



Strengthening teachers' skills in using an enrichment biology e-module based on flipbook integrated with Qur'anic and Sunnah values

Siti Robiah ^{a,1}, Syahraini Tambak ^{b,2}, Juliani Siregar ^{c,3}, Jhannah Hafizah ^{a,4}, Amelia Swastika ^{a,5}

^a Biology Education, Faculty of Teacher Training and Education, Universitas Islam Riau, Jl. KH. Nasution No. 113, Pekanbaru, Riau 28284, Indonesia

^b Islamic Religious Education, Faculty of Islamic Studies, Universitas Islam Riau, Jl. KH. Nasution No. 113, Pekanbaru, Riau 28284, Indonesia

^c Psychology Department, Faculty of Psychology, Universitas Islam Riau, Jl. KH. Nasution No. 113, Pekanbaru, Riau 28284, Indonesia

¹sitirobiah@edu.uir.ac.id*, ²syahraini_tambak@fis.uir.ac.id, ³juliarni.siregar@psy.uir.ac.id, ⁴jhannahhafizah@student.uir.ac.id,

⁵ameliaswastika@student.uir.ac.id

*Corresponding author

ARTICLE INFO	ABSTRACT
<p>Article history Received: 2024-11-12 Revised: 2024-12-27 Accepted: 2024-12-27 Published: 2024-12-29</p> <p>Keywords Biology e-module Flipbook Islamic values Qur'anic and Sunnah Teachers' Skills</p>	<p>Biology teachers at MAN 2 Model Pekanbaru still rely on conventional learning resources that do not fully meet the needs of an Islamic-based curriculum. This limitation has an impact on students' ability to internalize Biology concepts within a holistic Islamic framework. Therefore, workshops and interventions are needed through the provision of flipbook-based Biology e-modules integrated with the values of the Qur'an and As-Sunnah to improve the quality of learning and student understanding. This community service aims to improve the capacity of biology teachers' skills at MAN 2 Model Pekanbaru by using flipbook-based biology enrichment e-modules integrated with the values of the Qur'an and As-Sunnah. The partner profile shows that most teachers at MAN 2 Model Pekanbaru have good pedagogical competence, but need to increase their capacity in utilizing digital technology-based learning resources integrated with Islamic values. This condition requires intensive training and mentoring programs for teachers so that they are able to optimize the use of flipbook-based e-modules that are in accordance with the needs of the curriculum and Islamic values. The results of the workshop showed that biology teachers at MAN 2 Model Pekanbaru were in the category of having quite good skills in using e-modules in learning, but they needed to get used to it so that they could become more skilled.</p>
<p>Kata Kunci Al-Qur'an dan As-Sunnah e-modul biologi Flipbook Keterampilan Guru Nilai Islam</p>	<p>Penguatan keterampilan guru dalam penggunaan e-modul pengayaan biologi berbasis flipbook yang terintegrasi dengan nilai-nilai Al-Qur'an dan Sunnah. Guru-guru biologi di MAN 2 Model Pekanbaru masih bergantung pada sumber belajar konvensional yang tidak sepenuhnya memenuhi kebutuhan kurikulum berbasis nilai-nilai Islam. Keterbatasan ini berdampak pada kemampuan siswa dalam menginternalisasi konsep-konsep Biologi dalam kerangka Islam yang holistik. Oleh karena itu, diperlukan workshop dan intervensi melalui penyediaan e-modul Biologi berbasis flipbook yang terintegrasi dengan nilai-nilai Al-Qur'an dan As-Sunnah untuk meningkatkan kualitas pembelajaran dan pemahaman siswa. Pengabdian kepada masyarakat ini bertujuan untuk meningkatkan kapasitas keterampilan guru biologi di MAN 2 Model Pekanbaru dengan menggunakan e-modul pengayaan biologi berbasis flipbook yang terintegrasi dengan nilai-nilai Al-Qur'an dan As-Sunnah. Profil mitra menunjukkan bahwa sebagian besar guru di MAN 2 Model Pekanbaru memiliki kompetensi pedagogik yang baik, namun memerlukan peningkatan kapasitas dalam memanfaatkan sumber belajar berbasis teknologi digital terintegrasi nilai Islam. Kondisi ini menuntut adanya program pelatihan dan pendampingan yang intensif bagi guru-guru agar mampu mengoptimalkan penggunaan e-modul berbasis flipbook yang sesuai dengan kebutuhan kurikulum dan nilai-nilai Islam. Hasil dari workshop yang dilakukan diketahui bahwa guru biologi MAN 2 Model Pekanbaru termasuk kategori cukup baik keterampilannya dalam menggunakan e-modul dalam pembelajaran namun perlu pembiasaan agar terbiasa dan bisa lebih terampil lagi.</p>

Copyright © 2025, Robiah et al
This is an open access article under the CC-BY-SA license



How to cite: Robiah, S., Tambak, S., Siregar, J., Hafizah, I., & Swastika, A. (2024). Strengthening teachers' skills in using an enrichment biology e-module based on flipbook integrated with Qur'anic and Sunnah values. *Journal of Community Service and Empowerment*, 5(3), 661-667. <https://doi.org/10.22219/jcse.v5i3.37499>

INTRODUCTION

The era of globalization in the 21st century with its very rapid technological advances has caused the world to feel like without borders, where everyone can easily interact, communicate, and transact with each other anytime, from and wherever they are. Apart from that, flow globalization with technological advances has an influence on the formation system and values of life in all aspects of life you want to face.

At the same time, there is also the destruction of values, dignity, and human dignity, such as the use of illegal drugs and narcotics, juvenile delinquency, promiscuity, abortion, homosexuality, lesbianism, and pornography (Fakhrudin et al., 2013; Harahap, 2016; Adamczyk et al., 2021; Manik et al., 2021). Viewing online pornography is a widespread phenomenon, with a prevalence rate of 96.6% in men and 77.7% in women, and researchers have claimed that excessive engagement can result in addiction-like symptoms (Li & Zheng, 2017; Keane, 2016). Not to mention the increasing number of people infected with HIV due to the use of drug injection needles (Hajarizadeh et al., 2023).

Educational institutions in Indonesia have an important role in fortifying and directing the next generation of this nation so that they have strong personalities and are not easily influenced by any behavior that is not influenced by Islamic culture and values in the era of globalization. Strengthening Islamic personality in students is expected. Students should not easily join in with foreign cultures that do not reflect the Islamic personality, such as homosexuality, lesbianism, free sex, abortion, pornography, and so on, where this behavior is increasingly common among teenagers both in Indonesia and at the global level.

Therefore, it is necessary to strengthen teacher skills in using e-module biology enrichment based on flipbooks integrated with the values of the Qur'an and As-Sunnah through workshops on the negative impacts of drugs, deviant sexual behavior (gays and lesbians), free sex, pornography, alcohol, abortion, etc., with the hope that the skills possessed can be given to students through the learning process so that students have a strong Islamic personality that is not easily influenced by such negative behavior. Additionally, teachers need to strengthen students' personalities to ensure they are not easily stressed, do not quickly fall into depression, and do not become easily angered. Teachers should also encourage students to strive for happiness and other positive traits. Furthermore, understanding and promoting the eating habits of the Prophet Muhammad is essential for teachers to pass on to students, so these habits can serve as a guide and be implemented in daily life.

Through training and workshops for biology teachers on the utilization of e-modules, this program aims to enhance teachers' capacity to integrate Islamic values into biology lessons and utilize information technology in teaching.

Thus, this community service program is expected to make a tangible contribution to improving the quality of biology education in Islamic schools in Pekanbaru by leveraging enrichment e-modules integrated with the values of the Qur'an and As-Sunnah. Additionally, the program seeks to empower biology teachers to become more creative and innovative in their teaching practices and to encourage the optimal use of information technology in education.

Saputro et al (2019) are of the view that scientific signals are universally integrated keywords of scientific facts derived from the verses of the Qur'an. Besides, students have factual and cultural experiences that correlate with miracles in the Qur'an (Fahyuni et al., 2020). To produce human resources who have comprehensive (integral-holistic) competencies, integration of knowledge is needed because in Islam every knowledge learned, regardless of awareness, will exist creator knowledge, namely Allah Subhanahu Wa Ta'ala. It is even a principle in the scientific field (Abdullah, 2015; Hassan, 2012; Mustafa et al., 2021; Hamami & Nuryana, 2022; Hassan et al., 2010). Can foster enthusiasm for learning (Anshori, 2021). The Al-Qur'an and Sunnah are sources of Islamic sciences, whereas social sciences and natural sciences are basic elements of both grand concepts and grand theories (Mufid, 2014).

In the context of strengthening Islamic personality and local cultural values among students, it is essential to develop innovative and creative approaches. One initiative involves teacher training programs integrating technology, such as flipbook-based e-modules, with the values of the Qur'an and As-Sunnah. This program directly contributes to SDG 4 (Quality Education) by enhancing the quality of education that fosters strong character formation in students. Furthermore, measurable impacts can be observed in the improved skills of teachers in delivering learning content relevant to global issues such as drug abuse, deviant sexual behaviors, and pornography, aligning with the targets of SDG 3 (Good Health and Well-Being). Through this approach, community service is not merely a one-way activity but a solution-driven initiative grounded in evidence, replicable to support sustainable development. This community service aims to enhance the skill capacity of biology teachers at MAN 2 Model Pekanbaru by using biology enrichment e-modules based on flipbooks integrated with the values of the Qur'an and As-Sunnah. This is achieved through workshops and interventions by providing the e-modules, with the hope of improving the quality of learning and strengthening the Islamic faith and personality of the students.

METHOD

This community service activity was conducted in the form of a workshop for biology teachers at Madrasah Aliyah Negeri 2 Model (MAN 2 Model Pekanbaru). For more detailed information about the workshop method, please refer to

Figure 1. Prior to the workshop, an initial socialization session was held with the science teachers of MAN 2 Model Pekanbaru, Riau.

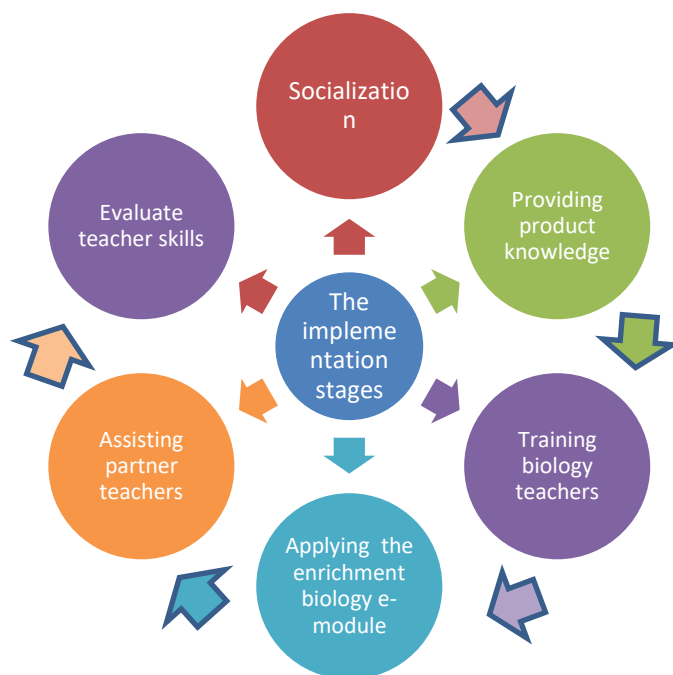


Figure 1. Stages of Community Service Implementation

The implementation stages include: (1) Conducting socialization to emphasize the urgency of strengthening faith, piety, and shaping students' Islamic personalities in the era of globalization; (2) Providing product knowledge about the importance of integrating biology with the values of the Qur'an and As-Sunnah, and its benefits in the field of education; (3) Training biology teachers on using the enrichment biology e-module based on flipbook technology, integrated with the values of the Qur'an and As-Sunnah; (4) Applying the enrichment biology e-module based on flipbook technology, integrated with the values of the Qur'an and As-Sunnah, in the classroom teaching process; (5) Assisting partner teachers in implementing the enrichment biology e-module based on flipbook technology, integrated with the values of the Qur'an and As-Sunnah, in student learning processes; and (6) Evaluating all aspects related to the use of the e-module, including its implementation in teaching by teachers, students' activities, learning outcomes, and the affective impact on faith, piety, and students' personalities.

This community service program was conducted over approximately two months, from September to November 2024. The team involved in this program consisted of three lecturers from Universitas Islam Riau: one from the Biology Education department, one from the Psychology department, and one from the Informatics and Technology department. Additionally, two pre-service teacher students (participants of the MBKM program) were also part of the team. The partners involved in this program included four Biology teachers and science students from MAN 2 Model Pekanbaru, Riau.

RESULTS AND DISCUSSION

The community service activity, conducted through a workshop titled "Strengthening Teachers' Skills in Using an Enrichment Biology E-Module Based on Flipbook Integrated with Qur'anic and Sunnah Values," has been successfully carried out. Figures 2 and Figure 3 illustrate the activities of different teachers during the implementation of the e-module with students.

The community service program conducted at MAN 2 Model Pekanbaru aimed to empower Biology teachers with the skills to utilize enrichment e-modules based on flipbook technology integrated with Qur'anic and Sunnah values. The results of the program revealed notable improvements in the teachers' ability to incorporate Islamic values into their lessons. This aligns with Abdullah (2015), who emphasizes that integrating scientific knowledge with spiritual elements fosters a holistic and interconnected approach to education, enabling students to view knowledge as inherently linked to divine principles.

The implementation of the enrichment e-module in classrooms yielded multiple positive outcomes. Students exhibited increased enthusiasm and participation during lessons, demonstrating greater engagement with the subject matter. This supports Fahyuni et al. (2020), who argued that integrating Islamic principles with modern pedagogical

methods could significantly boost student motivation. Additionally, the e-modules facilitated the formation of stronger Islamic character among students, as the content reinforced moral and spiritual values alongside scientific concepts.



Figure 2. An example of teacher activities in the classroom during the implementation of utilizing biology e-modules based on flipbooks integrated with Al-Qur'an and As-Sunnah values.



Figure 3. An example of teacher activities in the classroom during the implementation of utilizing biology e-modules based on flipbooks integrated with Al-Qur'an and As-Sunnah values.

However, challenges were observed in the consistent application of Qur'anic and Sunnah values within the learning process. Teachers highlighted the need for ongoing practice and support to ensure these integrations become a regular part of their pedagogical strategies. This indicates that while the program successfully provided foundational skills, further reinforcement is required for long-term sustainability.

Beyond its immediate impact, the program contributed to broader educational and societal goals. It aligned with SDG 4 (Quality Education) by equipping teachers with innovative teaching tools that enhanced educational quality and fostered strong character development in students. Simultaneously, it supported SDG 3 (Good Health and Well-Being) by addressing critical societal issues such as drug abuse, deviant behaviors, and pornography, which are increasingly prevalent among youth, as highlighted by Hajarizadeh et al. (2023). Through the integration of these values, the program aimed to safeguard students from harmful influences and prepare them to navigate global challenges while maintaining their Islamic identity.

Furthermore, the interdisciplinary approach of the program—combining insights from Biology, Islamic Education, and Psychology—underscored the importance of collaborative efforts in achieving educational excellence. As Hamami

and Nuryana (2022) suggested, a holistic and integrative approach is essential to address contemporary challenges effectively. By encouraging creativity and innovation in teaching, this program exemplifies the potential of leveraging digital technology to enhance both the cognitive and affective domains of education.

The following Figure 4 and Figure 5, presents several examples of visualizations from the enrichment biology e-module based on a flipbook integrated with the values of the Qur'an and As-Sunnah, as implemented by teachers at MAN 2 Model Pekanbaru, Riau.

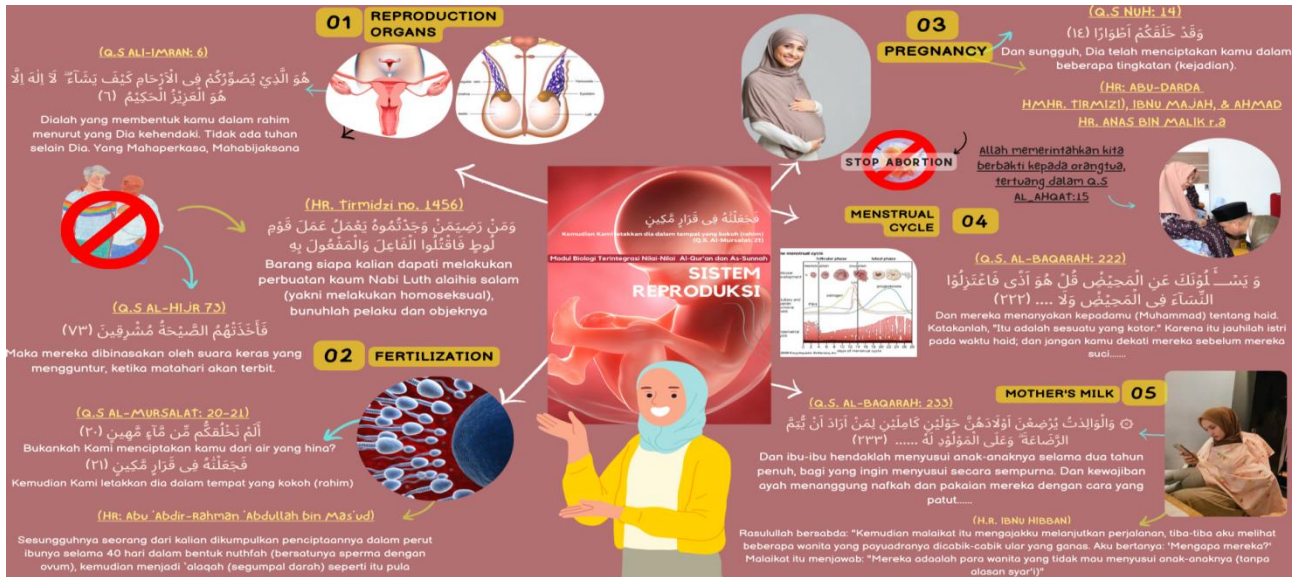


Figure 4. Example of visualization from the enrichment biology e-module based on a flipbook integrated with the values of the Qur'an and As-Sunnah.

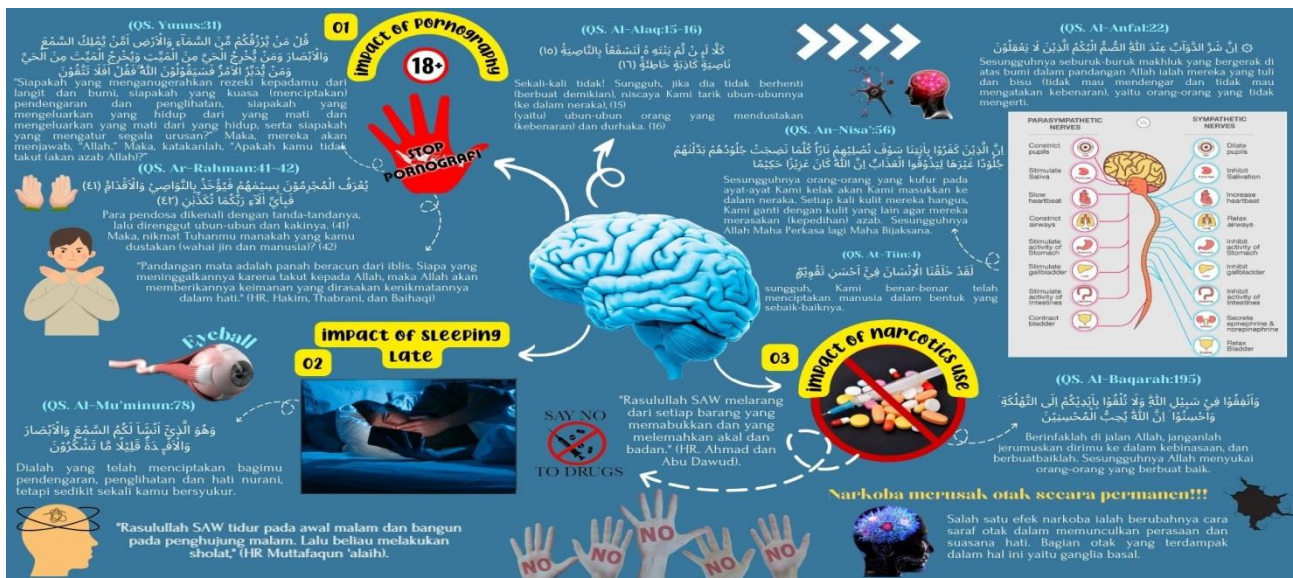


Figure 5. Example of visualization from the enrichment biology e-module based on a flipbook integrated with the values of the Qur'an and As-Sunnah.

The results of this program demonstrate its potential for replication and adaptation in other educational settings, particularly in Islamic schools that aim to integrate spiritual values with modern scientific education. In the context of 21st-century globalization, where technological advancements enable borderless interactions (Fakhrudin et al., 2013), educational institutions have a crucial responsibility to shape a generation that is not only intellectually smart but also morally strong.

The flow of globalization and technological advances often brings challenges such as the erosion of values and human dignity, including drug abuse, juvenile delinquency, and deviant sexual behaviors (Adamczyk et al., 2021). Therefore, this program aims to strengthen the Islamic personality of students so that they are not easily influenced by negative behaviors that are increasingly prevalent among teenagers, both in Indonesia and globally (Harahap, 2016).

With further refinement, this program can serve as a model to enhance the role of education in shaping future generations equipped with both intellectual competence and strong moral character. This aligns with the view that integrating knowledge and Islamic values in education can produce human resources with comprehensive (integral-holistic) competencies (Abdullah, 2015; Hassan, 2012). This dual emphasis ensures that students not only excel academically but also contribute positively to their communities, reflecting the ultimate goal of education in Islam.

The program also contributes to achieving SDG 4 (Quality Education) by enhancing the quality of education that fosters strong character formation in students, and SDG 3 (Good Health and Well-Being) by improving teachers' skills in delivering learning content relevant to global issues such as drug abuse and deviant sexual behaviors. Thus, this program is not merely a one-way activity but a solution-driven initiative grounded in evidence, replicable to support sustainable development (Saputro et al., 2019; Fahyuni et al., 2020).

CONCLUSION

The implementation of a community service program titled Utilization of Biology Enrichment E-Modules Based on Flipbook Integrated with Qur'anic and Sunnah Values at MAN 2 Model Pekanbaru, Riau, carried out by the Biology teachers of MAN 2 Model, has shown that the teachers' skills are categorized as moderately good. However, certain aspects, particularly the integration of Qur'anic and Sunnah values into the learning process, still require improvement due to the need for consistent practice and habituation.

ACKNOWLEDGEMENT

The implementation team would like to express their heartfelt gratitude to the Directorate of Research and Community Service (DPPM) at Universitas Islam Riau (UIR) Pekanbaru for their support and funding, under Grant Number: 933/Kontrak/P-K-U/DPPM-UIR/10-2024, which has made this community service program possible. We extend our deepest appreciation to the Rector of Universitas Islam Riau for his continuous support and encouragement, which greatly contributed to the successful execution of this initiative.

Our gratitude also goes to our partner school, Madrasah Aliyah 2 Model Pekanbaru, for their cooperation and valuable suggestions that played a vital role in the success of this community service program. Lastly, we sincerely thank the faculty members from the Psychology Study Program and the Informatics and Technology Study Program at Universitas Islam Riau for their collaboration and contributions, ensuring the smooth implementation of this activity.

REFERENCES

- Abdullah, M. A. (2015). Religion, Science, and Culture: An Integrated, Interconnected Paradigm of Science. *Al-Jami'ah: Journal of Islamic Studies*, 52 (1), 175. <https://doi.org/10.14421/ajis.2014.521.175-203>
- Adamczyk, A., Liu, Y. H., & Scott, J. (2021). Understanding the role of religion in shaping cross-national and domestic attitudes and interests in abortion, homosexuality, and pornography using traditional and Google search data. *Social Science Research*, 100 (June), 102602. <https://doi.org/10.1016/j.ssresearch.2021.102602>
- Anshori, I. (2021). Problem-Based Learning Remodeling Using Islamic Values Integration and Sociological Research in Madrasahs. *International Journal of Instruction*, 14 (2), 421–442. <https://doi.org/10.29333/iji.2021.14224a>
- Droessiger, G., & Vdovinskiene, S. (2020). Factors for increasing motivation to theory class attendance among students of technology studies. *Integration of Education*, 24 (1), 50– 61. <https://doi.org/10.15507/1991-9468.098.024.202001.050-061>
- Fahyuni, EF, Wasis, W., Bandonu, A., & Arifin, MBUB (2020). Integrating Islamic Values and Science for Millennial Students' Learning on Using Seamless Mobile Media. *Indonesian Journal of Science Education*, 9 (2), 231–240. <https://doi.org/10.15294/jpii.v9i2.23209>
- Fakhruddin, M., Ananda, R., & Istiningsih, S. (2013). Paradigm Changes in Learning Organizations at Jakarta State University Postgraduate Programs. *Jakarta State University Journal*, 27 (2), 111–117.
- Hajarizadeh, B., Kairouz, A., Ottaviano, S., Ireland, J., Willing, A., Cunningham, E., Webb, P., Colledge-Frisby, S., Wheeler, A., Leung, J., Tran, L.T., Price, O., Vickerman, P., Farrell, M., Hickman, M., Dore, G.J., Bergenström, A., Degenhardt, L., & Grebely, J. (2023). Global, regional, and country-level coverage of testing and treatment for HIV and hepatitis C infection among people who inject drugs: a systematic review. *The Lancet Global Health*, 11 (12), e1885–e1898. [https://doi.org/10.1016/s2214-109x\(23\)00461-8](https://doi.org/10.1016/s2214-109x(23)00461-8)
- Hamami, T., & Nuryana, Z. (2022). A holistic–integrative approach to the Muhammadiyah education system in Indonesia. *HTS Theologiese Studies / Theological Studies*, 78 (4), 1– 10. <https://doi.org/10.4102/hts.v78i4.7607>
- Harahap, RD (2016). LGBT IN INDONESIA: Perspectives on Islamic Law, Human Rights, Psychology and the Maşlahah Approach. *Al-Ahkam*, 26 (2), 223. <https://doi.org/10.21580/ahkam.2016.26.2.991>
- Hasan, N. (2012). Education, Young Islamists and Integrated Islamic Schools in Indonesia. *Studia Islamika*, 19 (1). <https://doi.org/10.15408/sdi.v19i1.370>

- Hassan, A., Suhid, A., Abiddin, N.Z., Ismail, H., & Hussin, H. (2010). The role of Islamic philosophy of education in aspiring holistic learning. *Procedia - Social and Behavioral Sciences*, 5, 2113–2118.
<https://doi.org/10.1016/j.sbspro.2010.07.423>
- Manik, TS, Riyanti, D., Murdiono, M., & Prasetyo, D. (2021). The Existence of LGBT in Indonesia in a Study of Human Rights, Religion and Pancasila Perspectives. *Journal of Citizenship*, 18 (2), 84.
<https://doi.org/10.24114/jk.v18i2.23639>
- Mufid, F. (2014). Islamic Sciences Integration. *QIJS (Qudus International Journal of Islamic Studies)*, 2 (2), 144–160.
<https://doi.org/DOI : 10.21043/qijis.v2i2.1565>
- Mustafa, Z., Baharuddin, A., & Saifuddeen, SM (2021). Islam, Science, and Education: Delving into the Progress, Collaboration, and Biases. *Journal of Islamic Thought and Civilization*, 11 (2), 44–68.
<https://doi.org/10.32350/jitc.11.2.03>
- Robiah, S., Elfis, E., Hamzah, H., & Triyeni, A. (2023). Workshop on integrating biology instructional strategies with Al-Quran and As-Sunnah value for prospective biology teachers. *Journal of Community Service and Empowerment*, 4 (3), 436–441. <https://doi.org/10.22219/jcse.v4i3.24841>