



The selection of technology in the learning process: Is that effective enough?

Zainuddin Tahir Bardan^{a*}, Universitas Islam Negeri Ar-Raniry, Lorong Ibnu Sina No.2, Darussalam, Kopelma Darussalam, Kec. Syiah Kuala, Kota Banda Aceh, Aceh 23111, Indonesia, zainuddin.t@ar-raniry.ac.id

Abdul Jalil Salam^b, Universitas Islam Negeri Ar-Raniry, Lorong Ibnu Sina No.2, Darussalam, Kopelma Darussalam, Kec. Syiah Kuala, Kota Banda Aceh, Aceh 23111, Indonesia, abduljalilsalam@ar-raniry.ac.id

Husni Mubarak^c, Universitas Islam Negeri Ar-Raniry, Lorong Ibnu Sina No.2, Darussalam, Kopelma Darussalam, Kec. Syiah Kuala, Kota Banda Aceh, Aceh 23111, Indonesia, husni.mubarak@ar-raniry.ac.id

Chairul Fahmi^d, Universitas Islam Negeri Ar-Raniry, Lorong Ibnu Sina No.2, Darussalam, Kopelma Darussalam, Kec. Syiah Kuala, Kota Banda Aceh, Aceh 23111, Indonesia, chairul.fahmi@ar-raniry.ac.id

Badri Hasan Sulaiman^e, Universitas Islam Negeri Ar-Raniry, Lorong Ibnu Sina No.2, Darussalam, Kopelma Darussalam, Kec. Syiah Kuala, Kota Banda Aceh, Aceh 23111, Indonesia, badri@ar-raniry.ac.id

Muhammad Siddiq Armia^f, Universitas Islam Negeri Ar-Raniry, Lorong Ibnu Sina No.2, Darussalam, Kopelma Darussalam, Kec. Syiah Kuala, Kota Banda Aceh, Aceh 23111, Indonesia, msiddiq@ar-raniry.ac.id

Suggested Citation:

Bardan, Z.T., Salam, A.J., Mubarak, H., Fahmi, C., Sulaiman, B.H. & Armia, M.S. (2024). The selection of technology in the learning process: Is that effective enough? *Global Journal of Information Technology: Emerging Technologies*. 14(1), 36-44. <https://doi.org/10.18844/gjit.v14i1.9453>

Received from; December 11, 2023, revised from; February 23, 2024 and accepted from March 29.

Selection and peer review under the responsibility of Prof. Dr. Carlos Rodrigues, Universidade Fernando Pessoa, Portugal ©2024 by the authors. Licensee United World Innovation Research and Publishing Center, North Nicosia, Cyprus. This article is an open-access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

iThenticate Similarity Rate: 12%

Abstract

This study aimed to address three main questions related to the type of technology selected in the learning process, the ways of choosing the technology, and to investigate whether the selected technology eases the learning process. This was qualitative research using a descriptive analysis approach. The data in this study was obtained from field research by observing, note-taking, and collecting various data and information about the selection of technology in the learning process. The theory applied in this study focused on digital learning technology. The research findings indicated that the technology selected in the learning process at the selected University was related to information technology. The information technologies generally used were laptops, computers, and mobile phones. Second, the influential technologies selected in the learning process were Google Classroom, Google Meet, and Canvas. The technology system has synchronous and asynchronous properties. Third, the technology implementation and the learning process need a sufficient condition, and the availability of an internet connection; the educators should understand the learning technology.

Keywords: digital learning; learning process; technology; technology selection.

* ADDRESS FOR CORRESPONDENCE: Zainuddin Tahir Bardan, Universitas Islam Negeri Ar-Raniry, Lorong Ibnu Sina No.2, Darussalam, Kopelma Darussalam, Kec. Syiah Kuala, Kota Banda Aceh, Aceh 23111, Indonesia. E-mail address: zainuddin.t@ar-raniry.ac.id

1. INTRODUCTION

Learning is a planned education activity with predetermined goals before the learning process (Siregar & Nara, 2011). Learning is a communication process to convey messages and information to stimulate students' thoughts (Muammar, 2017), feelings, interests, and attention. The learning process needs facilities to support the teachers and learners to achieve maximum learning outcomes. Various types of equipment and tools can be used to ease the learning process. Science and technology development contribute to the educational technology that encourages the learning process known as learning technology (Barrett & Liu, 2016; Malyshev & Piyavsky 2024).

The presence of technology is expected to promote educators' achievement (Arifin, 2012; Peretti et al., 2024). Educators could use technology in the learning process to accelerate the learning goals (Godsk & Møller 2024). The technology used in the learning process can be a computer, software, application, and internet connection. Other technology devices used are a projector, tape recorder, sound amplifier, filmstrip, slides, TV, audio, and visual technology. In the form of software, there were many programs and applications to be used for various purposes, including learning. For example, *Google Classroom and Canvas* help students and teachers organize their assignments and learning collaboration. *Google Meet, Zoom Meetings, WhatsApp, email, Instagram, and Facebook* are also choices as media technology for learning (Manguilimotan et al., 2022).

The educators and the learners can efficiently operate the learning technologies. However, some of them need training and other supported devices to operate. Thus, the users need to consider the technology before choosing it because it will be an appropriate tool based on its selection accuracy (Baniomar, 2022; Salman & Shahadab, 2022; Yoo et al., 2022). The technology used in the learning can affect the learning process and outcome. Some teachers and students might not be compatible with the technical equipment. The simple and easy factor of its operation is why educators choose the technology. Other technologies are complex with their various functions and uses. Some educators find these technologies easy to use because of their skills; however, others find it challenging to operate as they find the operation complicated and sophisticated. In addition, some students find it easy and helpful to follow the learning process; meanwhile, others have obstacles in using the technology.

The use of technological aids becomes a necessity in the learning process, specifically in distance education (Perraton, 2021). Teachers and educational institutions need to be selective in choosing the learning technology to avoid difficulties in using it. The presence of technology in learning activities eases learning (Kurniawan et al., 2022; Ospanova et al., 2022; Yoo et al., 2022). However, if the technology selected does not follow the users' abilities, the learning objectives cannot be achieved. The technology is expected to facilitate the learning process; however, it can hinder it because of incorrect technology selection. The development of technology has influenced the learning process at Ar-Raniry State Islamic University, Banda Aceh (UIN Ar-Raniry). Today, the selection of learning technology at Ar-Raniry State Islamic University is carried out because of the demand for the learning standard as regulated in the national of higher education. Furthermore, the COVID-19 pandemic has encouraged UIN Ar-Raniry to choose various information and technologies for learning (Azorín, 2020).

1.1. Theoretical foundation

1.1.1. Learning media

Learning media are media used in learning, including teachers' aids in teaching and delivering messages from learning sources to students (Suryani, Setiawan, 2018). The current phenomenon requires educators to be more creative in carrying out the teaching and learning process so that students can collaborate, cooperate, be creative, and think critically (Noermanzah & Friantary, 2019; Aarnio et al., 2024). The use of technology such as gadgets and laptops in the learning process will undoubtedly attract students' interest so that the learning process and learning outcomes will be optimal. Educators can use various online applications that have been developed a lot to support the achievement of the learning process objectives (Mustikawati, 2019).

Learning media is a blend of materials and tools or a combination of software and hardware. Learning media are media used in the learning process to achieve learning objectives. The learning process is also a

Bardan, Z.T., Salam, A.J., Mubarak, H., Fahmi, C., Sulaiman, B.H. & Armia, M.S. (2024). The selection of technology in the learning process: Is that effective enough? *Global Journal of Information Technology: Emerging Technologies*. 14(1), 36-44. <https://doi.org/10.18844/gjit.v14i1.9453>

communication, so learning media can be understood as a communication medium used in the communication process. Learning media has a pivotal role as a means to channel learning messages. They have several functions: the attention function, making students concentrate on the learning content (Sunaengsih, 2016) The optimal media use in learning will provide optimal benefits also for learning.

There are many types of learning media. Most schools' most familiar media are printed media (books) and blackboards. In addition, several schools have used other types of media such as pictures, models, overhead projectors (OHP), and natural objects. Meanwhile, other media such as audio cassettes, videos, VCDs, slides (film frames), and computer learning programs are still rarely used even though they are already familiar to most teachers. However, as a teacher, it would be nice to know some of these types of learning media. This statement is intended to encourage the holding and use of these media in learning activities.

1.1.2. Technology in learning (digital)

The role of technology in the learning process is crucial, especially in universities. Technology in higher education is a basic need that will determine the achievement of learning objectives (Mitchell & Manzo, 2018; Wang et al., 2024). The learning resources are essential in universities because they use an adult learning system (*andragogy*), so students are independently required to be proactive in interacting with learning resources. The use of learning media in the teaching and learning process can generate new desires and interests, motivate and stimulate learning activities, and positively affect students (Gallagher et al., 2024). The use of media in learning orientation will significantly help the activeness of the learning process and convey messages and learning content (Arsyad, 2010).

In addition to generating motivation and interest in learning, learning media can also improve understanding and present data excitingly and reliably. Furthermore, learning media brings and evokes feelings of pleasure and joy, renews enthusiasm, helps strengthen knowledge, and brings lessons to life. The benefits of learning media in the learning process, such as:

- a. Learning will attract more attention so it can increase motivation to learn.
- b. Learning contents will have a more precise meaning to be better understood and enable students to master and achieve learning objectives.
- c. Teaching methods will be more varied, not merely verbal communication through words, so the students are not bored and do not run out of teachers' energy, mainly when they teach every lesson.
- d. Students can do more learning activities because they do not only listen to descriptions but also conduct other activities such as observing, demonstrating, and exhibiting (Nana and Rivai, 2002).

The primary purpose of learning technology is to solve learning problems or facilitate learning activities. Learning technology as software in systematic ways of solving learning problems is increasingly sophisticated and has a vast place in education. The practical application of learning technology in solving learning problems has a concrete form with the existence of learning resources that facilitate students to learn. Learning technology grows and develops from educational practices and the audio-visual communication movement. Learning technology was initially seen as equipment technology related to equipment, media, and means to achieve educational goals or learning activities by utilizing audio-visual aids. Learning technology combines three streams of mutual interest: educational media, learning psychology, and systems education approaches. Learning technology is considered pivotal because it functions as a bridge between students and educators; besides that, learning media has advantages; one of them can motivate students. In addition, the learning media of technology introduction also helps to learn (Setiawan, 2018).

Digital learning includes the efforts taken by the learner with the principles of freedom, independence, flexibility, up-to-date, suitability, mobility, and efficiency. The principle of freedom means that the learning system is democratic because it is designed so that anyone can freely follow it. Moreover, learners are heterogeneous in conditions or characteristics, including motivation, intelligence, educational background, opportunities, and learning time. Therefore, the learning content, method, and process are specially designed, not limited to predetermined learning content, place, distance, time, age, gender, and other non-academic

Bardan, Z.T., Salam, A.J., Mubarak, H., Fahmi, C., Sulaiman, B.H. & Armia, M.S. (2024). The selection of technology in the learning process: Is that effective enough? *Global Journal of Information Technology: Emerging Technologies*. 14(1), 36-44. <https://doi.org/10.18844/gjit.v14i1.9453>

requirements. Some aspects of digital literacy resemble the characteristics of individuals with high Self-Directed Learning (SDL).

Bracey (2010) revealed that the characteristics of someone who has a high SDL are: critical, creative, able to observe, a good listener, and quite responsive to various things. When compared with aspects of digital literacy, the following competencies will be found: critical thinking, creativity, ability to seek and find information, and sensitivity to the developing socio-cultural context. However, other aspects such as collaboration and effective communication do not have a wedge with these characteristics (Akbar & Anggaraeni 2017). Martin & Bolliger, (2023) suggested several components in digital learning design that can be applied in digital or web-based learning, namely:

- a. Designing or selecting course management tools.
- b. Course planning and organizing.
- c. Chunking content.
- d. Using interactive teaching and learning strategies.
- e. Applying the adult learning principle.
- f. Considering Self-directing learning and student-centered learning approach.
- g. Using authentic assessment strategies.
- h. Providing digital orientation learning and technology training.
- i. Providing information about appropriate infrastructure for learner support.

1.2. Purpose of study

In this pandemic, the lecturer's and students' interaction and the lecture were carried out by software learning technology. UIN Ar-Raniry has applied online media in the online and offline learning process. Google Classroom and Zoom applications are the software to support distance education in this pandemic. The lecturers of Ar-Raniry also used several hardware and software devices, including selected applications as the learning media. The selection of this technology influences learning achievement. This study will investigate the selected media and its effectiveness in the learning process at Ar-Raniry State Islamic University, Banda Aceh (UIN Ar-Raniry). The research questions are what technology is used in the learning process, how to select the technology, and whether the selection eases the learning process?

2. METHOD AND MATERIALS

This research is qualitative with a descriptive analysis approach. In this study, the authors used sentences to examine and find out various issues related to the selection of technology in the learning process. The descriptive analysis research approach describes a symptom or event happening right now and then analyzed. A qualitative research method is used to examine the condition of natural objects, where the researchers are the key instrument. The data collection technique is done by triangulation (mixed), while the data analysis is inductive, and the results of qualitative research emphasize meaning rather than generalization (Sugiyono, 2009). Qualitative meaning is used to obtain in-depth data or data that contains meaning. Meaning is actual and factual data which is a value behind visible data (Sugiyono, 2009).

2.1. Data collection

This research is a field research type, meaning that the data used in the research is obtained through field studies by observing, recording, and collecting various data and information about the selection of technology in the learning process at Ar-Raniry University Banda Aceh. The object of this research is the selection of technology in the learning process.

2.2. Participants and context

This study was located at Ar-Raniry University Banda Aceh. Researchers are interested in researching this place since the location is strategic and directly related to the educational system. In addition, this location has the potential for data from various types of backgrounds, such as students, education staff, and lecturers. There is also a relationship between the researchers and the education staff in the university, thus enabling

Bardan, Z.T., Salam, A.J., Mubarak, H., Fahmi, C., Sulaiman, B.H. & Armia, M.S. (2024). The selection of technology in the learning process: Is that effective enough? *Global Journal of Information Technology: Emerging Technologies*. 14(1), 36-44. <https://doi.org/10.18844/gjit.v14i1.9453>

researchers to conduct more in-depth research because of the easy access to further relevant information. This research was carried out from October to December 2021.

3. RESULTS

3.1. Selected technology and learning process at UIN Ar-Raniry Banda Aceh

According to the Head of Information Center Technology (ICT), Ghufran explained that UIN Ar-Raniry has a control center for information and technology. There are two types of technology used in the learning process at UIN Ar-Raniry, namely hardware, and software. Besides controlling the information and technology system of UIN in databases and performance, ICT also facilitates the online learning process. Furthermore, Ghufran explained that ICT facilitates lecturers and students to register their accounts. Then, the accounts are integrated and managed, so that every lecturer and student can interact based on the accounts that have been provided.

Furthermore, Ghufran also mentioned that to facilitate the learning process through information technology, ICT submits learning system management to the academic affairs of each faculty. For the next, the faculty would provide a study room for academic and student affairs by choosing Google Classroom and Zoom applications. The software is controlled by academic affairs and also the study program.

According to the Head of subdivision, for example, Head of Academic Subdivision of Da'wah and Communication Faculty, and also the Head of Subdivision of Academic and Students of Science and Technology Faculty, both explained that for connecting lecturer and students in the learning process, they provide an account for lecturers and students. After that, lecturers and students are invited to the Google Classroom application. Through Google Classroom, the lecturer could convey learning theory in writing, pictures, and audio-visual. There are various menus or facilities that lecturers and students could use in the learning process. Several UIN lecturers interviewed revealed similar answers, such as Fairum M. Nur, Zubaidah, Muhibuddin, Anita, Hendar Syah Putra, Yusri, and T. Lembong. They mentioned that the dialogue process in Google Classroom, Zoom Meeting, and Google Meet learning is straightforward. Although they had difficulty at first experience because they still had not gotten used to it, by the time they became used to it, and felt easy to operate it.

According to the Head of ICT, the selection of Google Classroom, Zoom Meeting, Google Meet, and Canvas as some applications for teaching and learning at UIN Ar-Raniry is based on the consideration that the whole supporting devices for operating function, computer compatible capacity, data centers as well as software and hardware of Google Classroom have already available. Thus, there is no obstacle to running Google Classroom.

Besides Google Classroom, other online learning technologies selected by UIN Ar-Raniry are Zoom and Google Meet. Zoom is more often used in the learning process, especially in the thesis defense process. Ade Irma, Bismi Khalidin, Muhammad Talal, and other UIN lecturers also explained that Zoom is convenient for lecturers and students, especially during proposal seminars, Munaqasyah, and Graduation processes.

The learning process through Zoom and Google Classroom has been done smoothly based on the observation results. Likewise, lecturers and students could conduct face-to-face interaction through the Google Classroom media even though they are in separate places. Some lecturers hold the lecture process on campus, whereas others take place at home. The lecturers and students join the online course based on the timetable that has been set. Furthermore, the other technology devices used in learning at UIN Ar-Raniry are focus, electronics board, TV studios, radio studios, and computer laboratory.

3.2. How to choose the technology in the Learning Process at UIN Ar-Raniry Banda Aceh

Based on the findings, one of the reasons to choose learning technology is based on the exciting and easy-to-do criteria. It can arouse students' curiosity, stimulate them to react to scientific explanations, and help students concretize something abstract. In previous sessions, several primary considerations needed to choose learning technology and media were mentioned as the selected candidates, especially in the context of distance learning as it is today. The considerations are the learning objectives and experiences. The other considerations are the way to choose the technology in the learning process. Based on existing data for

Bardan, Z.T., Salam, A.J., Mubarak, H., Fahmi, C., Sulaiman, B.H. & Armia, M.S. (2024). The selection of technology in the learning process: Is that effective enough? *Global Journal of Information Technology: Emerging Technologies*. 14(1), 36-44. <https://doi.org/10.18844/gjit.v14i1.9453>

selecting technology in the learning process, it is necessary to pay attention to synchronous and asynchronous. This technology is used in Google Classroom, Meet, Canvas, and Zoom meetings.

According to Ghufran, there are several methods used in choosing the technology, they are:

1. Conducting dialogue or discussion. ICT holds meetings and discussions with lecturers and university leaders as the center of information management and the unit that controls the database. This discussion is conducted to determine what technology media is suitable and easy to use in the learning process. Meanwhile, the dialogue with the leaders is intended to obtain support and regulations that must be made legal for using technology in the learning implementation.
2. Conducting observations and evaluations of facilities. ICT conducts observations and evaluations of various devices and facilities, especially those that support the computer operation connected to a database and an integrated internet network system. Evaluation is carried out to find out what facilities are already available and what equipment is not yet available. They are forwarded to the leaders so the equipment that is not yet available can be immediately provided.
3. Conducting training for lecturers and education staff. Before confirming the chosen technology, UIN Ar-Raniry, through the leaders of all faculties in collaboration with ICT, conducts training for lecturers and education staff on using Google Classroom, Google Meet, and Zoom Meetings. From the training, it is known that every lecturer and education staff is believed to be able to use the selected educational technology. The lecturers experience difficulties only in the early stages. After being introduced to the technology, the trained lecturers and education staff could use it easily.
4. Creating a guide. To facilitate learning technology, UIN Ar-Raniry, through the Rector's Decree, issued a guide for online and offline lecture systems. The guidelines that have been prepared are socialized and harmonized, so various inputs obtained from the socialization process become input for improvements to existing guidelines. The socialization process involves the Quality Assurance Institution, Information Technology and Database Centre (PTIPD), and ICT. Socialization is held by forming a cluster. This strategy is intended to divide the number of participants equally.
5. Giving directions to students. Students receive direction and guidance on connecting with the online learning system through their respective accounts and an integrated communication network, either through Google Classroom, Google Meet, Zoom Meeting, or Canvas.

Learning technology offers various possibilities for the technical design of the learning process and system. They must be controlled, flexible, adaptive, and guided smartly. A precondition for this system is general learning theory and a specific model domain for getting knowledge. There is no different opinion about learning technology that provides the latest tools for education and a great opportunity to use research results. The selected technology applications have synchronous and asynchronous properties. Both can occur directly simultaneously, while other application systems can occur continuously (asynchronously) to allow students to enter and return to the various contents presented. Meanwhile, Google Meet and Zoom Meeting have a lower usage duration than Google Classroom.

3.3. The right technology selection can facilitate the learning process at UIN Ar-Raniry Banda Aceh.

The research data explains that in the selection of technology, the factors and criteria of the technology should be understood. Then, apply the selection of technology and follow its provisions, including the suitability between technology and materials, affordable funds, available hardware, available learning resources, and ease of use. In addition, several obstacles occur when choosing learning technology, such as teaching materials not being adequately facilitated, lack of understanding of educators about learning technology, and incompatibility between professions and degrees.

Therefore, it is necessary to understand the factors in selecting technology and the criteria for choosing technology. If one already understands these two things, then one is expected to be able to apply them when choosing technology. The stages and procedures that must be carried out when choosing technology are the

Bardan, Z.T., Salam, A.J., Mubarak, H., Fahmi, C., Sulaiman, B.H. & Armia, M.S. (2024). The selection of technology in the learning process: Is that effective enough? *Global Journal of Information Technology: Emerging Technologies*, 14(1), 36-44. <https://doi.org/10.18844/gjit.v14i1.9453>

suitability of technology and materials, available funds, ensuring hardware and textbook facilities, mastering the use of the selected technology, and overcoming the obstacles that continuously occur when the technology is chosen. Based on the data, the selected and available technology in the learning process at UIN Ar-Raniry Banda Aceh was related to Information Technology (IT). The technology used was easy to find under any conditions in the learning process. Students and lecturers generally use computers, laptops, and even mobile phones during lectures.

Information Technology (IT) is influential in facilitating the learning process both synchronous and asynchronous. The synchronous learning process means that learning occurs in a time that has been set, while asynchronous means using technology in the learning process with a predetermined time setting. Even though the process is not being monitored, it continues as it should (Amiti, 2020). These two properties will ease users in the learning process. Information technology has been beneficial in the learning process with no obvious obstacle in terms of using the technology, indicating by the participants that it is effortless to use technology during the learning process. However, there are challenges concerning technological support, such as the Internet network, teaching materials not being adequately facilitated, the lack of educators' understanding of learning technology, and the incompatibility between the profession and the degree (Uerz et al., 2018).

5. CONCLUSION

From the research results, several conclusions can be drawn. First, information technology is the selected and available technology used in the learning process at UIN Ar-Raniry Banda Aceh, Indonesia. The tools used in general are laptops, computers, and mobile phones. Second, Google Classroom, Google Meet, and Canvas are chosen for the learning process to be more effective.

All of these learning tools have synchronous and asynchronous properties. Third, to implement technology and facilitate the learning process, it is necessary to obtain a good condition, as proven and recognized by many who use technologies during the learning process. Fourth, internet networks should be well-facilitated, and educators must understand the learning technology.

Conflict of Interest: The authors declare no conflict of interest.

Ethical Approval: The study adheres to the ethical guidelines for conducting research.

Funding: This research received no external funding.

REFERENCES

- Aarnio, H., Clavert, M., Toom, A., & Kangas, K. (2024). Pedagogical infrastructures in multidisciplinary technology education. *International Journal of Technology and Design Education*, 1-25. <https://link.springer.com/article/10.1007/s10798-024-09915-4>
- Akbar, M. F., & Anggaraeni, F. D. (2017). Teknologi dalam Pendidikan : Literasi Digital dan selfdirected Learning Pada Mahasiswa Skripsi. *Jurnal Indigenous*, 2(1).
- Amiti, F. (2020). SYNCHRONOUS AND ASYNCHRONOUS E-LEARNING. *European Journal of Open Education and E-Learning Studies*, 5(2). <https://oapub.org/edu/index.php/ejoe/article/view/3313/0>
- Arifin, Z. (2012). *Evaluasi Pembelajaran*. PT Remaja Rosdakarya.
- Arsyad, A. (2010). *Media Pembelajaran*. RajaGrafindo Persada.
- Azorín, C. (2020). Beyond COVID-19 supernova. Is another education coming?. *Journal of Professional Capital and Community*, 5(3/4), 381-390. <https://www.emerald.com/insight/content/doi/10.1108/JPCC-05-2020-0019/full/html>
- Baniomar, K. A. (2022). The impact of the shift to distance learning on the seven principles of good practices in university education in light of the COVID-19 pandemic. *Kıbrıslı Eğitim Bilimleri Dergisi*, 17(5), 1533-1548. <https://www.ceeol.com/search/article-detail?id=1048882>
- Barrett, N. E., & Liu, G.-Z. (2016). Global Trends and Research Aims for English Academic Oral Presentations. *Review of Educational Research*, 86(4), 1227–1271. <https://doi.org/10.3102/0034654316628296>

- Bardan, Z.T., Salam, A.J., Mubarak, H., Fahmi, C., Sulaiman, B.H. & Armia, M.S. (2024). The selection of technology in the learning process: Is that effective enough? *Global Journal of Information Technology: Emerging Technologies*, 14(1), 36-44. <https://doi.org/10.18844/gjit.v14i1.9453>
- Bracey, G. W. (2010). Our Eternal (and Futile?) Quest for High Standards. *Phi Delta Kappan*, 91(4), 75-77. <https://doi.org/10.1177/003172171009100418>
- Gallagher, M., Nanyunja, S., Akello, M., Mulondo, A., & Miranda, J. J. (2024). Hopeful futures for refugees in higher education: cultivation, activation, and technology. *International Journal of Educational Technology in Higher Education*, 21(1), 38. <https://link.springer.com/article/10.1186/s41239-024-00470-5>
- Godsk, M., & Møller, K. L. (2024). Engaging students in higher education with educational technology. *Education and Information Technologies*, 1-36. <https://link.springer.com/article/10.1007/s10639-024-12901-x>
- Rehman, G. U. (2021). Chirally Discriminant Process Analytical Technologies. The University of Manchester (United Kingdom). <https://search.proquest.com/openview/db7eadfb484812272b131cd812678af9/1?pq-origsite=gscholar&cbl=51922&diss=y>
- Kurniawan, A. W., Musa, M. I., Akbar, A., Burhanuddin, B., Mustafa, M. Y., & Haeruddin, M. (2022). Magical Mystery Tour: The Enigma of Indonesia Education Service during COVID-19 Outbreak. *Cypriot Journal of Educational Sciences*, 17(5), 1760-1773. <https://eric.ed.gov/?id=EJ1349194>
- Malyshev, V. V., & Piyavsky, S. A. (2024). Technology of Confident Judgment when Decision Making in the Education System. *Journal of Computer and Systems Sciences International*, 63(1), 149-174. <https://link.springer.com/article/10.1134/S1064230724700126>
- Manguilimotan, R. P., Cabalda, J. A., Arnado, A. M. M., Padillo, G. G., Espina, R. C., & Capuno, R. G. (2022). Parents' Satisfaction with Online Education for Learners with Special Needs at the Elementary Level. *Cypriot Journal of Educational Sciences*, 17(4), 981-998. <https://eric.ed.gov/?id=EJ1336596>
- Martin, F., & Bolliger, D. U. (2023). Designing online learning in higher education. *Handbook of open, distance and digital education*, 1217-1236. https://link.springer.com/content/pdf/10.1007/978-981-19-2080-6_72.pdf
- Mitchell, K. M. W., & Manzo, W. R. (2018). The Purpose and Perception of Learning Objectives. *Journal of Political Science Education*, 14(4), 456-472. <https://doi.org/10.1080/15512169.2018.1433542>
- Muammar, M. (2017). Nurcholish Madjid dan Harun Nasution serta Pengaruh Pemikiran Filsafatnya. *Petita : Jurnal Kajian Ilmu Hukum Dan Syariah*, 2(2). <https://doi.org/10.22373/petita.v2i2.74>
- Mustikawati, F. E. (2019). Fungsi Aplikasi Kahoot sebagai Media Pembelajaran Bahasa Indonesia. Prosiding seminar Nasional Bulan Bahasa. <https://ejournal.unib.ac.id/semiba/article/view/10281>
- Nana, S., & Rivai, A. (2002). *Media Pengajaran*. Sinar Grafika.
- Noermanzah, N., & Friantary, H. (2019). Development of Competency-Based Poetry Learning Materials for Class X High Schools. *International Journal of Recent Technology and Engineering*, 8(4).
- Ospanova, B. O., Aubakirova, R. Z., Kuanysheva, B. T., Kabzhanova, G. A., Anatolyevna, T. I., & Tabakaev, Y. V. (2022). The organization of distance education during the Covid-19 pandemic. *Cypriot Journal of Educational Sciences*, 17(4), 999-1008. <https://doi.org/10.18844/cjes.v17i4.7104>
- Peretti, S., Kubiato, M., Caruso, F., Di Mascio, T., Giancola, M., D'Amico, S., & Pino, M. C. (2024). # InstaMind: teachers' beliefs on educational technology to promote seamless technology integration in early education. In *Frontiers in Education*, 9, 1399807. <https://www.frontiersin.org/articles/10.3389/feduc.2024.1399807/full>
- Perraton, H. (2021). A theory for distance education. In B. H. David Sewart, Desmond Keegan (Ed.), *Distance Education International Perspectives* (1st ed., pp. 34-35). Routledge Publishing.
- Salman, A. M., & Shahadab, F. H. (2022). Obstacles of Teaching Distance Universities Courses in Light of E-Learning Quality Standards. *Cypriot Journal of Educational Sciences*, 17(4), 1244-1257. <https://eric.ed.gov/?id=EJ1336595>
- Setiawan, D. (2018). PERSPEKTIF E-LEARNING DOSEN PROGRAM STUDI SISTEM INFROMASI UNIPMA, RESEARCH. *Computer, Information System & Technology Management*, 1(1), 1-6.
- Siregar, E. & Nara, H. (2011). *Teori Belajar dan Pembelajaran*. Ghalia Indonesia.
- Sugiyono. (2009). *Metode Penelitian Kuantitatif, Kualitatif, dan RAD*. Bandung. Alfabeta.

- Bardan, Z.T., Salam, A.J., Mubarak, H., Fahmi, C., Sulaiman, B.H. & Armia, M.S. (2024). The selection of technology in the learning process: Is that effective enough? *Global Journal of Information Technology: Emerging Technologies*, 14(1), 36-44. <https://doi.org/10.18844/gjit.v14i1.9453>
- Sunaengsih, C. (2016). PENGARUH MEDIA PEMBELAJARAN TERHADAP MUTU PEMBELAJARAN PADA SEKOLAH DASAR TERAKREDITASI A, *Jurnal UPI Edu*, 3(2). <https://ejournal.upi.edu/index.php/mimbar/article/view/4259>
- Suryani, N., & Setiawan, A. P. (2018). *Media Pembelajaran Inovatif Dan Pengembangannya*. Remaja Karya.
- Uerz, D., Volman, M., & Kral, M. (2018). Teacher educators' competencies in fostering student teachers' proficiency in teaching and learning with technology: An overview of relevant research literature. *Teaching and Teacher Education*, 70, 12–23. <https://doi.org/10.1016/j.tate.2017.11.005>
- Wang, C., Chen, X., Yu, T., Liu, Y., & Jing, Y. (2024). Education reform and change driven by digital technology: a bibliometric study from a global perspective. *Humanities and Social Sciences Communications*, 11(1), 1-17. <https://www.nature.com/articles/s41599-024-02717-y>
- Yoo, J. Y., Lee, J. H., & Kim, Y. S. (2022). A study on the possibility of a change in culture and arts education curriculum by shooting "METACLASSROOM" in the COVID-19 pandemic era. *Cypriot Journal of Educational Sciences*, 17(5), 1603–1621. <https://doi.org/10.18844/cjes.v17i5.7239>