

The effectiveness of on-line learning at an Indonesian university during the Covid-19 pandemic: students' perspectives

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ABSTRACT: Indonesia, similarly to other countries, has been deeply affected by the Covid-19 pandemic right from its inception and across all sectors, including education. In view of this situation, the government introduced an on-line learning policy to prevent the spread of Covid-19. On-line learning was also carried out by Syiah Kuala University, Kota Banda Aceh, Indonesia. Learning activities from home through on-line mode needed to be analysed from a range of perspectives. Student opinions on the advantages and obstacles of implementing on-line learning are considered an important aspect. Hence, the purpose of this study was to determine the perceptions of civil engineering students of on-line learning at Syiah Kuala University during the pandemic. The results demonstrate that the students responded positively in regard to the assessment items, including the ease of access, timing and the appropriate learning material. They appreciated the opportunities created by their lecturers, the exchange of questions, opinions and responses, which enhanced the interaction and made them actively involved in the learning process.

INTRODUCTION

Currently, the world is still in the grips of the Covid-19 pandemic which has affected all areas of life and economy [1]. Covid-19 was first reported in Wuhan, China, in January 2020 [2], but has quickly spread to other countries. Indonesia is one of the countries that have been severely impacted by the pandemic as evidenced by the grim statistics indicating that 4,249,323 people have tested positive for the coronavirus and 143,592 of them have died [3].

As way of response and prevention, various countries have implemented regional quarantine policies [4], and introduced lockdown measures. Indonesia is one of the countries that have made various efforts to prevent the spread of Covid-19 [5].

One of the prevention efforts carried out by the government of Indonesia was the call for physical distancing [6]. Physical distancing policies have been implemented in many countries not only Indonesia [6][7], and resulted in the closure of schools and universities across nations. According to the Indonesian policy, Syiah Kuala University is encouraged to make appropriate changes in the teaching and learning process, so that it can continue to provide education and support the academic progress of students.

Governmental policies have enabled the implementation of educational strategies in the Covid-19 emergency period, thus facilitating on-line teaching off campus and learning from home. During the current pandemic, on-line learning is considered a logical alternative to face-to-face on-campus education [8].

On-line learning is a type of distance learning based on various Internet media [9][10]. When learning on-line, , students do not have to rely on a particular location, can study anywhere, and being in a different place that the lecturer does not impede the learning process as students can smoothly follow their lectures and engage with the lecturer [8][11]. On-line learning requires educators to master the relevant technology and organise the on-line teaching process with high competence. On-line learning is based on several platforms and services and includes, for example, Google Classroom, WhatsApp, Zoom Cloud Meeting and other applications that can support the implementation of on-line learning [12].

As indicated above, Syiah Kuala University has also been engaged in on-line education delivery due to the pandemic. The learning process through that mode has been analysed from the perspective of civil engineering students, and the results presented herein. On-line learning from home faces numerous challenges, but also creates certain opportunities. For example, some students may find it advantageous that they do not have to commute to and from the campus, while others may struggle without direct contact with their peers and lecturer.

The purpose of this study was to find out students' perceptions of the application of on-line learning, including their views of the obstacles to this mode of learning during the Covid-19 pandemic.

RESEARCH METHOD

The respondents in this study were students who first enrolled for study in the Civil Engineering Department at Syiah Kuala University, in 2018 and 2019. The total population was 259 as shown below:

Table 1: Demographic information of the population.

Enrolment	Department	Male	Female	Total	Percentage (%)
2019	Civil Engineering	77	60	137	52.90
2018	Civil Engineering	76	46	122	47.10
				259	100.00

Random sampling was used to select engineering students for this study. This sampling technique refers to taking samples from a population in such a way that provides all members of the population with the same probability of being selected [13]. The sample size was determined using the Slovin formula with a margin of error set at 5%, so that a sample of 157 students was obtained.

The data used in this study were primary and secondary data. The primary data was obtained from the responses to a questionnaire distributed to 157 civil engineering students at Syiah Kuala University.

Questionnaire

The questionnaire was distributed to the selected group of students to determine their perceptions of on-line learning in the Civil Engineering Department at Syiah Kuala University during the Covid-19 pandemic. The questionnaire was based on a Likert scale model. The Likert scale is the most widely used rating system to reveal differences in respondents' perceptions of social phenomena [14].

Questionnaires in research may include closed-ended and open-ended question. In regard to closed-ended questions respondents must choose from several potential answers provided to them [15]. In the Likert scale, the measured variables or indicators are a starting point for compiling instrument items, which can be in the form of statements or questions. Each respondent can demonstrate the level of their agreement or disagreement with the statements or questions by choosing one of the provided answers [14]. The questionnaire distributed to Syiah Kuala University students included four levels: strongly agree - 4; agree - 3; disagree - 2; and strongly disagree - 1 [16].

The collected data were analysed using descriptive statistical methods to reveal the students' perceptions of the application of on-line learning during the Covid-19 pandemic.

RESULTS AND DISCUSSION

Based on the questionnaire responses from 157 civil engineering students at Syiah Kuala University, the following ratings were obtained:

Table 2: The results of students' perceptions of on-line learning.

No.	Variable (V)	Score							
		1	(%)	2	(%)	3	(%)	4	(%)
1.	Easily accessible.	9	5.73	0	0.00	121	77.07	27	17.20
2.	Provide high learning motivation.	7	4.46	100	63.69	50	31.85	0	0.00
3.	Does not provide high learning motivation.	33	21.02	0	0.00	124	78.98	0	0.00
4.	On time according to the study schedule.	0	0.00	2	1.27	125	79.62	30	19.11
5.	On-line learning materials are presented according to the syllabus.	0	0.00	25	15.92	88	56.05	44	28.03
6.	On-line learning helps in understanding the learning material.	20	12.74	116	73.89	21	13.38	0	0.00
7.	On-line learning does not help in understanding the learning material.	0	0.00	40	25.48	113	71.97	4	2.55
8.	Miscommunication often occurs.	0	0.00	22	14.01	115	73.25	20	12.74
9.	The interaction between lecturers and students is getting closer.	35	22.29	112	71.34	10	6.37	0	0.00
10.	Lecturers give you the opportunity to ask questions or give opinions.	0	0.00	4	2.55	120	76.43	33	21.02

11.	Students are actively involved in asking questions and giving opinions during the learning process.	0	0.00	2	1.27	119	75.80	36	22.93
12.	Makes it easy to collaborate with fellow students in tasks involving research and group work.	43	27.39	99	63.06	10	6.37	5	3.18
13.	The value of the course will increase.	6	3.82	10	6.37	121	77.07	20	12.74
14.	The on-line media/applications are very easy to use.	0	0.00	4	2.55	123	78.34	30	19.11
15.	It is convenient to collect assignments and examinations on-line.	30	19.11	20	12.74	97	61.78	10	6.37
16.	Prefer to study on-line rather than face-to-face.	0	0.00	29	18.47	87	55.41	41	26.11
17.	There is no difference between on-line and face-to-face learning.	111	70.70	21	13.38	20	12.74	5	3.18
18.	On-line learning makes your interactions with fellow students much friendlier.	93	59.24	39	24.84	20	12.74	5	3.18
19.	On-line lectures, examinations and assignments make the study load heavier than usual.	40	25.48	77	49.04	29	18.47	11	7.01

A comparison of students' ratings for each statement is shown in Figure 1 below.

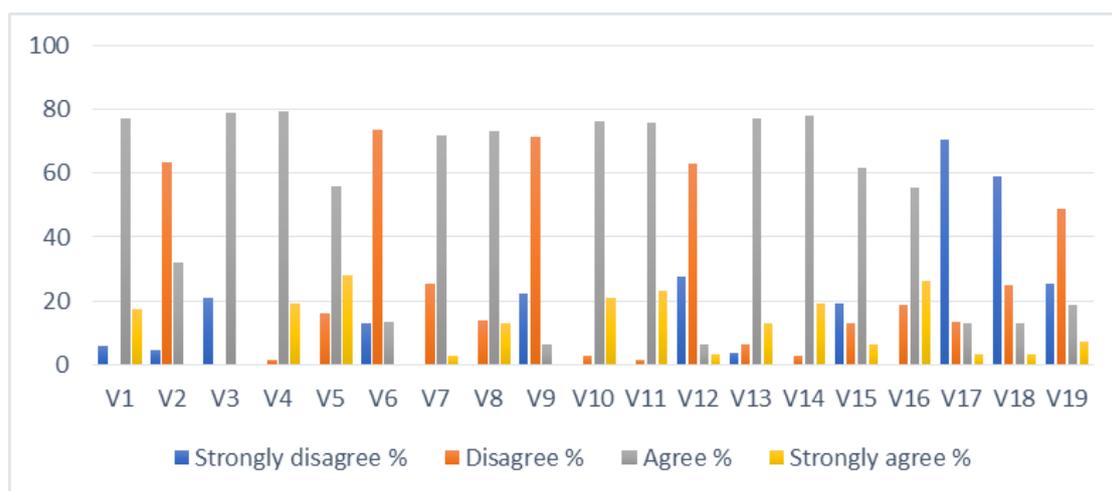


Figure 1: Students' ratings for each statement in percentages.

Based on Table 2 and Figure 1, it is evident that the majority of respondents (77.07%) *agree* that on-line learning is easily accessible. The majority of respondents (63.69%) *disagree* that on-line learning provides high learning motivation. This is disappointing as in the learning process, motivation is needed by every student, so that they can study harder and achieve more. If students do not have high learning motivation, their achievement will also decrease.

The majority of respondents (78.98%) *agree* that on-line learning does not provide high learning motivation. This reaffirms the students' responses to the former statement. As stated above, motivation has an important role in the on-line learning process. Student motivation may be low or even non-existent due to the mode of learning, lack of direct contact and other factors which can weaken learning outcomes.

The majority of respondents (79.62%) *agree* that on-line learning is carried out on time according to the study schedule. As courses are delivered on-line, and students learn from home, they have to be aware of the lecture schedule. The timing of lectures must be accurate for the lectures to be delivered according to the schedule.

Most respondents (56.05%) *agree* that on-line learning was delivered according to the syllabus. The relevance of learning refers to the suitability of the learning process with the course syllabus. The majority of respondents (73.89%) *disagree* that on-line learning can help in understanding learning materials. On-line learning can be less effective for some students, because they require more direct assistance when trying to understand new material. However, it is hoped, that within the on-line setting, the lecturer will be able to provide a better, more optimal assistance than now.

The next question confirms the findings from the one before, i.e. the majority of respondents (71.97%) *agree* that on-line learning does not help in understanding learning materials. It can be concluded that on-line learning is not as effective in the process of understanding study material as is direct contact. The majority of respondents (73.25%) answered that they *agree* that on-line learning often results in miscommunication. This is because the lecturer may provide complex information not easily understood by students, but also there could be a problem with the Internet connection.

The majority of respondents (71.34%) *disagree* that the interaction between lecturers and students was getting closer. Effective student-teacher interactions are very important in the on-line learning process; however, students may have difficulty interacting with lecturers due to, as mentioned above, complex study materials, connection problems, etc. Nevertheless, it is expected that lecturers and students can establish effective communication while working together over a longer period of time.

Most respondents (76.43%) *agree* that in on-line learning, lecturers provide opportunities for students to ask questions or give opinions. The majority of respondents who chose the answer agreed (75.80%) that on-line learning made students active in asking questions and giving opinions during the learning process.

The majority of respondents (63.06%) stated that they *disagree* that on-line learning makes it easy to collaborate with fellow students in tasks involving research and group work. This is partly understandable as students have difficulty doing group assignments, collecting data or studying together without prior experience. The majority of respondents (77.07%) *agree* that in on-line learning the value of the courses they participated in would increase. As long as on-line learning runs very effectively, it can facilitate students gaining higher grades.

Most respondents (78.34%) *agree* that on-line media or applications are very easy to use. Internet-based media are important educational tools in supporting students to achieve their learning outcomes. On-line learning is more flexible to use, easy to carry out, easy to access, all of which are advantageous. Most respondents (61.78%) *agree* that on-line learning could facilitate the collection of assignments and examinations on-line. It is easy to collect assignments and have examinations on-line.

Most students (55.41%) *agree* with the preference of studying on-line rather than face-to-face. The majority of respondents (70.70%) *strongly disagree* that there is no difference between learning on-line and face-to-face. On-line and conventional learning are certainly based on different educational methods and create distinctive learning atmospheres. The majority of respondents (59.24%) stated *strongly disagree* that on-line learning made fellow students' interactions increasingly more friendly. According to some respondents, on-line learning is less effective in facilitating the interaction between students. Almost half of the respondents (49.04%) *disagree* that on-line learning, tests and on-line tasks made the on-line learning burden heavier than usual.

CONCLUSIONS

On-line learning is a form of education strongly promoted by governments during the Covid-19 pandemic [8]. The results of the study outlined in this article show that civil engineering students at Syiah Kuala University who were learning on-line during the pandemic, appreciated the ease of access, timing and the appropriate learning material delivered in that mode.

They also acknowledged the opportunities created by their lecturers, the exchange of questions, opinions and responses, which enhanced the interaction and made them actively involved in the learning process. Also, the on-line mode was rated positively in relation to student task assessment and examinations. Some disadvantages were also identified, for example, relating to insufficient teacher assistance, motivation and miscommunication or Internet connection problems. These are serious issues that need to be resolved, if the on-line only mode is to prevail.

However, the overall evaluation by students appears positive.

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