Edukasi Islami: Jurnal Pendidikan Islam, VOL: 12/NO: 02 Mei 2023 **P-ISSN: 2252-8970**
DOI: 10.30868/ei.v12i02.4991 **E-ISSN: 2581-1754**

STEMR As an Integrated Method in Learnings of Religion And Science At Pesantren-Based Madrasa

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ABSTRACT

The emergence of the Revolutionary Era of Society 5.0 requires the mastery in science and technology. However, the development in science and technology has not been accompanied by the spiritual aspect as a balancing center. On the other hand, the institutions of religion education, have less participation in the world of education in madrasas and Islamic boarding schools. These institutions hold on to the very old traditions so that they are by far left behind from the touch of science and technology. Education in Islamic boarding schools (Madrasah) prioritizes learning in *ulumus syar'i* such as fiqh, fiqh proposals, interpretation, and memorizing the Qur'an. The development of science and technology has not been taken seriously by most of these institutions. This study is aimed to provide an overview of how the implementation of science learning uses the STEMR (Science, Technology, Engineering, Mathematics and Religion) method in learning natural science and mathematics in Pesantren-based Madrasa and how to integrate it in learning process. The method used in the study was field research with a qualitative descriptive analysis approach. The data were collected in three ways: observation, interview, and documentation. After conducting an in-depth study, it resulted that the implementation carried out was in the form of integrating Science, Technology, Engineering, Mathematics and Religion lessons by using information from Al-Qur'an verses to explaining scientific theory, both in class learning, practice and in composing scientific papers. After conducting an in-depth analysis, it shows that the STEMR method provides students with a great understanding in theory of sciences and the Qur'an. Yet, further research is needed to confirm the effects of scientific theory and the Qur'an.

Keywords: Madrasa, Islamic Boarding School (*Pesantren*), Method, Integration, Religion, Science

A. INTRODUCTION

The 5.0 Era of Community Revolution initiated by Japan is a period when humans and technology become one unit, that technology seems to be a primary necessity in life (Prasetyo et al., 2020), (Rahmawati et al., 2021). The basis that distinguishes it from the previous era is that within this era humans still play a central role in controlling the development of this technology (Husna Nashihin et al., 2020). The 5.0 Community Revolution offers a human-centered community order in that there is a balance between technological progress and solving social problems through two instruments by using relationships in the virtual world and the real world (Ellitan, 2020). This era emerged because there were concerns that the human role would be degraded in the industrial revolution 4.0. The 5.0 Era departs from the view of existentialists who think that humans need a rational mind to organize and maintain order in society in this life (Rahmawati et al., 2021).

The development of education is greatly influenced in this era as well. Where the learning process is required to be more mature and educate students in order to enable them to answer the challenges of the times (Hadisi et al., 2023). Of the implementation in this educational process students are expected to have the ability not only in thinking critically, creatively, & independently, but also collaborating, communicating and problem solving (Jatmiko Wibisono, Hafidz, Iffat Abdul Ghalib, 2023). Apart from that, they can also master literacy, numeracy, science, culture, and diversity (Setiawardani et al., 2021). In addition, the implementation of the educational process in this era is expected to easily integrate religion and science, because what are developing now tend more to master material values than spiritual aspects (Husna Nashihin, 2022), for example the demands for the ability to master certain sciences without any assistance in spiritual aspects (Choeroni et al., 2021).

As in the case with public educational institutions, the development of science and technology is not accompanied by the integration between religion and science (Nikita Nur Zulaecha, Hafidz, Biela Nanda Oktivibi Pertiwi, 2023). On the other hand, the technological developments of the religion-based educational institutions have not taken much participation in the world of education as in madrasas and Islamic boarding schools (Hawi, 2018), (Suradi, 2018). These institutions hold on to the very old traditions so that they are by far left behind from the touch of science and technology. Education in Islamic boarding schools (Madrasah)

prioritize learning in *ulumus syar'i* such as fiqh, fiqh proposals, interpretation, and memorizing the Qur'an. (Choeroni et al., 2021).

Because there is a huge gap in these educational institutions, public schools are supposed to be equipped with the integration between religion and science. Madrasas and Islamic boarding schools must open up and catch up in the current development era in science and technology by giving special attention to the learning that has been practiced this far. These institutions must look for strategies and methods on how students of *pesantren* can gain equality or even more in mastery of science and technology. Madrasas and Islamic boarding schools are obliged to find strategies for how to enable their students in mastery of Islamic law and integrate it with sciences.

B. LITERARY REVIEW

1. Islamic boarding school (*pondok pesantren*)

The development of Islamic boarding schools (*pondok pesantren*) from time to time has attained great progress which cannot be underestimated, where Islamic boarding schools have a strategic position and the ability to affect greatly the lives of most levels of societies. Islamic boarding schools are not only a basis for Islamic da'wah but also a place for educational activities (Hamruni, 2016).

The existence of madrasas after the independence of Indonesia has a new nuance, in which the government opens educational channels that were hampered during the colonial period (Nashihin, 2019). Formal educational institutions began to appear, such as elementary, junior high school, senior high school, that also affected *pesantren* to adjust the implementation of learning with the learning in formal education and the national education system, although not all pesantrens were able to adapt to this model (Qomar, 2006).

Around 1970, a variation of pesantren had developed with two models as follows:

a. The old type (classical) is a pesantren that teaches classic books. This type does not teach the teaching with the national curriculum, even though it has adopted the madrasa system with the classical model. Islamic boarding schools belonging to this type include Lirboyo Islamic Boarding School, Ploso Kediri, Maslakul Huda Pati Madrasah Aliyah and Pacitan Tremas Islamic Boarding School (Dhofier, 2015).

b. The new type is a pesantren that has established schools/madrasas with the teaching of classic books, but with an inadequate portion when compared to the classical type of pesantren. Islamic boarding schools that follow this type include; Tebu Ireng and Rejoso Islamic boarding schools in Jombang (Dhofier, 2015). The pesantren follows the national curriculum which follows the pattern of the government which is able to develop rapidly, that is by opening formal schools or madrasahs at the elementary, junior high, high school and even college levels in it (Qomar, 2006).

2. Madrasa Education

There are several moments that really determine the existence of madrasas; first, the Joint Decree of 3 Ministers (SKB 3 Menteri) in 1975 which became the entry point for the recognition of madrasas as Islamic educational institutions which have equivalence to public schools; second, the Law of National Education System No. 2/1989 which makes madrasas not only as equal educational institutions with public schools, but also more than that are recognized as public schools with the distinguished characteristics in the Islamic religion. In other words, since the Law of National Education System No. 2/1989 was enacted, madrasas serve as "plus public schools" strengthened by the existence of Law No. 20/2003 which states that public schools and madrasas stand at the same level of equality, such as the equality between Madrasah Ibtidaiyah (MI) and Elementary Schools (Elementary School), Junior High School (SMP) and Madrasah Tsanawiyah (MTs), Senior High School (SMA) and Madrasah Aliyah (MA), Vocational High School (SMK) and Vocational Madrasah Aliyah (MAK) or other forms of equality (Kosim, 2007).

There are three models of pesantren-based madrasas; first, Islamic boarding school madrasas (*pesantren* madrasa), where the operational model management between madrasas and Islamic boarding schools (Suriadi, 2022) is conducted as one management system (Sumarjoko, Braham Maya Baratullah et al., 2023). Not only are they physically in the *pesantren*, but the structure of its organization and management between madrasas and *pesantren* are also in one integration (integrated management). Secondly, Madrasah Environment Pesantren is a madrasah located in a pesantren environment, which distinguishes from the first model is between madrasah and pesantren not in one managerial system (Robbaniyah et al., 2022). *Thirdly,* Madrasah Pesantren Value System is a madrasah based on the assumption that the *pesantren* education system with its material and culture is considered

suitable or in accordance with the character of the madrasah, especially in realizing Islamic characteristics (Nurul Umah Fijanati, Hafidz, Sukadi, 2023), this madrasah does not have to be in the pesantren environment but the distinctive values of pesantren and Islam are practiced in this madrasah model (Ihsan, 2016).

3. Integration of Religion and Science

The rapid development of science and technology in Indonesia on the one hand has increased material prosperity, but on the other hand, the paradigm of modern science and technology has dragged down the dryness of the human dimension and spiritual and moral needs. The science and technology developed further separated themselves and further abandoned religion and ethics (Kholish et al., 2020). This phenomenon indicates a sharp separation between the life of the world and the hereafter, which begins with an education system that is not integrated, but partially dichotomous. On the one hand, there is a traditional educational system specifically studying Islamic sciences in legal, narrow and limited aspects of worship. On the other hand, there are educational systems that emphasize secular science that adopts the crude given from the West. The two education systems produce a duality of personality within the body of Islam and contradict each other. Therefore, it is necessary to adopt modern secular disciplines with Islamic insights, then reintegrate the science that has been patterned in dichotomous Islamic education (Kurniawan, 2015).

The dichotomy in Islamic education occurs because of two conflicting ideas, namely religion considers that the general science studied is *heresy or* invalid because it comes from infidels, while general science activists argue theology as false science, or in other words as mythology that will not reach the scientific level. This causes the distance between religious knowledge and general science to be even farther. Therefore, the integration of religion and science is a solution that can be offered to answer the Islamic problem of education dichotomy. The integration of religion and science is clearly an opportunity to improve the quality of Islamic education in order to continuously develop with human progress (Warisin, 2018). The focus of science education in Islamic educational institutions will be able to improve the ability of students not only to understanding in sharia science which is *fardu 'ain* science, but also has the ability in the field of science which is *fardu kifayah science* that in the future students are able to face and keep up with the times (Abu Darda, 2015).

In practicing learning with the integration of religion and science, it is necessary to consider the opinions of the figures, including; Mahzar argues that religion and science are not contradictory, both have a strong and inseparable relationship of integrality, where science and religion, according to him, has a mutually reinforcing relationship of integrality between the two. Mahzar sees the relationship between the two with the point of view from the Qur'an and Hadith which resulted him to make a concept with the integral term Islamic science, namely unification for natural sciences and religious sciences as well as humanitarian and social sciences. Mahzar gave his argument when giving explanation of Surah al'Alaq verses 1-5 that knowledge cannot be separated from Allah. This departs from his words that to achieve the happiness of the world and the hereafter must use knowledge. Therefore, science must draw closer to God and science is a means of gaining true knowledge. Also commented in Surah Fussilat verse 3, he stated that the horizon is a symbol of all phenomena that exist in the human environment while the self symbolizes everything that is in the human soul. The first knowledge produces science in the natural and social sciences. The second knowledge produces the sciences of humanity, philosophy, linguistics, logic and mathematics (Mahzar, 1993).

Abdullah gave his thoughts for the solution to the Madrasah Aliyahalahan that occurs in Muslim world, namely the separation between sharia science and sharia ghairu science which is better known as the dichotomy of science. The understanding of Muslims who say that the science of ghairu shari'ah is not important even though there are more of them, because what can save a person in the afterlife is the science of shari'ah, causing the stagnation of Islamic science. As an observer of Islamic science, it is necessary to reconstruct this fact and make a restoration of the scientific paradigm (Yulanda, 2019).

Agus Purwanto explained that Islam with science can be categorized in three forms; first, Islamization of Science which is trying to make the great scientific discoveries of the 20th century and the majority of which occur in the West, can be in accordance with Islamic teachings. Second, Islamic Scientification which means efforts to find a scientific basis for a statement that is considered true in Islam, and third is Islamic Science which is an effort to make the Qur'an and as-Sunah as the basis for the construction of science, as well as an effort to make it able to do good integration with modern science that has developed before (Mohamad Yasin, Sutrisno, Karwadi, 2017).

C. METHOD

The method used in this paper is field research with a qualitative descriptive analysis approach (Syaiful Anam, 2023). The data source consists of primary data taken from religious teachers, science teachers, and students at Madrasah Aliyah Yanbu'ul Qur'an Menawan in Kudus while secondary data is taken from several previous researches, both in the form of books and writings in scientific journals (Koentjaraningrat, 1998). The data is collected in three ways, namely; observations, interviews, and documentation (Arikunto, 2010).

D. RESULTS AND DISCUSSION

After conducting an in-depth study, it was found that the implementation carried out was in the form of integrating Science, Technology, Engineering, Mathematics and Religion lessons by using information from Qur'anic verses in the form of explaining scientific theories.

The data obtained in madrasa learning of Madrasah Aliyah Tahfiz Yanbu'ul Qur'an Menawan Kudus shows the integration in religion and science, by providing assistance to students in strengthening science learning equipped with explanations from the verses of the Qur'an. The implementation of the integration in religion and science not only being carried out in the classroom but also in extracurricular activities that support the mastery of material such as in laboratory activities and research activities.

The implementation of the integration in religion and science at Madrasah Aliyah Yanbu'ul Qur'an Menawan Kudus using the STEMR model (Science, Technology, Engineering, Mathematics and Religion) is by providing reinforcement of natural science and technology materials in madrassas based on pesantren education, so that in addition to mastering fardu ain knowledge also mastering fardu kifayah material, such as Chemistry, Biology, and Physics. The integration of religion and science learning is carried out by presenting material and theories about science then connecting with related Qur'anic verses.

The implementation of science learning at Madrasah Aliyah *Tahfiz* Yanbu'ul Qur'an implements an integration system using an integrated STEMR approach to Islamic science, meaning that in today's learning is using STEM (Science, Technology, Engineering, and Matematic), because in this context we are *a boarding school,* then we add one more aspect, that is *Religion* integrated in Islamic Science, meaning that in the process of delivery the material in the classroom we integrate using the Qur'an as an informative media. The verse of the Qur'an is used as an informative medium to foster students' enthusiasm in conducting

scientific research. Thus, the delivering of science material is by using the pesantren model, songs, sholawat, to make students separated from the feeling of a general learning and a lesson from non-Muslims (Faiz, 2020).

The delivery of science learning in class is conducted in the way that the teacher explains the main content of the material, then explains the content of the Qur'an according to the certain material such as an explanation of human reproduction. The teacher also explains how the reproduction process is explained in the Qur'an as in Surah as-Sajdah verse 8, Surah al-Mursalat verses 20-23 also Surah Noah verses 13-14. In addition, in the end science learning is also always directed to return something to Allah SWT, such as the existence of this universe is a gift from Allah SWT for humans. Therefore, we must always be grateful for this gift by participating in safeguarding this universe as man's duty as a caliph on this earth (Irsyad, 2021). Another practice is where the teacher relates science to Qur'anic verses such as electrolyte solution material that can conduct electric current so that the lamp can be lit. When explaining this, the teacher also explained the content of the Qur'anic verses related to it, namely explaining the content of verses 5-6 of Surah Yunus (Nurul Huda, 2022).

The integration of religion and science is also carried out during practicum activities and Youth Scientific Group (KIR) activities. The activity always begins with a briefing by the teacher/supervisor. On this occasion, the teacher can convey religious values within the scope of God's power and knowledge in the universe, and remind what character values can be developed in the learning process (Nashihin, 2017). The results of this implementation are certainly assessed from the visible character assessment of students (Irsyad, 2021).

When the teacher gives an explanation for example about the technology of transportation equipment, the teacher gives an introduction that the Qur'an has signaled the importance of developing transportation as explained in Surah Yasin verses 42-42. In this verse Allah Almighty provides knowledge about how to make a boat so that it can be used, when explaining about architecture, the teacher can explain the gesture of building the foundation of Baitullah by Prophet Ibrahim while assisted by Prophet Islamil which is explained in Surah Al-Baqarah verses 124-132 (Saifudin, 2017).

The example of integration of religion in mathematics learning is when the teacher explains about numbers, then the teacher also explains that the Qur'an has commanded humans to learn about counting and accompanied by accuracy when counting, as Surah. al-Jin verse

28. Mentioning numbers in their various contexts (Surah. al-Kahf; 11-12). While the mention of numbers and their operations in the Qur'an include; integers (Surah. al-Tawbah; 36 and Surah. al-Fajr; 1-3), fractional numbers (Surah. an-Nisa; 11-12), numerals (Surah. Jonah; 5), Social arithmetic (Surah. al-A'raf: 9), number operations (Surah. an-Nisa: 112). As well as the mention and privilege of the number 19 (Kusuma, 2020).

The practice of integrating religion and science in Madrasah Aliyah *tahfiz* Yanbu'ul Qur'an tends to the explanation of some figures about the theory of Islamization of science such as Mahzar who gave his argument when giving the explanation of Surah al'Alaq verses 1-5 that science cannot be separated from Allah. According to him, the sciences of society can be Islamized with the light of integral fiqhiyyah, the humanitarian sciences can be Islamized with the light of Sufiyah and the natural sciences can be Islamized with the light of monotheism (tawhid) (Mahzar, 1993).

Agus Purwanto explained that Islam with science can be categorized in three forms; first, Islamization of Science which is trying to make the great scientific discoveries of the 20th century and the majority of which occur in the West, can be in accordance with Islamic teachings. Second, Islamic Scientification which means efforts to find a scientific basis for a statement that is considered true in Islam, and third is Islamic Science which is an effort to make the Qur'an and as-Sunah as the basis for the construction of science, as well as an effort to make it able to do good integration with modern science that has developed before (Mohamad Yasin, Sutrisno, Karwadi, 2017). Of the three categories of Agus Purwanto, according to researchers who approach the suitability of practice in Madrasah Aliyah *Tahfiz Yanbu'ul Qur'an, is the* Islamization of Science, which is to harmonize the findings of Western scientists with the verses of the Qur'an.

The integration of religion and science developed in Madrasah Aliyah *Tahfiz* Yanbu'ul Qur'an Kudus also uses the mahzar integration model which in the final stage aims to bring students closer to Allah Almighty in the sense of always obeying Allah Almighty over each of His creatures.

E. CONCLUSION

After conducting an in-depth study, it was found that the implementation of science learning was carried out in the form of integrating Science, Technology, Engineering,

Mathematics and Religion lessons by using ayatization (verse-based) in the form of explaining scientific theory with verses of the Qur'an.

Conducting science learning with the model of Science, Technology, Engineering, Mathematics and Religion (STEMR) students are expected to be able to follow the development of science in era 5.0 while maintaining spiritual values based on the verses of the Qur'an in understanding them.

After an in-depth analysis, it showed that learning the STEMR model provided students with an understanding of the theory of science and the Qur'an. However, more research is needed to confirm the effects of scientific theory and the Qur'an.

REFERENCES

Abu Darda. (2015). Integrasi Ilmu dan Agama: Perkembangan Konseptual di Indonesia. *At-Ta'dib; Journal of Pesantren Education*, *10*(1), 33–46. https://doi.org/http://dx.doi.org/10.21111/at-tadib.v10i1.323

Abdullah, M. Amin, (2012). *Studi Islam di Perguruan Tinggi, Pendaftaran Integrasi- Interkoneksi*, Yogyakarta: Pustaka Pelajar.

Arikunto, Suharsimi, (2010). *Prosedur Penelitian,* Jakarta: Rineka Cipta.

Choeroni, C., Syukur, F., & Kusuma, H. (2021). Integration Model of Learning Religion and Science in Madrasah Based on the Tahfizh Al-Qur'an Pesantren. *Proceedings of the First International Conference on Islamic History and Civilization, ICON-ISHIC 2020, 14 October, Semarang, Indonesia*. https://doi.org/10.4108/eai.14-10-2020.2303834

Dhofier, Zamakhsyari, (2015). *Tradisi Pesantren; Studi Pandangan Hidup Kyai dan Visinya mengenai Masa* Depan *Indonesia*, Jakarta: LP3ES.

Ellitan, L. (2020). Competing in the Era of Industrial Revolution 4.0 and Society 5.0. *Jurnal Maksipreneur: Manajemen, Koperasi, Dan Entrepreneurship*, *10*(1), 1. https://doi.org/10.30588/jmp.v10i1.657

Hadisi, L., Hakim, M. R., Musthan, Z., Nashihin, H., & Kendari, I. (2023). Implementation of Learning Management In Building an Attitude of Religious Tolerance at State High Schools In The Muna District. *Edukasi Islami: Jurnal Pendidikan Islam*, *c*, 1879–1892. https://doi.org/10.30868/ei.v12i03.4296

Hamruni, H. (2016). The Challenge and The Prospect of Pesantren in Historical Review. *Jurnal Pendidikan Islam*, *5*(2), 413. https://doi.org/10.14421/jpi.2016.52.413-429

Hawi, A. (2018). Otonomi Pendidikan dan Eksistensi Madrasah. *Conciencia*, *17*(1), 11–14. https://doi.org/10.19109/conciencia.v17i1.1574

Husna Nashihin. (2022). KONSTRUKSI PENDIDIKAN PESANTREN BERBASIS TASAWUF. *Edukasi Islami : Jurnal Pendidikan Islam*, 1163–1176. https://doi.org/10.30868/ei.v11i01.2794

Husna Nashihin, Anisatul Baroroh, & Aslam Ali. (2020). IMPLIKASI HUKUM TEKNOLOGI INFORMASI DALAM PERKEMBANGAN TEKNOLOGI PENDIDIKAN ISLAM (Telaah

atas Hukum Moore, Hukum Metcalfe, dan Hukum Coase). *At Turots: Jurnal Pendidikan Islam*, *2*(2), 57–73. https://doi.org/10.51468/jpi.v2i2.39

Ihsan, I. (2016). Penguatan Pendidikan Agama Islam Pada Madrasah Aliyah di Kudus. *Nadwa: Jurnal Pendidikan Islam*, *6*(1), 115–136. https://doi.org/10.21580/nw.2012.6.1.464

Jatmiko Wibisono, Hafidz, Iffat Abdul Ghalib, H. N. (2023). Konsep Pemikiran Pembaharuan Muhammadiyah Bidang Pendididkan (Studi Pemikiran Muhammad Abduh). *Attractive : Innovative Education Journal*, *5*(2), 514–522.

Kholish, A., Hidayatullah, S., & Nashihin, H. (2020). Character Education of Elderly Students Based on Pasan Tradition at Sepuh Islamic Boarding Shool Magelang. *IJECA (International Journal of Education and Curriculum Application)*, *3*(1), 48. https://doi.org/10.31764/ijeca.v3i1.2061

Koentjaraningrat, (1998). *Metode-metode Penelitian Masyarakat*. Jakarta: Gramedia.

Kusuma, Hamdan Hadi, (2020). *Kajian Sains dalam Prespektif al-Qur'an*, Semarang: CV. Lawwana,

Kosim, M. (2007). Madrasah di Indonesia (Pertumbuhan dan Perkembangan). *Tadris*, *2*(1), 41–57.

Kurniawan, S. (2015). Reconcile the Religion and Science Education Management in Islam. *Ta'dib*, *20*(1), 103. https://doi.org/10.19109/td.v20i1.221

Mohamad Yasin, Sutrisno, Karwadi, Y. (2017). Epistemologi Sains Islam Perspektif Agus Purwanto. *Analisis: Jurnal Studi Keislaman*, *17*(1), 65–90.

Mahzar, Armahedi, (1993). *Islam Masa Depan*, Bandung: Pustaka.

Nashihin, H. (2017). *Pendidikan Karakter Berbasis Budaya Pesantren*. Formaci. https://books.google.co.id/books?id=X27IDwAAQBAJ

Nashihin, H. (2019). *Analisis Wacana Kebijakan Pendidikan (Konsep dan Implementasi)*. CV. Pilar Nusantara. https://books.google.co.id/books?id=SXcqEAAAQBAJ

Nikita Nur Zulaecha, Hafidz, Biela Nanda Oktivibi Pertiwi, H. N. (2023). Pemanfaatan Media Sosial sebagai Dakwah Digital dalam Penyiaraan Agama Kalangan Kaum Milenial di Instagram (Ustadz Hanan Attaki). *Attractive : Innovative Education Journal*, *4*(1), 1–12.

Nurul Umah Fijanati, Hafidz, Sukadi, H. N. (2023). Etika Dakwah Menurut Pandangan Habib Husein Jafar Al Hadar dalam Channel Youtube Jeda Nulis. *Attractive : Innovative Education Journal*, *4*(1), 1–12.

Prasetyo, S. E., Damaraji, G. M., & Kusumawardani, S. S. (2020). A Review of The Challenges of Paperless Concept In The Society 5.0. *International Journal of Industrial Engineering and Engineering Management*, *2*(1), 15–24. https://doi.org/10.24002/ijieem.v2i1.3755

Qomar, Mujamil, (2006). *Pesantren; Dari Transformasi Metodologi Menuju Demokratisasi Institusi*, Jakarta: Erlangga.

Rahmawati, M., Ruslan, A., & Bandarsyah, D. (2021). The Era of Society 5.0 as the unification of humans and technology: A literature review on materialism and existentialism. *Jurnal Sosiologi Dialektika*, *16*(2), 151. https://doi.org/10.20473/jsd.v16i2.2021.151-162

Robbaniyah, Q., Lina, R., Ustadz, S., Rofiq, A., Islami, F. Al, & Faiz, A. (2022). Konstribusi Pemikiran Abu Nida ` dalam Pengembangan Pendidikan Islam Pondok Pesantren di Indonesia. *JIPSI: Jurnal Ilmu Pendidikan Dan Sains Islam Interdisipliner*, *1*(1), 23–34.

Saifudin, A. (2017). Al-Quran DAN SAINS TEKNOLOGI (Pendekatan Historis dan Teologis). *Al Karima*, *1*(1), 1–11.

Setiawardani, W., Robandi, B., & Djohar, A. (2021). Critical Pedagogy in the Era of the Industrial Revolution 4.0 To Improve Digital Literacy Students Welcoming Society 5.0 in Indonesia.

PrimaryEdu - Journal of Primary Education, *5*(1), 107. https://doi.org/10.22460/pej.v5i1.2073

Sumarjoko, Braham Maya Baratullah, A. A., Musthan, Z., Ulfa, H., Sarwadi, Ahmadi, & Nashihin, H. (2023). Pesantren Property : Case study in Pesantren Property Ploso , Banguncipto Village , Sentolo District , Kulon Progo Regency. *Namibian Studies*, *33*, 3399–3415.

Suradi, A. (2018). Transformation Of Pesantren Traditions In Face The Globalization Era Introduction In General ; Pesantren can be distinguished to the pesantren of khalafiyah and salafi . The teaching system used classical methods . 1 This method is known as the sorogan or. *Nadwa Jurnal Pendidikan Islam*, *12*(51), 27–38.

Suriadi. (2022). Relasi Manajemen Keuangan dan Kualitas Lembaga Pendidikan Islam. *AMORTI: Jurnal Studi Islam Interdisipliner*, *1*(2), 111–121.

Syaiful Anam, H. N. (2023). *Metode Penelitian (Kualitatif, Kuantitatif, Eksperimen, dan R&D)*. PT GLOBAL EKSEKUTIF TEKNOLOGI. https://www.google.co.id/books/edition/Metode_Penelitian_Kualitatif_Kuantitatif/w-bFEAAAQBAJ?hl=id&gbpv=0

Warisin, K. (2018). Relasi Sains dan Agama Perspektif IAS G. Barbour dan Armahedi Mazhar. *Rahmatan Lil Alamin*, *1*(1), 15–20.

Yulanda, A. (2019). Epistemologi Keilmuan Integratif- Interkonektif M. Amin Abdullah dan Implementasinya dalam Keilmuan Islam. *Tajdid*, *18*(1), 79–104.