



WWJMRD2023; 9(07):102-107  
www.wwjmr.com  
International Journal  
Peer Reviewed Journal  
Refereed Journal  
Indexed Journal  
Impact Factor SJIF 2017:  
5.182 2018: 5.51, (ISI) 2020-  
2021: 1.361  
E-ISSN: 2454-6615

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## The Online Undergraduate Thesis Guidance during the Covid-19 Pandemic, Indonesia

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### Abstract

The coronavirus (COVID-19) outbreak hit the world at the end of 2019 and prompted the enforcement of strict stay-at-home, social distancing, quarantining, and isolation policies. To curb the spread of COVID-19, Indonesia instituted the same approach. The covid pandemic has changed the education landscape in the form of a change from face-to-face methods to e-learning. The research aims to determine how students deal with or respond to changes in thesis guidance patterns. The research was conducted from the period September-December 2021 at a public university in Bandung, using a survey method of 220 students who, in March 2020-August 2021, had completed their theses. The results showed that one of the biggest obstacles was unstable internet infrastructure in several geographic locations and student adaptation in the face of changes in mentoring methods. The study found that most students could accept changes in the pattern of thesis guidance and were very enthusiastic about it. A SWOT analysis of the changes, hoping lecturers will feel more confident in guiding students to complete their undergraduate theses amidst the covid-19 pandemic.

**Keywords:** covid-19, online learning, face-to-face learning, thesis guidance, undergraduate

### 1. Introduction

The coronavirus pandemic, news of which first appeared in China in 2019, created an emergency that has affected all aspects of life, including education. Based on data from worldometers.info, the total number of Covid-19 infections worldwide is currently at 275.822.844 cases, with 5.3 million died and 247,517,739 others recovered from the coronavirus. Meanwhile, positive cases of Covid-19 in Indonesia as of December 21, 2021, the accumulation of coronavirus sufferers to date is 4,260,544 cases, and 4,111,619 people recovered, while the number deaths are 144,002.

The government has made several efforts to prevent the transmission of COVID-19. These include physical/social distancing, wearing masks, and avoiding large crowds. The government declared a policy of staying at home, working from home, studying at home, and worshipping at home, and prohibited the convening of mass gatherings <sup>[1]</sup>.

The outbreak of COVID-19 resulted in the temporary suspension of many on-campus university teaching programs, including courses and thesis guidance; they use an online format. Another pandemic result was that various activities had been hampered or stopped, including the vast majority of social interactions, economic activity, tourism, and education. The education system dealt with this change by switching to online learning methods in order to keep the teaching and learning process continuing between lecturers and students. The online teaching-learning method is defined as learning in a synchronous or asynchronous environment using various digital devices (such as laptops, cellular phones, and tablets) by utilizing internet access. Therefore, students can anywhere and at any time learn and interact with lecturers or with other students in real time <sup>[2-3]</sup>. Another definition was presented by Cojocariu <sup>[4]</sup>, who stated that online learning is learning mediated by computers connected to the internet network, which makes it possible to learn anywhere, anytime, in any rhythm with any means. If online learning is optimized, then online learning is a tool that can make the teaching and learning process more student-oriented as a learning center, innovative, and flexible. Thus, in a crisis like the COVID-19 outbreak, online learning is no

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longer an option but a necessity. Various obstacles that can hinder the effectiveness of online learning include technological barriers (such as problems with internet networks, audio, video, and others), bored students, unsmooth lecturer-student interactions, and the unpreparedness around lecturer-student competence in the online learning system [5-6].

Undergraduate students must usually present a thesis at the end of their courses as a graduation requirement. A thesis aims to enable students to explain, analyze, and apply all knowledge and educational experience based on fundamental and elective subjects at their university and in the area of expertise they are interested in. Therefore, the thesis expresses student creativity to design, plan, evaluate, improve, innovate, and provide solutions to real problems (problem-solving) contained in the object of study related to aspects of science. This thesis is a written scientific report that follows the rules of research methodology and standard scientific writing.

The purpose of writing this paper is (i) to find out how students deal with or respond to changes in thesis guidance patterns in mentoring undergraduate thesis and (ii) to conduct a SWOT analysis of online student thesis guidance.

## 2. Materials and methods

This research uses the descriptive qualitative method, and the research instrument is a questionnaire type. The participants, students at the Faculty of Engineering Geology in Bandung who had graduated during the COVID-19 pandemic, sent the questionnaire by email—the survey method used in data collection. The researcher prepared several questions made in the Google form application. The research participants consisted of 220 students who had graduated; 185 students returned to the researcher, and the others did not return because students were difficult to contact and the deadline for filling out the questionnaire had passed.

A SWOT was applied to identify and evaluate the online

undergraduate thesis guidance process's strengths, weaknesses, opportunities, and threats [7]. Through this method, student supervisors can evaluate the skills, strengths, competencies, and assets of the faculty so that they can use them to support the implementation of thesis guidance effectively.

## 3. Results & Discussion

### 3.1. Result of Questionnaire

The questionnaire was submitted to participants regarding their readiness for online mentoring. The data shows that 80% of students are ready, while 8% are doubtful, and as many as 12% are not ready to conduct online thesis guidance (Figure 1A). To achieve maximum results in online tutoring, students must be diligent and patient because the explanation given by the supervising lecturer may be challenging to understand due to the limitations of introductory guidance media. Students must be prepared both mentally and with the availability of a good internet network. The supervising lecturer is obliged to provide explanations so that students who are hesitant and not ready become ready to follow the online method of thesis guidance.

The thesis consultation model during the Covid-19 pandemic used by students and lecturers can vary. Examples are face-to-face (offline), using social media, online, and hybrid (mixed face-to-face and online) models. However, the face-to-face guidance process was not applied because government regulations or regulations from campus authorities do not allow it—proposed offline guidance was offered to students who live around campus or in dormitories with some consideration. As many as 12% of students want a face-to-face (direct interactive) model. Most students prefer to follow online tutoring (60%). Students who live outside the city of Jatinangor (the campus location of the university) or far from campus dominate the online tutorial model; students who chose the hybrid model are 28%. Figure 1B presents the choice of the thesis consultation model in the Covid-19 pandemic era.



**Fig. 1:** Pie Diagram of readiness to participate in online mentoring of undergraduate students (A), and model consultation (B)

A digital application is needed to implement online guidance to run optimally. Several applications, such as WhatsApp, Zoom, Skype, Trello, and email, are familiar to students or lecturers. University authorities provide Zoom facilities that students and lecturers can use anytime. As many as 40% of students use the email application in consultation, while that % use the WhatsApp application are 48%, and the remaining 12% use the Trello application. In this guidance process, students prefer email and WhatsApp facilities to the Trello application (Figure 2A).

The choice of the proper application will support online guidance effectively and efficiently so that it will provide optimal results.

One of the severe obstacles that can interfere with achieving the objective of thesis guidance is the problem of the quality of the internet network. During the COVID-19 pandemic, many students returned to their homes outside Jatinangor. The geographical position of the house is different for each student, causing differences in network quality and internet network availability, and the quality of

network speed will also differ across households. The problems hinder the writing of the thesis using this online/online method. Figure 2B shows internet network facilities from student locations. 56% of students have a

good (fast) internet network, while 28% have a moderate internet network, and a poor and unstable internet network constrains 16% of students.



Fig 2: Pie diagram of the type of application (A) and the quality of the internet network (B)

A consultation schedule is highly influential in the completion of the thesis. The more frequently a student consults with their supervisor, the higher the possibility that the timely completion of the thesis can be achieved. The consultation schedule is determined based on an agreement between the lecturer and the student; there are no rules from the faculty authority regarding the consultation schedule. The student's punctuality in consultation also has a role in influencing the success of thesis completion. From the questionnaire distributed, the consultation schedule that was mostly chosen was once every two weeks (40%), followed by once a week (32%). As many as 16% choose once every three weeks to consult with the supervisor

(Figure 3A). As many as 12% of students have an uncertain consultation duration or once a month.

In online mentoring, discipline is a critical factor in students being able to complete their theses on time, discipline in consulting time, and discipline in improving the results of consultations with supervisors. Some students scheduled themselves to consult with lecturers within the agreed period. There is a consultation period of once a week, every two weeks, with a time determined and agreed to by both parties. Based on Figure 3B, the duration of revisions or corrections in the thesis design, 63% of students did revisions for one week, 31% for two weeks, and the remaining 6% for more than two weeks.

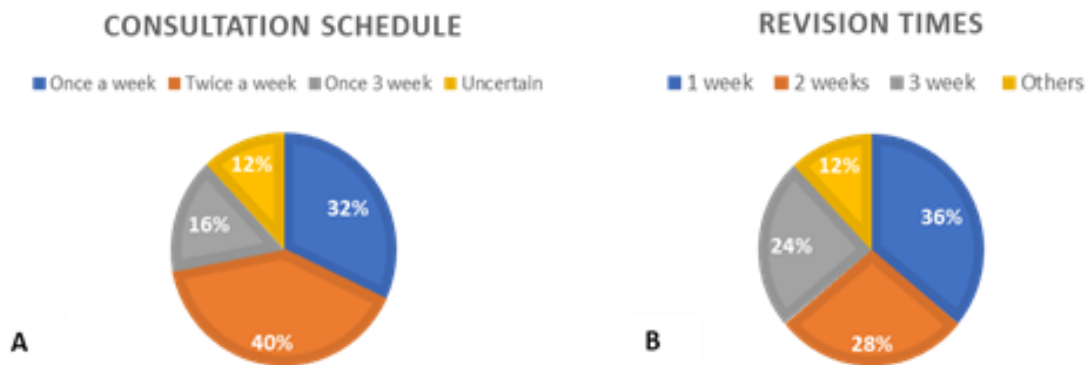
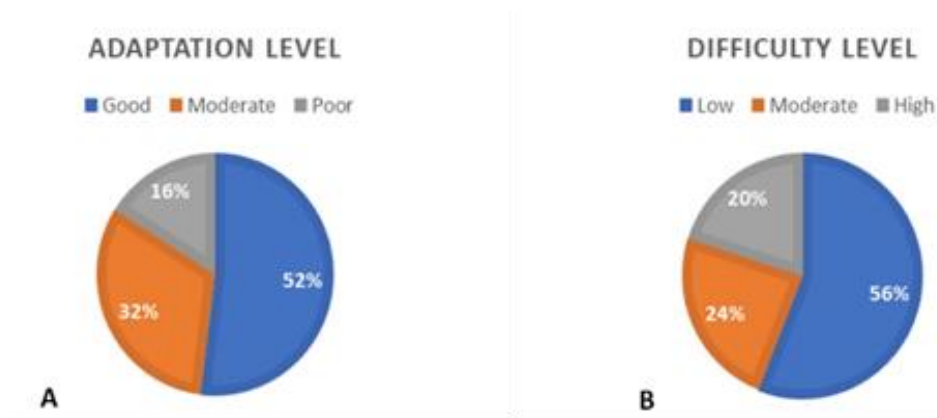


Fig 3: Pie diagram of the consultation schedule (A) and revision time for improving their thesis

A policy or regulation by the holder of authority is not always acceptable to all parties. Likewise, faculty authorities issue student thesis guidance regulations requiring online guidance. There are pros and cons. However, due to the COVID-19 pandemic, students must follow this provision. All students hope to be ready to work on their thesis under conditions like the current COVID-19 pandemic. They need a reasonable adaptation process in dealing with emergencies to complete their theses on time. The questionnaire data (Figure 4A) shows that as many as 52% of students can adapt well, 32% can moderately adapt, and 16% are not or less adaptable.

Students' adaptability is closely related to the difficulty students face in carrying out the online tutoring process. There are still many weaknesses in implementing the online

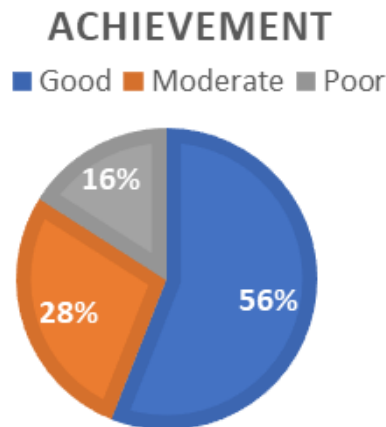
thesis guidance process, from technology problems, online learning methods, and social and environmental conditions solutions for various obstacles that may arise by the faculty authority to minimize the difficulty students face. Data from the questionnaire (Figure 4B) showed that 56% of students experienced low difficulty, while those who experienced moderate difficulty were as many as 24%. Those who experienced high difficulty levels were 20% of students.



**Fig 4:** Pie diagram of students' adaptation level (A) and difficulty level in the online tutoring process.

Although there are many obstacles and problems in the online thesis mentoring process, most students pass it well. However, some do not or have not achieved maximum results. The assessment of the achievement of thesis guidance is grouped into good (if the completion of guidance is on time), medium category (if the student has completed an experiment and written it down as the result

of their research). In contrast, students in the 'bad' category had not experimented. The results of the questionnaire data showed that as many as 56% of students had completed it on time. Meanwhile, students had a level of moderate achievement, reaching 28 students, and were categorized as poor (16%).



**Fig 5:** Pie diagram of the achievement of thesis completion

### 3.2. Discussion

Based on the questionnaire data, the obstacles that contribute during the mentoring process and solution initiatives either by the supervisor or faculty authorities to minimize these obstacles. From the online method's guidance process, five factors play a significant role in the thesis guidance process, which switches from face-to-face to an e-learning medium of instruction. These are (1) person, (2) infrastructure network, (3) method, (4) materials, and (5) environment.

#### (1) Personal Collaboration

The Covid-19 outbreak, which continues to multiply, impacts students, lecturers, education staff, and everyone who works in an academic environment. Collaboration between thesis mentoring lecturers, students, and academic staff in the online thesis guidance process is fundamental. At first, they felt isolated because of the work-from-home (WFH) policy time management issues, where many activities suddenly take place, whether in the form of meetings, webinars; concerns about the use of technology and the limitations of software knowledge due to the implementation of online learning teaching. Some students or lecturers have experienced deep sadness caused by the

sudden death of colleagues or family due to this epidemic [8]. The faculty authorities provide online guidance and information related to this outbreak to students and supervisors by holding webinars containing tips on dealing with this epidemic while still learning, provided by experts in the field of education from local and foreign countries. The strenuous efforts made by the faculty authorities and supervising lecturers provided strong motivation to students. This can be seen from the level of readiness of students to follow the online mentoring pattern very well (80% of students stated they were ready) and only 8% not ready)

#### (2) Infrastructure network

The e-learning infrastructure network is one of the factors that can support the continuity of online thesis guidance. The success of online thesis guidance is highly dependent on the internet infrastructure network owned by a university. E-learning network infrastructure consisting of electronic devices, stable internet accessibility, a Learning Management System (LMS), and communication applications is an indicator of the readiness of educational institutions in distance learning [9-10]. An effective e-learning system indicates the readiness of educational



institutions or LMS, electronic devices, communications apps, and internet accessibility in conjunction with students' abilities and knowledge and lecturers using technology and learning. Several application platforms such as Zoom, WhatsApp, Trello, and Microsoft Teams became familiar to students and lecturers during the pandemic. They are the primary means of online communication in teaching and thesis guidance. Internet accessibility is also essential for online tutoring to take place. Problems with internet network availability, coverage, speed, and costs can also hinder smoothness in online tutoring. In this case, the government has helped through quota subsidies for students and lecturers so that the e-learning process runs well.

Moreover, university authorities have prepared digital platforms, such as Zoom and Google Meets, to facilitate the online tutoring process appropriately. The only unremedied issue is related to the geographical location of a student's residence. During the pandemic, many students returned to their original areas to gather with their families, and these locations were sometimes far outside the coverage area of the internet network. So, students experience issues in participating effectively in the e-learning process. They have seen from the questionnaire results, which showed that some students had difficulty obtaining a good internet network considering the location of their residence. From the survey, as many as 16% of students do not have a good and reliable internet network.

**(3) Methods Transition**

The COVID-19 pandemic has forced various educational institutions to halt traditional face-to-face learning and start with an online learning method, either through the teaching and learning process or the thesis guidance process. There has been a sudden change from the face-to-face method to distance learning, which has led to conditions that the academic community has responded to with various responses. The university authorities have quickly responded by providing several pieces of training on e-learning methods, using the internet and application platforms to students, lecturers, and administrative staff. They can solve problems with changes in face-to-face learning methods to online.

**(4) Materials Supported**

The university authorities have facilitated the availability of material support so that the online thesis learning and guidance can run well and that lecturers have no difficulty carrying out their duties. License, internet connection, and webcams are the infrastructure needed to conduct online

classes or tutoring through applications such as Zoom. The university has provided well. However, some students are in a different situation. For example, they were sharing their devices and other resources with family. Because all activities at home during the pandemic for education, economic activities, or other work, limited access to hardware, software, and adequate bandwidth will create a digital gap and ultimately interfere with the ability of students to undergo the online thesis guidance process [11].

**(5) E-Learning Environment**

The COVID-19 pandemic created an emergency for all aspects of life, one of which has resulted in significant changes in the field of education and marked by a drastic change in the face-to-face learning method to e-learning with various consequences. For this reason, the government, health authorities, and education authorities make various rules and recommendations to minimize negative consequences as much as possible. It is certain that university stakeholders, both administrative staff and lecturers, strive to design online teaching effectively. Of course, online learning methods in an emergency (unexpected and different from before) are not the same as learning in normal conditions [12, 13].

One important thing is creating a fun, comfortable learning environment that provokes more active involvement from students so that lecturer-student interactions can run optimally and effectively. To do this, lecturers need to design an instructional strategy that combines elements of pedagogy and online teaching. However, there are doubts about dealing with this situation due to a lack of knowledge and limited support due to sudden changes. Students feel bored because they are at home too long (Work from Home), feel socially isolated, and experience motivation decreases because, in a situation like this, even though they can graduate quickly, they cannot work. After all, no company will accept new employees. Therefore, in addition to guiding students according to their knowledge, the lecture is also required to motivate them to change their views and characterize students for the better, even though the conditions are still unclear when this covid pandemic ends.

**3.3. SWOT Analysis (Strength–Weakness–Opportunities–Threat)**

Use the SWOT analysis to maximize strengths, cover weaknesses, take advantage of opportunities, and deal with emerging threats in the online guidance for undergraduate students. A SWOT analysis of the undergraduate thesis guidance process is depicted in Figure 6, as shown below:



**Fig 6:** SWOT Analysis of Online undergraduate thesis guidance

**Strengths.** The existence of a new online thesis guidance system has raised the awareness of students that whatever conditions occur, they must be faced to complete their thesis. So that there is awareness to be more creative, more innovative, to be more independent, to have a flexible learning environment. The environmental conditions during the guidance and interaction process will be safe.

**Weaknesses.** In the online tutoring process, the interaction between lecturers and students is fragile, very dependent on the thesis supervisor, and the lecturer's control is weak on the progress of thesis completion. The emergence of feelings of loneliness from students due to WFH has been ongoing for a long time. In addition, the student's response to the guidance material is complex for the supervisor to identify.

**Opportunities.** The online thesis tutoring methodology provides opportunities to increase the use of more advanced and diverse digital technologies, increase creativity and synergy in online faculty-student interactions, and ensure a safe and flexible learning environment related to advanced technology during a pandemic.

**Threats** COVID-19 has taught educators that online learning is more of an extraordinary thing for students than it was before the COVID-19 pandemic. There will always be threats and challenges; finding a reasonable solution is a reasonable way to overcome these obstacles. In the online thesis guidance process, the potential challenges include the fact that digital technology is diverse, so a compromise between lecturers and students is necessary, hardware device compatibility (laptops, smartphones), questions arise regarding the integrity of students due to changes in learning methods from traditional face-to-face patterns to online patterns Student-lecturer approval agreements are required for the choice of software, expensive, and so on.

#### 4. Conclusion

An emergency like the one that has resulted from the Covid-19 pandemic has spurred an increase in innovation, creativity, and out-of-the-box thinking. Thus, the online undergraduate thesis guidance process can be exciting and fun and familiarize students with online learning approaches, e-learning infrastructure, and innovative technology. Education facilitates learning, and, in the end, students adapt quickly to changes that occur and are encouraged to complete their theses on time. This research shows that most students feel comfortable and optimistic about the changes. However, some students also feel isolated, lonely, and lazy due to this sudden change in the pattern of thesis guidance.

#### 5. Acknowledgment

We thank the Rector of the University of Padjadjaran, Indonesia, for funding this research by Academic Leadership Grant 2021.

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