

Factors Hindering Effective Online Learning among Undergraduate Office Administration Education Students

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ABSTRACT

Online learning refers to instructional activities conducted through digital networks where interaction, content delivery, and evaluation are mediated by technology. In the implementation of online learning, it is not free from obstacles faced. Obstacles to online learning are various obstacles or difficulties experienced by students, lecturers, and related parties in the teaching and learning process conducted online. The purpose of this study is to determine how the obstacles to online learning of students of the Office Administration Education Undergraduate study program, Faculty of Social Sciences and Law, Makassar State University. The type of research used in this study is descriptive qualitative research and data collection techniques used are observation, interviews, and documentation techniques, then analyzed by reduction, presentation, and verification. Indicators used in this study are management and implementation of learning, communicative teaching and learning process, student responses, learning activities, and learning outcomes. The results of the study indicate that the Analysis of Obstacles to Online Learning of Students of the Office Administration Education Undergraduate Study Program, Faculty of Social Sciences and Law, Makassar State University is in the fairly good category. It is shown in the aspects of management and implementation of learning, which have been running but still encounter obstacles including media, and internet network disruptions. In the communicative teaching and learning process, it can be considered adequate, as reflected in the interaction between learning parties has been implemented but has not run optimally. Student responses show a tendency to decrease learning motivation due to unsupportive environmental situations and conditions. Learning activities are less effective due to limited direct supervision and monotonous routines. Meanwhile, learning outcomes are not optimal due to obstacles in understanding the material and limited feedback received. Thus, overall, the Analysis of Obstacles to Online Learning for Students of the Undergraduate Study Program in Office Administration Education, Faculty of Social Sciences and Law, Makassar State University has run quite well, although improvements are still needed in several aspects.

Keywords: online learning, learning barriers, learning effectiveness, higher education, qualitative study

INTRODUCTION

Technological developments and the role of globalization have had a significant impact on the world, especially on education in Indonesia. Online learning has experienced a rapid increase, especially during the COVID-19 outbreak. The transition from offline to online learning has also occurred in Indonesia, to prevent and break the chain of the COVID-19 virus. During the COVID-19 pandemic, government policies encouraged restrictions on physical activities, leading educational institutions to shift rapidly toward online learning systems. This government policy forced educational institutions throughout Indonesia to be able to adapt to the situation. Online learning is a solution provided by the government and is the main choice

for the continuity of the teaching and learning process. Makassar State University also implemented online learning, especially for undergraduate students of Office Administration Education, which was also affected by this change.

Online learning activities are a series of teaching and learning activities that take place virtually, utilizing the internet and technological devices as the primary means. "E-learning activities, or dare learning, create a change in the situation compared to engaging learning for students. Previously, lectures were conducted face-to-face, and this naturally requires students to adapt when they must attend lectures online." (Ali et al., 2004; Herwin et al., 2022; Zhao et al., 2023). Online learning offers efficiencies in its implementation, such as flexibility in time and the ability to access materials from anywhere. Initially, online learning was deemed appropriate during the pandemic. "Many consider this learning system to be the best way to protect and protect students, teachers, and staff from the threat of the Covid-19 virus." (Haerul et al., 2021; Masry-Herzallah & Dor-Haim, 2023; Muhibbin et al., 2022; Peng et al., 2022). However, not all students can adapt quickly to changes in the online learning system.

Learning obstacles are also not free from this, both technical and non-technical (Akib et al., 2021; Hasim & Yusof, 2023; Landrum, 2021) technical constraints regarding internet data quotas, difficulties in understanding online learning and being more interested in learning in class, as well as a lack of motivation from teachers during online learning. Meanwhile, according to Jacobs et al., (2005); Niswaty et al., (2021); Vettriselvan et al., (2024). Transforming virtual education: Advanced strategies for quality assurance in online and distance learning. Obstacles faced by students and lecturers in online learning include the availability of internet quota, unstable networks, and supporting tools such as gadgets and laptops (Conrad, 2022; Marlena et al., 2022; Surahman, 2020)

Based on the results of initial observations through direct interviews with 1 Office Administration Education student, it was found that there are several courses that implement online and offline learning or commonly called blended learning with the division of lecture methods 70% offline and 30% online, in line with this, causing various obstacles due to the implementation of the learning system. As mentioned, the obstacles include an unstable network. This condition has a negative impact because the network connection is the main vital tool in the continuity of the online learning process. Poor network connections make lecturers' explanations unclear and Difficulty in accessing learning. This then makes it difficult for students to understand what is being discussed, especially since the absorption capacity of the human brain varies so that the effectiveness of learning is far from successful. The next negative impact is the delivery of material only using PDF files without being accompanied by direct explanations by the lecturer, the lack of interaction between lecturers and students. The symptoms arising from the negative impacts of this learning process trigger delays in mastering the knowledge learned. Most students also prefer offline learning to online learning. Therefore, an in-depth analysis of the implementation of online learning is needed to identify the obstacles. The results of this analysis can then potentially serve as a basis for maximizing student learning processes and outcomes.

METHODS

This research used a descriptive qualitative approach. Data were collected through interviews, observation, and documentation. Data validity was ensured through triangulation and member checking. Data analysis followed reduction, presentation, and verification stages. The descriptive approach helps researchers gain a deeper understanding of the meaning of the

phenomena being studied. Furthermore, descriptive qualitative research allows researchers to explore the results obtained and provide a more comprehensive picture of the situation among students in the undergraduate program PAP FIS-H UNM. In the next stage, data was collected using observation, in-depth interviews, and documentation. Data validity was maintained through triangulation of sources, techniques, and time, as well as member checking. Data analysis followed the Miles & Huberman model: data collection, data reduction, data presentation, and conclusion drawing/verification.

The purpose of this study was to determine the obstacles to online learning for students in the undergraduate program PAP FIS-H UNM. measured based on five main indicators, namely: (1) Management and Implementation of Learning, (2) Communicative Teaching and Learning Process, (3) Student Response, (4) Learning Activities, (5) Learning Outcomes. These five indicators are used as a basis for assessing the obstacles to online learning for students in the PAP FIS-H UNM undergraduate program.

The research implementation stages began with the preparation and implementation of field observations, followed by collecting primary data through interviews and direct observation. Secondary data collection included screenshots of online lectures, online lecture assignments, and documentation in the form of photographs during the research. Furthermore, this research also utilized technological devices such as digital cameras and recording devices to document the data. To ensure the validity of the data obtained, source triangulation, technical triangulation, and verification through a member check process were used. In this case, the interview results were returned to the informant to avoid discrepancies in the answers given by the informant.

RESULT AND DISCUSSION

Learning Management and Implementation

Learning management and implementation is a systematic process of designing, organizing, and implementing learning activities. This process aims to achieve optimal learning outcomes.

Interview data indicate that five informants from the Office Administration Education Study Program, it can be concluded that online learning still faces challenges, particularly in technical aspects such as unstable internet connections and frequent disruptions to the Learning Media System (LMS). This situation results in delayed access to materials and disrupted learning interactions. Furthermore, some teaching materials are deemed outdated and irrelevant to the current curriculum. However, most students do not experience difficulties in managing their own study time. The learning process is considered more effective when lecturers deliver material in a structured, communicative, and responsive manner, as this can increase student motivation and active participation in online learning activities.

Empirical findings show that from the management of the implementation of online learning among students of the Office Administration Education Program, it can be concluded that the learning process generally runs according to schedule, supported by digital platforms such as the LMS and presentation media like PowerPoint and learning videos. Despite the structured delivery of material, student engagement remains relatively low, especially when interaction with lecturers is limited. The main obstacles observed were unstable internet connections and disruptions to the LMS system, which hampered access to materials and the assignment submission process. However, several lecturers have attempted to create a more

communicative and enjoyable learning environment through non-monotonous material delivery and consistent feedback, which has positively impacted student motivation and participation in online learning.

Good learning management and implementation must be based on student needs and consider the availability of facilities, infrastructure, and access to technology that supports the teaching and learning process. Research has found that online learning still faces several obstacles, particularly in terms of the availability and access to teaching materials. The mismatch between the material presented and students' actual needs and the applicable curriculum is a major issue. During independent learning, students often encounter distractions, both from their surroundings and from difficulties understanding the material without direct guidance. Although the material is generally presented clearly and structured, technical challenges such as unstable internet connections remain a significant obstacle. Student response to learning media is highly dependent on the quality of communication and feedback provided. When interactions run smoothly, students tend to demonstrate enthusiasm and active participation in the online learning process.

"The management and implementation of bold learning planning must be designed systematically so that learning activities can run effectively" (Nia et al., 2023; Nuryanti et al., 2021; Zhang et al., 2023). Good planning includes mapping student learning needs, determining appropriate learning methods and media, and adapting to the conditions of available facilities and infrastructure. In addition, the implementation of planning needs to involve related parties, including study program managers, teaching staff, and students, so that learning objectives can be achieved optimally and emerging obstacles can be minimized. Based on this theory, the management and implementation of bold learning are two aspects that greatly determine the success of the learning process. A mature and systematic planning stage will have a direct impact on the smoothness of learning. The success of this management is influenced by the availability of accurate data, the selection of appropriate strategies, methods, and media, and the involvement of all related parties. Meanwhile, implementation that involves active coordination between organizers, lecturers, and students will strengthen the achievement of learning objectives and minimize potential obstacles.

Communicative Teaching and Learning Process

A communicative learning process is a learning approach that emphasizes active, two-way interaction between students and educators, in this case, lecturers. In this process, communication is not one-way but open, participatory, and allows for the exchange of ideas, opinions, and clarification on the material being studied.

Based on interviews with five informants, it was found that the implementation of online learning has provided space for student participation, especially when lecturers deliver material in an engaging manner and open interactive discussion forums. Most students assessed that lecturers' responses to questions were quite good and helped improve understanding, although there were still shortcomings in providing consistent feedback. The main obstacles faced by students included internet network disruptions, incompatibility with learning platforms, and low confidence in asking questions. The effectiveness of online learning is greatly influenced by the quality of the material, ease of access to learning media, and the lecturer's ability to facilitate interaction during the learning process.

Based on observations, online learning has generally been implemented according to schedule and uses media that support the learning process, such as an LMS and digital presentations. Lecturers deliver material in a structured manner and utilize lecture and online discussion methods. However, the implementation of learning is not without various

obstacles. These obstacles include unstable internet connections and learning systems that are difficult to access at certain times. Student interaction in learning forums remains limited, especially when lecturer supervision is minimal or when the media used is inadequate. A conducive learning environment and optimal technical support have been proven to increase student focus and engagement, leading to communicative teaching and learning.

The initial stage of implementing online learning focuses on establishing a communicative teaching and learning process. This process must be designed in such a way that the interaction between participants and instructors is effective. Research has found that the communicative teaching and learning process in online learning is significantly influenced by the quality of two-way interaction between instructors and students. Students tend to be more active in discussions when given triggering questions, engaging topics, and the opportunity to express their opinions openly. Clear and concise learning media such as PowerPoint presentations and quizzes are also considered helpful in maintaining student focus and facilitating understanding of the material. However, the communicative teaching and learning process still faces several obstacles, such as limited social interaction and technical issues such as unstable internet connections. These obstacles often disrupt smooth communication and comprehensive understanding of the material. Furthermore, the speed and consistency of feedback provided during online learning are crucial factors; rapid responses and detailed explanations have been shown to improve student understanding, while a lack of consistent feedback can weaken interaction in online learning.

The findings demonstrate that students value opportunities for discussion and active participation during online classes. Nevertheless, interaction remains limited because many students hesitate to ask questions and lecturers do not always provide immediate feedback. This finding suggests that the challenge is not merely technological but also pedagogical. The effectiveness of online learning depends on how lecturers create interactive learning environments that encourage student engagement. This result supports the argument of (Blieck, 2019; Ice, 2023; Masry-Herzallah & Dor-Haim, 2023) who emphasizes that social presence and timely feedback are essential for sustaining student participation in online learning environments.

Student Response

Student response is a crucial indicator in assessing the effectiveness of learning management and implementation. This response reflects students' level of understanding, engagement, and attitude toward the ongoing learning process. In the context of online learning, student responses can be seen through participation in discussions, active participation in answering questions, submission of assignments, and interaction in learning forums.

Based on interviews with five informants, it can be concluded that online learning still faces various challenges that impact student participation and learning effectiveness. The main obstacles identified include unstable internet connections, the use of monotonous learning methods, and limited supervision from lecturers, which leads to students' lack of focus and distraction. Environmental factors also significantly influence learning, especially for students learning from home in unfavorable conditions. Furthermore, low self-confidence, the complexity of the learning platform, and technical glitches such as unclear lecturer voices also hinder understanding the material. Although some students are active in discussion forums, the lack of comfort and adequate learning support remains a major inhibiting factor.

Observations indicate that online learning has been implemented using digital media such as the Learning Management System (LMS) and online presentations, and has been scheduled

according to plan. Lecturers deliver material using lecture and discussion methods, but the effectiveness of implementation is often hampered by technical obstacles, such as unstable internet connections and problems with student devices. Furthermore, a lack of student engagement is also evident when there is no direct supervision, especially when cameras are disabled or the learning environment is not conducive. Interaction during online learning remains limited, and student participation tends to be passive if not supported by a communicative learning approach. Therefore, a conducive learning environment significantly influences student responses in online learning.

Student responses to online learning are a crucial aspect that reflects their engagement, understanding, and satisfaction with the learning process. Research has found that student responses during online learning vary and are influenced by various internal and external factors. Students tend to be more responsive and active when learning takes place using engaging, interactive methods and at an appropriate duration. However, if the learning process is monotonous, too long, or lacks supervision, student participation tends to decline. Lack of self-confidence, drowsiness, and boredom also contribute to student engagement in discussions and Q&A forums. Learning environments with sound or audio interference, inadequate devices, and noise at home also impact student responses. A non-conductive learning environment can easily lead to distractions, leading to passive and slow responses. Conversely, when students are in a comfortable, distraction-free environment supported by adequate technology, their responses to online learning are more positive, focused, and productive.

Student responses to online learning are closely related to the level of self-motivation, the quality of comments, the involvement of the learning community, and student initiative. Thus, the success of online learning in encouraging positive student responses is greatly influenced by interactive learning design, adequate technical support, and a conducive learning environment. Based on this theory, student responses in online learning are influenced by two factors. First, internal factors include student interest, motivation, satisfaction, interest, self-confidence, and initiative, while external factors include interactive learning design, the quality of interaction and feedback, adequate technical support, and a conducive learning environment. When these factors are met, positive student responses will increase so that they are more active, focused, and involved in the online learning process. (Ali et al., 2004; Herwin et al., 2022; Landrum, 2020)

Learning Activities

Learning activities encompass all forms of student involvement in the process of acquiring knowledge, skills, and attitudes through interactions with learning materials, educators, and the learning environment. In online learning, learning activities are an important indicator for assessing the extent to which students are actively engaged, whether through discussion forums, individual or group assignments, quizzes, and interactions via digital platforms.

Based on interviews with five informants, it can be concluded that students generally have good time management skills and complete assignments independently during online learning. However, learning effectiveness is still affected by several obstacles, including unfavorable environmental conditions, health factors, and less-than-ideal time allocation when assignments are given with tight deadlines. Student participation in online discussions varies; some demonstrate active engagement, while others are passive due to monotonous learning methods, minimal motivation, and a lack of feedback from lecturers. Other obstacles identified include low group contribution in collaborative work and lectures that exceed time limits, which impact student focus and engagement.

Observations indicate that online learning has been implemented through various digital media with structured delivery methods, such as lectures and presentations. However, student engagement in the learning process is still affected by various technical and non-technical obstacles. Some students appear passive, especially when two-way interaction is poorly facilitated by lecturers or when supervision is not optimal, such as when cameras are turned off. Network disruptions, inadequate devices, and noisy learning environments are factors that hinder optimal material absorption. Nevertheless, lecturers' efforts to create a fun and interactive learning environment can encourage increased student motivation and participation in the online learning process.

Learning activities in online learning are an important aspect that reflects student involvement, independence, and responsibility in the ongoing learning process. These activities can be seen in students' participation in completing assignments, attending online lectures, participating in discussion forums, and utilizing available learning media. Research has found that student learning activities in online learning show diverse tendencies. Some students are able to manage their time fairly well in completing assignments, but this ability is greatly influenced by their understanding of the material presented. Some students stated that they were active in discussions, quizzes, and group work, while others admitted that their participation in discussion forums was still low and tended to be passive. Environmental factors such as noise, crowded home environments, and physical conditions such as fatigue or poor health often disrupt learning focus. Furthermore, the lack of group participation, monotonous learning methods, and lack of feedback from lecturers are obstacles that reduce student motivation and engagement.

Student learning activities in online learning can increase when learning is designed to be flexible and supports independent learning. However, activities can decrease if students face technical constraints, lack of interaction, and limited feedback from teachers." Based on this theory, student learning activities in online learning are influenced by a combination of internal and external factors. Internal factors include student motivation, discipline, independence, and interest, while external factors include supportive learning design, quality of interaction with teachers, consistent feedback, technical support, and a conducive learning environment. When these factors are met, students' learning activities will increase so that they are more active, focused, and involved in the online learning process (Ali et al., 2004; Fang et al., 2023; Zakiah et al., 2022).

Learning Outcomes

Learning outcomes are the gains achieved after undergoing the learning process. These learning outcomes encompass cognitive (knowledge), affective (attitude), and psychomotor (skills). Learning outcomes reflect students' level of understanding, critical thinking skills, and mastery of competencies in the knowledge they have learned.

Based on interviews with five informants, Online learning is flexible because I can access materials anytime and study according to my own schedule. However, when the internet connection is unstable, it becomes difficult to understand the lecturer's explanation online learning offers several benefits, particularly flexibility in scheduling and convenient access to learning resources, which support students in developing independent learning habits. Despite these advantages, its implementation is still challenged by a number of issues, such as limited interaction between lecturers and students, insufficient academic supervision, the predominance of one-way instructional approaches, and inadequate feedback mechanisms. Technical problems, especially unstable internet connectivity, further affect students' ability to comprehend course materials effectively. Student satisfaction tends to increase when learning

materials are delivered in a clear and understandable manner, supported by sufficient references, and accompanied by flexible study arrangements. Nevertheless, several participants emphasized that online learning is not yet able to fully substitute face-to-face instruction, particularly because direct classroom settings provide greater opportunities for self-expression, active participation, and meaningful discussion.

Observations indicate that online learning has been implemented through the use of digital platforms and supporting learning media, such as LMS, visual presentations, and online discussion forums. Lecturers deliver material in a structured manner, but two-way interaction remains limited, and student participation is uneven. Technical obstacles such as network disruptions, inadequate devices, and a less-than-conducive learning environment often disrupt concentration and the smoothness of the learning process. Some students appear passive, especially when there is no discussion space or when the material is delivered monotonously. In general, the effectiveness of online learning implementation depends heavily on lecturer preparedness, clarity of delivery, time management, and adequate technical and environmental support.

Learning outcomes are the primary indicator for assessing the success of online learning. Learning outcomes serve as a benchmark for understanding material, achieving expected competencies, and achieving satisfaction with the learning process. Research has found that student learning outcomes in online learning vary widely. Some students benefit from the flexibility of online learning, which allows them to access materials at any time, engage in independent study, and adjust their study time as needed. Students who utilize learning resources effectively and maintain discipline tend to be satisfied with their learning outcomes. However, other students report that online learning is less than optimal in achieving learning objectives, primarily due to low interaction, minimal supervision from lecturers, and a lack of consistent feedback. This contributes to disparities in learning outcomes among students, with some students preferring face-to-face learning, which is perceived as more interactive and supports deeper understanding.

Learning outcomes in online learning are influenced by understanding the material, access to adequate learning facilities, and active student involvement in learning activities. Students who have good access to learning and are active in the learning process tend to achieve higher learning outcomes. Based on this theory, learning outcomes in online learning are influenced by understanding the material, motivation, discipline, and active student involvement in learning activities, adequate access and learning facilities, learning media, technical support, quality of interaction, and feedback provided during the learning process. If all these factors are optimally met, students will more easily understand the material, be active in learning activities, and have high learning motivation. (Jacobs et al., 2005; Tan, 2021; Zakiah et al., 2022).

The findings indicate that students encounter a range of obstacles in the online learning environment. One of the most common challenges is unstable internet connectivity, which often interrupts access to learning activities and course materials. In addition, limited interaction between students and lecturers, coupled with delayed feedback, tends to decrease student participation and engagement in the learning process. External factors, including environmental distractions at home or in surrounding learning spaces, further hinder students' ability to maintain focus during online classes. These results highlight that the effectiveness of online learning is shaped not only by technological infrastructure but also by pedagogical practices that support interaction, communication, and student engagement.

CONCLUSION

Referring to the results of this study, it can be concluded that online learning among students of the Office Administration Education Undergraduate Program at Makassar State University still faces several challenges, including unstable internet connectivity, disruptions in the Learning Management System (LMS), monotonous instructional methods, and limited two-way interaction between lecturers and students, which in turn reduce student motivation, concentration, and participation; however, online learning also offers advantages such as flexibility in time and easy access to learning materials that support independent learning, so its effectiveness largely depends on the lecturer's ability to deliver material clearly and interactively, provide consistent feedback, and ensure adequate technological support alongside a conducive learning environment in order to achieve optimal learning outcomes.

REFERENCES

- Akib, H., Amran, A., & Darwis, M. (2021). Effectiveness of Online Learning Implementation. *Jurnal Office*, 7(1), 41–46.
- Ali, N. S., Hodson-Carlton, K., & Ryan, M. (2004). *Students' perceptions of online learning: implications for teaching*. 29(3), 111–115. <https://doi.org/10.1097/00006223-200405000-00009>
- Blieck, Y. (2019). Consensus among stakeholders about success factors and indicators for quality of online and blended learning in adult education: a Delphi study. *Studies in Continuing Education*, 41(1), 36–60. <https://doi.org/10.1080/0158037X.2018.1457023>
- Conrad, C. (2022). How student perceptions about online learning difficulty influenced their satisfaction during Canada's Covid-19 response. *British Journal of Educational Technology*, 53(3), 534–557. <https://doi.org/10.1111/bjet.13206>
- Fang, S., Lu, Y., & Zhang, G. (2023). External and Internal Predictors of Student Satisfaction with Online Learning Achievement. *Online Learning*. <https://eric.ed.gov/?id=EJ1407927>
- Haerul, H., Agustang, A., Idhan, A. M., & Rifdan, R. (2021). Online Learning Challenges in School. *Jurnal Office*, 7(2), 215–224.
- Hasim, N., & Yusof, J. (2023). Online Learning Readiness and Satisfaction Among Undergraduate Students. In *Lecture Notes in Networks and Systems* (Vol. 573, pp. 469–480). https://doi.org/10.1007/978-3-031-20429-6_43
- Herwin, H., Fathurrohman, F., Wuryandani, W., & ... (2022). Evaluation of Structural and Measurement Models of Student Satisfaction in Online Learning. *International Journal of ...* <https://eric.ed.gov/?id=EJ1341084>
- Ice, P. (2023). SOCIAL PRESENCE AND STUDENT SUCCESS: Retention, Satisfaction, and Evolving Expectations. In *Social Presence in Online Learning: Multiple Perspectives on Practice and Research* (pp. 77–85). <https://doi.org/10.4324/9781003447023-11>
- Jacobs, J., Salas, A., Cameron, T., Naguwa, G., & Kasuya, R. (2005). *Implementing an online curriculum management database in a problem-based learning curriculum*. 80(9), 840–846. <https://doi.org/10.1097/00001888-200509000-00011>
- Landrum, B. (2020). Examining students' confidence to learn online, self-regulation skills and perceptions of satisfaction and usefulness of online classes. *Online Learning Journal*, 24(3), 128–146. <https://doi.org/10.24059/olj.v24i3.2066>

- Landrum, B. (2021). A class of one: Students' satisfaction with online learning. *Journal of Education for Business*, 96(2), 82–88. <https://doi.org/10.1080/08832323.2020.1757592>
- Marlena, N., Dwijayanti, R., & ... (2022). Online learning infrastructure: does it strengthen the effect of service quality on student satisfaction? *Jurnal Iqra'* <https://journal.iaimnumetrolampung.ac.id/index.php/ji/article/view/2032>
- Masry-Herzallah, A., & Dor-Haim, P. (2023). Higher education student satisfaction and success in online learning: An ecological perspective. *International Journal of Instruction*. <https://e-iji.net/ats/index.php/pub/article/view/49>
- Muhibbin, M. A., Wulandari, P. Y., & ... (2022). An exploration of student satisfaction with online learning: A systematic review. In *Jurnal Inovasi dan* [pdfs.semanticscholar.org. https://pdfs.semanticscholar.org/f5af/295c8d61cc3bd8e03ebc5a313d0d5c873dab.pdf](https://pdfs.semanticscholar.org/f5af/295c8d61cc3bd8e03ebc5a313d0d5c873dab.pdf)
- Nia, H. S., Marôco, J., She, L., Fomani, F. K., & ... (2023). Student satisfaction and academic efficacy during online learning with the mediating effect of student engagement: A multi-country study. In *Plos one*. [journals.plos.org. https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0285315](https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0285315)
- Niswaty, R., Reski, S. H. A., & Nasrullah Muh. Nasrullah, H. (2021). Analysis of Student Learning Activity During Online Learning Department of Office Automation and Governance at SMK Negeri 1 Makassar. *FISIP, University of Jember Presented the International Conference and Call Papers 2021*, 251–265.
- Nuryanti, Y., Hutagalung, D., Nadeak, M., Abadiyah, S., & Novitasari, D. (2021). Understanding the links between system quality, information quality, service quality, and user satisfaction in the context of online learning. *International Journal of Social and Management Studies*, 2(4), 54–64.
- Peng, Y., Liu, E., Peng, S., Chen, Q., Li, D., & Lian, D. (2022). Using artificial intelligence technology to fight COVID-19: a review. In *Artificial intelligence review*. Springer. <https://doi.org/10.1007/s10462-021-10106-z>
- Surahman, E. (2020). Student Satisfaction toward Quality of Online Learning in Indonesian Higher Education During the Covid-19 Pandemic. ... *6th International Conference on Education and* <https://ieeexplore.ieee.org/abstract/document/9276630/>
- Tan, K. H. (2021). Higher education students' online instruction perceptions: A quality virtual learning environment. In *Sustainability (Switzerland)* (Vol. 13, Number 19). <https://doi.org/10.3390/su131910840>
- Vettriselvan, R., Velmurugan, P. R., Deepan, A., Jaiswani, G., & Durgarani, M. (2024). *Transforming virtual education: Advanced strategies for quality assurance in online and distance learning* (pp. 563–580). IGI Global. <https://doi.org/10.4018/979-8-3693-6915-9.ch024>
- Zakiah, L., Marini, A., & Nafiah, M. (2022). Implementation of Character Education Policies on Online Learning in Elementary Schools. *Jurnal Ad'ministrare*, 9(1), 19–28.
- Zhang, Y., Huang, J., Hussain, S., & Dong, Y. (2023). Investigating the Impact of the Community of Inquiry Presence on Online Learning Satisfaction: A Chinese College Student Perspective. *Psychology Research and Behavior Management*, Volume 16, 1883–1896. <https://doi.org/10.2147/PRBM.S409229>
- Zhao, Y. (Audrey), Bandyopadhyay, S., & Bandyopadhyay, K. (2023). Learning Complex Technology Online: Effect of Challenge and Hindrance Techno-stressors on Student Satisfaction and Retention. *Communications of the Association for Information Systems*, 52(1), 587–608. <https://doi.org/10.17705/1CAIS.05225>