

## MALAYSIAN UNDERGRADUATE STUDENTS' EXPERIENCES OF ONLINE LEARNING IN THE MIDST OF COVID-19 PANDEMIC

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### ABSTRACT

The outbreak of COVID-19 has spurred educators to find ways to support each other and provide a platform to ensure teaching and learning can be sustained even during this difficult time. As universities shift online, students are forced to adopt this new way of learning. The purpose of this study is to investigate the students' perception and experiences of online learning in the midst of a COVID-19 pandemic. A qualitative method was used where 13 undergraduates (Diploma and Bachelor's degree students) were interviewed online. A thematic analysis was employed. This study found that students had mixed feelings about their online learning experience during the COVID-19 pandemic. The majority of students acknowledged the support from the university and lecturers. Many students claimed they experienced numerous benefits of online learning, yet, there were students who found online learning experience more challenging than they expected it to be. This study recommends a dynamic synergy between students' needs, lecturers' delivery and universities' support for effective online learning. Disregarding challenges faced by students during online learning could lead to student attrition at universities.

Key words: online learning, undergraduate students, COVID-19 pandemic.

### INTRODUCTION

The popularity of online teaching and learning has been on the rise with many educational institutions exploring new ways of delivering effective course contents for the benefit of online learners (Dumford & Miller, 2018). Online learning is defined as "a form of distance education in which a course or program is intentionally designed in advance to be delivered fully online (Bates, 2016).

The COVID-19 pandemic has resulted in schools and universities to be closed all across the world. While countries are at different points in their COVID-19 infection rates, globally there are currently more than 1,190,287,189 learners enrolled in pre-primary to tertiary education levels who are affected by 150 country-wide closures (UNESCO, 2020). As a result, education has changed dramatically. Face to face learning and blended learning were replaced by fully online learning. This distinctive rise of online learning means that teaching is undertaken remotely using digital platforms. With the outbreak of the COVID-19, Chinese universities had to shut down campuses and initiate online teaching with immediate effect (Bao, Wei, 2020). Cuaton (2020) asserts that the global education system needs to transform and adapt as traditional education systems globally have been challenged and the traditional physical classrooms grounded in human physical interactions are under threat.

In the time of COVID-19 pandemic, the global education system is in the process of transforming and adapting to new and challenging situations which test the conventional learning process of classroom human interaction and capitalize in virtual and online education

In Malaysia, in an effort to contain the spread of COVID-19, the Malaysian government enforced the Movement Control Order (MCO) on March 18, 2020. The Star newspaper published an article on 29 March detailing how the COVID-19 pandemic has pushed schools, higher education institutions (HEIs) and training providers online to ensure the continuation of effective learning (Chin, 2020). The availability of technology can facilitate seamless migration from face-to-face learning to a virtual platform, but there is concern about the accessibility to quality digital content during MCO. Even though many universities have scrambled to provide a reliable platform for online learning, it was expected that there would be hiccups especially in the early stages due to inadequate access to stable internet bandwidth for the students in rural areas and the likelihood of digital learning platform crashes due to sudden increase in load (Arumugam, 2020). Challenges faced by teachers are a main concern for educational institutions, both in schools and universities (Rasheed et al., 2020).

Since the adoption of online learning, universities have been training lecturers to gear their pedagogical strategies, student engagement, and assessment that support online learning (Bates, 2016), that is devoid of physical contact between lecturers and students. Despite such efforts, the challenges faced by students are real and have to be acknowledged and addressed.

Thus, while it is important to highlight challenges faced by universities, it is also important to discover how students as the end users perceived this change from face to face learning to online learning. Understanding of how students experienced online learning will illuminate on the learning benefits they have gained. If students had positive and good first online learning experiences, there would be a high likelihood that they would appreciate and seek similar engaging experiences in the future. However, if they were not able to reap benefits from the online learning, then strategies must be put into place so students' learning experiences could be improved.

Past research has shown that students face numerous challenges as universities are clamouring to continue with online teaching due to the need for social distancing required as an after effect of the COVID-19 pandemic. Learners from low-income families

lack the basic technology they need to study online, including access hardware, software, a reliable broadband connection, and a conducive environment to stay and concentrate to complete assigned tasks (Hall & Batty, 2020). Likewise, in the Malaysian context, as universities are engaging in online teaching in full-force due to the COVID-19 pandemic, and students are benefitting from the continuity of their education without any disruptions, however, they face various challenges that need to be examined thoroughly.

## LITERATURE REVIEW

Numerous researches related to online learning have dated back to the beginning of the eighties and the body of research regarding this topic continues to grow. In the early 2000, studies by the National Centre for Education showed an increased demand and acceptance of online learning (Waits & Lewis, 2003), where students who undergone eLearning courses were generally very positive about their learning experiences. In 2014, Popovici and Mironov found that the students recognized the changes to learning caused by digital technologies and were aware of the impact on their learning process. It is interesting to note that Eldeeb (2014) found that students preferred mixed mode and online supplemented course rather than a fully online course. Mislinawati and Nurmasiyah (2018) did a research on the usefulness of online learning to students. They found that the students perceived the e-learning web-based module to be useful in helping them to understand learning materials, be independent, self-disciplined and motivated. Students also improved their interactions with each other and with the teacher. Adding on to the benefits of online learning, Mamattah in 2016 discovered that majority of the students thought that e-learning was an innovative idea that should be encouraged. Matsunaga (2016) investigated online learning in a high-impact general education course at an urban American university. He found that students gained knowledge by taking the online course, regardless of their backgrounds. Students reported greater overall efficacy and preference for the online delivery.

In 2013, Media Culture 2020 project (Vickers et al., 2020) developed innovative virtual classrooms where knowledge and learning were represented by new ways of production, transmission and representation. They explored various social media, online platform and cloud-based technologies including Facebook, Google+ Google Hangout, Google Docs and Blogger. This project's main aims were to break down barriers created by physical classrooms and campus by creating open virtual learning environments where students from different countries and fields could explore and learn together. This project had a dream way ahead of our current necessity caused by the COVID-19 pandemic.

Learners experience of the COVID-19 pandemic is a major concern now. Hence, a special health framework has been proposed to manage behaviour during the pandemic in an effort to flatten the emotional distress curve (Kaslow et al., 2020). The stress experienced by students in higher education is now being weighted down further by the menace of the COVID-19. Education has been highlighted as a domain in one of the 6 phases proposed within the framework (Kaslow et al., 2020).

Sahin and Shelly (2008) stressed that what is central in designing, developing, and delivering online courses is definitely the consideration given to students' needs and perceptions. A study carried out to investigate the use of digital devices in the classroom confirmed a shift in how students learn using electronic devices. This study further concluded that policy makers should be aware that both students and teachers need technological and pedagogical support, respectively (Montrieu et al., 2015).

According to Girrik Allo (2020) student perception is of importance to lecturers and universities as it provides input for them to streamline online learning processes while keeping the students safe during the transmission of COVID-19. Thus, the purpose of this study is to investigate the learners' perception and experiences regarding their online learning during a COVID-19 pandemic.

## RESEARCH OBJECTIVES AND RESEARCH QUESTIONS

The objectives of this study are to examine the support received by students from the university and lecturers for their online learning, the online applications used by students during online learning, and students' perceptions, experiences and challenges faced pertaining to online learning in the midst of COVID-19 outbreak.

The following research questions were explored in this paper.

- RQ1: What support did students get during the online learning period?
- RQ2: What are the applications that students used during online learning?
- RQ3: What are students' experiences during online learning?
- RQ4: What type of personal attention did the students get from their lecturers?
- RQ5: What are the challenges faced by students during online learning?
- RQ6: What is the overall experience on online learning as described by students?

## METHODOLOGY

The methodology adopted for this study is a qualitative approach using an interview protocol to gather rich data from each participant. The sample was 13 undergraduate students from the Diploma and Bachelor's degree programmes. The sample size was determined based on the saturation of data collected. Data collected from the 5 interview questions were qualitatively analysed based on the themes and patterns that emerged from the responses.

Analysed data is presented here in the order of the research questions. In addition to summarizing the analysis of data, relevant direct quotations are also included to enhance and strengthen the objectivity of the findings.

## CONCEPTUAL FRAMEWORK

The Table 1 below presents the conceptual framework for this qualitative study which includes the research objectives, research questions and instrument used.

Research Objectives	Research Questions	Instrument
Examine the support received from the university and lectures.	RQ1: What support did students get during the online learning period?	Interview Protocol
Identify the online application used by students	RQ2: What are the applications that students used during online learning?	
Identify students' perception and experiences pertaining to online learning	RQ3: What are students' experiences during online learning? RQ4: What type of personal attention did the students get from their lecturers? RQ5: What are the challenges faced by students during online learning? RQ6: What is the overall experience on online learning as described by students?	

Table 1: Conceptual Framework

## FINDINGS

### *RQ1: What support did students get during the online learning period?*

Based on the responses from the undergraduate graduates, the university had provided online technological platforms such as Panopto and Infraplus from the Learning Management System (LMS) for effective online learning. Other support provided by the university include Administrative and technical support which were readily available to students.

#### **Sample students' responses:**

Student 3 - Diploma:

“... is definitely one of the supports that we received as we can download all the lecture slides and also view the lecture videos just in case if we miss the class or just trying to refer back to the lecture. Besides that, we can also get our coursework/assignment briefs from INFRAPLUS (LMS) to learn more about our task.”

Student 6 – Degree:

“The usage of multi online learning platforms such as Zoom, WebEx, and Infraplus Panopto allows students and lecturers to choose on which would suit the best for studying accordingly.”

### *RQ2: What are the applications that students use during online learning?*

Students were comfortable using various online applications for online learning. The applications highlighted by the majority of students include, WhatsApp, Zoom, Google Classroom, Instagram, Google Meet, WebEx.

### *RQ3: What are students' experiences during online learning?*

Students had a myriad of experiences during their online learning. The support provided by lecturers through their communication with students and their consideration of possible challenges students might face during online learning seem to have a deep impact on the students' experiences of online learning.

Some of the themes that were teased out from the students' responses include the following:

#### **Theme 1: Lecturers' academic support**

The students seemed extremely satisfied with the academic support provided by the lecturers. There were frequent and consist communication between students and lecturers through the online learning period. Lectures made themselves available to provide support even after office hours using the LMS as well as social media applications such as WhatsApp.

**Sample students' responses:**

Student 1 –Degree:

“During this pandemic period, lecturers were so supportive. They are available at all times. We can message them and they are always ready to help us.”

Student 2-Diploma:

“Lecturers will always answer our questions at any time.”

Student 3 - Diploma

“So far, the lecturers have been very supportive as whenever a student is having any form of questions, the lecturers would respond to them immediately and sometime even guide them to troubleshoot certain issues. Not just in class, but after class, on WhatsApp group and direct messages, the lecturers would respond as soon as they receive the message from the students to help the students with any problems they face.”

Student 5 \_-Degree:

The lecturer tends to reply to our doubts even past office hour.

**Theme 2: Assigned tasks and activities**

Students expressed appreciation for the flexibility of extra time for task completion and submission deadlines. Due to various challenges that students were facing, lecturers had been considerate to allow extra time to complete assigned tasks. This action by lecturers ensured that students could take advantage of learning at their own pace which is one of the positive features of online learning.

**Sample students' responses:**

Student 1 - Degree:

“Lectures are giving us extra time to complete our tasks.”

Student 4 – Degree:

“Lecturers often give extra time for tasks and activities in respect to constraints (Internet connection or devices).”

Student 1 – Diploma:

“I had one hour extra after each of my classes to complete the given class exercises.”

**Theme 3: Experience with teaching materials**

Students were grateful for the variety of teaching materials used during the online learning period. Lecturers had prepared additional notes compared to face-to-face class so students are able to understand their online lectures. Lecturers also uploaded these notes and recorded lectures in the LMS before each class.

**Sample students' responses:**

Student 4 – Diploma:

“Fully provided with addition notes for more understandable lectures since the lecturer did not have the chance to explain it like in normal face-to-face class.”

Student 1 – Degree:

“Notes are upload much earlier, thus its really helpful for me to prepare early before the class start. Lectures also upload the recording session after each class.”

**Theme 4: Experience with class participation**

Students asserted that they were given numerous opportunities to interact with the lecturer and course mates during the online learning sessions. Students were encouraged by lecturers and given time to ask questions and/or comment and share their thoughts before and after online lessons. Lecturers were also able to focus on the individual student who was responding to questions asked.

**Sample students' responses:**

Student 1 – Degree

“Before and after each lecture, the lectures gave us a chance to share our thoughts and also to clarify our doubts.”

Student 6 – Diploma:

“Participation during class was encouraged more this semester as the lecturers could focus more on us and view who responds.”

Student 2 – Degree:

“My lecturers would encourage class participation by asking if we had any questions or concerns, we'd like to ask. Other than that, some of my lecturers would ask questions for us to give our opinions, throughout the lecture itself.”

*RQ4: What type of personal attention did the students get from their lecturers?*

Students were satisfied with the personal attention provided by the lecturers. Lecturers, knowing the challenges that students might face during online learning, went the extra mile to ensure that students get the attention expected. They were “friendly and approachable” and “good and fair” to all students. Students appreciated the fact that their lecturers gave them the assurance that they can contact them whenever they need assistance in understanding the lesson contents. Students were also given “thorough guide” by lecturers when answering the questions.

**Sample students' responses:**

Student 7 – Degree

“Lecturers were very friendly and approachable. They did remind us frequently to contact them whenever we are facing a problem or do not understand the lesson clearly.”

Student 4 – Diploma:

“It was good and fair for all of the students. The lecturers were not being picky when they were teaching and do entertain any questions from all students.”

Student 4 – Degree:

“Lecturers are very understanding and show concerns about any problems encountered at home or pertaining to online learning and assignments.”

Student 6 – Degree:

“Always open for one-to-one communication and direct messaging and the questions asked are answered with thorough guide.”

Student 5 – Degree:

“Personal attention was given to students who had a hard time certain calculations or topic. Special classes were conducted as well for students, on certain calculations and engineering concept to improve our understanding.”

*RQ5: What are the challenges faced by students during online learning?*

The most recurring challenge identified by all the students relate to internet connections and electronic equipment.

**Theme 1: Technical challenges**

The majority of the students mentioned that they face problems with internet connections due to bad reception and poor connectivity that disrupts the lessons. Some students lack the financial means to purchase new electronic equipment or even up upgrade their existing equipment. So, many students struggled with malfunction of their electronic equipment which led to crashes and poor audio as highlighted by Arumugam (2020). This findings on the challenges faced due to technical challenges concur with Hall & Batty (2020) where they highlighted students lack of access to a laptop and a reliable broadband connection.

**Sample students' responses:**

Student 3 – Diploma:

“Sometimes, the internet connection becomes unstable which later on causes the audio to disrupt during online class and led students to not understand the lecture well. Besides, the most common reason for submitting a work after the deadline is due to slow internet connection.”

Student 6 – Degree:

“Sometimes my laptop would crash or update without any heads up, but when informed to the

lecturers, they understand the situation and they gave me some time to deal with it.”

**Student 7 – Degree:**

“Sometimes there is an issue with my WIFI connection and I will not be able to hear the lesson properly as it keeps breaking. Other times, lecturers will also face similar problems and we will not be able to hear them which takes up more time than necessary. I usually use my phone during online classes because I do not own a microphone so no one can really hear me and also the camera on my laptop is extremely blurry so lecturers will not be able to see me.”

**Student 1 – Diploma:**

“Internet connections e.g. Wi-Fi, data. This is the biggest challenge when it comes to learning online. Especially at the morning. Even though I have a Wi-Fi connection at my home and data connection in my phone, it was still hard for me to connect to my morning classes. We had to cancel few of the classes because my lecturer had a very poor internet connection. At first, I could not use my laptop camera due to some technical issue, then I used my handphone for online classes throughout the semester. But when it comes to online presentation, I could not depend on my handphone, so I had to borrow my neighbour’s laptop for my presentation.”

**Student 2 – Diploma:**

“Poor internet connection was a serious challenge for me this semester especially when it’s raining. The line would glitch or reconnect so many times that makes it hard to stay focus.

During the first week of my class I had to use my handphone to join the classes because my laptop charger was broken and I need to get a new one which takes time.”

**Theme 2: Lack of physical interaction**

It is an accepted fact that online learning lacks physical interaction. Thus, the university and the lecturers were consistently striving to ensure maximum interaction possible during online learning.

However, based on the students’ responses, it is evident that online learning cannot match the physical interactions available during face-to-face classes. Students were also “less motivated” to participate in class discussion.

**Sample students’ responses:**

**Student 2 – Degree:**

“Due to the different atmosphere of learning, unlike in a physical classroom, I was less motivated to participate in class discussions.”

**Student 3 – Degree:**

“Little or no face to face interaction.”

**Theme 3: Distractions**

The lack of the confined physical classroom environment leads to various forms of distractions during online lessons. Students claimed that they cannot “view non-verbal gestures and overcome the barrier with lecturers” and thus “lessons aren’t as interactive or interesting” and this could easily distract them from the learning session. These findings concur with Hall & Batty (2020) where students claimed that without a quiet place like the library, they could not stay focused.

**Sample students’ responses:**

**Student 7 – Degree:**

“I get easily distracted in online classes because the lessons aren’t as interactive or interesting when done online. It mainly just requires students to listen.”

**Student 7 – Diploma:**

“Not being able to physically attend the class, thus not being able to view non-verbal gestures and overcome the barrier with lecturers.”

**RQ6: What is the overall experience of online learning as described by students?**

Students overall views on their online learning experience ranged from positive to negative. Many described their online learning experience as “convenient”, “flexible”, “fresh”, “comfortable”, “convenient”, “useful”, “new”, and “interesting” which concur with findings by Waits & Lewis (2003).

However, there were also students who described their overall online experiences as “lonely”, “distracting”, “frustrating”, “hectic”, “exhausting”, “panicky”, “disconnected”, “confusing” and “unmotivated”.

## DISCUSSION AND CONCLUSION

A recent study by Hall & Batty (2020) also highlighted similar concerns and that “students are worried about how they will cope”. Students expressed mixed feelings on the overall online learning experience. This has been highlighted by Eldeeb (2014) where he found that students preferred mixed mode and online supplemented course rather than a fully online course. This research shows that students are acceptable to online learning but they still prefer to have face-to-face lessons to support the lack of interaction during online learning. However, with the current COVID-19 pandemic, students have been suddenly forced to adapt to the current fully online lessons.

Some students’ positive views such as “fresh”, “new”, and “interesting” regarding their experience on online learning concur with Mamattah (2016) where the findings indicated that online learning is an innovative idea that should be encouraged.

As much as students were positive in the overall view of online learning, there were comments that indicated that students were “unmotivated” and “disconnected”. This finding contradicts Mislinawati and Nurmasiyah (2018) for they claimed that online learning is motivating for the students. In line with Matsunaga (2016), the findings in this study also shows that students do prefer online learning and described it as “convenient” and “useful”.

The university and the lecturers are aware and considerate of the need for drastic actions to support the forced sudden need for online learning due to COVID-19. Students as well as the university has to work in tandem to ensure effective learning happens online. As proposed by Sahin and Shelly (2008), this study found that the university raised to the occasion by providing sufficient technical support to students and lecturers, as teachers too face challenges with the need to use new technologies (Rasheed et al., 2020). This effort concurs with the recommendations i.e. technical support for students and pedagogical support for teachers as proposed by Montrieux et al. (2015). This ensured the effectiveness of online learning throughout the challenging times of this pandemic.

The findings of this study concur with Girrik Allo (2020) where he stressed the importance of students’ perception and feedback in strategizing effective delivery of online learning and administration. Educational institutions and lecturers should take note of this and consider students’ feedback to improve and enhance delivery of course contents for online learning. Virtual classroom will be the norm from now on, and thus it is critical that research findings be seriously put into practice with immediate effect to ensure that the quality of education is not affected by the pandemic. This is a possible reality as reported by Media Culture 2020 Project (Vickers et al., 2020) which carried out in 2013. With the advancement in technology and the numerous applications and platforms available for virtual classroom, we do not have any excuses to slacken in the delivery of education in the midst of COVID-19. Current platforms and applications used by the lecturers at this university include Zoom, WebEx, Padlet, EdPuzzle, Google Meet, WhatsApp and the inhouse LMS and Infraplus.

As Cuaton (2020) affirmed that the traditional physical classroom is threatened by the menacing COVID-19 pandemic globally, institutions of higher education must take the burden and responsibility upon themselves to engage with students to gather their feedback to enhance delivery of contents effectively in the virtual classrooms. Such efforts will converge both the strengths of students’ digital skills with lecturers’ pedagogical skills. This dynamic engagement between students and lecturers can result in new approaches to enhance online learning.

The above collaborative effort between students, lecturers and educational institutions is of paramount importance at this moment in time as social mobility experts are warning that the shift to online learning could severely hold back some students (Hall & Batty, 2020). Students’ feedback on their experiences and challenges faced are critical to be considered to understand the stress students are negotiating currently. Mental health is a delicate yet dangerous and risky concern among students, especially in institutions of higher education. Efforts are being taken to address this concern during the COVID-19 pandemic (Kaslow et al., 2020). Hence, due to the sudden and forced isolation caused by the pandemic, all students, lecturers and universities have to find a fragile balance by synergizing efforts, resources and skills to ensure sustainability of effective online learning.

Until a vaccine is found, the need for social as well as physical distancing is here to stay. As claimed by Skidmore (2020), the “situation is more challenging than it sounds”. He further cited a 2017 study which asserted that online learning increases the possibility of students dropping out and negatively affects the academic progress. Hence, disregarding challenges faced by students, regardless of their socio-economic backgrounds, could lead to poor academic performance, and eventually student attrition at universities across the board.

## REFERENCES

- Arumugam, T (2020, April 19) COVID19: Education sector grapple with technology, virtual, online classrooms. News Straits Times. <https://www.nst.com.my/news/nation/2020/04/585687/covid19-education-sector-grapple-technology-virtual-online-classrooms>
- Bao, Wei. (2020). COVID -19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies*.
- Bates, Tony (2016). Online learning for beginners: 1. What is online learning? <https://www.tonybates.ca/2016/07/15/online-learning-for-beginners-1-what-is-online-learning/>. Retrieved on 10 June 2020.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- CNN-Indonesia. (2020). Sri Mulyani: Dampak virus corona berat ke perekonomian CNN Indonesia. Jakarta, Indonesia: CNN Indonesia.

- Chin, C. (2020, March 29). Learning mustn't stop with COVID-19. The Star  
<https://www.thestar.com.my/news/education/2020/03/29/learning-mustnt-stop-with-covid-19>
- Creswell, J. W. (2007). Qualitative inquiry and research design: Choosing among five approaches (2nd ed.). Thousand Oaks: CA: SageW.
- Creswell, J. W. (2012). Educational research: planning, conducting, and evaluating quantitative and qualitative research. Boston: Pearson Education, Inc.
- Cuaton, G. (2020). Philippines Higher Education Institutions in the time of COVID-19 Pandemic. *Revista Romaneasca Pentru Educatie Multidimensională*. <https://doi.org/10.18662/rrem/12.1sup2/247>
- Dumford, Amber D. & Miller, Angie L. (2018). Online learning in higher education: exploring advantages and disadvantages for engagement. *Journal of Computing in Higher Education*.
- Eldeeb, R., A. (2014). Students' perceptions to e-learning. IOSR Journal of Research & Method in Education, 4(3), 33-36.
- Girik Allo, Markus. (2020). Is the online learning good in the midst of COVID-19 Pandemic? The case of EFL learners. *Jurnal Sinestesia*, 10, 1-10.
- Hall, Rachel & Batty, David. (2020). I can't get motivated: the students struggling with online learning.  
<https://www.theguardian.com/education/2020/may/04/i-cant-get-motivated-the-students-struggling-with-online-learning>. Retrieved on 10 June 2020.
- Holmes, B., & Gardner, J. (2006). E-Learning: Concepts and Practice. London: SAGE Publications.
- Kaslow, N. J., Friis-Healy, E. A., Cattie, J. E., Cook, S. C., Crowell, A. L., Cullum, K. A., Del Rio, C., Marshall-Lee, E. D., LoPilato, A. M., VanderBroek-Stice, L., Ward, M. C., White, D. T., & Farber, E. W. (2020). Flattening the emotional distress curve: A behavioral health pandemic response strategy for COVID-19. *The American Psychologist*.  
<https://doi.org/10.1037/amp0000694>
- Keller, C., & Cernerd, L. (2002). Students' perceptions of e-learning in university education. *Journal of Educational Media*, 27, 1-2.
- Mamattah, R., Selorm (2016). Students' perceptions of e-Learning. (Master program Adult Learning and Global Change), Linköping University, Linköping.
- Matsunaga, S (2016) College Students' Perception of Online Learning: Knowledge Gain and Course Effectiveness. *The Online Journal of Distance Education and e-learning*, 4, 20-30.
- Mislinawati, V., M., & Nurmasiyah. (2018). Students' perceptions on the implementation of e-learning: Helpful or unhelpful? Paper presented at the 6th South East Asia Design Research International Conference.
- Montrieux, H., Vanderlinde, R., Schellens, T., & De Marez, L. (2015). Teaching and learning with mobile technology: A qualitative explorative study about the introduction of tablet devices in secondary education. *PLoS ONE*.  
<https://doi.org/10.1371/journal.pone.0144008>
- Popovici, A., & Mironov, C. (2014). Students' perception on using eLearning technologies. *Procedia - Social and Behavioral Sciences*, 180, 1514 – 1519.
- Rajab, M. (2020). Pendidikan di tengah pusaran wabah corona detikNews. Jakarta: detikNews.
- Rasheed, Rasheed Abubakar, Kamsin, Amirrudin, Abdullah, Nor Aniza. (2020). Challenges in the online component of blended learning: A systematic review. *Computers and Education*
- Sahin, I., & Shelley, M. (2008). Considering students' perceptions: The distance education student satisfaction model. *Educational Technology & Society*, 11(3), 216-223.
- Smart, K., L., & Cappel, J. (2006). Students' perceptions of online learning: A comparative study. *Journal of information technology education*, 5, 201-219.
- UNESCO. (2020, May 25). COVID-19 educational disruption and response . Retrieved from <https://en.unesco.org/themes/education-emergencies/coronavirus-school-closures> Google Scholar
- Skidmore, Chris. (2020). If universities shift online, we risk more poorer students dropping out.  
<https://www.theguardian.com/education/2020/may/04/if-universities-shift-online-we-risk-more-poorer-students-dropping-out>. Retrieved on 10 June 2020.
- Vickers, R., Field, J., & Melakoski, C. (2020). Media Culture 2020: Collaborative Teaching and Blended Learning Using Social Media and Cloud-Based Technologies. *Contemporary Educational Technology*. <https://doi.org/10.30935/cedtech/613>

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