

Photo voice study: Planned Behavior of AI User Students in the Quranic Perspective

Novia Solichah*, Ermita Zakiyah, Nurul Shofiah, Iqbal Ali Wafa, Verona Feisya Akhadya

Maulana Malik Ibrahim State Islamic University Malang email: noviasolichah@uin-malang.ac.id, zakiyah.ermita@uin-malang.ac.id,

Abstract: The purpose of this study is to see how student behavior plans using photo voice studies in the use of AI from the perspective of the Qur'an, because technological advances are increasingly rapid and life problems are dynamic, so that AI on the one hand becomes the answer to all existing questions, students are easier to access all problems with AI technology. The Qur'an which is the end of the answer is used as the main solution when problems in life are also increasingly complex, just as AI is used as a solution in problems. This research uses the method of studying photo voice to see whether AI technology can answer problems in Islam and how the Qur'an responds to it, this research was conducted from August to October 2020 through a series of stages of implementation in accordance with the process of photovoice, data transcript and interviews, member checking, condensing facts related to AI Ethics in the Qur'an. The finding of this study is that AI cannot be used in Islamic studies in crucial problems, because Islam is dynamic so it requires more than one paradigm to answer it. The Qur'an gives the answer that everything can be answered and has a solution, only that man must look for clear instructions that are the Qur'an.

Keywords: Study of photographic voice; behavior; students; perspective of the Qur'an.

INTRODUCTION

The application of artificial intelligence (AI) is growing rapidly and experiencing many developments of new ways to utilize it in various aspects of human life (Mijwil et al., 2023). Recent advances in artificial intelligence (AI) have increased interest in understanding potential applications and their implications in various domains. One of the most prominent developments in this field is natural language processing (NLP) systems, artificial intelligence (AI) (Van Dis et al., 2023). AI technology will change habits in the implementation and evaluation of education. Changes in the role of educators one that

changes habits, discussed by Fırat (2023), Bozkurt & Gil-Jaurena (2023) and Hu et al., (2020), which supports the idea that AI tools can improve student engagement and satisfaction.

Currently developing artificial intelligence (AI) applications including search strategies with prompts used in online bibliographic databases that have applied AI (artificial Intelligence) models. In the context of AI, prompt means an instruction or question given to AI. Examples of some AI applications are 1. Elicit (elicit.org), 2. Scispace (typeset.io), 3. https://www.perplexity.ai/. Based on the results of an initial survey to students, AI technology that is often used includes paraphrasing https://quillbot.com/, https://getdigest.com/en, litmaps.com, connectedpapers.com, researchrabbit.ai.

In this study, the students used as respondents were figh study students. Participants have the criteria to be in semester 3 and are completing several compulsory Islamic courses. Four students consisting of two men and two women were gathered to provide information about their subjective experience using AI in completing Islamic course assignments. Participants are active users of AI in completing courses.

Planned behavior carried out by students in using AI can be explained using the Theory of planned behavior. The theory of planned behavior relates a person's intentions and behavior. This theory, proposed by Icek Ajzen, has been widely applied to the study of various behaviors in various fields, including advertising, public relations, and health. The SDGs state that intentions toward attitudes, subject norms, and perceived behavioral control, together shape behavior (Pourmand et al., 2020).

According to Planned Behavior Theory, a person's background, such as personality, age, gender, nationality and cultural background, acculturation, stigma and socioeconomic status, affect a person's beliefs in a behavior. These beliefs include behavioral beliefs, normative beliefs, and control beliefs that shape a person's attitude toward the behavior. This attitude then affects a person's intentions and ultimately affects actual behavior (Bornschlegl et al., 2021).

Theory of planned behavior (TPB) explained by Ajzen (1985), suggesting that attitudes are specific attitudes related to behavior or perceptions of individual behavior about performing behavior and evaluation of the results of these behaviors, subjective norms are individual perceptions of culture and views of others, perceptions of behavioral control are close to intent is self-efficacy, namely the individual's belief that he will succeed in mastering the skills needed (Ramdhani, 2016). Planned Behavior theory explains intentions and attitudes toward action and perceived behavioral control is often a significant variable responsible for the variations described in intentions. Intention remained the most important predictor, but in half the studies reviewed, perceived behavioral control significantly improved predictions (Godin & Kok, 1996).

Based on the results of research related to planned behavior of AI user students, it was found that the geographical configuration tends to come mostly from the USA (United States of America) and Greece while the system comes from Thailand, Spain, Portugal, Chine, Canada, Turkey, Morocco, UK, Finland, Pakistan, Australia, Vietnam, Sweden, and Korea

(González-Calatayud et al., 2021). In planned behavior research on the application of AI technology in student assessment from 2018 to 2022, it is known that there are several authors with the most citations, including: Cuijpers, P., (32 citations, 4 articles), Ebert, D., (32 citations, 4 articles), Kessler, R., (32 citations, 4 articles), Bruffaerts, R., (26 citations, 3 articles), and Karyotaki, E., (22 citations, 3 articles) (González-Calatayud et al., 2021).

With several prominent topics including artificial intelligence, assessment, education, student feedback, improving learning technology, and also educational innovation (González-Calatayud et al., 2021). The recommendations from this study for further research are to understand the ability of AI in educational assessment, especially at education levels other than higher education. In addition, there is a need to increase research that focuses more on educational aspects than technical development around AI (González-Calatayud et al., 2021).

The Qur'an is used by human guidance, the Qur'an goes hand in hand with human development, when in this day and age technology is increasingly developing, the Qur'an is also dynamic to accompany it. Utilization of AI technology to be prepared to anticipate the negative impacts of AI with ethics and humanism, appropriate strategies and anticipatory steps.(Saihu, 2021). How the Qur'an describes the use of AI technology and how the Qur'an assesses the existence of AI technology. Because the Qur'an is always a guide that will not stop, the image of the Qur'an is important to manage AI in the dynamics of student behavior planners.

Further research is still needed related to planned behavior and AI with adolescent participants, in this case students. An explanation of how the dynamic picture of planned behavior of AI user students can be more easily understood using the photovoice method. The purpose of this study is to determine the picture of Planned Behavior of AI User Students in the Quranic Perspective using the Photo voice study approach.

RESEARCH METHODS

Participants in this study were students who were used as respondents were students of fiqh studies. Participants have the criteria to be in semester 3 and are completing several compulsory Islamic courses. Four students consisting of two men and two women were gathered to provide information about their subjective experience using AI in completing Islamic course assignments. Participants are active users of AI in completing courses.

This research was conducted from August to October 2020 through a series of implementation stages according to the photovoice process developed by Wang and Burris in 1997. In detail, the stages of photovoice implementation are as follows:

Recruit photovoice participants. At this stage, the researcher as a facilitator approaches the group first. Introducing the photovoice method. Researchers conducted a focus group discussion (FGD) to socialize research to photovoice project participants. The introduction of the photovoice method to participants begins with an introduction by the researcher as a facilitator to explain the purpose and purpose of this research project.

Take a photo. The next stage, participants were asked to take photos related to the problem. The participants freely took photos according to their wishes and creativity. Discuss photos. The photo discussion is divided into two stages. In the first stage of photo discussion, researchers display the results of photos that have been taken by participants. In the second stage of photo discussion, researchers presented new photos taken by participants and dug deeper into the photos.

Stage 2

Evaluation of activities. Evaluation is the final stage in the series of photovoice project implementation. At this stage, researchers and participants carry out focus group discussions (FGDs) to evaluate the weaknesses and strengths of all stages of the photovoice project implementation that have been carried out starting from participant recruitment, socialization and training on photovoice methods, photo taking, photo discussions to photo exhibitions.

The next stage is transkipping data and interviews, checking members, condensing facts related to AI Ethics in the Qur'an. The process of integration along with psychological theory and the Qur'an, Ethics of honesty. Academic integrity, research ethics, Islam in its results.

RESEARCH RESULTS and DISCUSSION

The Qur'anic concept in the use of AI includes four parts, the first is intention, the second is control in the form of time, ability and energy, the third is attitude and the fourth is environmental influence consisting of subjective norms. These four components are associated with the postulates of the al_Qur'an with the Maudhui method or thematic method, which is a method that takes references to the Qur'an based on certain themes from the Qur'an so that this study is based on the postulates contained in the Qur'an.

The study of intention is an urgent matter in Islam (Busro, n.d.), intention in psychology can be interpreted as the motivation that exists in a person's person and intention is the most relevant predictor to determine behavior (Junaedi, n.d.) Someone who has high motivation is different from someone who does not have motivation, subjective norms and perceptions of control over behavior have a positive effect on intention (Irfan, 2011)

Time, ability and energy become factors that are also important in social life, potential energy has an influence on the capacity of human abilities (Siahaan, n.d.), a person who has more time but no ability and energy will be wasted, the three components will go hand in hand. Then the influence of the environment both the school environment and the community environment. (Wahid et al., n.d.) This influence will have a positive impact as well as a negative impact (Pitoewas, n.d.

Through the photovoice method can help participants express their views, thoughts and ideas through photos. This is in line with the views of Royce et al., (2006) which states that one of the alternative media that can be used by participants for expression is photo media. Photos are used to amplify data (Birowo, 2020). Facilitators usually work together in groups

of participants teaching them to use cameras to encourage them to define, communicate, and deal with the situations they face. Broadly speaking, the purpose of the photovoice method is to provide a communication space for participants to convey their circumstances, strengths and problems.

Then, supported by other research related to artificial intelligence in online higher education in the period 2011 to 2021, it is known that there are several authors who have the most citations, namely: Cuijpers, P., (32 citations, 4 articles), Ebert, D., (32 citations, 4 articles), Kessler, R., (32 citations, 4 articles), Peng, Wei (27 citations, 4 articles) and Buffaerts, R., (26 citations, 3 articles) (Ouyang et al., 2022). With geographical configurations that tend to come from India, Columbia, Saudi Arabia, Spain, USA, China, Brazil, Australia, Netherlands, Malaysia, Ireland, Taiwan, Sweden, UK, Japan, and Dubai.

Based on this research there are several research topics that are often discussed such as: artificial intelligence in education, systematic reviews, online higher education, online learning, and empirical research (Ouyang et al., 2022). From this research, there are also still shortcomings, of course, so it is recommended that future research can more fully find relevant articles and increase insight related to new terms in AI technology. In addition, you can find reference sources from various articles, not only linked to magazine articles, and determine the right study. Also, the use of formal meta-analyses will be able to help report the effects of selected empirical studies for deeper understanding. Of the several things that have supported this research, it should be developed in future research and put into practice trends (Ouyang et al., 2022).

There are also other studies related to the systematic review of artificial intelligence applications in higher education in Latin America from 2014 to 2022 with several authors with the most citations as in previous studies, as follows: Cuijpers, P., (32 citations, 4 articles), Ebert, D., (32 citations, 4 articles), Kessler, R., (32 citations, 4 articles), Peng, Wei (27 citations, 4 articles) and Buffaerts, R., (26 citations, 3 articles) (Zobeida et al., 2022). The geographical configuration is in Peru, Ecuador, Colombia, Brazil, Mexico, Argentina, Bolivia, and Chile. In addition, several research topics that are highlighted include: artificial intelligence, higher education, Latin America, machine learning, deep learning, natural language processing, algorithms, and systematic reviews (Zobeida et al., 2022). In this study, of course, it is far from perfect, so it is recommended by researchers for the future research should continue to pay attention to the development of AI in Latin America which includes content analysis as well as in-depth quantitative analysis of relevant studies. In addition, there is still a need to establish protocols for the protection of personal data during data collection (Zobeida et al., 2022).

Not only that, on research Xu and Ouyang (2022) Regarding the systematic assessment of the role of AI in education systems based on the proposed conceptual framework, there are some of the same researchers as in the previous study, with the most citations. In addition, there are several research topics that are highlighted, including in this study such as: artificial intelligence, artificial intelligence in education, adaptive system theory complex, complexity, and the role of AI (Xu & Ouyang, 2022). However, in a study certainly cannot be separated

from sh

from shortcomings, so, input from researchers is needed as evaluation material for future research, where future research can adjust screening criteria so that more articles can be included, in addition to future research, more variations for the methodology, not only through systematic reviews (Xu & Ouyang, 2022).

On research Hasan Sapci and Aylin Sapci (2020) About a systematic review of artificial intelligence education and tools for medical and health informatics students in the period 2014 to 2022 with the most citation authors the same as previous studies that have been presented. Of course, in this study there are several research topics that are often discussed, including: artificial intelligence, education, machine learning, deep learning, medical education, health informatics, and systematic reviews (Hasan Sapci &; Aylin Sapci, 2020). These various studies have geographical configurations including Canada, Singapore, Sweden, China, United States, Portugal, Greece, Germany, Taiwan, Mexico, Korea, France, Oman, and the Netherlands (Hasan Sapci &; Avlin Sapci, 2020). From the results of the discussion about the research that has been presented by (Hasan Sapci &; Aylin Sapci, 2020), it was found that there are still shortcomings so that in the future artificial intelligence systems can emerge in health care that require new learning modalities. In addition, a recent study evaluated the skills of health informatics students in developing AI applications and emphasized the need to develop new competencies. Medical students need to become familiar with clinical AI applications and predictive modeling to assess biased data and evaluate innovative AI technologies, and should also be familiar with the proper application of ML algorithms as well as the development of innovative clinical informatics systems (Hasan Sapci &; Aylin Sapci, 2020). They must gain the hands-on skills needed to extract data, manage large data sets to analyze sophisticated data, and develop innovative AI systems (Hasan Sapci &; Aylin Sapci, 2020).

Furthermore, there is also research on a systematic review of artificial intelligence dialogue systems to improve the interactional competence of English as a foreign language students at universities, from 2014 to 2022 with the following geographical configurations: Japan, China, Egypt, Taiwan, Croatia, Serbia, Korea, Germany, Turkey, English, and USA (Zhai & Wibowo, 2023). From this study, there are several authors who have the most citations similar to those in previous studies that have been described (Zhai & Wibowo, 2023). Although this research is widely spread in several countries, it does not rule out the possibility of shortcomings of research so that, for future research it is expected that researchers to develop speaking activities that can be accessed easily and used in educational institutions at universities as academic goals, besides that it is necessary to build a framework to implement a dialogue system in education at universities (Zhai & Wibowo, 2023).

Qur'an Perspective

The Qur'an regulates the concepts of intention, self-control in the form of time, ability and energy, then attitudes and environmental influences consisting of subjective norms. This concept is then used in assessing the use of AI by students in Islamic materials.

Intention and motivation in psychological studies are not the same, intention and motivation are different things, intention as a belief in the heart to do something, while motivation is a need that grows on the basis of intention (Muhammad Izzuddin Taufiq, 2006), intention is part of behavior, and motivation is the impetus that arises in the application of intention.

The purpose of man is to serve God,(Gaffar, 2016) in accordance with Surat QS a-Zariyat which states that I did not create jinns and humans but to serve Me. It is clear that Muslims in their lives only do worship, so whatever is done, both in the form of mahdhof worship and goiru mahdhoh worship must be intended for worship, such as prayer, fasting, hajj which is intended for worship but working, maintaining food, maintaining health is also worship to Allah, the difference is in the position of intention, working with the intention of worship is much nobler than working with the intention of only making a living.

Self-control has three components, namely in the form of time, ability and energy, self-control is the ability of individuals to determine their behavior based on certain standards such as morals, values, and rules in society to lead to positive behavior, (Sentana, M. A., &; Kumala, 2017) In the use of AI, students must have good control, this is the same as described in the Qur'an

Indeed, those who believe and migrate and wage jihad with their property and soul in the way of Allah and those who give shelter and shelter (to the pilgrims), they are each other's protections. And (to) those who believe, but have not migrated, there is not the slightest obligation upon you to protect them, before they migrate. (However) if they ask you for help in religion, then you are obliged to give help except to those who have an agreement between you and them. And Allah sees what you do.

The letter states that as human beings must have self-control, both in the form of faith, migration and jihad. Self-control in the form of faith is that humans must base themselves on belief in God, in the use of AI students must have righteous faith in God,(Sari, 2019) which in the use of AI must prioritize elements of non-plagiarism, When faith becomes the foundation for students, students benefit from using AI wisely.

Self-control by migrating is that students must have the desire to improve their good deeds from day to day, migrating is not just going from one place to another, but migrating from a position of worship that is less than maximal, not only compulsory worship is carried out but sunnah worship is also carried out. In the wise use of AI, students must have self-control in the form of hijrah, namely that previously the use of AI was only for general

vocabulary searches, while in this concept students use AI for search to facilitate research.(Tjahyanti et al., n.d.)

Self-control by jihad means trying as much as possible, (Saputra et al., n.d.) easy use of AI makes students less competent, (Pakpahan, n.d.) because AI will find whatever students need, so it takes sincerity in finding material that needs and does not need to be studied.

Attitude is needed in the use of AI, because that attitude then determines how the policy in its use. In religious material, attitude is very important in terms of ethics, but in terms of material substance that does not change, AI has enormous benefits, because Islamic science becomes an authoritative science that does not change, even though Islam will adapt to the culture that surrounds it. (Mubarok, n.d.)

The use of AI can occur due to the influence of the environment where the student is, as a creature that cannot be separated from others, humans have a special relationship with other humans. So that the environment causes positive and negative impacts depending on humans who live.



Figure 1.

At first I tried to find 20 verses of the Quran about positive behavior and its rewards. Then I tried to check 1 1 verse, but only at number 2 the translation of the verse was no longer in accordance with the original translation

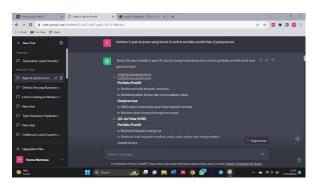


Figure 2

Then I tried to find it again, with a more specific command (as ordered by the Qurdith lecturer), here the command in QS.Al-Baqarah is in accordance with the original verse, but actually in the verse does not explain the reward that will be given

Analysis of the above findings states that Ai makes it easier to find information, cannot be used as a primary source, because Ai's search in Islamic science exemplified by the search for Qur'anic verses is not in accordance with the meaning in accordance with the Ministry of Religion. Ai can be used in social sciences and global problems, but for dynamic Islamic studies, Ai cannot be used as a primary reference.

The next finding is that there is no compatibility between AI, chat GBT and printed books, so AI in Islam is not recommended because Islam runs with *maqasitd sharia*, everything will depend on the benefits(Zakiyah, 2022), it is suppose that the law of eating pork that is haram to eat, will become edible when there is no food other than pork, and when life is threatened.

Ai is efficient in finding big themes, because Ai is a product whose function is to answer general problems, while Islam runs according to the context of the law that works, not on static law. Although sometimes in Islamic science there is a big static theme so that Ai can answer problems, or problems that have been determined by the mujtahid imam that must be used as guidelines

Students use AI to find a general picture, then develop explanations with other AI and other scientific sources, because in Islam there are many paradigms that must be used, for example fiqh, Sufism, law, and social perspectives, all these main things must be seen, Islam is very broad so that in looking at problems must be seen other paradigms.

Answers have been found in AI like jwaban in books, but the book or reference is unknown, so it makes confusion, because there is a large bias from the findings contained in it, references are only globally explained, not specifically explained. The use of AI in Islamic studies is less effective, because the arguments presented are not precise and when discussing crucial laws are not found

CONCLUSION

Study of Photo Voice from Student Behavior Plan AI Users in Quran Perspective it can be concluded that in the science of the Qur'an AI is not appropriate to use, because there are different meanings of translated Qur'anic verses, AI also cannot answer questions about specific laws. The study of the photo voice proves that AI only answers one problem with the global, whereas in Islam humans and law must be seen from a paradigm that is more than one, because basically humans experience different conditions.

BIBLIOGRAPHY

- Ajzen, I. (1985). From Intentions to Actions: A Theory of Planned Behavior. In J. K. & J. Beckmann (Eds.), Action Control (pp. 11–39). Springer-Verlag. https://doi.org/10.1007/978-3-642-69746-3_2
- Bornschlegl, M., Townshend, K., &; Caltabiano, N. J. (2021). Application of the Theory of Planned Behavior to Identify Variables Related to Academic Help Seeking in Higher Education. Frontiers in Education, 6(October), 1–13. https://doi.org/10.3389/feduc.2021.738790
- Bozkurt, A., &; Gil-Jaurena, I. (2023). Shaping the Future by Looking at the Past of Openness in Education and Open Praxis: Rising on the Shoulders of Giants. Open Praxis, 15(1), 1–7. https://doi.org/10.55982/openpraxis.15.1.558
- Busro, M. (n.d.). Presenting Intention in All Deeds. In: Islamic Potpourri in the Disciplines of the Faculty of Mathematics and Natural Sciences, Universitas Islam Indonesia: Student Da'wah Edition.
- Gaffar, A. (2016). Man in Qur'anic Perspective. Tafsere Journal, 4(2).
- Godin, G., &; Kok, G. (1996). The Theory of Planned Behavior: A Review of its Applications to Health-Related Behaviors. American Journal of Health Promotion, 11(2), 87–98. https://doi.org/10.4278/0890-1171-11.2.87
- González-Calatayud, V., Prendes Espinosa, P., &; Roig-Vila, R. (2021). Artificial intelligence for student assessment: A systematic review. Applied Sciences (Switzerland), 11(12). https://doi.org/10.3390/app11125467
- Hasan Sapci, A., &; Aylin Sapci, H. (2020). Artificial intelligence education and tools for medical and health informatics students: Systematic review. JMIR Medical Education, 6(1), 1–14. https://doi.org/10.2196/19285
- Hu, J., He, W., &; Zhou, K. (2020). The mind, the heart, and the leader in times of crisis: How and when COVID-19-triggered mortality salience relates to state anxiety, job engagement, and prosocial behavior. Journal of Applied Psychology, 105(11), 1218–1233. https://doi.org/10.1037/apl0000620
- Irfan. (2011). The concept of al-z}ulm in the Qur'an. UIN Alauddin Makassar.
- Junaedi, M. S. (n.d.). The effect of environmental awareness on the purchase intention of green products: A study of environmentally sound consumer behavior. Benefit: Journal of Management and Business, 9(2), 189–201.
- Mijwil, M. M., Salem, I. E., &; Ismaeel, M. M. (2023). The Significance of Machine Learning and Deep Learning Techniques in Cybersecurity: A Comprehensive Review. Iraqi Journal for Computer Science and Mathematics, 4(1), 87–101. https://doi.org/10.52866/ijcsm.2023.01.01.008
- Mubarok, A. S. (n.d.). REALIZING AUTHORITATIVE INTERPRETERS: (Optimization of Nusantara interpretation as an effort to reduce radical movements. QOF, 2(2), 175–185.

- Muhammad Izzuddin Taufiq. (2006). A Complete and Practical Guide to Islamic Psychology, : Human Echoes.
- Ouyang, F., Zheng, L., &; Jiao, P. (2022). Artificial intelligence in online higher education: A systematic review of empirical research from 2011 to 2020. In Education and Information Technologies (Vol. 27, Issue 6). Springer US. https://doi.org/10.1007/s10639-022-10925-9
- Pakpahan, R. (n.d.). Analysis of the influence of the implementation of artificial intelligence in human life. JISICOM (Journal of Information Systems, Informatics and Computing, 5(2), 506–513.
- Pitoewas, B. (n.d.). The influence of the social environment and adolescent attitudes towards changes in values. JPK (Journal of Pancasila and Citizenship, 3(1), 8–18.
- Pourmand, G., Doshmangir, L., Ahmadi, A., Noori, M., Rezaeifar, A., Mashhadi, R., Aziminia, R., Pourmand, A., &; Gordeev, V. S. (2020). An application of the theory of planned behavior to self-care in patients with hypertension. BMC Public Health, 20(1), 1–8. https://doi.org/10.1186/s12889-020-09385-y
- Ramdhani, N. (2016). Preparation of measuring devices based on the Theory of Planned Behavior. Psychology Bulletin, 19(2), 55–69.
- Saihu, M. (2021). Al-Qur'an and The Need for Islamic Education to Artificial Intelligence. Mumtaz: Journal of Qur'anic and Islamic Studies, 5(02), 18–31. https://www.jurnalptiq.com/index.php/mumtaz/article/view/274
- Saputra, L., Murlianti, S., &; Nanang, M. (n.d.). Social Hermeneutics Study On the Meaning of Jihad by Students of Mulawarman University. Progress In Social Development, 2(1), 1–5.
- Sari, D. A. (2019). (2019). The Meaning of Religion in Modern Life. Horizons: Journal of Islamic Studies, 14(1), 16–23.
- Sentana, M. A., &; Kumala, I. D. (2017). Aggressiveness and self-control in adolescents in Banda Aceh. Journal of Psychological Science, 6(2), 51–55.
- Siahaan, A. (n.d.). Islamic education strategy in improving the quality of Indonesian human resources. Almufida: Journal of Islamic Sciences, 1(1).
- Tjahyanti, L. P. A. S., Saputra, P. S., &; Santo Gitakarma, M. (n.d.). The Role of Artificial Intelligence (AI) to Support Learning during the Covid-19 Pandemic. COMTEX, 1(1).
- van Dis, E. A. M., Bollen, J., Zuidema, W., van Rooij, R., & Bockting, C. L. (2023). ChatGPT: five priorities for research. Nature, 614(7947), 224–226. https://doi.org/10.1038/d41586-023-00288-7
- Wahid, F. S., Setiyoko, D. T., Riono, S. B., &; Saputra, A. A. (n.d.). The influence of the family environment and school environment on student achievement. Syntax Literate, 5(8), 555–564.
- Xu, W., &; Ouyang, F. (2022). A systematic review of AI role in the educational system based on a proposed conceptual framework. Education and Information Technologies, 27(3), 4195–4223. https://doi.org/10.1007/s10639-021-10774-v

- Zakiyah, E. (2022). Maudhui's Tafsir Method in the Qur'an and Hadith on Maqasid Syariah for Economic Welfare in Indonesia. Journal of Islamic Economics and Philanthropy, 5(4). https://doi.org/10.21111/jiep.v5i4.8289
- Zhai, C., &; Wibowo, S. (2023). A systematic review on artificial intelligence dialogue systems for enhancing English as foreign language students' interactional competence in the university. Computers and Education: Artificial Intelligence, 4(September 2022). https://doi.org/10.1016/j.caeai.2023.100134
- Zobeida, S., Pilco, S., &; Yang, Y. (2022). Artificial intelligence applications in Latin American higher education: a systematic review. International Journal of Educational Technology in Higher Education. https://doi.org/10.1186/s41239-022-00326-w.