

# Utilization of E-learning in The Learning Activities in Higher Education

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**Abstract:** This study aims to investigate the implementation of distance learning with E-learning conducted in tertiary institutions. After the Covid-19 pandemic, E-learning became the main learning platform carried out in various universities. This research uses a qualitative approach with a type of library research. Sources of data in this study are books and research results that are in accordance with the research theme. The results of the research show that the E-learning system is the result of the development of a digital system in the world of education which aims to provide convenience for teachers and students in learning activities. Through E-learning the teaching and learning process can be carried out without face-to-face contact between the teacher and students and is no longer limited by time and place. E-learning is a solution to the problems in the world of education which are increasingly busy with various services that offer high flexibility and mobility.

**Keywords:** E-learning Platform, Educational Technology, Learning Motivation.

## Introduction

The rapid advancement of technology is currently affecting all sectors in Indonesia, including the education sector. In this sector, technology has affected changes in the dissemination of content and information from conventional methods (face to face) to virtual methods ([Rosyad et al., 2022](#)). Since 2008, UNESCO stated that more than 455 million people worldwide receive education and training via the internet. Accompanying changes in technology and the learning process where students can search, send information via the

internet, the need for electronic and internet-based learning is increasing rapidly ([Bao, 2020](#)). Without eliminating the learning process during lectures, the use of E-learning complements the deficiencies in the direct learning process where E-learning can be accessed anytime and anywhere as long as it is connected to an internet connection.

E-learning is a form of learning model that is facilitated and supported by the use of information and communication technology. E-learning has characteristics, including ([Arghode et al., 2017](#)): 1) has content that is relevant to learning objectives; 2) use instructional methods, for example presentation of examples and exercises to enhance learning; 3) using media elements such as words and pictures to convey learning material; 4) enable direct teacher-centered learning (synchronous E-learning) or designed for independent learning (asynchronous E-learning); 5) build understanding and skills related to learning objectives either individually or improve group learning performance. Meanwhile, according to Rusman et al E-learning has characteristics, including (a) interactivity (interactivity); (b) independence (independence); (c) accessibility; (d) enrichment (enrichment). E-learning can be defined as a form of information technology that is applied in the field of education in the form of virtual worlds ([A'yun et al., 2022](#)). The term E-learning is more precisely intended as an effort to create a transformation of the learning process in schools or colleges into a digital form that is bridged by internet technology ([Isroani et al., 2022](#)).

During this pandemic, the learning process in the world of education requires the latest innovations so that quality concerns the learning process in the form of materials, assignments and others ([Arribathi et al., 2021](#)). The method of delivering material during the learning process can be evaluated on the E-learning system, in the face-to-face learning process it also has drawbacks such as students not being able to focus on the material conveyed to the lecturer, some students are often left far behind. Which results in divided concentration ([Dirsa et al., 2022](#)). With the use of E-learning as a medium to complement / improve the quality of learning where when face to face the lecturer only explains / discusses with students who do not understand and aims to get solutions to material that is not understood.

Student-centered learning that is carried out at this time does not limit student learning in space and time so that nursing students will not experience difficulties later in carrying out creativity and innovation in developing nursing knowledge and skills ([Abdelhai, 2012](#)). This was stated by Renny that the existing learning system should facilitate students and lecturers in the teaching and learning process ([Marwiyah et al., 2022](#)). This is also evidenced by technological developments in Jakarta such as the provision of wifi areas for the public that can be used to find the widest possible information. This E-learning learning method

has been carried out at foreign universities in the form of distance learning where students do not need to meet face to face with their lecturers ([Hindardjo et al., 2022](#)).

E-learning system which contains facilities for sharing subject matter ([Buchori et al., 2022](#)). The result is a system interface that can be used by lecturers to input material, and students to download material. In addition, a discussion forum is provided in the form of a comment column so that the forum is more active ([Mardiyana et al., 2022](#)). Utilizing E-learning media as a medium for delivering material results in a lack of discussion time, therefore the researchers researching this aim to create an E-learning prototype. The difference with previous research on E-learning, the E-learning prototype built in this study facilitates internal discussion forums form of live chat and quizzes are provided to evaluate learning outcomes ([Suwoyo & Kristanto, 2022](#)).

Based on previous study was conducted by Azzery argued that E-learning, educators and students have their respective roles. Educators (teachers/lecturers/instructors or widyaiswara) have a role as facilitators and guides in learning activities, while students (students and university students) have a role as knowledge constructors, independent learners, and problem solvers ([Azzery, 2022](#)). On other hands, these conditions have caused E-learning to become the center of attention, especially in education to continue to be studied, applied and improved from various aspects by educational experts and practitioners for use in formal and non-formal education. As something new, the application of E-learning may still be far from perfect when compared between what it should be (conceptually) and the actual implementation (factually). E-learning has become a contemporary issue of research and study in the world of education today ([Hidayat & Alaydrus, 2019](#)). This study aims to describe the quality standards for implementing E-learning as an effective learning medium, identify the effectiveness of E-learning learning plans, identify the effectiveness of designing and manufacturing E-learning learning materials, identify the effectiveness of E-learning delivery, identify the effectiveness of E-learning implementation and interactivity, identify the effectiveness of evaluating the implementation of E-learning, as well as knowing the inhibiting and supporting factors for the implementation of E-learning learning.

## Research Method

This study was literature review, library research, or also called content analysis. The data collection technique is by recording data from various sources from written materials and then identifying contextual evidence, namely by looking for a relationship between the data and the reality that the author has been researching.

## Data collection method

In this research, the data collection technique is by recording data from various sources from written materials and then identifying contextual evidence, namely by looking for a relationship between the data and the reality that the author has been researching so far from more than 40 documents regarding teacher roles. The documentation in this study is a process of taking several documents that serve as rational and empirical evidence related to the research objectives. The documentation method is carried out by investigating written objects such as vision and mission, teacher learning administration, and school program.

## Data analysis

The writers use the interactive model to analyse the data introduced, which includes: the first stage is collecting data. The second stage is reducing data, the purpose of reducing this data so that data is not biased, then the third stage is presenting the data, and the last stage is concluding and withdrawing data that has been verified. The data processing in this survey is qualitative in nature, so it is carried out through critical analysis, comparison and interpretation of various search results from sources from books and journals as well as other references. Therefore, in the data analysis process, the writer selects the collected data, then after the selection, the researcher starts coding according to the discussion and topic. In addition to referring to various reading materials related to research, in discussing this material.

## Data Validity

To check the validity of the data in this study through several techniques. This technique is intended to find the characteristics and elements in the situation that are most relevant to the preparation and issues being sought and then focus on these matters in detail. The persistence of observation can result in the depth of the data obtained. For this reason, researchers make careful and detailed and continuous observations of visible phenomena. The techniques referred to include: a) dependability, namely the criteria for examining whether the research process is of quality or not. To check whether the results of qualitative research are quality or not, researchers do this very carefully so that there is little potential for error. Therefore, before going to the field, the researcher had conceptualized the plan beforehand. After obtaining data from various sources, researchers collect data so that the data does not accumulate. Researchers interpret the data that has been collected in a written research report., and b) confirmability is a criterion for assessing the quality of research results by recording data and information tracking as well as interpretations supported by

existing material on audit tracking or tracing. To fulfil this audit tracing, the researcher has prepared the necessary materials such as raw material data (field notes and interview transcripts), recorded results (documents and photos), results of data analysis (summaries, working hypotheses and concepts), and notes regarding the implementation process (methodology, strategy, and legitimacy efforts).

## Result and Discussion

### The Essence of E-learning System

E-learning comes from the equivalent of two words namely 'e' and 'learning'. 'e' stands for electronic and learning is learning. So E-learning can literally be interpreted as learning that uses electronic media, especially computer devices. The term E-learning contains a very broad meaning, so that many experts describe the definition of E-learning from various points of view ([Ismail et al., 2019](#)). Defines "E-learning as learning by using electronic device assistance services". The main focus is the learning process (learning) not on "e" (electronic), because electronic devices only act as tools. Peterson explains that: "define the e in E-learning from the perspective of the user is exploration, experience, engagement, ease of use, and empowerment". In simple terms, Horton defines "E-learning is the use of information and computer technologies to create learning experiences" ([Rosyad, 2019](#)).

Horton's opinion can be interpreted as E-learning as all forms of using information and computer technology to create learning experiences. This definition emphasizes how learning experiences are formulated, organized, and created through E-learning tools. One definition that is quite acceptable to many parties, for example, from Darin E. Hartley which states "E-learning is a type of teaching and learning that allows teaching materials to be conveyed to students using Internet media, Intranets or other computer network media" ([Sewell et al., 2010](#)). LearnFrame.Com in the Glossary of E-learning Terms [Glossary, 2001] states a broader definition that "E-learning is an education system that uses electronic applications to support teaching and learning with Internet media, computer networks ([Hidayat et al., 2020](#)).

E-learning is also known as online learning, virtual learning, distributed learning, networked or web-based learning. All refer to the same meaning and in their application will use computer technology such as intranets and the internet. E-learning has changed the paradigm of teacher-centered learning to student-centered learning ([Ismail et al., 2019](#)). Learning no longer depends on the teacher because the teacher is no longer the only source of knowledge for students. E-learning enables students to access accurate and up-to-date

information without space and time barriers. The ease of accessing E-learning allows students to learn from anywhere and at any time as long as they have an adequate internet connection.

The term E-learning has many meanings because of the various uses of E-learning today. Basically, E-learning has two types, namely synchronous and asynchronous (Hussin & Tamuri, 2019). Synchronous mean at the same time. This allows direct interaction between educators and students online. In implementation, synchronous training requires educators and students to access the internet simultaneously. Educators provide learning material in the form of papers or presentation slides and students can listen to presentations directly via the internet. Students can also ask questions or comments directly or through the chat window. Synchronous training is a picture of a real class, but is virtual (virtual) and all students are connected via the internet (Arifudin & Rosyad, 2021). The essence of E-learning system will describe below

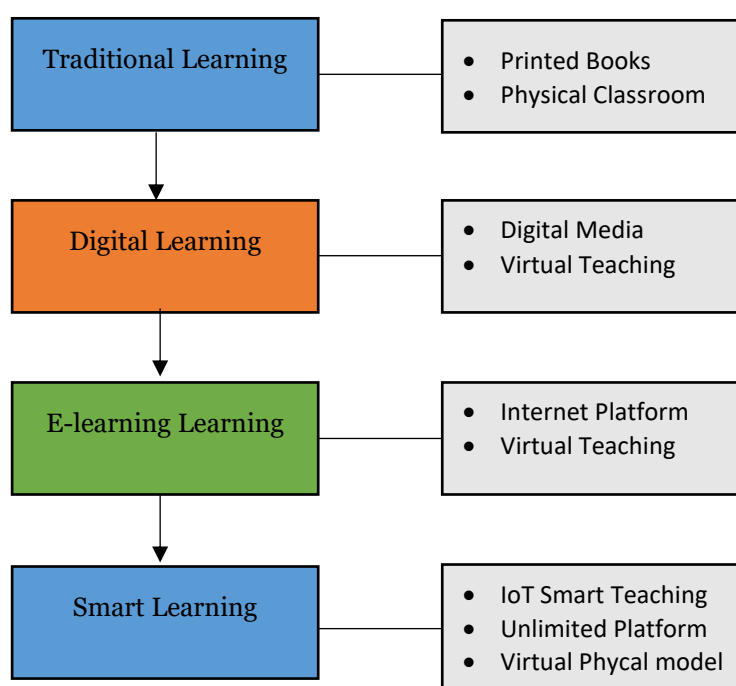


Figure 1. Essence of E-learning system (Yuet-Ming & Chi-Wing, 2019)

In fact, online learning consists of synchronous and asynchronous model. Synchronous training is often referred to as a virtual classroom. Asynchronous means not at the same time. Learners can take different learning times with educators providing material. Asynchronous training is popular in E-learning because students can access learning materials anywhere and anytime. Students can carry out learning and complete it at any time

according to a predetermined schedule range. Learning can take the form of readings, animations, simulations, educational games, tests, quizzes and collection of assignments.

### Learning Strategy of E-learning

The strategy of using E-learning to support the implementation of the learning process is expected to increase students' absorption of the material being taught; increase the active participation of students; improve students' independent learning abilities; improve the quality of education and training materials, improve the ability to display information with information technology tools, expand the reach of the teaching and learning process using the internet, not limited to space and time ([Hindardjo & Wajid, 2017](#)). To achieve the things mentioned above, in the development of an E-learning application it is necessary to pay attention that the material displayed must support the delivery of correct information, not only prioritizing the beauty side; pay close attention to the teaching and learning techniques used; Material from the learning process can be taken from valid sources and with E-learning technology, material can even be produced based on sources from experts (experts). For example, a digital video display featuring a marketing expert demonstrating how to do product styling in a retail setting. With 3-dimensional animation, it can be shown how the steps to prepare correctly apply the product preparation strategy for a variety of different types of products ([Pollard & Hillage, 2001](#)).

In the application of technology such as the use of E-learning, it is necessary to formulate a clear strategy as a reference. Developing an E-learning strategy as stated by Empy (2005) is useful for (1) clarifying the objectives of the training or education to be achieved (2) knowing the resources needed (3) making all parties involved stick to the same goals. (4) knowing the measurement of success ([Jayde et al., 2014](#)). The E-learning strategy involves four stages namely analysis, planning, implementation and evaluation. Analysis, the factors that need to be analyzed include the needs of the organization in view of the current situation and the existence of E-learning in providing a positive impact. In addition to the needs of the organization, it is also necessary to analyze the organizational infrastructure for the implementation of the use of E-learning ([Danielle et al., 2012](#)).

Planning, planning aspects that must be reviewed are network, learning management system, materials and management. Implementation, this stage requires good project management skills to ensure coordination and execution of work according to plan and not deviate from goals and strategy. Evaluation, after carrying out the E-learning implementation plan, then assesses the success of the program ([Garfinkel & Rosenblum, 2005](#)).



The learning model developed through E-learning emphasizes resource-based learning, which is also known as learner-centered learning (Benson et al., 2016). With this model, students are able to obtain teaching materials from their respective places (via personal computers at their respective homes or at the office). The advantage of this learning model is that the level of independence of students is getting better and their communication technique skills are showing encouraging progress. With this model, communication between students and teaching staff takes place simultaneously or separately through the support of a computer network (Ng & Peggy, 2020).

Information technology-based learning models using E-learning result in changes in the learning culture in the learning context. There are at least four important components in building a learning culture using the E-learning model in schools, the four components are (1) Students are required to study independently in various appropriate approaches so that students are able to direct, motivate, manage themselves in learning. (2) Educators are able to develop knowledge and skills, facilitate in learning, understanding learning and the things needed in learning. (3) The availability of adequate infrastructure (4) The existence of creative administrators and the preparation of infrastructure in facilitating learning (Danielle et al., 2012).

In E-learning applications, not only are students required to master certain skills, but an educator is also required to have several competencies that he must have so that the E-learning program he runs can run well. There are three basic competencies that must be possessed by educators to organize E-learning learning models, namely (1) The ability to make instructional designs according to the rules pedagogical as outlined in the lesson plan. (2) Mastery of technology in learning, namely the use of the internet as a source of learning in order to obtain up-to-date and quality teaching materials. (3) Mastery of learning material (subject matter) in accordance with the field of expertise possessed (Soleh & Arifin, 2021). In the figure 2 will describe the E-learning strategy

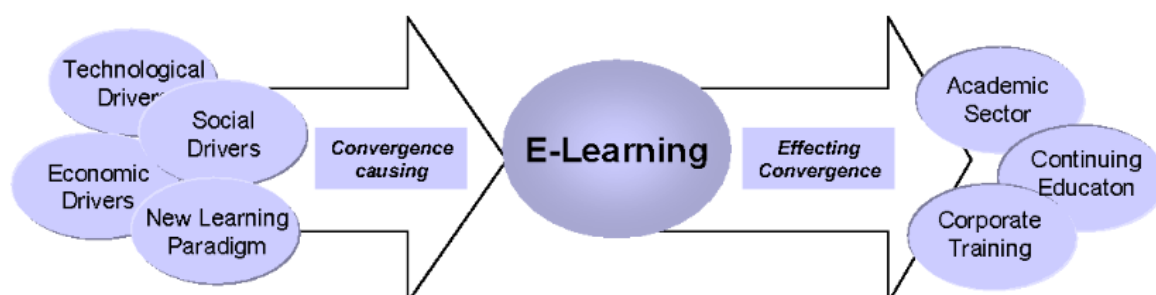


Figure 2. Learning Strategy in E-learning System (Ng & Peggy, 2020)



Several things need to be considered in implementing the E-learning digital classroom program, namely educators use the internet and e-mail to interact with students and measure their learning progress, students are able to manage study time, and regulate the effectiveness of using the internet in multimedia spaces. By looking at the development of information technology in the world of education and several important components that need to be prepared in developing the program E-learning, the E-learning program is not something that is impossible to realize.

### Utilization of E-learning in Higher Education

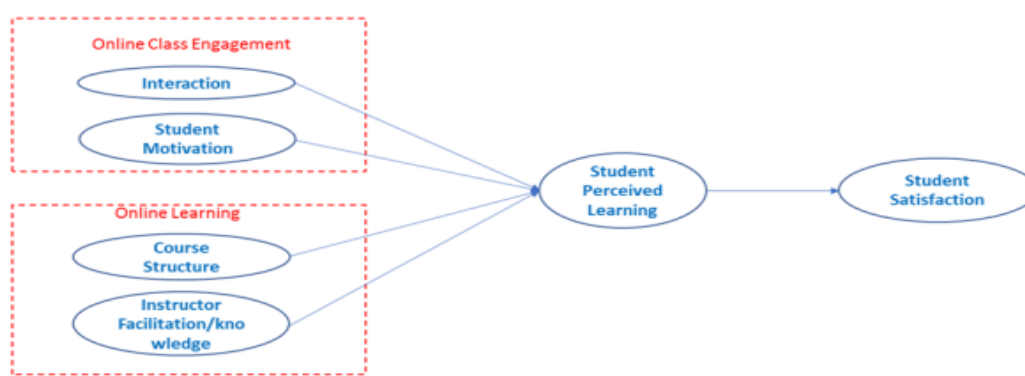
In higher education the utilization of E-learning in lectures shows the results that the perceived use and convenience variables have a strong effect on the attitude variable. The attitude of students in using E-learning is influenced by the perception of usability in learning activities ([Rosyad & Maarif, 2020](#)). The use of E-learning can improve performance in lectures, increase the effectiveness of learning, and at the same time increase productivity. Perceived ease of use of the system and the construction of trust determine the use of the E-learning system. The use of technology helps students to achieve learning goals because students think the system will help their learning ([Anh et al., 2019](#)).

The anxiety about the ability to use E-learning affects satisfaction in learning and behavior in learning. A system will be utilized optimally if it is easy to use and it is also clear that its use supports learning activities. The results of this study indicate that perceived ease of use influences attitudes in using E-learning. Students in higher education will be maximized in utilizing and participating in learning using E-learning. Setting the learning process with E-learning, Govindasamy suggests teaching strategies are based on interactions between lecturers and students, and the need for constructive and meaningful feedback. Likewise, the level of access must be traced which is used to differentiate, among high, average, or slow achieving students. This condition will be used to positively motivate students. Quality for satisfaction with E-learning is seen from three dimensions, namely information quality, system quality, and service quality ([Hariandi, 2019](#)).

Information quality greatly affects user satisfaction and loyalty. System quality relates to the consistency of the user interface, ease of use, responsiveness in interactive systems, and quality of documentation. The quality of the system has a positive effect on users, where they will develop a positive attitude towards E-learning content so that the use of E-learning in tertiary institutions must pay attention to system operations (Pane & Darwis Dasopang, 2017). Quality of service in this case is the learning process which has become a measure of

satisfaction in obtaining learning. User attitude has a big influence on the use of E-learning. Attitudes are formed from the perception of the ease and usefulness of a system to be used.

Use and usability affect the behaviour of using E-learning in learning. The use of technology in learning is strongly influenced by various variables that are around the learner. No matter how good the system or technology used in learning, if the variables around the learner are not considered, the implementation will not work well. Utilization of E-learning requires more maturity and self-discipline compared to conventional programs, and must provide students with greater trust, authorization, and responsibility (Rohmadi, 2018). User perceptions of E-learning in improving their performance have a positive effect on attitudes and greater achievement. The figure below will illustrate the utilization of E-learning in higher education



**Figure 3. Utilization of E-learning in Higher Education**

With the message forum students can ask anything they don't understand, this makes it easier for students and lecturers to discuss lectures the ease of access that is owned by a tertiary institution is needed by students. When students can easily access the internet, students will be able to explore knowledge, or even be creative through the internet. The learning process using technology such as E-learning allows students to learn via computer at their respective places without having to be physically present on campus. Besides that, it is also a web-based learning which uses internet access (online). E learning is an educational system/concept that utilizes information technology in the teaching and learning process without having to meet face to face between lecturers and students (Consuelo et al., 2019). This E-learning learning method has several positive benefits, namely flexibility, meaning that lecturers and students can choose the time and place to access it, self-learning means that with E-learning students can determine for themselves when and what is needed and can explore the knowledge they have, unlimited learning materials. We can explain the advantages of using the E-learning method, namely that it saves time for the teaching and learning process, reduces travel costs, saves on the cost of books, and trains students to be more active and creative.

## Conclusions

The success of E-learning is supported by the maximum interaction between lecturers and students, between students and various educational facilities, between students and other students, and the existence of active learning patterns in these interactions. Information technology and telecommunications that are cheap and easy will eliminate the limitations of space and time that have limited the world of education. Some of the logical consequences that occur include: (1) Students can easily take courses anywhere without being limited to institutional and country boundaries; (2) Students can easily study and discuss with experts or experts in the field they are interested in; (3) Lecture materials can even be easily taken in various corners of the world without depending on the college where students study. Among the characteristics of E-learning, namely: Utilizing technology, using computer media, independent approach, stored on computer media, automation of the learning process. The limitation of this study is only explain the E-learning platform in the learning process in education.

## References

- A'yun, Q., Wati, D. E., Sari, D. R., Ma'rufa, H., & Khafidhloh, F. N. (2022). Effectiveness of Using the Quizzz Application in Islamic Religious Education. *International Journal of Science Education and Cultural Studies*, 1(1), 16–31.
- Anh, T. V., Nguyen, H. T. T., & Linh, N. T. M. (2019). Digital Transformation. *Proceedings of the 2019 The World Symposium on Software Engineering - WSSE 2019, 2017*, 119–124. <https://doi.org/10.1145/3362125.3362135>
- Arghode, V., Brieger, E. W., & McLean, G. N. (2017). Adult learning theories: implications for online instruction. *European Journal of Training and Development*.
- Arifudin, I., & Rosyad, A. M. (2021). Pengembangan dan Pembaharuan Perguruan Tinggi Keagamaan Islam di Indonesia: Gagasan dan Implementasinya. *Al-Afkar, Journal For Islamic Studies*, 4(2), 425–438.
- Arribathi, A. H., Suwanto, Miftakhu Rosyad, A., Budiarto, M., Supriyanti, D., & Mulyati. (2021). An analysis of student learning anxiety during the COVID-19 Pandemic: A Study In Higher Education. *The Journal of Continuing Higher Education*, 69(3), 192–205.
- Azzery, Y. (2022). Analysis of E-commerce Growth in the Industrial Age 4.0 in Indonesia. *International Journal of Engineering Continuity*, 1(1), 1–8. <https://doi.org/https://doi.org/10.58291/ijec.v1i1.33>

- Bao, W. (2020). COVID-19 and online teaching in higher education: A case study of Peking University. *Human Behavior and Emerging Technologies*, n/a(n/a). <https://doi.org/10.1002/hbe2.191>
- Benson, J. D., Szucs, K. A., & Taylor, M. (2016). Student Response Systems and Learning: Perceptions of the Student. *Occupational Therapy in Health Care*, 30(4), 406–414. <https://doi.org/10.1080/07380577.2016.1222644>
- Buchori, N. S., Budiman, J., Setiawan, D., Saipulloh, S., Qomaruzzaman, A., & Adiyanto, A. (2022). Building Entrepreneurship Values Based on Shariah Economic Perspective. *International Journal of Management Science and Application*, 1(1), 40–52.
- Consuelo, S.-M. M., Ignacio, G. O. C., Francisco, D.-P. J., & Jorge, M. A. L. (2019). Will personalized e-Learning increase deep learning in higher education? *Information Discovery and Delivery*, 47(1), 53–63. <https://doi.org/10.1108/IDD-08-2018-0039>
- Danielle, M., Grace, M., & Mary, Z. (2012). Bringing the Classroom to Life: Using Virtual Worlds to Develop Teacher Candidate Skills. In C. Wankel & P. Blessinger (Eds.), *Increasing Student Engagement and Retention Using Immersive Interfaces: Virtual Worlds, Gaming, and Simulation: Vol. 6 Part C* (pp. 129–160). Emerald Group Publishing Limited. [https://doi.org/10.1108/S2044-9968\(2012\)000006C008](https://doi.org/10.1108/S2044-9968(2012)000006C008)
- Dirsa, A., BP, S. A., Diananseri, C., & Setiawan, I. (2022). Teacher Role as Professional Educator in School Environment. *International Journal of Science Education and Cultural Studies*, 1(1), 32–41.
- Garfinkel, T., & Rosenblum, M. (2005). When Virtual Is Harder than Real: Security Challenges in Virtual Machine Based Computing Environments. *HotOS*.
- Hariandi, A. (2019). Strategi Guru Dalam Meningkatkan Keterampilan Membaca Alquran Siswa Di SDIT Aulia Batanghari. *Jurnal Gentala Pendidikan Dasar*, 4(1), 10–21. <https://doi.org/10.22437/gentala.v4i1.6906>
- Hidayat, T., & Alaydrus, M. (2019). Performance Analysis and Mitigation of Virtual Machine Server by using Naive Bayes Classification. *2019 Fourth International Conference on Informatics and Computing (ICIC)*, 1–5. <https://doi.org/10.1109/ICIC47613.2019.8985932>
- Hidayat, T., Franky, D. S. T., & Mahardiko, R. (2020). Forecast Analysis of Research Chance on AES Algorithm to Encrypt during Data Transmission on Cloud Computing. *2020 2nd International Conference on Broadband Communications, Wireless Sensors and Powering (BCWSP)*, 163–166.
- Hindardjo, A., Pratama, M. F., & Ali, J. (2022). Analysis of the Influence of Competence and Work Culture on Employee Performance with Moderation of Exit Intentions: A Case Study at Bank Syariah Indonesia. *International Journal of Management Science and Application*, 1(1), 1–17.

- Hindardjo, A., & Wajid, A. (2017). Analisis Tingkat Religiusitas, Pendapatan & Kepercayaan Terhadap Kesadaran Membayar Zakat di Kota Tangerang. *Jurnal Asy-Syukriyyah*, 18(1), 24–38.
- Hussin, N. H., & Tamuri, A. H. (2019). Embedding values in teaching Islamic education among excellent teachers. *Journal for Multicultural Education*, 13(1), 2–18. <https://doi.org/10.1108/JME-07-2017-0040>
- Ismail, R., Safieddine, F., & Jaradat, A. (2019). *E-university delivery model: handling the evaluation process*. 25(7), 1633–1646. <https://doi.org/10.1108/BPMJ-10-2018-0281>
- Isroani, F., Jaafar, N., & Muflihaini, M. (2022). Effectiveness of E-Learning Learning to Improve Student Learning Outcomes at Madrasah Aliyah. *International Journal of Science Education and Cultural Studies*, 1(1), 42–51.
- Jayde, C., Margot, M., Agnes, B., & Christa, J.-T. (2014). Walking out the door: casualisation and implementing Moodle. *International Journal of Educational Management*, 28(1), 5–14. <https://doi.org/10.1108/IJEM-06-2012-0076>
- Joosten, T., & Cusatis, R. (2020). Online Learning Readiness. *American Journal of Distance Education*, 1–14.
- Mardiyana, M., Ihsan, M., Adrial, A., Parida, H., & Sidiq, S. (2022). A SWOT (Strength Weakness Opportunity and Threat) Analysis as a Strategy to Enhance Competitiveness. *International Journal of Management Science and Application*, 1(1), 18–27.
- Marwiyah, M., Arti, P. P., & Hidayat, T. (2022). An Analysis of Online Transportation Applications Between Gojek and Grab for Students. *International Journal of Science Education and Cultural Studies*, 1(1), 52–64.
- Ng, Y.-M., & Peggy, P. L. (2020). Coronavirus disease (COVID-19) prevention: Virtual classroom education for hand hygiene. *Nurse Education in Practice*, 102782. <https://doi.org/https://doi.org/10.1016/j.nepr.2020.102782>
- Pane, A., & Darwis Dasopang, M. (2017). Belajar Dan Pembelajaran. *FITRAH: Jurnal Kajian Ilmu-Ilmu Keislaman*, 3(2), 333–352. <https://doi.org/10.24952/fitrah.v3i2.945>
- Pollard, E., & Hillage, J. (2001). *Exploring e-learning*. Institute for Employment Studies Brighton.
- Rohmadi, K. (2018). Pengembangan dan Implementasi Kurikulum Pendidikan Islam Perspektif Neurosains. *Ruhama*, 1(1), 39–50.
- Rosyad, A. M. (2019). The Implementation of Inductive Teaching and Learning Methods in Islamic Education Learning. *Risâlah, Jurnal Pendidikan Dan Studi Islam*, 5(2, Sept), 60–75.
- Rosyad, A. M., & Maarif, M. A. (2020). Paradigma Pendidikan Demokrasi dan Pendidikan Islam dalam Menghadapi Tantangan Globalisasi di Indonesia. *Nazhruna: Jurnal*

*Pendidikan Islam*, 3(1), 75–99.

- Rosyad, A. M., Sudrajat, J., & Loke, S. H. (2022). Role of Social Studies Teacher to Inculcate Student Character Values. *International Journal of Science Education and Cultural Studies*, 1(1), 1–15.
- Sewell, J. P., Frith, K. H., & Colvin, M. M. (2010). Online assessment strategies: A primer. *MERLOT Journal of Online Learning and Teaching*, 6(1), 297–305.
- Soleh, A. R., & Arifin, Z. (2021). Integrasi Keterampilan Abad 21 dalam Pengembangan Perangkat Pembelajaran Pada Konsep Community of Inquiry. *QALAMUNA: Jurnal Pendidikan, Sosial, Dan Agama*, 13(2), 473–490. <https://doi.org/10.37680/qalamuna.v13i2.995>
- Suwoyo, H., & Kristanto, F. H. (2022). Performance of a Wall-Following Robot Controlled by a PID-BA using Bat Algorithm Approach. *International Journal of Engineering Continuity*, 1(1), 56–71.
- Yuet-Ming, N., & Chi-Wing, Y. (2019). *A 3-step teaching approach for a blended learning of 'understanding and avoiding unintentional plagiarism.'* Elsevier.