Students and Covid-19: Challenges and Strategies in facing Online Learning

Anang Fathoni<sup>1\*</sup>, Ali Mustadi<sup>2</sup>, Wahyu Kurniawati<sup>3</sup>

<sup>1,2</sup>Department of Primary Education Postgraduate Program, Universitas Negeri Yogyakarta, Indonesia

<sup>3</sup> Department of Primary School Teacher Education, Faculty of Teacher Training and Education, Universitas PGRI Yogyakarta, Indonesia

\*e-mail: [anangfathoni.2019@student.uny.ac.id](mailto:anangfathoni.2019@student.uny.ac.id)

### Abstract

The emergence of Covid-19 has had a significant influence on the world of education. Even though the emergence of Covid-19 has accelerated the integration of technology in learning, there are still negative classroom learning impacts. This study aims to explore student experience in online learning in the Covid-19 Pandemic period; describe the negative impacts and obstacles that arise in online learning; and describe student strategies in online learning. This research is qualitative in the type of case studies. Data were collected through open questionnaires and interviews with participants of 20 students. Data analysis was accomplished with Bogdan and Biklen models through reduction, searching for sub-themes, and seeking relationships between sub-themes to obtain the conclusion. The results of this study show that learning in the Covid-19 pandemic period has not been fully optimally done. In addition, students also get physical and mental impacts during online learning. Furthermore, students get barriers to signals, learning environment, and learning activities with lecturers online. However, students have a varied learning strategy to minimize obstacles and negative impacts of online learning.

**Keywords:** Covid-19, Student Experience, Online Learning, Obstacles, Strategy

### 1. Introduction

Online learning is a remote learning accessible through the help of electronic devices such as smartphones, laptops, tablets, and computers, requiring Internet connections to access them (Gonzalez & St.Louis, 2018). The use of online learning systems in the Covid-19 pandemic period is an appropriate response in the face of crisis (Murphy, 2020), and became an important key in the educational world (Herliandry et al., 2020). But online learning is also a new challenge for Indonesian educators, learners, and people, as changes in the face-to-face system to online learning occur in the absence of transitions. The rapid move from face-to-face to distance learning has caused confusion for both academics and learners (Czerniewicz et al., 2020). The changes that occur in every line of life, including in the educational world certainly provide a sense of anxiety due to the uncertainties that arise in the process, as Fullan had said 1,5 decades ago in his book (Fullan, 2005, p. 31). Nevertheless, various ways to minimize the concerns, barriers, and all the shortcomings that arise remain sought in every process of change that takes place, including in the current Covid-19 pandemic period.

Educators certainly have to think about how to connect pedagogical skills with technology (Nursyifa et al., 2020; Son, 2018). The pedagogical skills will be futile when there is still a problem in technology access in learning (Cakrawati, 2017). The advancement of the internet (Alqurashi, 2019), and the skill of using technology (Jan, 2015) became essential to the optimization of online learning. Educators certainly require more mature preparation with power investment, skills, and time to design and implement online learning, as online learning requires higher investment than face-to-face learning (Green, 2016). So that, educators, learners, and platforms used in online learning (Zhu et al., 2020) into three important elements whose proportions must balance one with the other. When one of those

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\*Corresponding author.

essential elements is absent or disproportionate then online learning becomes less optimally implemented.

The positive side of learning during the Covid-19 pandemic is that the educational community becomes accustomed to technology-based learning. The presence of online learning is as it is the stimulus that hastens the distribution of IT skills in the industry era 4.0. that all-round uses technology. Previous research stated that technology in online learning facilitates educators in interacting and subjection to learners in the Covid-19 pandemic period (Salsabila et al., 2020). Technology also offers learning that can be done anywhere and at any time (Korucu & Alkan, 2011; Nursyifa et al., 2020), and improves technology-related skills (Ulfa & Mikdar, 2020). On the other hand, however, online learning that occurs in the field still leaves many flaws or problems in education. Findings in previous research have shown that learning during the Covid-19 pandemic has an impact on students' understanding in learning are regressing, problems in accessing technology (Di Pietro et al., 2020, p. 30), the emergence of physical and mental fatigue (Atmojo & Nugroho, 2020), eye tension (Octaberlina & Muslimin, 2020), disruption of Internet connection (Diningrat et al., 2020), difficulty in producing learning media and designing fair assessment (Arlinwibowo et al., 2020), explanations being less maximal (Jariyah & Tyastirin, 2020), limited learning resources (Czerniewicz et al., 2020), and learning ability from still weakly classified students (Chang & Fang, 2020). Research before Covid-19 also showed some obstacles in online learning, such as difficulties in time management (Mohamadkhani et al., 2017), and slow internet connection (Cakrawati, 2017).

Analysis of various research findings shows that the presence of Covid-19 has also had a big impact on education, both positive and negative. However, additional studies are still needed to explore students' challenges and student strategies carried out during the Covid-19 pandemic to add to the treasurer of research during the Covid-19 pandemic. And so, based on the complexity that arises, the study intends to deepen, strengthen, and complement the discussion of online learning in the Covid-19 pandemic period from a student perspective. The purpose of this study is to (1) explore student experience in online learning in the Covid-19 pandemic period; (2) describe the negative impacts and obstacles that arise in online learning; and (3) describe student strategy in the face of problems that occur in times of online learning.

## 2. Method

This research is a qualitative study with a type of case study. The study was conducted at Yogyakarta PGRI University on October 28–November 11, 2020. Participants in the study were 20 students of Elementary School Teacher Education. The technique used to determine the subject of research is purposive sampling. Students selected as respondents are active students of 3<sup>rd</sup> semester who have done online learning for two semesters. Data collection is generated through open questionnaires through google form and interviews through WhatsApp. Open questionnaires were conducted at the beginning of the study to see the problem in general. Furthermore, there is a deepening of information through interviews individually as well as in groups. Open questionnaire materials and interviews are the following (1) learning exploration in the Covid-19 pandemic period; (2) describing the negative impacts and obstacles that arise in online learning; (3) describing PGSD students' learning strategies in online learning. Researchers became the main instrument in the study.

Open questionnaires and interviews were conducted by adjusting the leisure time of each respondent. Researchers conveyed that all data obtained from respondents were used in the study only. The participants' response to the open questionnaire and interview became the sole asset of the researcher and respondents themselves. The collected data will not affect future participants' conduct. The analysis was carried out using Bogdan & Biklen model (1982) by through reduction, seeking sub-themes, and relationships between sub-themes (Bogdan & Biklen, 1982). Open questionnaire results data and interviews were initially reduced, then reduction results data were presented in table form and sought out sub-

companies. Thereafter, it is analyzed and connected between sub-themes to seek out the conclusion.

### 3. Result and Discussion

#### Results

The results of this study were divided into three main topics, namely (1) online learning exploration in the Covid-19 pandemic period; (2) obstacles and negative impacts in online learning; and (3) Student learning strategies in the face of online learning. Each of the topics is further re-expounded in some themes for reduction and searching for sub-heralism. Furthermore, each sub-theme is connected one with the other to be obtained inferences on each theme. Each topic is discussed more detail in the following discussion.

#### Exploring Online Learning in Times of Covid-19 Pandemic

Topics regarding online learning exploration in the Covid-19 pandemic period found two themes to understand it. Two such themes are (1) Technology in online learning; and (2) Learning in the time of the Covid-19 Pandemic. Each of the themes obtained is presented as follows.

#### *Technologies of Online Learning*

The use of gadgets and the Internet became something that could not be released in online learning. Based on the information gained, the entire student used his laptop and smartphone to study as well as work on tasks in the Covid-19 pandemic period. The Internet is used so that each student can be connected to one with the other, including with a teaching lecturer. Furthermore, the utilization of technology and the internet increased in the Covid-19 pandemic period. Based on the results of data analysis done on the theme of technology in online learning, there are four sub-themes as presented in Table 1.

**Table 1.** Reduction Results related to Technologies of Online Learning

No.	Sub-theme	Relation between sub-themes
1.	Most students have been used to using technology and the internet in learning before and after the existence of Covid-19	The increasing use of technology and the internet during the Covid-19
2.	The intensity of technology and internet use increased after the presence of a Covid-19 pandemic	the development of
3.	Online learning makes technology access even more advanced	education that utilizes technology in the Industrial
4.	Utilization of technology adds to student IT skills	4.0 era.

Most college students mentioned that they are fully adept to using technology and the internet in learning, both before and after the advent of Covid-19. The distinguishing factor is that after the advent of Covid-19, the intensity of technology and the internet use increased. Whereas before the advent of Covid-19, Internet use was only to seek information related to education or material relevant to lectures. However, the presence of Covid-19 makes learning with technology more variable, such as the use of google classrooms, edmodo, gamification, and Conference video platforms such as zoom or google meet. Students also revere that the use of technology in Covid-19 pandemic learning adds to IT skills from college students. It certainly makes technology access even more advanced. However, such positive circumstances also still leave many gaps of flaws in online learning in the Covid-19 pandemic period. One of them was like a hampering of access using books in the campus library. This is because the campus is lockdown and many students are returning to its hometown.

### **Learning in Times of Covid-19 Period**

Online learning in the Covid-19 pandemic period is already in two semesters in Indonesia. Based on the results of the analysis on learning themes in the Covid-19 pandemic period found six sub-themes, as presented in Table 2.

**Table 2.** Reduction Results related to Learning in Times of Covid-19 Period

No.	Sub-themes	Relations between sub-themes
1.	Interactions occurred between lecturers with college students are quite good, although not as optimal as face-to-face	Learning in the Covid-19 pandemic period has not been fully optimal
2.	Sometimes college students have a hard time understanding learning from lecturers	
3.	Not all lecturers provide reflection at the end of learning	
4.	Sometimes there are fewer lecturers in providing explanations	
5.	Online learning makes student understanding lesser than on face-to-face	
6.	Students expect relearning with face-to-face systems	

The conclusion that can be taken out of this topic suggests that learning in the Covid-19 pandemic period has not been fully optimally done. The statement is based on information that students present on new challenges that expose the flaws of learning in the Covid-19 pandemic period. Students render that it is harder to understand lecturers' learning, both from direct lecturers and from exposure to other students through already shared groups. Students realize that the currently ongoing online learning makes student understanding diminished, in contrast to face-to-face learning systems. Lecturers are also sometimes lacking in providing explanations regarding the topics of the material discussed, as well as when providing assignments. In addition, there are still fewer lecturers in providing reflection at the end of learning. Furthermore, students are rendering that intertwined interactions between lecturers with students in online learning are quite good, although not as optimal as face-to-face. Some college students are delivering their hopes of carrying out face-to-face lectures back. However, the Covid-19 pandemic conditions with steadily increasing positive casualties, left the college side still delaying face-to-face learning the following semester. So that students who are out of town still postpone going to campus. The statement certainly hampered the search for references in the form of printed books available in campus libraries.

### **Obstacles and Negative Impacts of Online Learning**

Topics regarding obstacles and negative impacts in online learning are discussed in two themes. The theme that addresses barriers is about the condition of student learning signals and environments, while the theme that deals with the negative impact of online learning is the physical and mental impact of university students.

### **The Issues of Signal and Students Learning Environment.**

The fluidity of internet signals is certainly the sustainability of online learning swaying in the Covid-19 pandemic period. Similarly, the home learning environmental conditions that have co-influenced online learning's smoothness, because learning is done remotely, and college students are at home respectively. Based on data analysis results on signal conditions and student learning environments, seven sub-themes are obtained as presented in Table 3. Uneventful signaling conditions will inhibit learning from college students as it will eliminate student focus in learning. Students expose that the lack of smooth signals are affected by power outages from the PLN of the surrounding area, bad weather such as heavy rains or high winds, and students who are in highland areas or mountains. When the signal conditions keep college students from following lectures, then the thing that college

students do is confirm immediately to lecturers directly as well as through other friends' intermediaries.

**Table 3.** Reduction Results related to Signal and Students Learning Environment

No	Sub-theme	Relations between sub-themes
1.	The signal conditions become less good or lost when power outages	Less smooth signal conditions are affected by power outages, weather conditions, and the area's location is in high altitudes or mountains
2.	The signal conditions become lost when the weather is bad	
3.	Signal conditions often do not smoothly occur in college students living in highland or mountainous areas	
4.	Poor signal conditions make college students less focused on learning	Uneventful signal conditions can inhibit student learning
5.	Students give confirmation to the lecturer when the learning process is inhibited because the signal condition is impaired	
6.	A bustling or noisy state of the environment can interfere with student concentration in learning	The state of the environment that lacks comfortable
7.	Parents who lack understanding the learning process of college students will inhibit student learning	students can inhibit college students in learning

In addition, a less comfortable environmental state may also inhibit college students in studying. The lack of comfort of the environment is based on the crowd of student learning environments thereby disrupting student concentration in following lectures or learning, and conditions when parents lack understanding of the learning processes undertaken by students. Meanwhile, the crowded state of the environment is mentioned by students is because of the disruption of sisters or other young children crowded when students study, or noisy because of the passing vehicles are auctioned around the house, for the case of college students residing in the highway environment.

#### **Physical and Mental Impact Towards Students**

In addition to the presence of obstacles, certainly online learning also brings about negative impacts for college students. The negative impact that students get based on the information collected is the impact on the physical and mental of students. Based on data analysis results on physically and mentally impacts from college students, there are eight sub-themes as presented in Table 4.

**Table 4.** Results of Reduction Impact in terms of Physicality and Mentality of Students

No	Sub-theme	Relations between sub-themes
1.	Spending too much time in front of the gadget makes the eyes damaged and hurt	Uncontrolled online learning can result in negative
2.	Too long using gadgets in online learning makes head dizzy	impacts on student physical
3.	A monotonous sitting position makes the waist ache	
4.	Too much assignment and less rest make the thrush and increase gastric acid	
5.	The mental impact of online is the rise of stress and stress	Excessive online learning without regard to mental health can result in negative impacts on student mental
6.	Students feel saturated with online learning	
7.	Student motivation is declining in online learning	
8.	The lazyness comes at a time in online learning	

Negative impacts on the physicality are affected by the lack of students in moving, and linger in front of laptops or smartphones. It is fully realized by students that lingering in front of the gadget makes the eyes blurry, sick, and spicy. Too use a gadget also results in the head becoming dizzy. This is because after online learning is complete, college students take a break by still using gadgets, such as playing games, opening social media or watching movies. Furthermore, a monotonous sitting position makes the waist ache, and too many tasks and less rest or escape from the gadget make the student a thrush and some college students mention gastric acid to rise. In addition to physical impacts, another negative impact perceived by college students is on mentally. The mental impact that students feel is in the form of the rise of stress and stress due to assignments that students think are too much. Students also mentioned that they were already saturated with online learning, which results in a declining motivation and a sense of lazyness that arises in its learning process. Decreasing motivation can certainly make college students lose focus and less optimal in learning.

### **Students Learning Strategies in Managing Online Learning**

Topics regarding student learning strategies in the face of online learning are discussed in three themes. The three themes are (1) How to overcome difficulties in learning; (2) Strategies in organizing learning; and (3) Self-motivating techniques. Each of the themes acquired, presented as follows.

#### ***The Way to Overcome Obstacles on Learning***

The difficulty in learning in the Covid-19 pandemic period resulted from negative impacts and obstacles in online learning that had been discussed on earlier themes. In addition to mentioning the negative impacts and obstacles, college students also mentioned how to minimize the difficulties in such learning. Solution on poor signal conditions is by replacing providers, looking for a place with good signals, and looking for a free Wifi spot, such as in Cafe or in the sister home installing Wifi. In the case of a crowded environment due to the disturbance of another younger brother or child, then the step made by the student is to search for a quiet place, as in the room by locking the room door. While for parents who sometimes miscommunicate with student conditions while studying is by publicly communicating to parents about their activities and learning schedules during college. The parent who provides full support to his child and meets all his or her child needs certainly makes the student able to perform learning optimally.

Furthermore, when students have difficulty in seeking reference or are confused with the assignment the lecturer provides, then the thing done is to ask the other friend both personally and through the WA group. However, college students also revere that they also often ask directly to lecturers, and for reluctant students, then prefer to ask the elder level who has completed the course. Related to the negative impacts earned on physical and mental, college students prefer to take solutions by taking a break, or by looking at something far and green, like trees, to refresh the mind. Also, there are students who tell parents, or friends to reduce the burden in his mind.

#### ***Strategies in Organizing Learning***

Students have a varied learning strategy to minimize the disorders that arise in online learning in the Covid-19 pandemic period. Based on data analysis results on strategy in regulating student study, there are six subthemes as presented in Table 5.

**Table 5.** Reduction Results related to Strategies in Organizing Learning

No.	Sub-themes	Relations between sub-themes
1.	Gives special time to study or work on tasks at night because it adds concentration	Specifying special time to study by not procrastinating assignment can
2.	Not procrastinating time on tasks	optimize student study
3.	Get used to every one hour for 20 minutes'	

No.	Sub-themes	Relations between sub-themes
4.	study and rest Installing reminder alarms for important lectures, tasks, and agendas	
5.	Creating the unworked assignment list	Making list assignments and making summaries of materials can make it easier for college students to learn
6.	Learn by summarizing or by making important points	

The strategy that students do is to determine the specific time for study. The determination of learning time certainly has variations between one student with another student. One student conveys that it is necessary for the habitability of controlling time to study for a full hour by avoiding interference from social media or other disorders, then doing a 20-minute break. Another thing student do is to put up a reminder alarm for college time, work on tasks, and other important agendas such as following webinars or public lectures.

The exact activity most students make is to give special time at night to study, because according to them, nighttime can add to its concentration for study as well as to work on tasks. In addition, students have a strategy to create an assignment list in the record on grounds as a reminder of already worked and unworked tasks. The notes are made on smartphones, whiteboards attached to rooms, or on their laptops. Later, some college students also made a summary or important points on some courses to make it easier for those students to remember the material. This finding adds information about student strategy in order to optimize self-study from a student perspective in the Covid-19 pandemic period.

### **The Method of Self-Motivation**

Although student motivation in the Covid-19 pandemic period tends to decline, college students still have techniques to improve their motivation in online learning. Based on data analysis results, four techniques that most students perform to improve their motivations in the Covid-19 pandemic period. Four such techniques are presented in Table 6.

**Table 6.** Reduction Results of Self-Motivating Techniques

No.	Sub-theme	Relations between sub-themes
1.	Motivate oneself by remembering the struggles of the elderly	Students have variations in ways to motivate
2.	Motivating oneself by looking at motivational videos of youtube, and quotes from social media	themselves, such as the cell-talk, motivation from
3.	motivate oneself by speaking to oneself in positive words	youtube, given the parental struggle, as well as through
4.	motivate oneself by resting or soothing the mind	rest or soothe the mind

Students have variations in ways to motivate themselves. The motivation is presented in two stimuli, namely from the outside and within. Outside stimulus is the form of motivational videos watched from youtube, quotes from social media, and also by remembering the struggles of parents or tuition that are certainly numerous. Meanwhile, stimulus from within is evoked with self-talk or speaks to oneself through motivating positive words. In addition, motivation can also be obtained when performing rest and when calming the mind. This finding became an additional information on the way college students in motivating themselves in the middle of the Covid-19 pandemic.

### **Discussion**

Technology integration during the Covid-19 pandemic is a must for online learning. The current crisis reflects new technology as an essential and needed tool in current learning (Nuere & de Miguel, 2020). This study's findings indicate the importance of gadgets and the

internet in supporting learning during the Covid-19 pandemic. These findings are in line with previous research that states that technology facilitates students and educators to interact and learn together online (Salsabila et al., 2020). The intermediary media used in online learning are gadgets such as smartphones, laptops, or tablets. Meanwhile, the interactions formed in online learning and connecting students and lecturers can occur because of the internet. Therefore, online learning cannot be done without gadgets and the internet.

The use of technology during the Covid-19 pandemic is indeed a key in the world of education (Herliandry et al., 2020). Students also mentioned that they were accustomed to using technology and the internet, both before and after the emergence of Covid-19. Technology has become part of the learning process provided by the campus for students; thus, lecturers need to understand how to use technology in learning (Arifin & Sukmawidjaya, 2020). This finding is a differentiator from the previous statement, which states that problems arise in accessing technology (Di Pietro et al., 2020). Problems in accessing technology may still arise in elementary to senior high school students, but not for student groups. The reason is that college students have adapted independently to learning that utilizes technology. This is reinforced by previous findings stating that students' media literacy and technological literacy are good (Sulistiyarini & Sabirin, 2020). Therefore, most higher education students do not need to study again from zero to access learning that utilizes technology online.

The emergence of Covid-19 made the use of technology and the internet increase. It accelerates the development of education that utilizes technology during the Industry 4.0 era, as in previous research findings that stated that technological innovation's achievement became accelerated during the Covid-19 pandemic (Brem et al., 2021). However, there is still a negative side to the emergence of Covid-19 for the world of education. The findings prove that it is challenging for students to search for printed reference sources that can be accessed through the library because they return to their hometowns. This finding reinforces previous research that states that access to resources available on campus, such as libraries, computer laboratories, and free Wi-Fi available on campus, becomes inaccessible (Czerniewicz et al., 2020). Thus, the search for books that support lectures is searched online. The problem is that students lack references due to limitations in obtaining the ebooks needed in lectures, although there are also illegal ebooks that students often target in seeking information; this is certainly new information in this study.

Other findings in this study confirm that students have difficulty understanding the learning process during the Covid-19 period, compared to before the Covid-19 presence. These findings strengthen the previous statement that students' understanding experiencing a setback during the Covid-19 pandemic (Di Pietro et al., 2020), the occurrence of confusion of concepts (Onojah et al., 2020), the explanation from the lecturer was not optimal (Jariyah & Tyastirin, 2020), and students' learning abilities are still relatively weak (Chang & Fang, 2020). Other findings from the lecturer's point of view also state that there are difficulties in producing learning media and designing fair assessments (Arlinwibowo et al., 2020), and the difficulty of ensuring student achievement using only technological media (Fatoni et al., 2020). The difficulties that arise from lecturers and students are certainly correlated with a decreased level of student understanding in learning. So lecturers need to always reflect on their learning and always look for effective learning with the environment in which they teach. Similarly, students must continue to adapt to the online learning environment, and students need to improve their self-learning programs.

Furthermore, the findings show that the interaction between lecturers and students in online learning is considerably good, although not as optimal as face-to-face. The excellent communication relationships that lecturers and students develop help increase student involvement (Tichavsky et al., 2015), support student cognition (Chatzara et al., 2016), and reduce anxiety amid the Covid-19 pandemic (Talidong & Toquero, 2020). Students also expressed their hope of back to conducting face-to-face lectures because online learning was still not optimal. These findings strengthen previous research that online learning is still less than optimal (Parmin et al., 2020), cannot meet as many learning needs as face-to-face (Best & Conceição, 2017), and is less interesting than face-to-face (Mulyanti et al., 2020).



Therefore, universities need to conduct periodic evaluations to monitor the effectiveness of online learning and seek best practice through scientific studies.

The presence of Covid-19 also provides obstacles and negative impacts in online learning. The findings show that unreliable signal reception will hinder the students' learning because it will eliminate students' focus on learning. These findings corroborate previous research on less optimal learning due to signal problems (Abidin et al., 2020). Also, students stated that the unreliable signal reception was influenced by the blackout from the local PLN, bad weather such as heavy rain or strong winds, and students who live in highland or mountainous areas. These findings complement previous research related to the causes of disturbances in internet connectivity (Cakrawati, 2017; Diningrat et al., 2020; Fatoni et al., 2020). Students practiced dealing with signal interference to change providers, found a place with better signal reception, and looked for a free Wi-Fi place, such as in a cafe or at a relative's house with Wi-Fi installed. These findings add alternative solutions that can be carried out based on previous research on problems in facilities needed in online learning (Abidin et al., 2020; Cakrawati, 2017; Dabbagh, 2007; Diningrat et al., 2020; Zhu et al., 2020). Students also stated that there were still disturbances in the learning environment that made it uncomfortable and disturbed student concentration. These findings corroborate previous findings that it is more difficult to find a conducive learning environment (Czerniewicz et al., 2020; Erarslan & Arslan, 2020; Fatoni et al., 2020). The student's strategy in dealing with this is to find a quiet place, such as in their room, by locking the door. These findings strengthen previous research that comfort is made in the environment by minimizing disruption in learning (Erarslan & Arslan, 2020; Sadikin & Hamidah, 2020).

Furthermore, online learning during the Covid-19 pandemic also negatively impacts students' physical and mental health. This study's findings indicate that students experiencing physical effects in the form of waist pain, increasing gastric acid, blurred, sore, and stinging eyes. These findings strengthen and complement previous research on the emergence of physical exhaustion (Atmojo & Nugroho, 2020) and eye strain (Octaberlina & Muslimin, 2020). The mental impact experienced by students is in the form of boredom, decreased motivation, and stress that arose while studying during the Covid-19 pandemic. These findings complement previous research on the emergence of students' mental problems (Atmojo & Nugroho, 2020; Charles et al., 2021; Jhon et al., 2020; Rakhmanov & Dane, 2020; Sayeed et al., 2020; Wang & Zhao, 2020). The emergence of stress due to their state of being constantly under stress and the emergence of anxiety regarding their studies (Chhetri et al., 2021). The strategy students used to deal with this was by taking a short break or looking at something far and greenery, such as trees, as a refresher mind. Some students shared their experience with their parents or friends to reduce the burden on their minds. These findings are in line with previous research, which states that it is necessary to maintain health and fitness through entertainment, accelerate motor skills, eat nutritious food and adopt a healthy life (Seki & Juwariyah, 2020). The finding reinforces that sleep habits, daily fitness routines, and social interactions significantly affect students' health conditions (Chaturvedi et al., 2021).

Online learning that has occurred for one year in the scope of higher education certainly has a lot of meaning for each component of education. This is because online learning during the Covid-19 pandemic also contributed to accelerating the use of technology in education. However, online learning during the Covid-19 period could not be carried out optimally, and there were still many obstacles in the process. However, based on students' experiences and points of view, they do not just give up on the uncertainty that Covid-19 brings in learning. Students still have motivation and strategies to overcome any obstacles and negative impacts of Covid-19 in learning. So, students can learn strategies from each other to improve their self-learning programs. This research certainly has limits that appear in data collection. These emerging limits can be a suggestion for further research that other researchers can carry out. The limits and suggestions of the study are as follows. First, the study has not explored the viewpoints of lecturers and campus parties on the barriers, negative impacts, and strategies that lecturers can undertake to deal with any challenges that arise. It therefore requires further research exploring the faculty' online viewpoint through

in-depth interviews and observations. Second, the study has not traced positive impacts in the Covid-19 pandemic period as well as future impacts after Covid-19 could be resolved. And so, it takes more profound reviews of the positive impact or potential that arises at the time of the Covid-19 existence as well as after the Covid-19 can be resolved in the foreseeable future. Third, this study has not yet traced to the effective learning process or best practices in learning, so further research is needed on it.

#### 4. Conclusions and Suggestions

Based on the analysis results, it is concluded that learning during the Covid-19 pandemic has not been fully optimal. However, the positive side is that the increasing use of technology and the internet during the Covid-19 pandemic has accelerated education development that utilizes technology in the Industry 4.0 era. Students also experienced negative impacts physically and mentally during the Covid-19 pandemic because online learning was poorly controlled without attending to students' physical and mental health. Besides, students still encounter obstacles in online learning, such as poor signal reception, a learning environment that is sometimes crowded, and learning activities with lecturers that are not as optimal as face-to-face. However, students still have learning strategies, self-motivating techniques, and ways to minimize obstacles or impacts during online learning during the Covid-19 pandemic.

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