



Effect of E-Learning on Online Student Engagement on Students in the Covid-19 Pandemic

Vivek Shofiah^(✉)

Faculty of Psychology, UIN Sultan Syarif Kasim Riau, Pekanbaru, Indonesia
vivik.shofiah@uin-suska.ac.id

Abstract. This study aimed to determine the effect of e-learning on online student engagement on students during the covid-19 pandemic. The study used a pre and post-test group design approach. Data collection uses an online student engagement scale with 18 items. Based on the results of hypothesis testing and statistical analysis using a t-test with 15 respondents. This shows the effect of e-learning on online student engagement for students during the covid-19 pandemic. The results of the descriptive analysis showed that all subjects experienced a decrease in online student engagement. The responses to the online student engagement pre-test show three subjects with high student engagement, three with moderate student engagement, and nine with low student engagement. While in the post-test student, 11 subjects with high student engagement, two subjects with moderate student engagement, and two with low student engagement. The increase in pre-test and post-test scores for all subjects occurred in the behavioural aspect of the engagement.

Keywords: student engagement · e-learning · online

1 Introduction

The covid-19 pandemic has changed the order of life in the world, including Indonesia. Various aspects of life have changed, including lecture activities. Initially, lectures were held *offline* to *online* due to limitations in meeting and breaking the chain of *Covid-19*. The learning process through *e-learning* is the right solution so that students still get their rights, namely educational services, during this pandemic. *E-learning* supports *student-centered learning* because students no longer depend on lecturers. After all, lecturers are one of many sources of knowledge for students (Ritonga et al. 2019).

E-learning is a distance lecture method with communication technology facilities via the internet (Laisa 2019). Technological developments can make it easier for students to do *e-learning*, but *e-learning* also creates difficulties for students. The difficulties experienced by students are the lack of direct interaction with lecturers, so learning becomes boring. The existence of internet network disturbances that cannot be controlled makes the learning process hampered, and many things must be fulfilled, namely the completeness of facilities and infrastructure such as *smartphones*, *laptops*, and computers, as well as costs for internet networks.

© The Author(s) 2023

A. Fattah et al. (Eds.): PFH 2022, ASSEHR 728, pp. 90–96, 2023.

https://doi.org/10.2991/978-2-38476-032-9_10

According to Sanjaya (in Arum and Susilaningsih 2020), Learning activities achieve effective results through reciprocal relationships between lecturers and students. However, the lecture process is only sometimes effective because the reciprocal relationship between students and lecturers cannot be carried out directly. This is because the communication tools are limited, so students cannot submit them promptly. The lecturer cannot explain when the signal is interrupted, so the material presented needs to be received clearly. As a result, students become lazy because they need many facilities to carry out assignments, cannot provide feedback quickly and need help understanding the material provided due to limited communication tools (Arum and Susilaningsih 2020).

According to Ladd and Dinella (in Reeve 2012), student *engagement* supports lectures to take place well. However, it is more difficult for students to engage in online lectures because students are physically separated from their lecturers and classmates (Bolliger et al. 2020). Wijaya et al. (2020) said that e-learning impacts students. Namely, students are forced to be independent in learning. Suppose there is a material that is difficult to understand, and one wants to find out directly from the lecturer. In that case, it becomes difficult because some courses do not have chat rooms as a medium. Only Signals constrain question and answer, access to information a few percent of the material can be understood by students; students must continue to receive and do assignments and collect on time, although sometimes there are obstacles in processing and sending assignments. Furthermore, the impact felt by students was an increase in boredom because some lecturers only uploaded materials online, and lecturers provided assignments without explaining the material given carefully. Next, the costs incurred by students will be greater for purchasing internet quota.

Online learning raises various complaints, such as making students bored because of the monotony of learning, becoming less creative, and tending to be passive and less productive. In addition, students experience stress because they are influenced by anxiety about contracting the Covid-19 virus, anxiety when leaving the house, boredom doing *social distancing*, and difficulty understanding lecture material during online lectures (Argaheni 2020). This indicates that students are not involved in *e-learning*, according to Appleton et al. (2008) said that there are students who are not bound by lecture activities, such as being indifferent, chatting with friends via chat, not being enthusiastic, and lacking focus. Alternatively, even fall asleep in the middle of online lectures.

Students with high *engagement* can be seen from positive behavior, high motivation, strong energy, seriousness in doing assignments, and responsible for complying with agreed rules (Schaufeli et al. 2002). *Student engagement* can affect academic achievement when students give their time, effort, and participation in learning activities to achieve achievement (Sa'adah and Ariati 2020). In a literature study, Fredricks, Blumenfeld, and Paris (in Fikrie and Ariani 2019) explained that there are problems such as low student achievement, high levels of student boredom, and increased cases of dropouts from schools as a result of students experiencing *disengagement* at school.

Based on preliminary studies related to *student engagement* in students, information was obtained that during lectures using e-learning, students were less involved cognitively, emotionally, and behaviorally. Students show this during online lectures. Namely, they are less active in discussions, only a few students are active, and students are not concentrating on lectures because sometimes attending lectures is on the road or not

in a comfortable place to lecture and also constrained by poor network good, limited extracurricular or non-academic activities that students can do.

Based on the problems described, the researchers are interested in examining the effect of *e-learning* on *online student engagement* among students throughout Sumatra during the Covid-19 pandemic.

2 Theoretical Review

Frederick et al. (2004) said *student engagement* is a form of student behavior that feels engaged with activities on campus and is manifested in *behavioral engagement*, *cognitive engagement*, and *emotional engagement*. Cognitive engagement is reflected in the behavior of students who describe their thoughts as sacrificing energy, thought, and time to achieve an achievement in a particular field that combines both ideas and a willingness to take action.

Student engagement is a form of behavior related to lecture activities and raises good behavior, such as obeying campus rules, actively participating in activities, and not having bad behavior. Meanwhile, emotional involvement describes good and bad reactions to lecturers, campus friends, academics, or the campus. It then bonds with the campus, affecting student motivation to study.

Student engagement in academic activities is a psychological process involving interest, attention, investment, and student effort channeled into learning (Marks 2000). Appleton, Christenson, and Furlong (Fredricks et al. 2016), explained that the quality of schools, especially secondary schools, is important in the engagement process, which has great potential. This makes us aware that improving the quality of education to produce students who have the ability is a big obstacle.

From the explanation above, it can be seen that *student engagement* in online lectures is needed because it will have a good impact on the quality of learning and academic achievement so that in the lecture process, students participate actively both inside and outside the classroom. *Student engagement* on campus is very important because the lecture process will become strategic and achieve results for itself. Students with high *student engagement* will have steady goals, concentration, and enthusiasm, in the lecture process and will show dynamic behavior compared to students who do not have *student engagement*.

Engagement will be built in students influenced by individual and environmental factors. Environmental factors include the lecture system through e-learning, one of the factors that influence student engagement. Lectures using *e-Learning* allow students and lecturers to make contact, and lecture activities will not be limited by anything, such as distance, space, and student time. Students can discuss this from home at any time. This condition makes students more *relaxed* when attending lectures because this relaxed and comfortable condition is expected to help students to be able to understand the material and be involved in lectures properly.

Ritonga et al. (2019) explained that the learning method using *e-learning* has benefits, such as being able to increase *student engagement* in lectures through several aspects, such as increasing student cognitive competence (Kassymova and Oloko 2019), enriching the teaching and learning system through increasing interaction between lecturers

and students through the system (Wassalam et al. 2017), make it easy for students to get an education anywhere without being limited to institutional and state constraints, easily discuss with experts in the desired field and get lecture material easily. Various sources are independent of students' campuses (Mutia and Leonard 2013). Therefore researchers want to see whether there is an effect of *e-learning* on *student engagement* in students.

3 Method

This study uses a *quasi-experimental approach to pre-and post-test design*. This type is aligned with the research objectives to be achieved, namely testing the effect of *e-Learning* on *online student engagement* in students during the COVID-19 pandemic. The data collection tool uses an online student engagement scale of 18 items. The research subjects were 15 students. The data analysis technique used is the t-test to test the effect of e-learning on online student engagement on students during the Covid-19 pandemic.

4 Results and Discussion

Based on the results of hypothesis testing and statistical analysis using the t-test, it was found that a significance value of 0.031 was less than < 0.05 . This shows that the hypothesis is accepted and proves that e-learning affects *online student engagement* among students during the Covid-19 pandemic. The results of this study are supported by Ritonga et al. (2019). They explain that the learning method using *e-learning* has benefits, such as being able to increase *student engagement* in lectures through several aspects, such as increasing student cognitive competence (Kassymova and Oloko 2019), enriching the system teaching and learning through increasing interaction between lecturers and students through the system (Wassalam et al. 2017), making it easy for students to get an education anywhere without being limited to institutional and state constraints, easily discussing with experts in the desired field and obtaining lecture material easily and from a variety of sources, not depending on the campus where students study (Mutia and Leonard 2013) (Table 1).

The results of the descriptive analysis of the research data obtained from the answers filled in by 15 research subjects showed that all subjects experienced a decrease in their online student engagement. Through the responses to the online student engagement *pre-test*, it can be seen that there were three subjects with high student engagement, three subjects with moderate student engagement, and nine subjects with low student engagement. Whereas in *the student post-test*, 11 subjects had high student engagement, two subjects had moderate student engagement, and two had low student engagement.

Table 1. The results of the comparison of the pre-test and post-test

Variable	Mean <i>Pre-test</i>	Mean <i>Post-test</i>	p
<i>Online student engagement</i>	11,600	17.60	0.031

Table 2. Categorization of responses to online student engagement pre-test and post-test

Initials	Pre-Test	Category	Post-Tests	Category
EN	22	High student engagement	24	High student engagement
AI	21	High student engagement	23	High student engagement
SI	24	High student engagement	25	High student engagement
NR	15	Moderate student engagement	20	High student engagement
sy	17	Moderate student engagement	21	High student engagement
KZ	19	Moderate student engagement	20	High student engagement
ME	14	Low student engagement	20	High student engagement
MF	12	Low student engagement	21	High student engagement
MT	14	Low student engagement	20	High student engagement
ZH	14	Low student engagement	22	High student engagement
HK	13	Low student engagement	23	High student engagement
RH	12	Low student engagement	18	Moderate student engagement
MH	14	Low student engagement	17	Moderate student engagement
SA	11	Low student engagement	10	Low student engagement
SY	13	Low student engagement	11	Low student engagement

Following are the results of the online student engagement response categorization pre-test and post-test (Table 2):

The increase in pre-test and post-test scores for all subjects occurred in the *behavioral engagement aspect*. According to Trowler (2010), *behavioral engagement* 1 namely the involvement of 1 students shown in the form of behavior. Students with *behavioral engagement* usually show behavior that adheres to behavioral norms, such as attendance and involvement in learning, and does not interfere with the learning process. *Behavioral engagement* is demonstrated by the subject being present when *e-learning* takes place. Students are more actively involved in discussions in the *zoom meeting room*, and all subjects are present during learning.

References

- Annisa Etika Arum., & Endang Susilaningsih. 2020. Online Learning and Study of the Impact of the Covid-19 Pandemic at the Muncar District Elementary School. Proceedings of the UNNES Postgraduate National Seminar.
- Appleton, JJ, Christenson, SL & Furlong, MJ2008. Student Engagement With School: Critical Conceptual And Methodological Issues Of The Construct. *Psychology in the Schools*, 45(05), 369–386.
- Argaheni, Niken Bayu. 2020. Systematic Review: The Impact of Online Lectures during the Covid-19 Pandemic on Indonesian Students. *Scientific Journal of Health and Its Applications*, Vol.8 (2) 2020

- Avianty, Donna, Ananyarta, Primadya. 2020. The Effectiveness of Online Learning on Student Involvement in Thematic Learning (Mathematics & Science) in Elementary School Students *Journal of Mathematics Education* Vol. 8, No. 4, p. 313 – 324
- A'yunin, Qurrata. 2020. The Relationship between Student Engagement and Academic Achievement in Class VIII Students of MTS al-Jadid Sidoarjo, Psychology Thesis of UIN Surabaya., p.26.
- Bagriacik, YES & Banyard, P. 2020. Engagement in distance education settings: A trend analysis. *Turkish Online Journal of Distance Education*, 21(1), 101-120.
- Free. Lita Ariani, 2019. Student engagement at school is an effort to increase student success at school. *Proceedings of the 2019 Educational Psychology National Seminar & Call Paper*, Faculty of Psychology Education, Hall C1, 13 April 2019
- Fredricks, J., Filsecker, M., & Lawson, MA (2016). Student engagement, context, and adjustment: Addressing definitional, measurement, and methodological issues. *Elsevier*. 43, 1-4
- Fredricks, JA, Blumenfeld, PC & Paris, AH. 2004. School engagement: the potential of the concept, state of the evidence. *Review of Educational Research*, (74): 59–109.
- Hidayati, Ririn E. (2021). Effectiveness of Online Learning Using Madrasah E-Learning During Covid-19. *Journal of Religious Education and Training*, Vol. 15, no. 1, January - June 2021.
- Jannah, Mitha Rohmatul, (2019). Relationship between Peer Attachment and Student Engagement in Islamic Boarding School MA Students, p.20
- Khoirunnisa, Riza Noviana Damajanti Kusuma Dewi, Desi Nurwidawati. 2018. Child Development E-Learning Learning in the Psychology Department *Journal of Theoretical and Applied Psychology* 2018, Vol. 9, No. 1, 62–76 p-ISSN: 2087–1708; e-ISSN: 2597–9035
- Kassymova and Oloko (2019). Cognitive Development Based On E-Learning. Available at: <https://www.researchgate.net/publication/331465431>. Tamil Nadu, India: Sri Sai Barath College of Education Dindigul.
- Laisa, Z. (2019). *Communication Technology for e-learning in Higher Education*. Publisher : CV Athra Samudra
- Lidiawati, K. R., Helsa. (2021). Online Learning During the Covid-19 Pandemic: How Self-Learning Strategies Can Affect Student Engagement. *Journal of Psychology* Vol.14 (No.1): pp. 1–10. Th. 2021.
- Marks, HM (2000). Student engagement in instructional activity: Patterns in the elementary, middle and high school years. *American Educational Research Journal*, 37, 153–184.
- Munir. (2009). *Distance Learning Based on Information and Communication Technology*. Bandung. Publisher: Alfabeta.
- Mutia, I., & Leonard. (2013). Study of the Application of E-Learning in the Learning Process in Higher Education. *Exacta factor* 6(4) , 278-289.
- Ritonga, Doris Apriani, Agung Sunarno, Chairul Azmi. 2019. Student Engagement in the Implementation of E-Learning in Sports Learning at PJKR FIK, Medan State University. *Journal of Sports Science* Vol. 18 (2), July – December 2019: 135 – 145
- Reeve, J. (2012). Handbook of research on student engagement. *Journal of Educational psychology*. 24(14). 149-172. Doi: https://doi.org/10.1007/978-1-4614-2018-7_7
- Sahidin, Desimarnis, Rusdinal, Nurhizrah G. (2021). The Effectiveness of Implementing E-Learning Policies During the Covid-19 Pandemic at Madrasah Aliyah. *Journal of Education Science* Volume 3 Number 5 of 2021 Halm 2626 - 2637
- Sa'adah, Ulfatus, Jati Ariat. (2020). The Relationship between Student Engagement and Academic Achievement in Mathematics Class XI Students of SMA Negeri 9 Semarang. *Empathy Journal*, January 2018, Volume 7 (Number 1), Pages 69–75
- Schaufeli, Wilmar B Isabel M. Martínez, Alexandra Marques Pinto, Marisa Salanova and Arnold B. Bakker. 2002, Burnout and Engagement in University Students: A Cross-National Study 3 *Journal of Cross-Cultural Psychology* 2002 33: 464.

- Trowler, V. (2010). Student Engagement literature review. Lancaster University: Department of Educational Research.
- Wijaya, Reni, Mustika Lukman, Dorris Yadewani. 2020. The Impact of the Covid-19 Pandemic on the Utilization of E-Learning. DIMENSIONS, VOL. 9, NO. 2: 307–322 JULY 2020 ISSN: 2085–9996

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

