



Offline versus Online Learning: Biology Department Students' Perceptions during COVID-19 Pandemic

Pembelajaran Offline Versus Online: Persepsi Mahasiswa Jurusan Biologi Selama Pandemi Covid 19

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INFO ARTIKEL	ABSTRAK
<p>Sejarah Artikel</p> <p>Dikirim 23-08-2021 Direvisi 14-12-2021 Diterima 21-12-2021 Dipublikasi 27-12-2021</p>	<p><i>While there have been numerous studies focusing on finding students' perception on online learning, the studies regarding the perception on both online and offline learning have generally been overlooked. This study, therefore, attempted to fill this void. The main objective is to find out whether offline learning is more preferable than online learning. This descriptive research employed questionnaire with Likert scale through online google forms in collecting the data. 36 students from Biology Department, Universitas Negeri Padang participated in this research. The respondents were asked some questions regarding learning implementation, lecturer's competency and facilities to know their perception. The research found that the students generally showed more positive attitude towards offline learning which can be perceived from the comparison of percentages in each question. The findings then suggest that students preferred offline learning to online learning and hence, offline learning is more recommended to be conducted.</i></p>
<p>Kata Kunci <i>offline learning, online learning, biology student's perception, course delivery-preferences</i></p>	<p style="text-align: center;">ABSTRAK</p> <p>Meskipun ada banyak penelitian yang berfokus pada menemukan persepsi siswa tentang pembelajaran online, studi mengenai persepsi pada pembelajaran <i>online</i> dan <i>offline</i> umumnya diabaikan. Oleh karena itu, penelitian ini berusaha untuk mengisi kekosongan tersebut. Tujuan utamanya adalah untuk mengetahui apakah pembelajaran <i>offline</i> lebih disukai daripada pembelajaran <i>online</i>. Penelitian deskriptif ini menggunakan kuesioner dengan skala Likert melalui <i>online google form</i> dalam pengumpulan datanya. Penelitian ini diikuti oleh 36 mahasiswa Jurusan Biologi Universitas Negeri Padang. Responden diberikan beberapa pertanyaan mengenai pelaksanaan pembelajaran, kompetensi dosen dan fasilitas untuk mengetahui persepsi mereka. Hasil penelitian menemukan bahwa siswa secara umum menunjukkan sikap yang lebih positif terhadap pembelajaran <i>offline</i> yang dapat dilihat dari perbandingan persentase pada setiap pertanyaan. Temuan tersebut kemudian menunjukkan bahwa siswa lebih menyukai pembelajaran <i>offline</i> daripada pembelajaran <i>online</i> dan karenanya, pembelajaran <i>offline</i> lebih direkomendasikan untuk dilakukan.</p>

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INTRODUCTION

The outbreak of corona virus around the world has greatly impacted numerous aspects of life particularly education system. The rapid spread of the virus has pushed many schools and universities in many parts of Indonesia to stop the face-to-face learning and adopt online distance-learning. The emergence of this new method of learning has presented obstacles for educators, educational institutions and students particularly because they have to adapt with the new system that they have never experienced before.

Among the three actors, the latter might be the most severely impacted ones since they have the least power and ability to adapt with the new mode of learning. Before the outbreak, students were used to study with teachers in person which provided direct interaction and discussion so that the teachers could explain the lessons clearly and offer guidance to those who need it immediately. However, this privilege is no longer available in the current condition and hence it creates concerns and problems. That is why many students and parents have complained about the learning process from home (Arifa, 2020). Similarly, Yang & Cornelius (2004) argue that learners had unpleasant experience since they studied online as they felt bored and sometimes could not concentrate well.

Gillett-Swan (2017) said that the online learning has provided challenges for academicians as they need more advanced technological competency to cope with the new system. Moreover, Arifa (2020) contended that there have been many educators who complained about the limited number of technological facilities and the ability to operate them. Maulana and Hamidi (2020) states that online learning is only effective for assigning students tasks, but to make them understand the materials is rather challenging. They add that the economic capacity and technological ability of each student are various. This implies that some students might find it easy to study with the new system while some others probably find it the otherwise. Online learning is actually designed to complement the face-to-face learning, not to substitute it (Saifuddin, 2017; Shank, 2008). Above all, there have been a number of studies which found concerns and problems associated with online learning such as the lack of technological facilities, teachers' and students' inability to access the online learning, signals, and ineffective learning process (Astini, 2020; Arifa, 2020; Horo et al., 2020; Jundi, 2020; Wahyono et al., 2020; Widiyono, 2020; Gillett-Swan, 2017; Yang and Cornelius, 2004).

On the other hand, several studies found the opposite results. Khusniyah and Hakim (2019) found that online learning presented positive effects in terms of three aspects namely teaching and learning, lecture's proficiency and facility and infrastructure. Another related study was conducted by Handarini and Wulandari (2020), who found that online learning led students to be more independent and more motivated to learn. Similarly, some other researchers who conducted studies about online learning regarding students' motivation and its effectiveness found positive results which means that there is an improvement related to the two variables after the implementation of the online learning (Rusdiana and Nugroho, 2020; Darmalaksana et al., 2020; Atiqoh, 2020; Fitriyani et al., 2020; Khusniyah and Hakim, 2019; Sofyana and Rozaq, 2019; Tantri, 2018; Kuntarto, 2017; Saifuddin, 2017).

Based on the previous studies, it can be perceived that students' perception on online learning can be both positive and negative and there might be numerous factors which determine it. Instead of just analyzing the perception on one side as previously done by many researchers, this study, however, attempted to find out the perception on two sides, not only on the online learning, but also on the offline learning. Therefore, the research question is formulated as follows: what is students' perception towards online versus offline learning?

METHODE

Many research methods used in educational context are descriptive which look at individuals, institutions, groups, materials and methods to contrast, compare, classify and describe events or entities (Cohen et al., 2018; 334). Since this study aimed to compare and describe individuals' perception, it can be said that this study is descriptive research. According to Subana (2011: 91), there are eight types of descriptive research. One of them is survey research and this study belongs to this approach. The survey research employs systematic or structured questions given to respondents and the responses are recorded to be analyzed (Darmadi, 2011: 235). The structured questions are called questionnaire which was used in this study to gather the data.

The data were collected through online questionnaire using google forms with likert scale namely strongly disagree, disagree, neutral, agree and strongly agree. There are three categories which consist of some questions in the questionnaire namely learning implementation, lecturer capability and facilities. The questionnaire used in this study adopted the questionnaire used by Maulana & Hamidi (2020). The respondents are 36 students from Biology Department, Universitas Negeri Padang. The technique analysis employed was qualitative analysis beginning with collecting the data, tabulating them into tables based on the three categories, describing and comparing the data using a statistical analysis (Mann-Whitney U test) and then drawing the conclusion. Mann-Whitney U test compares two groups on a single, ordinal variable without any specific distribution. It is used to determine whether there are statistically significant differences between two groups, which is similar to t-test (MacFarland & Yates, 2016). Since the aim of this study is to determine significance between two groups, this type of statistical analysis is suitable.

RESULTS AND DISCUSSION

The results are split into statistical analysis and descriptive explanation. The statistical analysis is used to examine whether there is any difference between online and offline learning as well as to see its significance. Meanwhile, the descriptive explanation is used to describe the percentage comparison of the participants' perception between the two types of learning.

Table 1. Significant result based on Mann-Whitney U Test

	Daring
Mann-Whitney U	13.500
Wilcoxon W	104.500
Z	-3.649
Asymp. Sig. (2-tailed)	.000
Exact Sig. [2*(1-tailed Sig.)]	.000 ^b

We hypothesized that there is difference between the two types of learning. Based on Mann-Whitney U Test, if Asymp. Sig value is less than 0.05, the hypothesis is accepted. On the other

hand, if the, if Asymp. Sig value is more than 0.05, the hypothesis is not accepted. From the data analysis, it was found that the Asymp. Sig value is 0.000 which is less than 0.05. Therefore, it can be said that the hypothesis is accepted. Then, based on table 4, it can be seen that the mean rank of offline learning is 18.96 while for online learning, it is only 8.04. This indicates that the participants prefer the face-to-face learning compared to the distance learning.

Table 2. Rank of Mann-Whitney U test

	Types of Learning	N	Mean Rank	Sum of Ranks
Perception	online	13	8.04	104.50
	offline	13	18.96	246.50
	Total	26		

The descriptive explanation of this study are divided into three categories to make them more easily understood. The three categories are 1) learning process, 2) lecturer competency and 3) facilities. Each category is explained separately in the following section and is accompanied with tables. The tables show the percentage of the likert scales to describe the data on the two variables (online and face-to-face learning).

Learning process

This category is related to the process of learning during the learning both online and offline. There are five questions that were asked to the respondents. They are (1) the implementation of offline/online learning can be accessed easily, (2) the implementation of offline/online learning is on time and based on the schedule, (3) the implementation of offline/online learning can increase theoretical and practical understanding, (4) the materials delivered are in accordance with the syllabus, and (5) it is easy to submit assignments/practicum reports. The data gained from the questionnaire are illustrated in the table below.

Table 3. The percentage of Students' Perception on both Offline and Online Learning in Learning Process

Question	strongly disagree		disagree		neutral		agree		strongly agree	
	off	on	off	on	Off	on	off	on	off	on
the implementation of offline/online learning can be accessed easily	0	5	13.9	15	25	47.5	30.6	27.5	30.6	5
the implementation of offline/online learning is on time and based on the schedule	0	7.5	5.6	10	19.4	45	52.8	37.5	22.2	0
the implementation of offline/online learning can increase theoretical and practical understanding,	0	7.5	8.3	22.5	27.8	52.5	25	15	38.9	2.5
the materials delivered are in accordance with the syllabus	0	5	8.3	10	2.8	15	55.6	57.5	33.3	12.5

Question	strongly disagree		disagree		neutral		agree		strongly agree	
	off	on	off	on	Off	on	off	on	off	on
it is easy to submit assignments/practicum reports	2.8	2.5	8.3	10	19.4	32.5	36.1	45	33.3	10

Overall, based on the table above, it is generally clear that there is a significant difference especially for respondents who strongly agreed on the two kinds of learning while there is no significant difference for those who strongly disagree or disagree. 30.6 % of them strongly agreed that the implementation of offline learning can be accessed easily while only 5% strongly agreed for online learning. In terms of the learning is on time based on the schedule, it was found that 22.2% respondents strongly agreed that the implementation of offline learning is on time while no one strongly agreed for online learning. Furthermore, the three remaining questions show similar percentage with the first two questions.

Lecturers' Competency

There are six questions asked to the respondents in this category, namely (1) lecturers are always there until the learning is done, (2) lecturers explain the direction and goal in every lesson, (3) lecturers give opportunities to students to ask and discuss, (4) lecturers respond to questions asked by students during the learning, (5) I could understand the subject taught, and (6) I actively get involved in the learning process.

Table 4. The percentage of Students' Perception on both Offline and Online Learning in Lecturers' Competency

Question	strongly disagree		disagree		Neutral		agree		strongly agree	
	Off	On	Off	On	Off	On	Off	On	Off	On
lecturers are always there until the learning is done	0	2.5	5.6	7.5	25	45	63.9	45	5.6	0
lecturers explain the direction and goal in every lesson	0	0	5.6	7.5	16.7	22.5	63.9	57.5	13.9	12.5
lecturers give opportunities to students to ask and discuss	0	0	5.6	2.5	5.6	15	61.1	65	27.8	17.5
lecturers respond to questions asked by students during the learning	0	0	8.3	5	11.1	20	58.3	67.5	22.2	7.5
I could understand the subject taught	0	5	8.3	12.5	13.9	40	52.8	40	25	2.5
I actively get involved in the learning process	0	0	8.3	15	16.7	22.5	50	55	25	7.5

Similar with learning process, there is also a considerable difference regarding those who strongly agreed on the two types of learning. The significant difference is on the last three questions with a margin between 15 – 22.5%. However, the other scales show similar percentages and there is no significant difference except in some variables. For example, with regard to the first question,

63.9% agreed that lecturers are always there until the offline learning is done while only 45% agreed for the online learning.

Facilities

In this category, there are only two questions asked to the respondents. They are (1) the materials are available well, and (2) I have devices/tools to do practicum based on the given direction.

Table 5. The percentage of Students' Perception on both Offline and Online Learning in Facilities

Question	strongly disagree		disagree		neutral		agree		strongly agree	
	Off	On	Off	On	Off	On	Off	On	Off	On
the materials are available well	2.8	5	11.1	7.5	22.2	22.5	38.9	55	25	10
I have devices/tools to do practicum based on the given direction	2.8	20	8.3	27.5	22.2	20	38.9	32.5	27.8	0

Based on the table above, it indicates that the three categories show similar patterns because this category also shows the similar pattern with the previous ones. There is a significant difference those who strongly agreed. 25% respondents strongly agreed that the materials are available well for offline learning while only 10% who said so for online learning. Moreover, 27.8% of them strongly agreed that they have devices/tools to do practicum based on the given direction during offline learning, but no one had the same opinion for online learning. In addition, 20% of them strongly disagreed and 27.5% disagreed that they have devices/tools to do practicum based on the given direction during online learning. Meanwhile, only 2.8% strongly disagreed and 8.3% disagreed towards offline learning.

The finding is similar with a previous study by Alsaaty & Abrahams (2016) and by Widiyono (2020) which found that online learning is less effective than offline learning as perceived by the respondents. Although prior research found that students had positive attitude on online learning (Alsaaty & Abrahams, 2016; Khusniyah and Hakim, 2019, Handarini and Wulandari, 2020), when it compared to offline learning, it was found that students had more positive attitude to offline learning than online learning. This might be partly due to the difficulties or obstacles faced by students and lecturers as a result of their lack of knowledge or adaptability to the technological advancement and the new method of teaching (Astini, 2020; Arifa, 2020; Horo et al., 2020).

CONCLUSION

While most scholars have agreed that blended mode of learning (face-to-face and online learning) is superior to only one mode, the debate still continues as to whether online learning is perceived more effective or preferable than face-to-face learning. In addition, since the last decade, much of research has focused on common challenges and issues related to online learning (Alsaaty & Abrahams, 2016). This study contributes to fill the void in the literature. There are three aspects assessed in this study related to offline and online learning namely learning implementation, lecturer's competency and facilities. Based on the findings, it was found that the respondents showed more positive attitude towards offline learning compared to online learning. This applies to

all of the three categories being examined since the percentages shows similar values despite some exceptions. Therefore, the results indicate that the respondents are more likely to enjoy offline learning than online learning. Further research is needed to find out the reasons behind students' preference on the traditional learning.

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