

STUDENTS' SATISFACTION IN USING E-LEARNING DURING THE COVID-19 PANDEMIC

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ARTICLE INFO

Article History:

received: 25/10/2023

revised: 15/11/2023

accepted: 18/12/2023

Keywords:

COVID-19, E-education, E-learning, satisfaction, transformative

DOI:

10.32509/mirshus.v3i2.58

ABSTRACT

This study considers Transformative Learning Theory of online students. This research aims to evaluate the level of student satisfaction with online learning platforms and learning experiences during the novel coronavirus COVID-19 pandemic. Data were collected through a quantitative study applying online questionnaire carried out in December 2022 – August 2023, using a representative sample (N=104). Findings showed students highly satisfied with the online learning environment and with the school support during COVID-19 pandemic. This study also found that most of the students highly preferred the online learning or the blended learning classroom. The students highly preferred with Zoom as the learning platform and as a course delivery tool. The findings has contributed to the evolving of the Transformative Learning Theory, particularly in online learning in developing countries like Indonesia. This study provides implications to e-education, educators, education institutions, and website system developers of online learning sites dealing with materials and services.

INTRODUCTION

The coronavirus spreading rapidly across Europe, the Middle East, the United States, and Asia. In southeast Asia, Indonesia has the highest number of COVID-19 cases (UNICEF, 2021). As of January 12, 2023, the total number of COVID-19 cases in Indonesia amounted to approximately 6.72 million. Up until now, the death toll in Indonesia has risen to more than 160.7 thousand (Nurhayati-Wolff, 2023).

While countries are at different points in their COVID-19 infection rates, worldwide there are currently more than 1.2 billion children in 186 countries affected by school

closures due to the pandemic (Li & Lalani, 2020). In Indonesia, children under 18 years old make up 12.6 per cent of confirmed cases and 1.2 per cent of deaths (UNICEF, 2021).

The spread of the Covid-19 has a profound effect on the economic world, but it has also a profound effect on the education world. The coronavirus (COVID-19) has changed how students are educated around the world. These changes give us a glimpse at how education could change for the better (or the worse) in the long term.

Indonesia government has taken swift and decisive actions to mitigate the

development of a full-blown pandemic. One of which is to support safe school opening, students are responding to roll calls from their teachers online.

These changes have certainly caused a degree of inconvenience, but they have also prompted new examples of educational innovation. Of course, these changes will affect education systems and will impact on the trajectory of learning innovation and digitization.

With this sudden shift away from the classroom, some believe that the unplanned and rapid move to online learning – with no training, insufficient bandwidth, and little preparation – will result in a poor user experience that is un conducive to sustained growth, others believe that a new hybrid model of education will emerge, with significant benefits (Li & Lalani, 2020).

There are challenges to overcome. Some students without reliable internet access and/or technology struggle to participate in digital learning. According to Organisation for Economic Co-operation and Development (OECD) data, only 34% of students in Indonesia that have a computer to use for their schoolwork, and over 30% they do not even have a quiet place to study in their homes (OECD, 2020).

It shows there is a significant gap between those from privileged and disadvantaged backgrounds. For those who do have access to the right technology maybe learning online can be more effective in a number of ways.

Although it is too early to judge how reactions to COVID-19, however, it is clear that this pandemic has utterly disrupted an education system that many assert was already losing its relevance. While some worry that the hasty nature of online learning may have not create a new, more effective method of educating students. They worry that online learning may have not focus on skills such as critical thinking and adaptability, which will be more important for success in the future. Others make online learning part of their new educational method after experiencing the

benefits first-hand. In other words, the effectiveness of online learning may have varies.

In response to significant demand, many online learning platforms are offering free access to their services, including platforms like Zoom, MsTeams, Google classroom, etc. These platforms allow the students being able to learn faster online.

While we have yet to see whether this will apply to online learning post-COVID-19, but what has been made clear through this pandemic is the importance of disseminating knowledge across borders, companies, and all parts of society. Therefore, there is no doubt that using the Internet can increase number of people are participating in.

The development of Internet and digital technologies have enabled e-commerce platforms to transform the retailing landscape, even before the pandemic (Vinerean, 2020). The Internet also has become a viable communication application for private sector marketers, especially in private universities, to gain a competitive advantage in the modern globalized economy. The Internet represents a globally linked network of computers providing people, businesses and corporations, educational institutions, governmental agencies and even countries the ability to communicate electronically.

The Internet provides a wide range of educational product choices and a platform for exchanging ideas. In other words, the Internet is used as a medium for communication and electronic to increase or improve in value, quality and attractiveness of delivering students benefits and better satisfaction. The adoption of the Internet as a way to learn has seen an increasing trend during a short period of time.

Although the e-learning term and tools do exist for over a decade, and many studies have investigated the use of the Internet for educating, the educational research field has not given enough attention to the study of student satisfaction in online learning. In

other words, using the Internet for learning and associated online students' satisfaction less is known.

A previous study by Bismala and Manurung (2021) has applied Importance Performance Analysis (IPA) to analyze student satisfaction in using e-learning. The results showed that there are several factors that need to be improved, such as materials presented in e-learning, interaction with lecturers, availability of facilities, and lecturers such as flexibility, assessment in e-learning that is felt to be appropriate, the benefits of e-learning, and students' ability to allocate time.

Maqbool et al. (2020) investigate the relationships between motivations and satisfaction in online courses. They found that there exists a strong positive correlation between different types of learning motivation and learning satisfaction. The data reveal a strong correlation between motivation and satisfaction and tutor and tutorial and weak correlation course content and organization.

Fiorini et al. (2022) explained students' satisfaction with online learning among adult learners. They found that learners are highly satisfied with the concept of online learning. They also noted several benefits of online learning were identified, including time saved on commuting, the ability to study from the comfort of home and the fact that lectures could now be recorded

Baabdullah et al. (2022) has applied uses and gratifications model to examine students' experience of augmented reality learning applications for evaluation of students' e-learning experience. They used four dimensions of uses and gratifications benefits were proposed as key antecedences of the students' experience with augmented reality learning: personal interactive benefits, social interactive benefits, affective benefits, and cognitive benefits. The statistical results largely support the significant impact of personal interactive benefits, affective benefits, and cognitive benefits, and telepresence on

student experience with augmented reality learning.

Even though many of the current literature acknowledges the capabilities of the Internet as a educating tool associated online students' satisfaction, one of the successful theoretical frameworks to examine perception of online learning has been the Transformative Learning Theory. Almusharraf & Khahro (2020) claimed the Transformative Learning Theory, provides a sound theoretical basis for explaining the value of personal experience as a central part of the learning process. The application of the Transformative Learning Theory provides a theoretical grounding and an avenue to further understand behavior, attitude, and views of using the Internet as a educating channel from a student perspective.

In their study, Almusharraf & Khahro (2020) employed the Transformative Learning Theory, which describe the learners' authority and investment over their learning to understand adult English as a Foreign Language (EFL) learners' attitudes and perceptions toward experiential online learning in the Kingdom of Saudi Arabia (KSA). An important component in this theory is learners are exposed to challenge tasks to motivate students' thinking. and are also encouraged to use critical thinking and questioning techniques to measure their understanding of subject matter. This study is written to add to the literature reviewed on learners' perceptions and transformative performances toward using online learning platforms.

This research aims to assess student satisfaction levels on the utilized online methods and approaches during the COVID-19 pandemic. Because of student satisfaction and other course-related perspectives are influenced by the online teaching strategies adopted to respond to COVID-19 in developing online learning, therefore, consequently, this research aims to explore the answer to the following three questions:

1. To what extent are students satisfied with the online learning environment during the COVID-19 pandemic?
2. To what extent are students satisfied with the school support during COVID -19 pandemic?
3. What are the students' perceptions of the most effective employed online teaching platforms in their learning process during COVID-19 pandemic?

In term of theory, this study provides a theoretical grounding to further understand students' satisfaction of using the Internet when learn online as well as instructors' and school support during the COVID-19 pandemic. This study also provides an empirical understanding on Indonesian students towards online learning. In terms of practice, this study provides strategic implications and directions for the development of online learning in Indonesia that result in students' satisfaction.

The purpose of this survey study is to explore students' perceptions of online learning delivery. It also aims to investigate students' preferred online platforms and methods of learning.

Literature Review

The Transformative Learning Theory particularly focuses on adult education and young adult learning. This theory is based on the idea that learners can adjust their thinking based on new information (WGU, 2020; Walker, 2018; Katz, 2019) and is based on the principle that personal experience is an integral part of the learning process (Okpoho, 2022; Ndemanu & Molina, 2022). The idea that meaning is constructed from experience and internal understanding (Kingman, 2018). This theory suggests that a learner's interpretation of the experience creates meaning, which leads to a change in the behavior, mindset, and beliefs. When transformational learning occurs, a learner may undergo a "paradigm shift" that directly impacts future experiences (Okpoho, 2022).

Therefore, Transformative Learning Theory is very closed related to perception. In this case, a more comprehensive description of students' perceptions of online learning can be found in study, where learners perceive online learning as a positive and encouraging learning experience (Almusharraf & Khahro, 2020). One of student perceptions, in response to institutional concerns about the quality of online platforms and methods of learning, is satisfaction.

Cheng & Wang (2022) define satisfaction as "...the difference between the individual's expectations for the experience gained and the actual feeling" (p.86). In other words, the learner feels satisfied when his experience gained and expected, otherwise he feels dissatisfied. Thus, in online learning context, satisfaction can be defined as learners' feelings and attitudes toward the learning process caused by the learning experiences (She et al., 2021). Furthermore, this satisfaction level can determine success or failure of an e-learning program (Suryani & Sugianingrat, 2021).

According to Almusharraf & Khahro (2020), the most important and robust dimensions of satisfaction include satisfaction level with the online learning environment, and satisfaction of the school support during COVID-19. The environment refers to what extent are students satisfied with online teaching and learning approaches utilized during COVID-19. The support refers to the students' satisfaction with the school support during COVID -19 was analyzed in various forms.

In addition, Almusharraf & Khahro (2020) added perceptions of the most effective online teaching methods and platforms as another major determinant. This perception refers to learners perceive online learning as a positive and encouraging learning experience, primarily on account of the productive peer-feedback participation in e-Learning.

METHOD

Population and sample

The target population are undergraduate and postgraduate students of the communication science major of seven universities who have some knowledge and experience of Internet learning. Therefore the target sample should be Internet learners who are learning or have learned on the Internet at least once.

In this research, researcher has selected convenience sampling technique. Questionnaire is designed accordingly by online survey on <https://forms.gle/PPVmZ3MvVyFcUy8>. This link was distributed to the students of some WhatsApp groups registered in an online learning. Although these groups are in Jakarta, Bogor, Bandung and Sumedang City of Indonesia, the members of these groups do not necessarily live in these cities. Only respondents who have completed the questionnaire will be accounted as valid survey. Until the deadline there were 104 respondents filled out the questionnaire.

Questionnaire Items and Sources

The current study uses a survey research in order to examine the student satisfaction levels on the utilized online learning methods and approaches during the COVID-19 pandemic. The survey was divided into four sections with 18 questions distributed to the respondents of the study: student demographic details, students' satisfaction level of the online learning environment, students' satisfaction of the school support, and students' perceptions of the most effective online learning methods and platforms items.

The first section of the questionnaire identifies the socio-demographic background of the respondents as gender and age. The second section of the questionnaire examined satisfaction level with the online learning environment. Environment scale involves of 7 items. This section is measured by the scale suggested by Almusharraf & Khahro (2020) and by

Bismala & Manurung (2021). In the third section of questionnaire consisted of satisfaction of the school support during COVID-19. Support scale involves of 3 items. This section is measured by the scale suggested by Almusharraf & Khahro (2020). The fourth section of questionnaire examined perceptions of the most effective online learning methods and platforms. This scale involves 6 items. This section is measured by the scale suggested by Almusharraf & Khahro (2020).

All measurement scales are Likert-type with 5-point format, anchoring at "1"--strongly disagree and "5"--strongly agree. The items of these three dimensions are included in one measurement to rigorously test of validity and reliability for proving instrument's validity and reliability.

Data Processing and Analysis

Quantitative methods, were applied in this research. A descriptive analysis was conducted using the Statistical Package for Social Science (SPSS) to supply information pertaining to the the demographic profile of the sample, students' satisfaction and the students' perception. First, validity and reliability testing is conducted to ordeal the validity and reliability of the questions employed to measure research variables. Second, Aggregated Mean Score (AMS) was used as a data analysis approach. Third, standard deviation is conducted to know how often a range of values differs or disperses. Fourth, discussion and conclusion are presented.

RESULT AND DISCUSSION

Respondent Demographics

Table 1. Summary of respondent socio-demographics profile

Socio-demographic	Description	Percent
Gender	Male	36.5
	Female	63.5
Age	17 to 23	52.1
	24 to 43	47.9

Source: Research

In the current study, the majority of the respondents who had previously learned online were females. In particular, the current study found that the majority of online learners fall in a category of age 20 and below (52.1%).

Table 2. Summary of validity testing and Cronbach's alpha test

Dimension	Item	Validity	Cronbach's Alpha
<i>Environment</i>	I am satisfied with the online teaching given by lecturers during COVID-19, because it is interactive, the material is easy to understand, the time is flexible..	0.634	0.880
	I am satisfied with faculty's alternative assessment models during online teaching, (such as open book exams, case studies, presentations or assignments).	0.573	
	I am satisfied with multimodal online teaching delivery (eg, audio, video, text, PowerPoint slides, games, and quizzes).	0.708	
	I am satisfied with online teaching because it helps me achieve self-learning abilities.	0.778	
	I am satisfied with the knowledge and skills acquired during Covid-19 online teaching such as analytical skills, ability to understand the use of e-learning, ability to understand instructions given, adaptability, and interpersonal skills.	0.788	
	I am satisfied with various online teaching approaches (eg, active learning, presentations, discussions).	0.743	
	I am satisfied with online learning during COVID-19 because it takes a student-centred approach.	0.830	
<i>Support</i>	I am satisfied with the responses and services provided by the faculty towards technical support during COVID-19 (eg, account login, Internet service	0.717	0.748

	support, tutorials, e-learning center).		
	I am satisfied with my academic advisor's the follow-up and support.	0.747	
	I am satisfied with the offered webinars and online extracurricular activities.	0.596	
<i>Perception</i>	I recommend going forward only to online learning in the future.	0.635	0.515
	I recommend learning using only face-to-face classroom.	0.234	
	I recommend implementing blended classrooms (combines online learning with face-to-face classroom methods).	0.576	
	Ms Teams used for online teaching delivery was the most effective learning platform.	0.590	
	Google Classrooms used for online teaching delivery was the most effective learning platform.	0.678	
	Zoom used for online teaching delivery was the most effective learning platform.	0.570	

Source: Research

Description: Validity ranged from 0.234 to 0.830 were greater than $r_{table} = 0.1927$ ($N=104-2$; sig. 0.05), and each was found valid. Cronbach's alpha was calculated for each factor, and each was found reliable ($\alpha=0.880$, 0.748, and 0.515 respectively). These three factors were: environment, support and perception of online learning.

Table 3. Satisfaction of the online learning environment

Dimension	Item	Mean	Standard Deviation
<i>Environment</i>	I am satisfied with the online teaching given by lecturers during COVID-19, because it is interactive, the material is easy to understand, the time is flexible..	3.87	0.797
	I am satisfied with faculty's alternative assessment models during online teaching, (such as open book exams, case studies, presentations or	4.23	0.700

assignments).			
I am satisfied with multimodal online teaching delivery (eg, audio, video, text, PowerPoint slides, games, and quizzes).	3.98	0.724	
I am satisfied with online teaching because it helps me achieve self-learning abilities.	3.71	0.921	
I am satisfied with the knowledge and skills acquired during Covid-19 online teaching such as analytical skills, ability to understand the use of e-learning, ability to understand instructions given, adaptability, and interpersonal skills.	3.85	0.856	
I am satisfied with various online teaching approaches (eg, active learning, presentations, discussions).	3.85	0.833	
I am satisfied with online learning during COVID-19 because it takes a student-centred approach.	3.68	0.873	

Source: Research

The results of both mean and standard deviations of online learning environment are shown in Table 3. This table indicates that the students' satisfaction level with the online learning environment was assessed. The students are satisfied with the online learning environment during the COVID-19 pandemic. None of the factors had an average mean score below 3.5 (Agree), an acceptance agreement threshold.

Regarding answering the first questions: *To what extent are students satisfied with the online learning environment during the COVID-19 pandemic?* The students' appeared to be highly satisfied to undergo online learning because they find the assessment teaching models are useful (M=4.23, SD=0.700) which creates multimodal online teaching delivery, such as audio, video, text, PowerPoint slides, games, and quizzes (M=3.98, SD=0.724). The students were also highly satisfied (M=3.87, SD=0.797) with the online teaching, because they thought the teaching is interactive, the materials are easy to understand and the time is flexible.

Furthermore, the students were satisfied (M=3.85, SD=0.833) with the approaches

chosen for the active learning environment, such as active learning, presentations, discussions, in which encourage self-exploring, peer collaborating, and group collaboration among them.

The students also were satisfied (M=3.85, SD=0.856) with the knowledge and skills acquired and they were satisfied with because it helps me achieve self-learning abilities (M=3.70, SD=0.908).

The lowest mean ranked by the students was related to the belief that online learning can take a student-centred approach. increase self abilities (M=3.68, SD=0.873). None of the factors had an average mean score below 3.5 (Agree), an acceptance agreement threshold.

Further, the Cronbach alpha value of the 7 questions of the third section of this study was (0.880); therefore, this section's results were validated by a standard deviation and the Cronbach Alpha test for the section.

Table 4. Satisfaction of the school support

Dimension	Item	Mean	Standard Deviation
Support	I am satisfied with the responses and services provided by the faculty towards technical support during COVID-19 (eg, account login, Internet service support, tutorials, e-learning center).	3.77	0.850
	I am satisfied with my academic advisor's the follow-up and support.	3.89	0.823
	I am satisfied with the offered webinars and online extracurricular activities.	3.67	0.829

Source: Research

In the third section of the questionnaire, the answer to the question: *To what extent are students satisfied with the school support during COVID -19 pandemic?* was analyzed. Tabel 4 indicates that the students are satisfied with the support provided by the school in various forms, including IT issues, online class login problems, academic advising, extracurricular activities, mental and social counseling. The students were satisfied with academic advising (M=3.89,

SD=0.823), with school staff support (M=3.77, SD=0.850), and with webinars, seminars, and facilities provided by the school (M=3.67, SD=0.829). None of the factors had an average mean score below 3.5 (Agree), an acceptance agreement threshold. Nevertheless, this bond between the learner and school can be enhanced in upcoming semesters.

Further, the Cronbach alpha value of the 3 questions of the third section of this study was (0.748); therefore, this section's results were validated by a standard deviation and the Cronbach Alpha test for the section.

Table 5. Perception of the online learning

Dimension	Item	Mean	Standard Deviation
Perception	I recommend going forward only to online learning in the future.	3.27	1.324
	I recommend learning using only face-to-face classroom.	3.39	0.898
	I recommend implementing blended classrooms (combines online learning with face-to-face classroom methods).	3.86	0.949
	Ms Teams used for online teaching delivery was the most effective learning platform.	3.66	0.796
	Google Classrooms used for online teaching delivery was the most effective learning platform.	3.66	0.920
	Zoom used for online teaching delivery was the most effective learning platform.	3.92	0.867

Source: Research

To answer the second research question (in the fourth section): *During COVID-19, what are the students' perceptions of the most effective employed online teaching platforms in their learning process?* The students' perceptions of the most effective online learning methods and platforms are varied.

Tabel 5 indicates, while some students are satisfied with the online learning environment and with the school support, most of the students highly preferred the blended learning classroom (M=3.86,

SD=0.949). The students also preferred the traditional face-to-face classroom environment (M=3.39, SD=0.898) where some topics can be covered online and few involving laboratories or critical concept support by face to face interaction on campus. But some students preferred the online learning (M=3.27, SD=1.324). This rate showed an average mean score between 3.0 to above 3.5 lower than blended learning and/or face-to-face classroom.

The students highly preferred with Zoom as the learning platform (M=3.92, SD=0.867). They were more satisfied with Zoom as a course delivery tool. Further, Google Classroom (M=3.66, SD=0.920) and MsTeams (M=3.66, SD=0.769) are preferred by the students as a course delivery tool.

The Cronbach alpha value of the 6 questions of the fourth section of this study was (0.515); therefore, this section's results were validated by a standard deviation and the Cronbach Alpha test for the section.

Discussion

Applying *Transformative Learning Theory* (WGU, 2020; Okpoho, 2022; Almusharraf & Khahro, 2020) this study attempted to assess student satisfaction levels on the utilized online methods and approaches during the COVID-19 pandemic. It also to explore the students' perceptions of online learning delivery, particularly to investigate students' preferred online platforms and methods of learning.

This study found that students are satisfied with the online learning environment and with the school support during COVID -19 pandemic. This study also found that students preferred the online learning or the blended learning classroom where some topics can be covered online and few involving laboratories or critical concept support by face to face interaction on campus. Students also highly preferred Zoom and Google Classroom as course delivery tools.

This result is in same direction with Fiorini *et al.* (2022) that stated learners are

highly motivated with the concept of online learning mainly agreeing that fully online courses allows them do well in class providing if the materials are studied appropriately. This is in line with the Bismala and Manurung (2021) findings when examining student satisfaction in using e-learning. They stated students' satisfaction to online learning is determined by several factors, such as materials presented in e-learning, interaction with lecturers, availability of facilities, and lecturers such as flexibility, assessment in e-learning that is felt to be appropriate, the benefits of e-learning, and students' ability to allocate time.

This study also is in direction with Almusharraf & Khahro (2020) who have noted the students are satisfied with the university staff and faculty members who agreed on specific online platforms to use, grading system, assessment options, training workshops, online technical support, and more. They also found that students were highly satisfied with Google Hangouts the most for lecture delivery, followed by Google Classroom and LMS (Moodle) for course management and assessments.

Thus, in the perspective of *Transformative Learning Theory*, a more comprehensive description of students' perceptions of online learning can be found in study, where learners perceive online learning as a positive and encouraging learning experience. One of student perceptions, in response to institutional concerns about the quality of online platforms and methods of learning, is *satisfaction*. Satisfaction is the perception of enjoyment and accomplishment in the learning environment

CONCLUSION

This study provides implications to e-education, educators, education institutions and website system developers of online learning sites dealing with materials and services. Electronic educators should

provide useful information to online learning learners.

Theoretically, the present study contributed to the literature to the best of our knowledge. This study shows the Transformative Learning Theory explains well learner online behaviors in a couple of ways. First, from the Transformative Learning context, this study can provide an empirical understanding on satisfaction and perception in online learning. Second, from cultural context, this study has contributed to the evolving of the Transformative Learning Theory, particularly in online learning in developing countries like Indonesia.

As a whole, the results of this study imply new directions for further research that should include a cultural dimension in order to produce better contexts for results. The future research can evaluate and analyse the literature on Internet in the perspective of Transformative Learning Theory from cultural differences. Hence, it is suggested that future research can be replicated in other Asian countries or other populations to identify cultural differences that may impact on the formation of learner attitudes and intention towards online learning.

However, this study encountered some limitations that must be declared. One of the study's limitations is that the number of participants is limited in this study. Thus, a study within a more diverse context and a large population would be recommended.

Further, the student sampling is based on a convenience sampling of conveniently accessible students to participate in the study. Therefore, a random approach in a broader context might add significance to future research. It would be quite useful to do a comparative case study to measure learners' perceptions and applications within the online environment through interviews and observations on a larger scale of participants in different contexts to strengthen the generalizability of this study's findings.

The content of conclusion is written in Cambria (font 11). The conclusion is an overview of a research that has been done. It does not result summary of discussion which refers to ascertain theory, but the result of analysis/correlation test of the data discussed.

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