Vocational Pre-Teacher Students' Perceptions on Online Learning During Covid-19 Pandemic in Java, Indonesia:
Benefits, Challenges, and Suggestions

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Abstract:

Online learning has increased rapidly in Indonesia's higher education since the government enforced to combat the spread of COVID-19. However, inequality in implementation has become an issue in several countries. In Indonesia, with archipelagic and mountainous topography has several challenges. Therefore, the present study is aimed to evaluate and analyze the benefits, challenges, and suggestions of online learning in Indonesia for future improvement. A total of 271 students were surveyed and provided complete information regarding the survey. Quantitatively, the instrument of the survey data is analyzed by using SPSS software. Qualitatively, data from open-ended participants' responses were analyzed by qualitative content analysis to explore the findings from the survey. The result showed that online learning was more efficient, provided easy communication, improve students' engagement, and developed their virtual learning skills. However, it was also found that the overall students were still unsatisfied since the uneven infrastructures of internet connectivity and learning arrangements not good enough. In line with this, media, processes, facilitators skills, and assessments needed further improvement. Students' suggestions for improving online learning quality are discussed as well.

Keywords: S*tudents' perceptions, Online learning, Indonesia.*

Introduction

Due to the COVID-19 pandemic effect, many sectors, especially education, have suffered a significant setback. The virus was reported to have originated from Wuhan, Hubei Province, China (Yang et al., 2020) and it has infected millions of people worldwide (Shereen et al., 2020). Furthermore, World Health Organization has officially declared COVID-19 a global pandemic (Song & Karako, 2020). Currently, COVID-19 is reported in 138 countries. In a bit to reduce the spread of the virus, many learning institutions have been shut down. A total of 1.37 billion students have been affected, and 60.2 million teachers are no longer reporting in classrooms (UNESCO, 2020).

Since the first reported case in Indonesia, the government has declared a state of public health emergency to combat its spread (Decree, 2020). To further reduce adverse infection, the Ministry of Education and Culture (MoEC) issued a circular that all educational institutions should conduct online learning (MoEC, 2020). Education is now online, a new concept that may be difficult and challenging to adapt compared to the typical conventional classroom setting (Durrani, 2020). For students in higher institutions faces different barriers and challenges such as their behavior, facilitators skills, and proper online learning infrastructure. The problem also faces by lecturers, and educational institutions (Rasheed, Kamsin & Abdullah, 2020). After three months of implementation, evaluation, and reflection need to be conducted to see the effectiveness and the aspects that could be improved for the future.

Student satisfaction is an essential element of quality online education (Moore, Janet C. & Bourne, 2005a). Evaluation of online education should consider student satisfaction. Therefore, this study aims to reflect and rate current conditions, investigate benefits, point out challenges, and give suggestions about online learning from the student's perspective during the COVID-19 situation.

Literature Review

Online learning is defined as a learning system that integrates teaching and learning processes with virtual internet connectivity (Bentley et al., 2011). As development occurs, online learning in higher education rapidly increases and it is supported by the development of information and communications technology (ICT) (Allen & Seaman, 2017). Furthermore, several studies have shown the importance of ICT as supporting tools in educational systems (Abbad & Jaber, 2014). The different teaching methods in providing education and training have been immensely influenced by technological innovation. (Sinclair et al., 2016). Current problems like a limited learning process, meeting hours, and distance can be tackled with ICT (Almarabeh, 2014). Online learning is defined as a learning system that integrates teaching and learning processes with virtual internet connectivity (Bentley et al., 2011). As development occurs, online learning in higher education rapidly increases and it is supported by the development of information and communications technology (ICT) (Allen & Seaman, 2017). Furthermore, several studies have shown the importance of ICT as supporting tools in educational systems (Abbad & Jaber, 2014). The different teaching methods in providing education and training have been immensely influenced by technological innovation. (Sinclair et al., 2016). Current problems like a limited learning process, meeting hours, and distance can be tackled with ICT (Almarabeh, 2014). Furthermore, improving the quality of education by using ICT as a supporting tool is mandatory by all education stakeholders, including lecturers and students (Torrisi-Steele & Drew, 2013).

The integration of technology in education based on the course content, learning context, and learner characteristics, should be considered in the learning plan (L. Smart & J. Cappel, 2006). The learning objectives and students involved should positively correlate with the use of technology (P. S. D. Chen et al., 2010). Students' self-efficacy in this environment will improve the quality of education. However, self-efficacy in technological aspects has first to be focused on. Computer, web, and internet self-efficacy are a part of self-efficacy in technology (Jan, 2015).

Learning environment in the 21st century education needs more student involvement and collaboration. Therefore, the process should be based on Students' Centered Learning (SCL). SCL advises teachers to act as facilitators of learning rather than organizers of learning. Meanwhile, students who are actively involved as actors are empowered to decide; what, when, where, and how to study (Judi & Sahari, 2013). Establishing an online discussion group is challenging (Kivijärvi et al., 2019). Online group learning and students' workgroup is the way to improve student involvement and interaction, which is essential in formal online education. Effective student interactions are positively related to achievement outcomes. This interaction is more of a quality than quantity. It could also be achieved when learning and instruction are

designed and implemented properly (Bernard et al., 2009). At the early stage of distance education, effective interaction may be absent (Abrami et al., 2011). Therefore, there is a positive and significant relationship between interaction and student satisfaction (Y. Chen, 2007), which is strongly predicted by learning content interaction (Alqurashi, 2019).

Students' perceptions of favorable and unfavorable in online learning have been documented in several studies. The interaction between students and instructors have a significant impact (Swan et al., 2000). The experience could be improved when educators know what elements affect perceived learning (Alavi et al., 2002). Perceived learning is the learner's perceptions of changes in skill and knowledge levels. It can be before or after the learning experience (Alavi et al., 2002). Evaluation of perceived learning and student satisfaction is the key area of online learning improvement and development (Kuo et al., 2014). The perceptions of student's experience reflect the student's satisfaction and considered as one of the five elements along with faculty satisfaction, learning effectiveness, scale, and access for the evaluation of the quality of online learning. It is identified by the Online Learning Consortium (Moore, Janet C. & Bourne, 2005).

Face-to-face and online or blended learning are among methods that can be used for effective learning. If the students want to acquire conceptual knowledge or application of knowledgeable skills, the ideal learning is face-to-face. But, if they want to acquire self-regulated skills is preferred to use online learning (Paechter & Maier, 2010). When conditions occur that demands the suspension of face-to-face learning, then taken blended learning is the best and only option (Zhang et al., 2020). However, some areas may experience poor internet connectivity, depression, anxiety, and unfavorable home conditions for such learning (Kapasia et al., 2020).

Research Method

The study used survey methods to answer the research questions. Total of 38 questions in the survey instrument, and it was divided into three sections. It was aimed at investigating the participants' characteristics as well as ascertain their point of view about the topic or phenomenon. The study investigated and explored Vocational teacher education students with the online learning experience as well as the benefits, challenges, and suggestions during the COVID-19 pandemic (Parsons et al., 2019). There are many research works on perceptions of interaction that are focused on survey research (Blaine, 2019), but the descriptive study was used to explore the findings from the survey.

Survey Development

The survey was developed with a theoretical framework and research questions. The instrument of the survey consisted of 38 questions, and it was divided into three sections. The participants' background information (Q1-Q8) was the first section of the instrument. The second section (Q9) consisted of 5 points Likert question related to overall participants' perceptions and benefits toward online learning during the COVID-19 pandemic. The last section consisted of two open-ended questions asking the participants for a short answer about their challenges and suggestions to improve its quality for the future. The overall inquiry areas as follows: (a) students' overall perceptions as reflection and evaluation of previous experience (b) benefits from their perspectives (c) challenges and obstacles (d) Students' suggestions based on their online learning experience for future improvement. Table 1. described the details content of survey.

Originally, the survey using native language (Bahasa Indonesia) to minimize the misperceptions of the survey content. Original result of the questionnaire is translated to English using back translation method to allow the research team to see how closely the translation corresponds to the source items (Ozolins et al., 2020).

Table 1. The Content of Survey

No	Item	Criteria		Description
1	**Learning Reflection and Evaluation**	Overall Perceptions	Q1	Overall, I am satisfied with the online learning
		Learning Media	Q2	There are clear learning objectives in the online learning media
			Q3	There are clear learning instructions in the online learning media

		Q4	The online learning resources and learning media are well managed
	Learning Process	Q5	Every topic in the online learning process has been conducted well
		Q6	Learning activities allow me to interact more in the class during online learning
		Q7	The learning assignments are already in line with the workload in each online lecture
	Facilitators	Q8	Facilitator skills to facilitate online learning has been excellent
		Q9	Facilitators have made good learning plan in online learning
		Q10	Facilitators have conducted varied methods for providing online lectures
	Learning Infrastructure	Q11	Tools and technology for online learning are very affordable for students
		Q12	Online learning support facilities (e-learning platform / SPADA) are running well
		Q13	Tools and equipment are supporting the online learning process
	Learning Assessments	Q14	Assessment methods for evaluation of online learning process are more varied (quiz, discussions, assignments, etc.)
		Q15	The students' assessment process in online learning is fairer
		Q16	Learning assessment criteria and rubrics are clearly stated by facilitators
2 Benefits	Effective and Efficient	Q17	Online learning provides more quality learning activities at each topic
		Q18	Facilitation from facilitators during online learning is more effective
		Q19	Online learning is more flexible in terms of time and place
	Easier communication	Q20	Online learning encourages quick feedback from facilitators
		Q21	Online learning makes communication between students easier
		Q22	The online learning supports the facilitation process if students have learning difficulties
	Student Engagement	Q23	The online learning methods encourage students to explore individual differences in the classroom better
		Q24	The online learning process encourages interaction and involvement between students
		Q25	Online learning encourages togetherness in the classroom
	Developing Virtual skills	Q26	Online learning gives more opportunities to learn virtually
		Q27	The online learning improves students' confidence to be actively involved virtually
		Q28	Online learning provides a more virtual learning experience

Subjects

The survey was administered to 271 undergraduate of vocational pre-teacher students studying in various study program in a university in Java, Indonesia. The background of study was the university located in the one of biggest province of Java Island as the center of the Indonesian population. The survey was conducted from 14th – 21st June 2020 and with Google form considering the condition of the COVID-19 pandemic. A purposive sampling technique was used by distributing questionnaire to representative of researcher colleague who taught in various study program. The survey was distributed after the final exam of their last semester. This time was suitable for the evaluation of the learning process during the semester.

Data Analysis

The quantitative data were analyzed by using the Statistical Package for Social Science (SPSS version: 26). The distribution of respondents was analyzed by descriptive statistics. Simple percentage distribution was used to evaluate the learning reflection and benefit of online learning. The qualitative data from open-ended students' responses were analyzed by qualitative content analysis. Quantitative data from questionnaire was collected using a 5-point Likert scale ranging from Strongly Disagree to Strongly Agree. To easier understand the students' perception from the contrast result, the disagree column included disagree and strongly disagree responses combined. In contrast, the agree column included Strongly Agree and Agree responses combined.

Result and Analysis

The result of the research is described below:

Participants' demographics

Table 2. Participants' demographics

Students Demographic		n	%
Gender	Male	159	59%
	Female	112	41%
	Total	**271**	**100%**
Grade Level	1st Level	155	57%
	2nd level	63	23%
	3rd Level	50	18%
	4th Level	2	1%
	5th level	1	0%
	Total	**271**	**100%**
Department	Mechanical Engineering Education	129	48%
	Civil Engineering Education	99	37%
	Informatics Engineering Education	43	16%
	Total	**271**	**100%**

Table 2. described the demographics of respondents. Regarding table 2, the respondents were dominated by male, first grade level dan from mechanical engineering education.

Table 3. Participants' internet access information

	Year of Experienced	n	%
Internet Used Experienced	<1 year	0	0%
	1 year < x < 3 year	0	0%
	3 year < x < 5 year	37	14%
	5 year < x < 10 year	163	60%
	>10 year	71	26%
	Total	**271**	**100%**
Online Learning	PC / Desktop	1	0%
	HP/Smart Phone	77	28%
	Laptop	26	10%

Access Tools	Combination (PC & HP)		167	62%
	Total		**271**	**100%**
Purposes of Internet Access	Academic		99	37%
	Non-Academic		172	63%
	Total		**271**	**100%**

Table 3. described the internet access experienced of the respondents. The respondents were experienced and user friendly with the internet access. They used personal computers (PC) and hand phone as learning access tools and most of internet access used for nonacademic purposes. This information was important to understand the internet skills level and learning access tools of the respondents.

General perceptions of online learning experienced

Table 4 described the general perceptions of the students. About 52 % of the respondents strongly disagreed or disagreed that they were satisfied with the method of learning during the COVID-19 pandemic (M: 2.46, SD=0.927, where 1 = strongly disagree and 5 = Strongly agree) only 12% respondents were satisfied with strongly agreed or agreed. Overall, students' perceptions indicated a negative response to their online learning. This response was in line with survey questions asking their overall satisfaction with their experience, and they responded that they were completely unsatisfied.

Table 4. General perceptions of students

Survey Statements	n	%
Strongly Disagree	41	15%
Disagree	101	37%
Neutral	97	36%
Agree	26	10%
Strongly Agree	5	2%
Total	**271**	**100%**

Online learning reflection and evaluation

The survey was conducted after the students' final exam. They had participated in it for about three months before the Indonesia government decided to conduct a study from home in response to the COVID-19 pandemic. The evaluation components were learning media, processes, facilitators, infrastructure, and assessments. Table 5 described the students' perceptions about learning reflection and evaluation of online learning.

Table 5. Learning evaluation and reflection.

Evaluated Items	Questions	Disagree %	Neutral %	Agree %	Total %	M	SD
Learning Media	Q2	24	41	35	100	3.09	0.853
	Q3	23	44	33	100	3.08	0.832
	Q4	26	38	36	100	3.08	0.9112
Learning Process	Q5	30	46	24	100	2.89	0.8723
	Q6	25	35	40	99	3.11	0.9302
	Q7	44	37	19	100	2.65	0.9665
Facilitators	Q8	35	49	15	100	2.76	0.8211
	Q9	27	47	26	100	2.98	0.8401

	Q10	21	43	36	100	3.12	0.8247
Learning Infrastructure	Q11	14	22	63	100	3.53	0.8944
	Q12	30	38	32	100	2.99	0.9641
	Q13	59	27	14	100	2.37	1.0256
Learning Assessment	Q14	16	39	44	100	3.29	0.8249
	Q15	33	47	19	100	2.78	0.8838
	Q16	24	52	23	99	2.96	0.7788

Regarding the table 5, there are the learning evaluation and reflection based on learning aspects:

1. Online learning media

The survey covered learning objectives (Q2), learning instructions (Q3), and learning resources (Q4), which were used for online training during the COVID-19 pandemic. About 35% of students agreed that learning objectives were informed by the facilitators (M:3.09, SD: 0.853). Similarly, in about 33% of the respondents agreed that learning instructions were informed by the facilitators (M: 3.08, SD: 0.832). Another result, about 36% of the respondents agreed that learning resources were managed well by the facilitators (M: 3.08, SD:0.911). Most of the students agreed that facilitators managed online learning media, objectives, instructions, and resources properly.

2. Online learning process

The survey covered the learning process in each topic (Q5), students' opportunity to interact (Q6), and students' assignment workload (Q7). About 30% of the students disagreed that every topic in online learning has been conducted well by the facilitators (M: 2,89, SD: 0.872). About 40% of the respondent agreed that students were given the opportunity by the facilitators to interact with each other (M: 3.11, SD: 0.930). In another result, about 44% of the respondents disagreed that learning assignments (Q7) were already in line with the workload by the facilitators (M: 2.65, SD: 0.966). Most students disagreed that facilitators managed the learning process, the topics, the opportunity to interact, and the assignment workload properly. They agreed that they could interact. All of them disagreed that students' assignments were in line with the workload (overload).

3. Facilitators

The survey covered facilitators skills(Q8), learning plan (Q9), and varied methods (Q10). About 35% of the students disagreed that facilitator skills were excellent (M: 2.76, SD: 0.821). About 27% of the respondents disagreed that facilitators made a good learning plan (M: 2.98, SD: 0.840). In another result, about 36% of the respondents agreed that facilitators had conducted varied methods for providing the lectures (disagree 21%, neutral 43%, M: 3.12, SD: 0.825). Most students disagreed that facilitators conducted it well.

4. Learning Infrastructures

The survey covered technology affordable (Q11), e-learning support facilities (Q12), and online learning tools & facilities (Q13). About 63% of students agreed that technology is very affordable for students (M: 3.53, SD: 0.894). About 32% of the respondents agreed that support facilities (e-learning platform / MOODLE, SPADA) were running well (M: 2.99, SD: 0.964). In another result, about 59% of the respondents disagreed that tools and equipment (Q13) were supporting its process (M: 2.37, SD: 1.026). Most students agreed that the learning infrastructures, affordable technology, and e-learning support facilities were running well, while some of the students disagreed that their most problem was internet connectivity.

5. Learning Evaluation and Assessment

The survey covered varied assessment (Q14), more fair assessments (Q15), and clear assessment criteria (Q16). About 44% of students agreed that assessment methods for evaluation of the process were more varied (quiz, discussions, assignments, etc.) (M: 3.29, SD: 0.825). About 33% of the respondents disagreed that the students' assessment process was fairer (M: 2.78, SD: 0.884). In another result, about 24% of the respondents disagreed that learning assessment criteria and rubrics were clearly stated by facilitators (M: 2.96, SD: 0.779).

Most students disagreed that facilitators managed to give assessments well (varied, fairer, and clear criteria). They agreed that learning assessments were more varied.
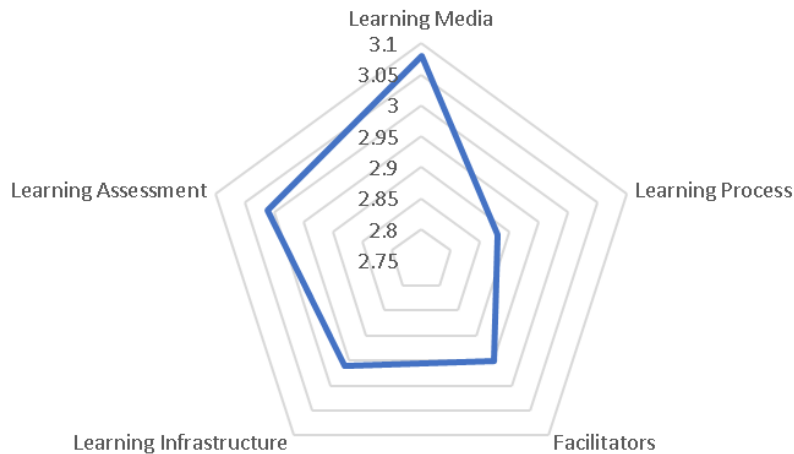

Figure 1. Learning reflection & evaluation

Figure 1. displays the learning reflection and evaluation. The learning process, learning process and learning infrastructure (internet connectivity) were the lowest, need more concern improvements in the future.

The Benefits of online learning

The survey components were more effective and efficient (Q17-Q19), easier communication (Q20-Q22), more students' engagement (Q23-Q25), and developing virtual skills (Q26-Q28).

Table 6. The online learning benefits

Indicators	Questions	Disagree	Neutral	Agree	Total	M	SD
		%	%	%	%		
Effective and Efficient	Q17	54	36	10	100	2.44	0.864
	Q18	55	32	12	99	2.43	0.911
	Q19	13	13	74	100	3.73	0.969
Easier communication	Q20	32	36	31	99	2.95	0.953
	Q21	58	27	15	100	2.41	0.986
	Q22	12	53	34	100	3.23	0.762
Student Engagement	Q23	41	30	29	100	2.80	0.990
	Q24	33	26	41	99	3.04	1.021
	Q25	55	26	18	99	2.47	1.013
Developing Virtual skills	Q26	37	33	30	100	2.87	0.953
	Q27	32	30	38	100	2.99	1.015
	Q28	14	24	62	100	3.49	0.947

Table 6 described the online learning benefits from students' perspectives. There are the details of online learning benefits:

1. The online learning more Effective and Efficient

The survey covered more quality learning; (Q17), facilitation was more effective (Q18), and more flexible in terms of time and place (Q19). About 54% of students disagreed that this method of learning provides more

quality learning activities at each topic (M: 2.44, SD: 0.864). About 55% of the respondents disagreed that facilitation from facilitators during the learning is more effective M: 2.43, SD: 0.911). In another result, about 74% of respondents agreed that it was more flexible in terms of time and place (M: 3.73, SD: 0.969). Most students disagreed that it was more effective and efficient in terms of quality of learning and effective facilitation. But agreed that it was effective and efficient in terms of flexibility of time.

2. The online learning makes communication easier

The survey covered encourages quick feedback (Q20), communication between students easier (Q21), and supports for learning difficulties (Q22). About 33% of the students disagreed that this method of learning encourages quick feedback from facilitators (M: 2.95, SD: 0.953). About 58% of the respondents disagreed that it makes communication between students easier (M: 2.41, SD: 0.986). In another result, about 34% of the respondents agreed that learning online supports the facilitation process if students have learning difficulties (M: 3.23, SD: 0.762). Most of students disagreed that this method of learning makes communication easier (quick feedback & easier communication). They agreed that the made communication easier in terms of support for learning difficulties.

3. The online learning provides more students engagement

The survey covered explore individual differences (Q23), student interaction and involvement (Q24), and togetherness in the classroom (Q25). About 41% of the students disagreed that the method encourages students to explore better individual differences in the classroom (M: 2.80, SD: 0.990). About 41% of the respondents of agreed that the process encourages interaction and involvement between students (M: 3.04, SD: 1.021). In another result, about 55% of the disagreed that it encourages togetherness in the classroom (M: 2.47, SD: 1.013). Most of students disagreed that this type of learning provides more student engagement. They agreed that it encourages interaction and involvement between students.

4. The online learning develops virtual learning skills

The survey covered more opportunities to learn virtually (Q26), improves students' confidence (Q27), and provides more virtual learning experience (Q28). About 37% of the students disagreed that the method gives more opportunities to learn virtually (M: 2.87, SD: 0.953). About 38% of the respondents agreed that the method improves students' confidence to be actively involved virtually (M: 2.99, SD: 1.015). In another result, about 62% of the respondents agreed that it provides more virtual learning experience (M: 3.49, SD: 9.47). Most students disagreed that it develops virtual learning skills (more opportunities to learn virtually & improves students' confidence), but only agreed in terms of providing more virtual learning experience. Figure 2. described the benefits of online learning.
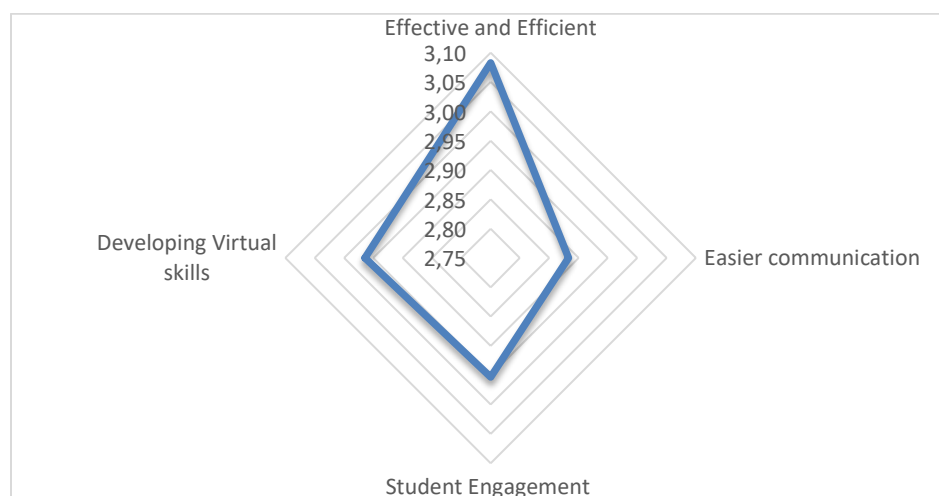

Figure 2. Online learning benefits

Challenges of online learning

Generally, from the reflection and evaluation survey, gathered in the data, students were unsatisfied with the quality of online learning during the COVID-19 pandemic. They noted that there were some challenges and obstacles. Most students' perceptions were more challenging than face to face learning. Those challenges were described below:

1. Difficulty in internet data and connectivity

The survey indicated that the most common issue was internet and data connectivity. 71% of the students surveyed from expressed their disappointment with internet data and connectivity. The students expressed their difficulties in accessing internet data and connectivity. The issue was caused by most of the students' topography, especially those living in rural areas with inadequate internet infrastructure.

2. Lack of arrangement and time management

Other concerns brought up by students from both universities were the lack of arrangements and time management. About 19% of the students expressed a lack of arrangement and time management by facilitators. The students expressed their difficulties in lack of arrangement and time management: Some students expressed their difficulty in scheduling synchronous meetings. This problem was caused by the sudden selection of online methods, which most of the stakeholders had not yet made adequate preparations in terms of infrastructure or learning skills.

3. Students were less motivated as a result of different learning styles

Students found it challenging because they are used to face to face learning styles. This condition brought about their difficulties and reduced their motivation to learn. Some students who participated in the survey mentioned that taking such courses was probably more difficult than face to face learning. About 9% of the students were less motivated because of the new learning style.

Student suggestions for improving the quality of online learning

The findings from the students' challenges were in line with their suggestions for improving its quality. From open-ended questions, students suggested that to alleviate the difficulty of based on previous discussions, and the following are summaries of the suggestions made:

1. Support for internet data and connectivity

From the experiences of their most difficulties in the internet and data connectivity, students from both universities had the same suggestions. They include support for internet data access to the internet, reduction in tuition fees (UKT), and supporting internet connectivity in villages.

2. Proper online learning arrangement

Students explained that the lack of preparation is one of the big challenges during the session. Students gave the suggestions to improve the media (Spada, e-learning). Improving the facilitator's skills in tasks, and time management, varied learning methods, improving the preparation, and improving communication were suggestions posed by the students.

3. Online learning assistance & training

After three months of experience in the studies, due to the COVID-19 pandemic, several students noted that the poor quality was because of the lack of skills. Students gave the suggestions to improve facilitators and student skills in terms of using the media.

Overall, the result showed that still lack of communication and learning engagement of student. Most of student have not satisfied with the online learning. There are two major components for student satisfaction with blended learning: learning engagement and perceived ability to communicate effectively (Moore, Janet C. & Bourne, 2005a). Rapid changing in the learning culture and lack of learning preparation is the cause. Need improvement in learning engagement and effective communication with student in the further learning activities. It will be increase student satisfaction.

Discussion

The reflection and evaluation from the study show that most students expressed dissatisfaction with online learning. Though they were overall unsatisfied, they still expressed positive feedback about the method. The result of the research further proves that students benefited from online learning because it provided an effective and more efficient time and place of learning with easier communication and interaction with facilitators and other students. The students also believed that the environment provided more students engagement and developed their virtual skills and experiences, which is one of the important skills to perform in the industry revolution 4.0 and global environmental challenges.

Students were also concerned that internet data and connectivity were one of the biggest challenges. Most of the surveyed students live in rural areas with poor internet infrastructure. The urban area is naturally prioritized for better internet access than rural areas and mostly concentrated in Java Island. The uneven internet access is becoming a challenge in Indonesia. Also, the increased frequency of internet usage increases the internet cost that burdens unprivileged students. The inequality in the opportunity of internet access infrastructure is becoming a disadvantage for students from low-income families and those who live in rural areas. Figure 3 described the condition of household with internet access in Indonesia.

Please include a brief summary of the possible clinical implications of your work in the conclusion section. Although a conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. Consider elaborating on the translational importance of the work or suggest applications and extensions.
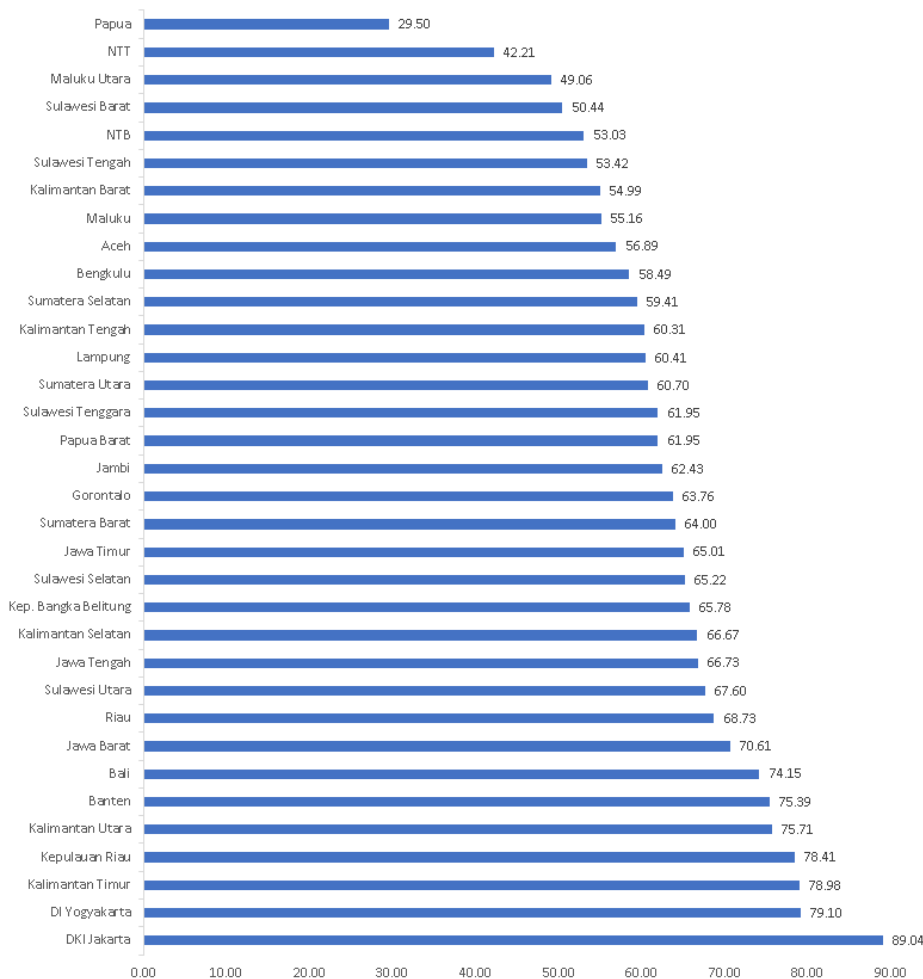

Figure 3. Percentage of household with internet access by the province in Indonesia
(BPS - Statistics Indonesia, 2018)

The students also pointed out that the problem of poor online arrangements and time management was due to the COVID-19 pandemic, which suddenly changed the learning environment. Previously, most of the learning methods used the traditional face to face, therefore, during the pandemic that suddenly required distance learning methods, it became challenging for facilitators. Additionally, those challenges required new learning behavior for students. Face-to-face learning became virtual and distance learning. Some students expressed less motivation caused by the new learning style that required them to adapt quickly. Table 7. summarizes the findings from this research:

Table 7. Summaries of finding

Benefits	Challenges	Suggestions
√ More effective & efficient	√ Difficulty in the internet data and connection	√ Supporting for the internet data and connections
√ Easier communication	√ Lack of online learning arrangements and time managements	√ Proper online learning arrangements
√ Student Engagement	√ Less motivated caused of different learning styles	√ Online learning assisstance & training
√ Develops virtual learning skills		

Conclusion

The key finding of this research is that online learning was the best option recommended for COVID-19 pandemic. In students' views, the method has some benefits and challenges. Overall, the result shows that the students needed more support in terms of internet data connectivity and arrangements of the method for valuable quality improvement. Consequently, the findings also indicated education stakeholders' involvement in how to prepare the infrastructures and develop students' and facilitators' virtual skills. They suggested giving more support for internet data and connectivity and improving facilitators' virtual skills in arrangements before conducting an online lecture, which could improve the quality of learning.

Also, learning assistance is needed for some students who have difficulties because of the sudden changes in learning styles due to the pandemic. The Indonesian Ministry of Education has announced that next semester, learning will continue online because the pandemic is still on. Actually, theoretical aspects are easier to deliver in the online learning method. Some practical aspects are still difficult to deliver for some teachers. One of the solutions is using remote practical method. Naturally, this method cannot be easily provided for practical skills, but it is an effective way of getting students to interact with real data, uncertainty and equipment which they cannot access directly (Bangert et al., 2020). Therefore, every education stakeholder should make adequate preparations to implement online learning. Findings from this study and students' suggestions may be useful for policymakers and facilitators in the universities for providing better learning experience and for more students' satisfaction. Again, the present study may provide research models or guidance for those with the same research interests.

Limitations and Recommendations

The research took place in a vocational higher education in Indonesia. The learning communities in different institutions warranted the generalization of the result. Therefore, this paper is the initial study of online learning reflection and evaluation after three months of using online learning due to the pandemic. Faculty members and institution policymakers' perspectives on the issues of online learning are recommended for future research. It is also recommended that issues like proper arrangements be explored. Furthermore, capacity building for educators and students should be considered for improving virtual skills. Also, the key data in this research shows that some students suggested supporting internet data, infrastructure, and connectivity are significant challenges. Additionally, the differences in students' learning styles to face the challenges of online learning need to be explored in future research for improving higher education in Indonesia.

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