

## *The correlation between Online Lectures and the students' productivity during the Covid-19 Pandemic*

### **Hubungan Kuliah Daring dengan Produktivitas Mahasiswa di Masa Pandemi Covid-19**

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#### **ABSTRAK**

Kegiatan belajar mengajar dari rumah menjadi salah satu solusi untuk tetap melaksanakan proses pembelajaran di masa pandemi Covid-19. Salah satu metode yang digunakan adalah kuliah daring untuk pencapaian prestasi belajar. Mengubah kebiasaan dengan cepat tentu tidak mudah, seperti halnya mengubah kebiasaan tatap muka melalui dunia maya. Penelitian ini bertujuan untuk menganalisis faktor-faktor yang berhubungan dengan produktivitas mahasiswa fakultas kesehatan pada masa pandemi di Universitas Dian Nuswantoro Semarang. Metode yang digunakan dalam penelitian ini adalah metode deskriptif dengan sampel sebanyak 155 mahasiswa yang pernah mengikuti perkuliahan tatap muka sebelumnya. Pengumpulan data dilakukan dengan kuesioner online yang disebarakan melalui WhatsApp group class. Hasil analisis menunjukkan bahwa 52,9% produktivitas mahasiswa pada masa pandemi Covid-19 berada pada kategori sesuai. Hasil uji korelasi rank spearman menunjukkan bahwa faktor yang berhubungan signifikan dengan produktivitas mahasiswa adalah kemudahan mengikuti perkuliahan, dukungan keluarga, dan kenyamanan perkuliahan dengan  $p$ -value  $< 0,001$ , sedangkan untuk faktor peralatan perkuliahan dan online preferensi kuliah dengan produktivitas mahasiswa  $p = 0,001$ , penghematan biaya dengan produktivitas mahasiswa  $p = 0,004$ , sedangkan masalah jaringan dengan produktivitas mahasiswa  $p = 0,485$ . Sehingga dapat menjadi faktor utama penentu kebijakan di perguruan tinggi, adanya kuliah daring akan menjadi solusi ketika kuliah reguler atau gabungan keduanya tidak dapat dilaksanakan.

**Kata Kunci:** Pandemi Covid-19, Kuliah Daring, Produktivitas Mahasiswa

#### **ABSTRACT**

*Teaching and learning from home is one solution to continue carrying out the learning process during the Covid-19 pandemic. One of the methods used is online lectures for learning achievement. Changing habits quickly would not be easy, as is changing face-to-face habits through cyberspace. This study aims to analyze factors related to student productivity of the faculty of health during the pandemic at Dian Nuswantoro University Semarang. The method used in this study is a descriptive method with a sample of 155 students who have experienced face-to-face lectures before. Data were collected by an online questionnaire distributed via WhatsApp group class. The analysis results show that 52.9% of student productivity during the Covid-19 pandemic is in a suitable category. The results of the Spearman rank correlation test showed that the factors that were significantly related to student productivity were the ease of attending lectures, family support, and lecture comfort with a  $p$ -value of  $< 0.001$ , while for the factor of lecture equipment and online lecture preferences with student productivity  $p = 0.001$ , cost savings with student productivity  $p = 0.004$ , while network problems with student productivity  $p = 0.485$ . So that it can be the main factor for determining policy in universities, having online lectures would be the solution when regular lectures or a combination of the two cannot be carried out.*

**Keywords:** Covid-19 Pandemic, Online Lectures, Student Productivity

## INTRODUCTION

All sectors are affected by the COVID-19 pandemic, including the world of education. Given the enormous risk of transmission of COVID-19 in the community and the community's non-compliance with health protocols, Indonesia's teaching, and learning process is carried out online (Nuryati *et al.*, 2020). The online teaching and learning process is carried out to prevent the transmission of Covid-19 in the learning place. There are many obstacles in the online teaching and learning process. The problem faced in online teaching and learning is how to use applications, methods, tools, and internet networks that are still minimal and has not yet reached all parts of Indonesia (Panday, 2020).

The COVID-19 pandemic must not stop the teaching and learning process. Learning from home online is one way to carry out the teaching and learning process. Learning from home does not mean learning has to be from home but can be done anywhere, such as in cafes or places that support teaching and learning activities (Ahidin *et al.*, 2020; Mungkasa, 2020). Studying from home online means self-study using technology. Social distancing activities make people creative in completing tasks and work to achieve the expected competencies (Sasmita *et al.*, 2021)

The consequences of changing learning methods from conventional (face-to-face) to online, where adjustments are needed from educators and students to the latest technology, is one of the demands of technological development. However, not all learning and teaching processes can be done online. Not all lessons or courses can be done online, for example, practicum courses that require supporting tools that are not at home (Rajesh *et al.*, 2022).

Online lectures can be a hassle for tech-savvy students but can also be considered easy for those who are used to changing technology. Students are more accessible to accept knowledge transfer through the conventional method than the online method because not all students are responsive to technology (Khan *et al.*, 2022).

## MATERIALS AND METHOD

The Indonesian government has implemented restrictions on community activities to suppress the transmission of the virus during the COVID-19 pandemic. This activity restriction also applies to the education system in Indonesia. This study aimed to determine factors related to student productivity during the covid19 pandemic.

This research is a quantitative analytic study conducted on students of Dian Nuswantoro University, Semarang. Students who became respondents to this study were students who had experienced the online and offline teaching and learning process. Respondents to this study were active and registered as students in 2018 and 2019. As many as 155 student data were collected by distributing online questionnaires using google forms. The google form link is distributed via WhatsApp group and the student telegram group. The student productivity questionnaire contains eight questions that have been modified from the elements of the Tri Dharma of Higher Education. The data were analyzed using the Spearman rank non-parametric correlation test to determine factors related to student productivity.

## RESULT

This research is a quantitative analytic study conducted on students of Dian Nuswantoro University, Semarang. Students who became respondents to this study were students who had experienced the online and offline teaching and learning process. Respondents to this study were active and registered as students in 2018 and 2019. As many as 155 student data were collected by distributing online questionnaires using google forms. The google form link is distributed via WhatsApp group and the student telegram group. The student productivity questionnaire contains eight questions that have been modified from the elements of the Tri Dharma of Higher Education. The data were analyzed using the Spearman rank non-parametric correlation test to determine factors related to student productivity.

The respondents of this study were 155 students, consisting of 48 male students and 107 female students, aged between 20 to 23 years. the respondent is an active student and registered as a student in 2018 and 2019. The student has gone through at least two semesters of offline lectures. Respondents came with a Bachelor of Environmental Health, Bachelor of Public Health, Bachelor of Management, Hotel Management, Diploma in Medical Records, Bachelor of English, Bachelor of Japanese, Bachelor of

Industrial Engineering, and Bachelor of Informatics.

**Identify factors supporting online lecture activities.**

There are seven questions to explore information related to online lecture activities. Each question is a positive question that gives a score ranging from 1,2, 4, and 5. The results of the study show:

**Table 1. Identify Factors Supporting Online Lectures During The Pandemic**

Question	Answer score							
	1		2		4		5	
	Σ	%	Σ	%	Σ	%	Σ	%
1. I was able to take the lectures online well:	8	5,2	31	20,0	69	44,5	47	30,3
2. I have the support of the family environment to study from home:	9	5,8	24	15,5	50	32,3	72	46,5
3. My lecture equipment supports learning from home online.	11	7,1	31	20,0	57	36,8	56	36,1
4. I didn't get any network problems when I was studying online.	18	11,6	55	35,5	58	37,4	24	15,5
5. I am comfortable studying from home and can follow the courses taught.	10	6,5	46	29,7	52	33,5	47	30,3
6. I prefer to learn online (on line) than offline (off line)	29	18,7	45	29,0	34	21,9	47	30,3
7. I have been spending more economically since studying from home.	28	18,1	28	18,1	31	20,0	68	43,9

The data table above displays data that shows the tendency of students to want offline or regular lectures. We can be seen from the answers to questions about the convenience of lectures being carried out offline. We can take lectures from home with a tendency to answer to agree (scores 2 and 4) as many as 99 respondents (63.8%), and respondents who expressed a tendency to be happier with online lectures than offline (scores 2 and 4) the results were lower, with a total of 81 respondents (52.2 %) of the overall sample.

Several things bring the tendency of today's students to use technology to support the teaching and learning process, with online lectures providing opportunities for

student creativity and independence and not being rigid in facing lectures as well as regular lectures (Khan *et al.* 2022).

**Student productivity during a pandemic**

We are extracting data related to student productivity by modifying the standard load of lecturer performance based on the tri dharma of higher education, then adjusting to the burden of students in the learning process. Student productivity is grouped in the ability to complete lecture assignments, involvement in lecturer activities, and self-development through scientific activities. The score is 0-3. The higher the score, the better the productivity compared to the smaller the score.

**Table 2. Student Productivity During a Pandemic**

Question	Result	
	$\Sigma$	%
1. In the WFH period a day I was able to take online lectures (consent in front of my laptop):		
• 100 minutes	(0)	67 43,2
• 200 minutes	(1)	50 32,3
• 300 minutes	(2)	27 17,4
• 400 minutes or more	(3)	11 7,1
2. During the WFH period, a week I was able to attend lectures (not licensed):		
• 1 – 3 credits	(0)	9 5,8
• 4 – 8 credits	(1)	25 16,1
• 9 – 12 credits	(2)	26 16,8
• 12 credits	(3)	95 61,3
3. During the WFH period, I successfully completed the assignments from the lecturers:		
• 0 tasks	(0)	1 0,6
• 1 – 2 tasks	(1)	7 4,5
• 3 – 4 tasks	(2)	26 16,8
• All tasks	(3)	121 78,1
4. Results in the Midterm Exam (UTS) I get:		
• Decrease in semester IP scores compared to before WFH	(0)	24 15,5
• fixed semester IP scores (the same only) compared to before WFH	(1)	30 19,4
• semester IP scores slightly increased compared to before WFH	(2)	53 34,2
• Increase in semester IP scores compared to before WFH	(3)	48 31,0
5. Results in my Final Semester Exam (UAS) get:		
• Decrease in semester IP scores compared to before WFH	(0)	22 14,2
• fixed semester IP scores (the same only) compared to before WFH	(1)	29 18,7
• semester IP scores slightly increased compared to before WFH	(2)	57 36,8
• Increase in semester IP scores compared to before WFH	(3)	47 30,3
6. I attended trainings, seminars (online) and the like during the WFH period:		
• 0 times	(0)	7 4,5
• 1 time	(1)	16 10,3
• 2 times	(2)	21 13,5
• > 2 times	(3)	111 71,6
7. I participated in community service lecturers during the WFH period		
• 0 times	(0)	114 73,5
• 1 time	(1)	27 17,4
• 2 times	(2)	4 2,6
• > 2 times	(3)	10 6,5
8. I was involved in the committee of activities on campus during the pandemic		
• 0 times	(0)	104 67,1
• 1 time	(1)	18 11,6
• 2 times	(2)	11 7,1
• > 2 times	(3)	22 14,2

Score 1 is the lowest score of student productivity, with the highest score being 22, with a median of 13. Student productivity level data is not normally distributed ( $p=0.002$ ). Total student productivity scores were then grouped into 2; the moderate

group ( $<13$ ) and the good group ( $\geq 13$ ). The frequency distribution of student productivity levels by group shows that 47.1% (73 respondents) are in the moderate group, and 52.9% (82 respondents) are in the good group. More details can be seen in Table 3.

**Table 3. Distribution of respondents based on student productivity level, n=155**

Productivity	$\Sigma$	Percentage
Good	82	52,9%
Moderat	73	47,1%
	155	100

The results in the field showed that even with a difference that was not large, productivity was still better, with a percentage of 52.9 percent. The reason can be because the standard assignments given to students adjust to conditions during a pandemic. From the eight question points related to student productivity, the answer that supports the value of productivity is good in the question of the ability to attend lectures as a whole, complete assignments given by lecturers, and take part in seminars or training held online. By attending online lectures, students feel that they are not very accomplished because the position of attending lectures can adjust conditions, not being stuck sitting in class that risks being bored listening to lectures from teachers or

lecturers. This study's results differ from the research of Jannah et al., which states that active students experience fatigue due to too long dealing with laptops/devices. They need time to adapt to online methods (Jannah et al. 2020), Online lectures have a risk of student mental disorders such as stress (Madani et al., 2022).

**The relationship between online lectures and student productivity during a pandemic**

The analysis was conducted by testing factors related to the online lecture period related to student productivity; a non-parametric correlation test of *spearman rank* was carried out because the data were not distributed normally.

**Table 4. Correlation of factors supporting online lectures with student productivity, n=155**

Factor identity	Student productivity	
	Corelation Pearson	p-value
Age:	-.169	0,036
Class of college (year of entry udinus):	-0,014	0,862
I was able to take the lectures online well:	.330	< 0.001
I have the support of the family environment to go to college from home.	.325	< 0.001
My lecture equipment supports learning from home online.	.260	0,001
I didn't get any network problems when I was studying online.	0,057	0,485
I am comfortable studying from home and can follow the courses taught.	.340	< 0.001
I prefer to learn online (on line) than offline (off line)	.276	0,001
I have been spending more economically since studying from home.	.231	0,004

The bivariate test of online lecture factors with student productivity shows that the results are broadly related. However, several factors show nothing to do with productivity, namely the age factor ( $p = 0.036$ ), the college class ( $p = 0.862$ ), and network constraint problems ( $p = 0.485$ ). The analysis results show no relationship between age and student productivity. In this study, age is not related because the age of 20-23 years is the age of deepening knowledge through formal education. This study's results align with research conducted at the University of Shah Kuala that 75% of students are ready to face online lectures at this age (Jannah *et al.* 2020).

Even in the current pandemic conditions, a student's creativity is required to follow the whole teaching and learning process (Jaelani *et al.*, 2020). Conventional education, relying on face-to-face (regular), can switch to distance education (online) with a touch of information technology that is not limited by space, time, and distance so that the relationship between students and students can be done anytime and anywhere (Munir 2009). It is necessary to master the supporting technology for online lectures for both lecturers and students (Mar'ah *et al.* 2020).

Not all courses are appropriate for conducting lectures online. For example, all students may not understand the content of reading materials delivered online. That is because the material content is presented as an e-book per chapter, teaching materials in the form of PowerPoint, and videos (Efriana, 2021). According to Arifa (2020), not all courses can be delivered dialogically, especially courses that require practice or communication with the community. However, not optimal; learning from home through online media is a solution during a pandemic. However, careful preparation is needed, and facilities are needed that facilitate the process of implementing online teaching and learning, one of which is a stable network to support online meetings (Basar, 2021; Rahayu, 2021).

The uneven distribution of a good internet network throughout Indonesia is one

of the obstacles to implementing online lectures, especially for students from specific regions (Subiakto, 2013). There needs to be more attention from the government related to the distribution of existing networks, to support the dissemination of information in Indonesia, especially for distance education, which in the current era is urgently needed. So far, providers for internet networks prioritize dense areas in constructing BTS because of the profit factor, which should also play a role in developing areas that the internet network has not reached.

Most students and lecturers feel changes in the teaching and learning system that are very fast. They feel unprepared in the face of changes in the teaching and learning process. They are not prepared to design good learning situations and create unique and innovative learning environments using digital technology (Rapanta *et al.*, 2020). Many educators are more comfortable transferring knowledge directly, considering that humans are social creatures who need to interact directly to feel the expressions of their interlocutors (Naway, 2017; Sukirman, 2012). Technology is continuously developing; inevitably, education people must be able to keep up with these developments, one of which is the combination of online and offline education (Kurniati *et al.*, 2021; Pratama & Mulyati, 2020), as an educational solution during the Covid'19 pandemic.

Research conducted by Rahman and Zahir Uddin Arif, 2021, showed that respondents felt that by doing WFH, their productivity was higher than working in the office.

## CONCLUSION

In this study, results were obtained. University Dian Nuswantoro has implemented a work-from-home policy since March 2020, and lectures are conducted online for all courses. as many as 52.9% of respondents are in the good student productivity group, and the rest are in the moderate group. But overall productivity is better during the pandemic.

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