



Evaluation of the Online Learning System during the COVID-19 Pandemic: A Systematic literature

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ABSTRACT

This research was motivated some time ago due to the COVID-19 outbreak that hit the world at the end of 2019. The government issued a new regulation so that learning can be done from home. Seeing these conditions, the teacher must be creative and interactive in delivering learning. This study aims to look at the evaluation of online learning during the covid 19 pandemic. This study uses a systematic literature review, while the data used is secondary data. The data is obtained not from direct observation but research results carried out by researchers earlier. Secondary data from reputable journals totaling 494 titles were then identified and found specifically discussing the evaluation of online learning in as many as 30 titles. The results showed that online learning planning requires special preparation by utilizing various important aspects, one of which is using information technology in learning. The learning process is carried out virtually by utilizing various learning support applications. Still, in the learning process, many obstacles hinder learning from being less than optimal because of internet connection problems, demographic conditions, and readjustment of learning conditions that were originally face-to-face to online. The learning outputs obtained by students get good results, as evidenced by learning outcomes that meet the graduation requirements.

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1. Introduction

In 2019, the world was shocked by the emergence of a new virus, the coronavirus, or COVID-19. This virus first appeared in Wuhan, a city in China (Chibisa & Mutambara, 2022). Corona Virus is an infectious disease that can spread directly or indirectly (Alqabbani et al., 2020). This condition attacks the respiratory system, nose, throat, and lungs. COVID-19 has brought about many changes, making all sectors of the life of a nation's society uncertain, including changes in the education sector (Khalil et al., 2020). In 2020 at the end of April, UNESCO stated that 186 countries had closed the face-to-face

education process (Muthuprasad et al., 2021). One of the efforts that can be made so that the education process can still be carried out is online learning. Online learning is a solution to carry out learning that has been stopped. In practice, it is hoped that the process skills can positively impact student learning outcomes. The process skills in question must be in the form of students' independence in carrying out tasks and instructions given by the teacher. The process skills arise when there is a change in student behavior in online learning, such as responsibility and self-confidence.

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Online learning is done by not meeting face to face but using a platform that can help the teaching and learning process that is carried out even though it is far away (Iwanaga et al., 2021). Online learning is said to be effective if there is a reciprocal relationship to create collaborative learning activities (Campillo-Ferrer & Miralles-Martínez, 2021). Online learning for students with middle to lower economic conditions is one of the obstacles in implementing learning because online learning requires facilities such as android phones or laptops and also has to incur additional costs for internet access. Although online learning has its drawbacks, many research results say that online learning is effective to implement. Research (Coman et al., 2020) argues that online learning is as good or even better than face-to-face learning. In addition, online learning positively impacts the character development of student's independent study habits (Umar & Ko, 2022). Online learning also provides ample space and time for students to develop their knowledge (Tsegay et al., 2022). Online learning can provide effective learning methods, such as making it easier for educators to monitor student activity. The online learning strategy also provides convenience for students because they can access it easily through media-based learning (Sefriani et al., 2021). The ease these students can influence learning outcomes.

Seeing this condition, it seems necessary to review the evaluation of the Online Learning System during the COVID-19 pandemic, which has been implemented. The word evaluation comes from English evaluation, which contains the basic word value "value." The word value in terms of evaluation relates to the belief that something is good or bad, right or wrong, strong or weak, enough or not enough. Evaluation is a process of considering a thing or symptom using qualitative criteria, for example, good or bad. Evaluation is also defined as an activity planned to determine an object's state using instruments, and the results are compared with benchmarks to obtain conclusions (Patton, 2021). Evaluation of the learning outcomes achieved by students and the teaching and learning process contains an assessment of learning outcomes, or the learning process contains an assessment of the learning outcomes or learning process, to what extent both are considered good (Bulkani et al., 2022). Learning evaluation is the activity of introducing, guaranteeing, and determining the quality of education for various components of education at every path, level, and type of education as a form of accountability for the administration of education (Fatchurahman, Setiawan, and Karyanti, 2022). The purpose of the learning evaluation is to determine the effectiveness and efficiency of the learning system,

both concerning the objectives, materials, methods, media, learning resources, and the environment.

Learning effectiveness measures the successful interaction between students and teachers in educational situations to achieve learning objectives (Toquero, 2020). learning effectiveness is usually measured by the level of attainment of the learner. Several important aspects can be used to describe the effectiveness of learning, namely: (1) accuracy of mastery of learned behavior, (2) speed of performance, (3) rate of transfer of learning, (4) retention rate of what is learned. Is this online learning system effective for improving learning outcomes or even ineffective in decreasing learning outcomes? Therefore, based on the background of the problem, the researchers are interested in conducting a literature study on the Evaluation of Online Learning Systems During the COVID-19 Pandemic.

2. Methods

The type of research used in this study is a literature study. The literature review is a written summary of articles from journals, books, and documents that describe theories and information both past and present, organizing the literature into topics and documents needed (Kurnia et al., 2022). Researchers use this type of research to obtain data and information by examining written sources such as scientific journals and proceedings relevant to the title to be studied. After getting the data, the researcher will interpret the data source to obtain facts about the study that will be discussed. The procedure in this study went through several stages: Organize, Synthesize, and Identity (Grechushkina, 2021).

2.1 Inclusion and exclusion criteria

Article selection is made systematically according to research needs. Inappropriate or duplicate articles will be removed. From the analysis carried out by the researcher, 494 articles were obtained, but they were filtered again to get articles that matched research needs. Article selection is carried out by considering the inclusion and exclusion criteria.

Table 1. Criteria for selecting relevant articles seen from the inclusion and exclusion criteria

Inclusion	Exclusion
Empirical studies in peer-reviewed journals	Journals that are not peer-reviewed
Empirical studies conducted between 2020-2022	Empirical studies before 2020
Sinta, WOS, and Scopus indexed journals	Indexed journals other than Sinta, WOS, and Scopus
Focus on the online learning system	Non-online learning system
Regarding learning in the time of covid-19	Empirical articles not related to learning in the time of covid-19

2.2 Database and search terms

Strategy in determining the database using links Scopus, Wos, Sinta, Google Scholar, journal websites, search engines Google, Yahoo, Bing. In the survey results, researchers look for the title of research articles relevant to evaluating the learning system during the covid-19 pandemic. The terms used to search the data are by using the following keywords:

Table 2. keywords

Code	Keyword	Criteria
A1	Learning evaluation	Writing that discusses learning evaluation, especially during the covid-19 pandemic
A2	Learning system	An article that examines the learning system implemented during the covid-19 pandemic
A3	Online learning	Writing that presents learning carried out online
A4	Covid-19	The discussion of covid-19 is related to education, especially learning evaluation

The key code is specified so that this research obtains data according to the focus of the research. Specifying the search will give the researcher certainty about the data sought. String and searching for the right data in a systematic review is very important because it will eventually be used to extract items that fit the appropriate scope of research.

2.3 Data analysis

The data analysis carried out in this study emphasizes the literature that examines online learning during the covid pandemic. The data analysis process was carried out to find an evaluation of online learning that had been carried out during the covid pandemic.

Table 1. Table 1 title

No	title	Author	Method	country	Key Word	Code
1	Barriers of Online Education in the New Normal: Teachers' Perspectives	(Sumalinog, 2022)	qualitative	Filipino	Online learning	A3
2	Teachers' Self-Efficacy and Online Teaching during COVID-19 Pandemic in Qatari Governmental Schools	(Allouh et al., 2021)	quantitative	Qatar	Covid-19	A4
3	Quality, Effectiveness, and Outcome of Blended Learning in Dental Education during the COVID Pandemic: Prospects of a Post-Pandemic Implementation	(Al-Fodeh et al., 2021)	cross-sectional exploratory study	Jordan	Learning evaluation	A1
4	State University Students' Learning Locations and Remote Learning Challenges During the COVID-19 Pandemic	(Jaca, 2022)	Mixed method	Filipino	Online learning	A3
5	Online Learning Effectiveness During the COVID-19 Pandemic: A Case Study of Saudi Universities	(Mahyoob, 2021)	Case Study	Arab Saudi	Learning evaluation	A1
6	Using Genially Games for Enhancing EFL Reading and Writing Skills in Online Education	(Castillo-Cuesta, 2022)	experiment	Ecuador	Online learning	A3
7	Adopting Virtual Classes during the COVID-19 Lockdown: Interrogating New Approaches to Teaching and the Exclusion of Learners in Rural Settings	(Nhongo & Siziba, 2022)	qualitative	South Africa	Learning system	A2
8	Filipino Teachers' Attitudes towards Distance Learning during the Covid-19 Pandemic	(Bautista et al., 2022)	quantitative	Filipino	Online learning	A3

Papers related to keywords are analyzed systematically with the following flow:

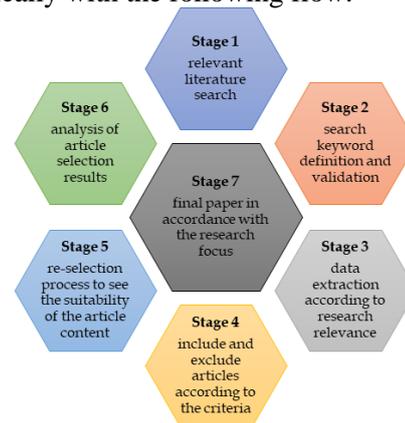


Figure. Data analysis flow

3. Results

From the results of the analysis of articles, as many as 494 articles from various sources, 221 articles were found about Covid-19. Seventy-five articles discuss the learning system, 135 articles discuss online learning, and 63 article titles discuss learning evaluation. After being classified and analyzed from 494 articles, it was found that many general and non-specific studies on the evaluation of online learning were found. It was found that 464 articles were not following the research discussion, and 30 articles were following the discussion of this research. These 30 articles specifically examine the evaluation of online learning during the COVID-19 pandemic, and the following are the results of a systematic mapping study of the 30 articles in question.

9	Exploring How COVID-19 Shapes the Professional Identities of South African Student Teachers	(Arnold & Groenewald, 2022)	Descriptive case study	South Africa	Learning evaluation	A1
10	Glimpses of Teaching in the New Normal: Changes, Challenges, and Chances	(Mananay et al., 2022)	Narrative qualitative	Filipino	Learning evaluation	A1
11	The implementation and effectiveness of intergenerational learning during the COVID-19 pandemic: Evidence from China	(Lyu et al., 2020)	qualitative	China	Learning evaluation	A1
12	E-learning Outcomes during the COVID-19 Pandemic	(My et al., 2022)	quantitative	Vietnam	Learning evaluation	A1
13	The impact of coronavirus pandemic (COVID-19) on education: The role of virtual and remote laboratories in education	(Abumalloh et al., 2021)	quantitative	Arab Saudi	Learning evaluation	A1
14	Factors related to students' satisfaction with holding e-learning during the Covid-19 Pandemic based on the dimensions of e-learning	(Yekefallah et al., 2021)	Cross-sectional study	Iran	Learning evaluation	A1
15	Experience of e-learning and online assessment during the COVID-19 pandemic at the College of Medicine, Qassim University	(Elzainy et al., 2020)	descriptive cross-sectional study	Arab Saudi	Learning evaluation	A1
16	Students' perception and preference for online education in India during COVID -19 pandemic	(Muthuprasad et al., 2021)	Literature review	India	Learning system	A2
17	Perception towards online/blended learning at the time of Covid-19 Pandemic: an academic analytics in the Indian context	(Bordoloi et al., 2021)	Analytical approach	India	Learning system	A2
18	The Trend in Using Online Meeting Applications for Learning During the Period of Pandemic COVID-19: A Literature Review	(Pratama et al., 2020)	Literature review	Republic of Kazakhstan	Learning system	A2
19	E-Learning in Dental Schools in the Times of COVID-19: A Review and Analysis of an Educational Resource in Times of the COVID-19 Pandemic	(Chavarría-Bolaños et al., 2020)	Literature review	kostarika	Learning evaluation	A1
20	Evaluation of the effectiveness of EFL online teaching during the COVID-19 pandemic	(Zou et al., 2021)	Literature review	China	Learning evaluation	A1
21	Exploring the critical challenges and factors influencing the E-learning system usage during the COVID-19 pandemic	(Almaiah et al., 2022)	review of literature	jordania	Learning system	A2
22	Higher Education during the Pandemic: The Predictive Factors of Learning Effectiveness in COVID-19 Online Learning	(Tsang et al., 2021)	quantitative	Hongkong	Learning evaluation	A1
23	A Systematic Review of the Benefits and Challenges of Mobile Learning during the COVID-19 Pandemic	(Saikat et al., 2021)	Literature review	Malaysia	Online learning	A3
24	Teacher Online Informal Learning as a Means to Innovative Teaching During Home Quarantine in the COVID-19 Pandemic	(H. Yu et al., 2021)	quantitative	China	Learning evaluation	A1
25	The Effectiveness of the Blended Learning in Conservative Dentistry with Endodontics based on the Survey among 4th-Year Students during the COVID-19 pandemic	(Nijakowski et al., 2021)	quantitative	USA	Learning system	A2
26	Distance learning impact on the English language teaching during COVID-19	(Kamal et al., 2021)	survey	Rusia	Online learning	A3
27	The Effectiveness of Online Education during Covid 19 Pandemic—A Comparative Analysis between the Perceptions of Academic Students and High School Students from Romania	(Butnaru et al., 2021)	quantitative	Romania	Learning evaluation	A1
28	Transitioning to E-Learning during the COVID-19 pandemic: How have Higher Education Institutions responded to the challenge?	(Turnbull et al., 2021)	Literature review	Australia	Online learning	A3

29	The effects of gender, educational level, and personality on online learning outcomes during the COVID-19 pandemic	(Z. Yu, 2021)	Literature review	China	Learning evaluation	A1
30	Successful online learning factors in COVID-19 era: Study of Islamic higher education in West Papua, Indonesia	(Yudiawan et al., 2021)	quantitative	Indonesia	Learning evaluation	A1

The literature study results show that the article on online learning evaluation is dated from 2020 to 2022. The findings focus on the online learning evaluation process that is carried out. The evaluation process in this study refers to learning planning, learning processes, and learning outputs.

Lesson planning

Learning planning during the COVID-19 pandemic emphasizes the information technology aspect. Learning planning needs to integrate information technology components so that learning can be carried out properly. Student location is also an issue; students living in the suburbs are constrained by their unstable internet connection.

Implementation of learning

Implementing learning can be done well when educators combine teaching skills with the ability to master information technology well. Even in the country of Zimbabwe, utilizing various features such as WhatsApp social media, radio, and other social platforms. Information technology is vital so the learning process can be carried out properly. Constraints in implementing the learning process, namely the formation of behavior, are difficult to achieve because learning is carried out in a virtual space without direct face to face. Environmental conditions also have a big role in learning. The farther the environment is from internet access, the learning process will be constrained so that it cannot follow the learning smoothly. Controlling the learning process can be done by registering online attendance.

Learning output

The outline of the learning process can be carried out well. Still, some aspects cannot be conveyed optimally, namely attitude, so that learning is only result-oriented, and behavioral aspects cannot be controlled optimally

4. Discussion

As one of the main components of education, teachers need to increase their ability to present interesting and innovative learning to get satisfactory results. Online learning needs to pay attention to many aspects so that learning can be carried out properly. Findings in several countries, such as North Africa, show that new teachers tend to stop teaching during the COVID-19 pandemic because they do not have the support of the school. Seeing the problems, teachers need support from the government in implementing online learning. In several countries, it has been

shown that the government plays a large role so that the learning process can continue to be carried out by assisting in the form of internet quotas, online learning platforms, policies in online learning, and convenience in the implementation of learning. Teachers as educational innovators provide changes that can facilitate so that students have a passion for learning even though the learning process is online. The findings of several studies show that most students also agree with online learning, as suggested by research by (Al-Fodeh et al., 2021).

The family component is also an aspect that cannot be left behind. Families will provide material and moral support to students (Lyu et al., 2020). A vital aspect of online learning is conditioning online classes, how teachers design classes, and directing learning for students. In addition, a very influential component in online learning is the online learning infrastructure and the delivered content (Kurnia et al., 2022). The system must be easy to understand and implement so that students have no difficulty. To create these conditions, teachers must work hard because not all teachers understand an adequate information technology-based system. Many platforms are busy developing online learning platforms and making major improvements to make it easier to access online learning (Abumalloh et al., 2021).

It seems clear that online learning implemented in several countries shows that the learning process can be carried out well by paying attention to various aspects of online learning. Good online learning provides positive motivation for students who participate in learning activities (Aznam et al., 2021). Teachers as educators are also expected to be able to integrate blended learning with students. Blended learning allows students to accept learning more easily because there is a combination of learning received to minimize failure in learning. Judging from the lesson plan, educators can prepare for learning well, as evidenced by the readiness of various completeness of the learning process to be implemented. Judging from the process, it is clear that learning activities in the virtual classroom can run smoothly even though some results explain the obstacles to the learning process, namely demographic conditions and internet connections owned by different students. The output of online learning also gives satisfactory results with the acquisition of learning outcomes that are in line with expectations. However, several countries have their constraints looking at geographical conditions, and

the skills and technological advances developed in each country are still different.

5. Conclusion

The results of this study concluded that online learning that had been carried out during the covid-19 pandemic from the literature review results could be carried out properly. Several countries have implemented special policies related to the education process during the COVID-19 pandemic. The government and other institutions collaborate so the learning process can be carried out properly. Teachers as educators must be creative in creating learning that is easy to accept and easy for students to understand in the online learning that is carried out. In particular, information technology skills must be mastered well so as not to experience obstacles in the learning that is carried out. The main depth found in several countries refers to students' geographical conditions and the internet network's condition. So one of the suggestions that can be given in this study is that in every country, they must pay attention to the distribution of internet networks in each region so that students can follow learning even in areas far from the city.

Article Information Form

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Authors' Contribution

Babatunde Oladele: Methodology

Iin Nurbudiyani: Data curation, Investigation, Resources

Muhammad Jailani: Formal analysis, Validation, Visualization

Septia Nanda Putri: Writing – review & editing, Project administration

Muhammad Andi Setiawan: Software, Editing final version

Declaration of Conflict of Interest

The authors declare no conflict of interest: All authors affirm that there are no financial, personal, or professional relationships that could be perceived to influence the findings or interpretation of the results presented in this article.

Ethical Approval

This study was conducted in accordance with ethical standards: The research involving human participants was reviewed and approved by the Research Ethics Committee of Universitas Muhammadiyah Sampit. The approval number is 002/KEPK-FKIP/III/2023. All participants gave informed consent prior to participation.

References

Abumalloh, R. A., Asadi, S., Nilashi, M., Minaei-Bidgoli, B., Nayer, F. K., Samad, S., Mohd, S., & Ibrahim, O. (2021). The impact of coronavirus pandemic (COVID-19) on education: The role of virtual and

remote laboratories in education. *Technology in Society*, 67(September 2020).

<https://doi.org/10.1016/j.techsoc.2021.101728>

Al-Fodeh, R. S., Alwahadni, A. M. S., Abu Alhaija, E. S., Bani-Hani, T., Ali, K., Daher, S. O., & Daher, H. O. (2021). Quality, effectiveness and outcome of blended learning in dental education during the COVID pandemic: Prospects of a post-pandemic implementation. *Education Sciences*, 11(12).

<https://doi.org/10.3390/educsci11120810>

Allouh, A. M., Qadhi, S. M., Hasan, M. A., & Du, X. (2021). Teachers' self-efficacy and online teaching during COVID-19 pandemic in qatari governmental schools. *International Journal of Learning, Teaching and Educational Research*, 20(11), 17–41.

<https://doi.org/10.26803/IJLTER.20.11.2>

Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2022). Exploring the critical challenges and factors influencing the E-learning system usage during COVID-19 pandemic. *Education and Information Technologies*, 25, 5261–5280.

https://doi.org/10.1007/978-3-030-99000-8_16

Alqabbani, S., Almuwais, A., Benajiba, N., & Almoayad, F. (2020). Readiness towards emergency shifting to remote learning during COVID-19 pandemic among university instructors. In *E-Learning and Digital Media* (Vol. 18, Issue 5, pp. 460–479).

<https://doi.org/10.1177/2042753020981651>

Arnold, L., & Groenewald, E. (2022). Exploring How COVID-19 Shapes the Professional Identities of South African Student Teachers. *International Journal of Learning, Teaching and Educational Research*, 21(4), 292–315.

<https://doi.org/10.26803/ijlter.21.4.17>

Aznan, N., Perdana, R., Jumadi, J., Wiyatmo, Y., & Nurcahyo, H. (2021). Motivation and Satisfaction in Online Learning during Pandemic Covid-19: A Systematic Review. *International Journal of Evaluation and Research in Education (IJERE)*, 11(2), 753–762.

<https://doi.org/10.11591/ijere.v11i2.21961>

Bautista, A. P., Balibrea, D. M., & Bleza, D. G. (2022). Filipino Teachers' Attitudes towards Distance Learning during the Covid-19 Pandemic. *International Journal of Learning, Teaching and Educational Research*, 21(2), 232–250.

<https://doi.org/10.26803/ijlter.21.2.13>

Bordoloi, R., Das, P., & Das, K. (2021). Perception towards online/blended learning at the time of Covid-19 pandemic: an academic analytics in the Indian context. *Asian Association of Open Universities Journal*, 16(1), 41–60.

<https://doi.org/10.1108/AAOUJ-09-2020-0079>

Bulkani, B., Setiawan, M. A., & Wahidah, W. (2022). The discrepancy evaluation model in the implementation of online learning (on the basis of parents' perceptions). *The Education and Science Journal*, 24(2), 116–137. <https://doi.org/10.17853/1994-5639-2022-2-116-137>

Butnaru, G. I., Niță, V., Anichiti, A., & Brînză, G. (2021). The effectiveness of online education during covid 19 pandemic—a comparative analysis between the perceptions of academic students and high school

- students from romania. *Sustainability (Switzerland)*, 13(9). <https://doi.org/10.3390/su13095311>
- Campillo-Ferrer, J. M., & Miralles-Martínez, P. (2021). Effectiveness of the flipped classroom model on students' self-reported motivation and learning during the COVID-19 pandemic. *Humanities and Social Sciences Communications*, 8(1). <https://doi.org/10.1057/s41599-021-00860-4>
- Castillo-Cuesta, L. (2022). Using Genially Games for Enhancing EFL Reading and Writing Skills in Online Education. *International Journal of Learning, Teaching and Educational Research*, 21(1), 340–354. <https://doi.org/10.26803/ijlter.21.1.19>
- Chavarría-Bolaños, D., Gómez-Fernández, A., Dittel-Jiménez, C., & Montero-Aguilar, M. (2020). E-Learning in Dental Schools in the Times of COVID-19: A Review and Analysis of an Educational Resource in Times of the COVID-19 Pandemic. *Odovtos - International Journal of Dental Sciences*, 3(22), 207–224. <https://doi.org/10.15517/ijds.2020.41813>
- Chibisa, A., & Mutambara, D. (2022). Determinants of High School Learners' Continuous Use of Mobile Learning during the Covid-19 Pandemic. *International Journal of Learning, Teaching and Educational Research*, 21(3), 1–21. <https://doi.org/10.26803/ijlter.21.3.1>
- Coman, C., Țiru, L. G., Meseșan-Schmitz, L., Stanciu, C., & Bularca, M. C. (2020). Online teaching and learning in higher education during the coronavirus pandemic: Students' perspective. *Sustainability (Switzerland)*, 12(24), 1–22. <https://doi.org/10.3390/su122410367>
- Elzainy, A., El Sadik, A., & Al Abdulmonem, W. (2020). Experience of e-learning and online assessment during the COVID-19 pandemic at the College of Medicine, Qassim University. *Journal of Taibah University Medical Sciences*, 15(6), 456–462. <https://doi.org/10.1016/j.jtumed.2020.09.005>
- Fatchurahman, M., Setiawan, M. A., & Karyanti, K. (2022). Evaluation of the CSE-UCLA model on the performance of school counselor in Indonesia. *Perspektivy Nauki i Obrazovania – Perspectives of Science and Education*, 56(2), 561–572. <https://doi.org/10.32744/pse.2022.2.33>
- Grechushkina, N. V. (2021). Online course: Application models in the educational process. *Vyssee Obrazovanie v Rossii*, 30(4), 120–130. <https://doi.org/10.31992/0869-3617-2021-30-4-120-130>
- Iwanaga, J., Loukas, M., Dumont, A. S., & Tubbs, R. S. (2021). A review of anatomy education during and after the COVID-19 pandemic: Revisiting traditional and modern methods to achieve future innovation. In *Clinical Anatomy* (Vol. 34, Issue 1, pp. 108–114). <https://doi.org/10.1002/ca.23655>
- Jaca, C. A. L. (2022). State University Students' Learning Locations and Remote Learning Challenges during the COVID-19 Pandemic. *International Journal of Learning, Teaching and Educational Research*, 21(2), 195–210. <https://doi.org/10.26803/ijlter.21.2.11>
- Kamal, M. I., Zubanova, S., Isaeva, A., & Movchun, V. (2021). Distance learning impact on the English language teaching during COVID-19. *Education and Information Technologies*, 26(6), 7307–7319. <https://doi.org/10.1007/s10639-021-10588-y>
- Khalil, R., Mansour, A. E., Fadda, W. A., Almisnid, K., Aldamegh, M., Al-Nafeesah, A., Alkhalifah, A., & Al-Wutayd, O. (2020). The sudden transition to synchronized online learning during the COVID-19 pandemic in Saudi Arabia: A qualitative study exploring medical students' perspectives. *BMC Medical Education*, 20(1), 1–10. <https://doi.org/10.1186/s12909-020-02208-z>
- Kurnia, A., Nasution, P., Nasution, M. K., Batubara, M. H., & Munandar, I. (2022). Learning During Covid-19 Pandemic: a Systematic Literature Review | Nasution | International Journal of Evaluation and Res ... Learning During Covid-19 Pandemic: a Systematic Literature Review. *International Journal of Evaluation and Research in Education (IJERE)*, 11(2), 18–20. <https://doi.org/10.11591/ijere.v11i2.21917>
- Lyu, K., Xu, Y., Cheng, H., & Li, J. (2020). The implementation and effectiveness of intergenerational learning during the COVID-19 pandemic: Evidence from China. *International Review of Education*, 66(5–6), 833–855. <https://doi.org/10.1007/s11159-020-09877-4>
- Mahyoob, M. (2021). Online learning effectiveness during the COVID-19 pandemic: A case study of saudi universities. *International Journal of Information and Communication Technology Education*, 17(4), 1–14. <https://doi.org/10.4018/IJICTE.20211001.0a7>
- Mananay, J., Alda, R., & Santos, M. S. D. (2022). Glimpses of Teaching in the New Normal: Changes, Challenges, and Chances. *International Journal of Learning, Teaching and Educational Research*, 21(4), 276–291. <https://doi.org/10.26803/ijlter.21.4.16>
- Muthuprasad, T., Aiswarya, S., Aditya, K. S., & Jha, G. K. (2021). Students' perception and preference for online education in India during COVID -19 pandemic. *Social Sciences & Humanities Open*, 3(1), 100101. <https://doi.org/10.1016/j.ssaho.2020.100101>
- My, S. T., Tien, H. N., My, H. T., & Quoc, T. Le. (2022). *E-learning Outcomes during the COVID-19 Pandemic*. 21(6), 160–177.
- Nhongo, R., & Siziba, L. (2022). Adopting Virtual Classes during the COVID-19 Lockdown: Interrogating New Approaches to Teaching and the Exclusion of Learners in Rural Settings. *International Journal of Learning, Teaching and Educational Research*, 21(2), 18–33. <https://doi.org/10.26803/ijlter.21.2.2>
- Nijakowski, K., Lehmann, A., Zdrojewski, J., Nowak, M., & Surdacka, A. (2021). The effectiveness of the blended learning in conservative dentistry with endodontics on the basis of the survey among 4th-year students during the covid-19 pandemic. *International Journal of Environmental Research and Public Health*, 18(9). <https://doi.org/10.3390/ijerph18094555>
- Patton, M. Q. (2021). Evaluation Criteria for Evaluating

- Transformation: Implications for the Coronavirus Pandemic and the Global Climate Emergency. *American Journal of Evaluation*, 42(1), 53–89. <https://doi.org/10.1177/1098214020933689>
- Pratama, H., Azman, M. N. A., Kassymova, G. K., & Duisenbayeva, S. S. (2020). The Trend in Using Online Meeting Applications for Learning During the Period of Pandemic COVID-19: A Literature Review. *Journal of Innovation in Educational and Cultural Research*, 1(2), 58–68. <https://doi.org/10.46843/jiecr.v1i2.15>
- Saikat, S., Dhillon, J. S., Ahmad, W. F. W., & Jamaluddin, R. A. (2021). A systematic review of the benefits and challenges of mobile learning during the covid-19 pandemic. *Education Sciences*, 11(9). <https://doi.org/10.3390/educsci11090459>
- Sefriani, R., Sepriana, R., Wijaya, I., Radyuli, P., & Menrisal. (2021). Blended learning with edmodo: The effectiveness of statistical learning during the covid-19 pandemic. *International Journal of Evaluation and Research in Education*, 10(1), 293–299. <https://doi.org/10.11591/IJERE.V10I1.20826>
- Sumalinog, G. G. (2022). Barriers of Online Education in the New Normal: Teachers' Perspectives. *International Journal of Learning, Teaching and Educational Research*, 21(1), 33–50. <https://doi.org/10.26803/ijlter.21.1.3>
- Toquero, C. M. D. (2020). Inclusion of people with disabilities amid COVID-19: Laws, interventions, recommendations. *Multidisciplinary Journal of Educational Research*, 10(2), 158–177. <https://doi.org/10.447/remie.2020.5877>
- Tsang, J. T. Y., So, M. K. P., Chong, A. C. Y., Lam, B. S. Y., & Chu, A. M. Y. (2021). Higher education during the pandemic: The predictive factors of learning effectiveness in covid-19 online learning. *Education Sciences*, 11(8). <https://doi.org/10.3390/educsci11080446>
- Tsegay, S. M., Ashraf, M. A., Perveen, S., & Zegegerish, M. Z. (2022). Online Teaching during COVID-19 Pandemic: Teachers' Experiences from a Chinese University. *Sustainability (Switzerland)*, 14(1), 1–13. <https://doi.org/10.3390/su14010568>
- Turnbull, D., Chugh, R., & Luck, J. (2021). Transitioning to E-Learning during the COVID-19 pandemic: How have Higher Education Institutions responded to the challenge? *Education and Information Technologies*, 26(5), 6401–6419. <https://doi.org/10.1007/s10639-021-10633-w>
- Umar, M., & Ko, I. (2022). E-Learning: Direct Effect of Student Learning Effectiveness and Engagement through Project-Based Learning, Team Cohesion, and Flipped Learning during the COVID-19 Pandemic. *Sustainability (Switzerland)*, 14(3). <https://doi.org/10.3390/su14031724>
- Yekefallah, L., Namdar, P., Panahi, R., & Dehghankar, L. (2021). Factors related to students' satisfaction with holding e-learning during the Covid-19 pandemic based on the dimensions of e-learning. *Heliyon*, 7(7), e07628. <https://doi.org/10.1016/j.heliyon.2021.e07628>
- Yu, H., Liu, P., Huang, X., & Cao, Y. (2021). Teacher Online Informal Learning as a Means to Innovative Teaching During Home Quarantine in the COVID-19 Pandemic. *Frontiers in Psychology*, 12(June), 1–12. <https://doi.org/10.3389/fpsyg.2021.596582>
- Yu, Z. (2021). The effects of gender, educational level, and personality on online learning outcomes during the COVID-19 pandemic. *International Journal of Educational Technology in Higher Education*, 18(1). <https://doi.org/10.1186/s41239-021-00252-3>
- Yudiawan, A., Sunarso, B., Suharmoko, Sari, F., & Ahmadi. (2021). Successful online learning factors in covid-19 era: Study of islamic higher education in west papua, indonesia. *International Journal of Evaluation and Research in Education*, 10(1), 193–201. <https://doi.org/10.11591/ijere.v10i1.21036>
- Zou, B., Huang, L., Ma, W., & Qiu, Y. (2021). Evaluation of the effectiveness of EFL online teaching during the COVID-19 pandemic. *SAGE Open*, 11(4). <https://doi.org/10.1177/21582440211054491>