At-Ta'dib. Vol. 16. No. 2, December 2021
ISSN: 0216-9142
DOI: http://dx.doi.org/10.21111/at-tadib.v16i2.6896
Available online at:
https://ejournal.unida.gontor.ac.id/index.php/tadib/index
e-ISSN: 2503-3514

The Practice of Science and Religion Integration: Students' Perspective on Muhammadiyah *Pesantren*

Naufal Ahmad Rijalul Alam
Universitas Muhammadiyah Yogyakarta
naufal.ahmad@umy.ac.id

Fajar Rachmadhani
Universitas Muhammadiyah Yogyakarta
fajarrachmadhani@umy.ac.id

Received November 20, 2021/Accepted December 14, 2021

Abstract

Islamic educational institutions in Indonesia have an important role in implementing science either from Islam, or the West with the breadth of knowledge. This study seeks to reveal the practice of Islamic education that integrates science and religious knowledge together. By taking the subject of students at Pondok Shabran, Surakarta, this qualitative research captures the extent to which the application of the integration of Islamic and Western knowledge is able to strengthen the understanding of students so that they get a portion that suits their needs. The result of the study shows, *first*, that the integration of knowledge through classroom learning has implications for improving the thinking skills of students. *Second*, the assignment given by the teacher gives students the freedom to read various kinds of Western literature that strengthens Islamic arguments.

Keywords: Pesantren, Integration, Science, Religion, Muhammadiyah

Introduction

Since Indonesia's independence in 1945, scholars have paid more attention to Islamic educational institutions in the form of Madrasahs and Pesantrens, so that their development is rapid.[1] Currently, there are no less than 36000 madrasas and 27000 pesantren spread throughout the country. The number is not small, so the existence of these two Islamic institutions is the 'choice' for the lower middle class. However, the achievements of both are able to match government-owned educational institutions. As is known, only about 10 percent of educational institutions are affiliated to the government, the rest are privately owned.[2]

On the other hand, Madrasas and Pesantrens are able to adapt quickly to the times. In fact, in the last three decades they have been able to combine the two poles of science, Islam and the West, at a time when several educational institutions abroad are 'reluctant' to combine

[1] Kathleen E Woodward, "Indonesian Schools: Shaping the Future of Islam and Democracy in a Democratic Muslim Country," *Journal of International Education and Leadership* 5, no. 1 (2015), http://www.jielusa.org/.

[2] Hardianto Hardianto, "Reposition of Historical Pesantren, Madrasah and Integrated Islamic School," *Edumaspul: Jurnal Pendidikan* 3, no. 2 (2019): 75–86, https://doi.org/10.33487/edumaspul.v3i2.106.

the two.[3] By mastering these two scientific poles, madrasas and pesantren are considered by the community, so that they become the main choice for sending their children to school.[4]

In the current 21st century, the wider community still considers and argues that religion (Islam) and science (Western) are two different objects[5] that are impossible to put together.[6] Both have their own safe zone that cannot be entered by other elements so that they seem separate and difficult to meet, both from the aspect of formal and scientific material objects, research methods, to approach which are believed to be true by each scientist.[7] In other words, science does not care about religion and religion does not care about science. That is a picture of educational practice and scientific activities in the country today with various negative impacts caused and felt by the wider community.[8]

From the Islamic point of view, the relationship between science and religion is not a big problem. The reason is science is only part of *'ilm'* which comes from the root word *'alama'* which means to know. So, intrinsically there is no conflict between science and Islam.[9] Science in its modern sense is the development of natural philosophy which is part of a comprehensive philosophy in the Greek scientific treasures.[10] However, Greek philosophy was too deductive, based more on speculative thinking. Therefore, it needs to be equipped with empirical observations as instructed in the Qur'an.[11] In the 20th century, the interaction between religion and science took various forms. New discoveries in science challenge classical religious ideas. In response to it, some people try to maintain traditional doctrine, some leave the tradition, and some reformulate religious concepts scientifically.[12]

---

[3] M. Amin Abdullah, "Islamic Studies in Higher Education in Indonesia: Challenges, Impact and Prospects for the World Community," *Al-Jami'ah* 55, no. 2 (2017): 391–426, https://doi.org/10.14421/ajis.2017.552.391-426.

[4] Nur Ali, "INTEGRATIVE CURRICULUM OF RELIGION AND SCIENCE AT SPECIAL PESANTREN FOR UNIVERSITY STUDENTS," *ULUL ALBAB Jurnal Studi Islam* 20, no. 1 (2019): 95–122, https://doi.org/10.18860/ua.v20i1.6353.

[5] Ahmad Sumpeno and Andi Muhammad Yauri, "Understanding of Religion , Science , and Technology Integration in Islamic Civilization : A Critical Insight of Harun Nasution," *TEST Engineering and Management* 83, no. March-April 2020 (2020): 2771–81.

[6] Muhammad Tarmizi Taher, "INTEGRASI AGAMA DALAM PEMBELAJARAN SAINS," *Jurnal Al Muta'aliyah: Pendidikan Guru Madrasah Ibtidaiyah* 6, no. 1 (2021): 66–85, https://doi.org/10.51700/almutaliyah.v6i1.120.

[7] Siswanto Siswanto, "Perspektif Amin Abdullah Tentang Integrasi-Interkoneksi Dalam Kajian Islam," *Teosofi: Jurnal Tasawuf Dan Pemikiran Islam* 3, no. 2 (2015): 376, https://doi.org/10.15642/teosofi.2013.3.2.376-409.

[8] M. Amin Abdullah, "Mendialogkan Nalar Agama Dan Sains Modern Di Tengah Pandemi Covid-19," *MAARIF* 15, no. 1 (2020): 11–39, https://doi.org/10.47651/mrf.v15i1.75.

[9] Syamsul Kurniawan, "Sukarno's Thought on the Importance of Reintegration of Religion and Science in Pesantren Education in Indonesia," *Journal of Indonesian Islam* 12, no. 2 (2018): 219–46, https://doi.org/10.15642/JIIS.2018.12.2.219-246.

[10] Muhammad Munadi, "Integration of Islam and Science: Study of Two Science Pesantrens (Trensain) in Jombang and Sragen," *Jurnal Pendidikan Islam* 5, no. 2 (2016): 287, https://doi.org/10.14421/jpi.2016.52.287-303.

[11] Hasyim Asy'ari, "Renaisans Eropa Dan Transmisi Keilmuan Islam Ke Eropa," *JUSPI (Jurnal Sejarah Peradaban Islam)* 2, no. 1 (2018): 1, https://doi.org/10.30829/j.v2i1.1792.

[12] Ade Yeti Nuryantini, "Integration Science and Religion: An Analysis in Islamic Higher Education," *TARBIYA: Journal of Education in Muslim Society* 5, no. 1 (2018), https://doi.org/10.15408/tjems.v5i1.9508.

The triggering factor for the emergence of the dichotomy of religion and general science according to al-Fāruqī,[13] is the entry of secular Western education into the Islamic world which then expose the two educational systems that distinguish between the Islamic education system, in this case the madrasa, and on the other hand, there is a secular education system.[14] In addition, the dichotomy of science and religion is more due to the belief in the difference in sources between religion and science where religion comes from God, while science comes from the results of human thought.[15] A similar view came from Mulyadhi Kartanegara who considered that the dichotomy of science was known in the Islamic world since the introduction of secular science to the Islamic world through Western imperialism. The dichotomy becomes very sharp because there has been a denial of the validity and scientific status of one over the other. There are parties, especially madrasas, who view that modern science is heretical and forbidden to be studied because it comes from infidels. Meanwhile, supporters of modern science view religious science as pseudo-scientific or as a mythology that cannot be said to be scientific because it does not talk about facts, but rather talks about meanings that are not empirical.[16]

This dichotomous situation caused unrest among Muslims. In the end, Islamic education is often interpreted as the transfer of knowledge and values of Islamic teachings contained in religious texts.[17] Meanwhile, social sciences and natural sciences are considered not part of religious knowledge. Muslims who only rely on religious knowledge make them less able to face the challenges of the times, even being eliminated from global competition. While people who only care about science without paying attention to religious teachings, he will do everything possible to achieve his goals. This situation in the end will only give birth to disobedient scientists and clergy who do not know their era Islamic education with a dichotomous paradigm will produce graduates who are divided and differentiate, even separate, between religious and general sciences.[18]

In the field of education, especially in Indonesia, studies on the integration of religion and science have begun to emerge in the last two decades, how schools are required to be able to combine religious and scientific knowledge (such as mathematics, physics, chemistry, biology, etc.).[19] However, not all schools are able to implement it, especially public (State) schools where the portion of religious subjects is only 2 hours per week, which makes it difficult for religious teachers to transfer these two poles of knowledge. In contrast to public schools, madrasas and pesantren are relatively easy to combine the two sciences together, because the

[13] Ahmad Nabil Amir et al., "Al-Faruqi's Fundamental Ideas and Philosophy of Education," *DINAMIKA ILMU* 15, no. 2 (2015): 235, https://doi.org/10.21093/di.v15i2.146.

[14] Solihah Binti Haji Yahya Zikri, "A Comparative Analysis of The Conceptions of Muhammad Naquib Al-Attas and Ismail Raji Al-Faruqi in Islamization of Knowledge," *Dirosat : Journal of Islamic Studies* 2, no. 1 (2017): 17, https://doi.org/10.28944/dirosat.v2i1.41.

[15] Fajar Syarif, "REINTEGRATION OF RELIGIOUS KNOWLEDGE AND GENERAL KNOWLEDGE (CRITICISM OF THE DISCOURSE OF SCIENCE DICHOTOMY)," *TRANSFORMATIF* 4, no. 1 (2020): 1–18, https://doi.org/10.23971/tf.v4i1.1850.

[16] Ngainun Naim, "Mystico-Philosophy; The Integration Epistemologies of Mulyadhi Kartanegara," *Epistemé: Jurnal Pengembangan Ilmu Keislaman* 13, no. 2 (2018): 361–79.

[17] Bill Gent and Leni Franken, "Islamic Religious Education in Europe: Introduction," *Islamic Religious Education in Europe: A Comparative Study*, 2021, https://doi.org/10.4324/9780429331039-101.

[18] M. Amin Abdullah, "Religion, Science and Culture: An Integrated, Interconnected Paradigm of Science," *Al-Jami'ah* 52, no. 1 (2014): 175–203, https://doi.org/10.14421/ajis.2014.521.175-203.

[19] Abdulkadir Rahardjanto and Retno Susilowati, "Study of Learning Strategy Integration of Science and Religion on the Development of Student Character," 2018, https://doi.org/10.2991/amca-18.2018.178.

portion of subjects is relatively balanced, so ideally the abilities of students from madrasas or students from pesantren should be superior to those of public schools.

In this context, Muhammadiyah as one of the largest Islamic organizations in Indonesia is able to properly implement and integrate religious and science lessons, both at the school, madrasah, and Muhammadiyah Pesantrens' level.[20] Of the three, Muhammadiyah educational institutions in the form of madrasas, according to researchers, have advantages in implementing the integration of these two sciences, because the religious base is quite strong, so it is not difficult for students to explore Islamic religion and science together.[21] This does not apply at the Muhammadiyah pesantren level, because the curriculum and materials taught to students are prioritized on Islamic sciences.

This study will describe in more detail how the process of integrating Islamic and scientific materials in Muhammadiyah pesantren with the focus of research lies in three aspects: materials, teaching methods, and curriculum. Furthermore, this research takes objects in one Muhammadiyah pesantren located in Surakarta, Central Java. The purpose of the research in general is to know the process of integration, development, and the results obtained by the students after receiving Islamic and scientific material. This research is included in the category of basic research which is still possible to be developed into applied research, so that the results can be used as a reference for other Muhammadiyah pesantren in Indonesia.

EDUCATION IN FACING TO RELIGION AND SCIENCE: AN OVERVIEW

Education experts consider that the downturn experienced by Muslims today is due to various basic problems that befell the Islamic world.[22] There are three basic problems facing the world of Islamic education. First, the ambivalent education system reflects a dichotomous view that separates religious and general sciences. Second, the occurrence of disintegration in the Islamic education system, where each system insists on maintaining its own individuality. Third, the emergence of the inferiority of managers of Islamic educational institutions vis a vis Western education. This is because the Western education system has been used as a benchmark for the progress and success of an education system.[23]

The discussion on the issue of the integration of religion and science in educational institutions has been discussed by several researchers. Bretl for example, argues that religion and science are often described as two different belief systems.[24] Scholars have different methods and criteria for arriving at truth claims and are often based on worldviews on different a priori grounds. However, at the most fundamental level, they both use the general system of

[20] Kuswandi, "Dinamika Pendidikan Pesantren Di Muhammadiyah," *Shahih: Journal of Islamicate Multidisciplinary* 5, no. 1 (2020): 2020.

[21] Agus Miswanto, "Eksistensi Pesantren Muhammadiyah Dalam Mencetak Kader Persyarikatan (Studi Di Kabupaten Magelang)," *Tarbiyatuna* 10, no. 1 (2019): 81–102, https://doi.org/10.31603/tarbiyatuna.v10i1.2717.

[22] Abdullah Sahin, "Critical Issues in Islamic Education Studies: Rethinking Islamic and Western Liberal Secular Values of Education," *Religions* 9, no. 11 (2018), https://doi.org/10.3390/rel9110335.

[23] M Noor Sulaiman Syah, "Challenges of Islamic Education in Muslimworld : Historical , Political , and Socio-Cultural Perspective," *QIJIS: Qudus International Journal of Islamic Studies* 4, no. 1 (2016), http://journal.stainkudus.ac.id/index.php/QIJIS/article/download/1580/1449.

[24] Brandon Bretl, "Religious and Scientific Concept Integration in Developmental, Cultural, and Educational Context," *Religion and Education* 47, no. 3 (2020): 257–72, https://doi.org/10.1080/15507394.2019.1643217.

the human brain and thus merge in the realm of psychological phenomena.[25] This gives us deep insight into how the integration of religious and scientific concepts occurs at a functional level and how it can be influenced by social and cultural factors. This line of research has revitalized ancient questions related to epistemology and the gap between religious belief systems and science with implications for various concerns in education and others.

Another opinion was conveyed by Srimulyani which describes the history and development of Pesantrens, madrasas, and integrated Islamic schools.[26] This study concludes that Islam can develop and be accepted by the Indonesian people through the existence of institutions pioneered by scholars and educational leaders. Evidenced by the positive efforts to develop Islamic educational institutions under the auspices of the Ministry of Religion. Massive efforts were made by the Ministry of Religion in developing Islamic educational institutions. so that the Ministry of Education and Culture provides an opportunity for Integrated Islamic Schools to design an educational curriculum to meet the National Education Standards by combining religious and scientific knowledge.

Rasyid's research focuses more on the pesantren curriculum, which reflects the style and will of the kyai who lead the pesantren, by reflecting on their interpretations of the two Islamic traditions, and the changes that occur in their society. Pesantren is a traditional educational institution in Indonesia that is concerned with the implementation of Islamic education. The teaching of the yellow book is a typical pesantren curriculum applied in the pesantren education system. Some pesantren still use the yellow book as their overall curriculum, while some other pesantren incorporate other curricula into their overall curriculum. Due to globalization and modernity, Pesantrens - as one of the education systems in Indonesia - are trying to integrate their curriculum into the national curriculum.[27]

Hasanah and Zuhaida explores the integration of religion and science in madrasas. According to them, religion and science are one unit. The difference between the two lies in the perspective. Knowledge comes from God. All kinds of approaches to reality are finally able to be integrated and integrated by contemplating the concept of the oneness of God. Scientific activities are closely related to the implementation of education. The implementation of education is always based on curriculum development. The existence of curriculum development is based on the emergence of future challenges and competencies. The purpose of this study is to describe the design of an integrative science Madrasah in the device and implementation of learning. The research method used is descriptive qualitative, the sample used is teachers at MTs N Salatiga. The integration of science-religion is seen only in the implementation of learning, where the teacher has introduced the science-religion relationship by connecting it with the verses of the Qur'an. The results obtained by both indicate that madrasas have been able to implement integration at the operational level.[28]

---

[25] Toto Suharto, "Transnational Islamic Education in Indonesia: An Ideological Perspective," *Contemporary Islam* 12, no. 2 (2018): 101–22, https://doi.org/10.1007/s11562-017-0409-3.

[26] Eka Srimulyani, "Women and Pesantren Education: History, Kinship, and Contents," in *Women from Traditional Islamic Educational Institutions in Indonesia*, 2021, 37–62, https://doi.org/10.1017/9789048516216.002.

[27] Ramli Rasyid, "The Integration Of The National Curriculum Into Pesantren Education System," *Jicsa* 1 (2012): 1–16.

[28] Nur Hasanah and Anggun Zuhaida, "DESAIN MADRASAH SAINS INTEGRATIF: INTEGRASI SAINS DAN AGAMA DALAM PERANGKAT DAN PELAKSANAAN PEMBELAJARAN," *Edukasia : Jurnal Penelitian Pendidikan Islam* 13, no. 1 (2018): 155, https://doi.org/10.21043/edukasia.v13i1.3517.

Islam does not separate or dichotomy between religion and science. The dichotomization of science is contrary to the integral teachings of Islam.[29] Islam teaches a balance between the affairs of this world (general) and the affairs of the hereafter (religion). All knowledge comes from God and must be studied and used to increase the closeness of a servant to God *(ma'rifat Allah).* The development of knowledge in Islam, according to Hossein Nasr's point of view, is based on two things: first, science does not include the details. found in the Qur'an; second, the Qur'an and hadith have defined the environment and values that are inherent in developing science. Since it was first created until the end of time, human life will never be separated from science. With science, humans can know God as the creator, humans can know the nature around them, even know themselves. Therefore, Islam teaches its people to always study and learn. Even the first revelation received by the Prophet Muhammad taught this.

The 2nd world Islamic education conference in 1980 recommended the classification of knowledge into eternal knowledge and sought-after knowledge. Eternal knowledge is knowledge that comes from revelation in the Qur'an and al-Sunnah. The knowledge sought is knowledge obtained from the efforts and abilities of the human mind.[30] This classification of knowledge combines three types of sources of knowledge, namely the reality of the Qur'an, the reality of reason and the reality of the universe into a harmonious and integral form that aims to prevent the disappearance of Islamic civilization. Integration between religious and general sciences to deal with dualism and secularism.[31] Although in principle they agree on the necessity of integrating knowledge, there are different views on the approach and method of implementing integration. The differences that occur are due to different views on several things related to the epistemology of science and its application to the education system.

RESEARCH METHOD

This qualitative research is a case study at Pesantren Muhammadiyah in Surakarta regarding the application of Islamic science and science at the Pesantren Hajjah Nuriyah Shabran (hereafter Pondok Shabran). To unravel this case, the researcher uses a phenomenological approach which, according to Denzin and Lincoln in Hasbiansyah[32] serves to find answers about the meaning of a phenomenon. In this case, the phenomenon under study is a learning activity that involves five students: A, D, L, M, S.

In this study, the main data collection technique was through in-depth interviews with research subjects. To obtain the results of the interview in its entirety, the researcher recorded all interview activities. The completeness of the data can be deepened by using other techniques, such as participant observation, document searching, and others. To get the data, I conducted interviews with five students of the Pondok Shabran who are in the same time students at the Muhammadiyah University of Surakarta. In addition, I also received data from the leadership of the Pondok Shabran regarding the application of scientific integration. After conducting interviews, I analysed the findings, then provided recommendations for further research.

---

[29] Sukman Sappe, "Differences in Knowledge Science in Islamic Education Philosophy Perspective," *International Journal of Asian Education* 1, no. 1 (2020): 1–8, https://doi.org/10.46966/ijae.v1i1.22.

[30] Shaikh Abdul Mabud, "World Conferences on Muslim Education: Shaping the Agenda of Muslim Education in the Future," in *Philosophies of Islamic Education: Historical Perspectives and Emerging Discourses*, 2016, 129–44, https://doi.org/10.4324/9781315765501.

[31] Eric Chaney, "Religion and the Rise and Fall of Islamic Science Extremely Preliminary and Incomplete," 2013.

[32] O Hasbiansyah, "Pendekatan Fenomenologi: Pengantar Praktik Penelitian Dalam Ilmu Sosial Dan Komunikasi," *Mediator: Jurnal Komunikasi* 9, no. 1 (2008): 163–80, https://doi.org/10.29313/mediator.v9i1.1146.

RESULTS

Background of Pondok Shabran

Pondok Muhammadiyah Hajjah Nuriyah Shabran is a higher education program for cadres of tarjih scholars and tabligh of Muhammadiyah/Aisyiyah Central Leadership held at Muhammadiyah University of Surakarta. The education program of Pondok Shabran was started in the academic year 1982/1983. However, the inauguration was carried out on 24 Rabiul Awwal 1403 H to coincide with January 8, 1983, by the Minister of Religion of the Republic of Indonesia, H. Alamsyah Ratuperwiranegara. 8 The vision of Pondok Shabran is to become a center for higher education for cadres of Tarjih and Tabligh Muhammadiyah scholars at the national level for the enlightenment of the people and the nation towards the ultimate.[33]

Meanwhile, its mission is (1) Organizing research-based education that is oriented to the development of Islamic sciences and Muhammadiyah, especially ketarjihan and da'wah. (2) Developing the potential of students to become cadres of scholars in the field of Tarjih and Tabligh who have strong beliefs, are obedient to worship, have noble character, and are progressive in accordance with the personality of Muhammadiyah. (3) Providing services and community services in the fields of Islamic law, da'wah, and Muhammadiyah development. The objectives of Pondok Shabran are (1) To become a higher education institution for scholars who excel in the study of Ketarjihan, da'wah and kemuhammadiyahan. (2) Produce graduates who have the qualifications of Tarjih and Tablighi scholars, militancy, and high commitment to Persyarikatan Muhammadiyah. (3) Developing the community through thoughts, fatwas, and da'wah activities towards the main community.[34]

The basic principle of Pondok Shabran education is Pondok as an educational system characterized by an integrative religion, in the sense of: (a) integrative in the sense of integrating the effectiveness of the pesantren model (in inculcating religious and spiritual values) and the effectiveness of the school model (in training analytical skills); (b) integrative in the sense, not just allocative dividing general education programs and religious education in a certain percentage, but in the sense of enriching and strengthening each other, where general education activities strengthen religious education programs and vice versa; (c) integrative in the sense of integration and balancing between mastery of material, methodology, insight, attitude, and behavior. In addition, Pondok is also a complete personal development, in the sense of integrated *dhikr* and *fikr*, integrated faith, knowledge, charity and da'wah, and integrated cognitive, affective, and psychomotor areas, in individual and social life.[35]

Learning How to Learn: The Process of Transmitting the Knowledge

My first interview was addressed to L, a senior student of the Pondok Shabran who a student at the Universitas Muhammadiyah Surakarta is also. The question of how the learning process at the Pondok Shabran is answered with a clear, that learning is carried out in a modern system as well as the learning method in general education institutions. The interaction between teachers and students occurs in two directions, which means that the teacher becomes a facilitator and mediator in the scientific development process.

---

[33] Azaki Khoirudin and Ma'arif Jamuin, "Kontinuitas Dan Diskontinuitas Pendidikan Kader Pondok Hajjah Nuriyah Shabran (1982-2014)," *Jurnal Muhammadiyah Studies* 1, no. 1 (2020), https://doi.org/10.22219/jms.v1i1.11412.

[34] Muhammad Muslam and M. Abdul Fattah Santoso, "Mohamad Djazman and Muhammadiyah Cadre Education: Case Study of Pondok Hajjah Nuriyah Shabran, Universitas Muhammadiyah Surakarta," *Iseedu: Journal of Islamic Educational Thoughts and Practices* 2, no. 1 (2018): 94–124.

[35] Tim Pondok, *Buku Pedoman Penyelenggaraan Pondok Muhammadiyah "Hajjah Nuriyah Shabran" Universitas Muhammadiyah Surakarta* (Surakarta: PM HNS-UMS, 2004).

> *In class, there is more discussion than material delivery. Usually, there is a schedule of presentations by raising the latest issues that are happening in the community, especially issues related to da'wah and Kemuhammadiyahan. In this case, the teacher becomes a facilitator to direct the discussion so that it goes well.*

My interview with L in this case got a conclusion on the aspect of scientific development, that learning with the discussion method in class provides a positive value for the scientific development of students. The role of the teacher as a facilitator is vital in directing the learning process so that the information obtained by students is in line with learning outcomes.

In contrast to "L", "A" has another view that the learning process is sometimes not carried out in class, but by giving assignments in the form of reading various kinds of literature that support primary books. In this case, students get various perspectives on the opinions of scholars on a problem. Not only from among Muslims, but also from the West.

> *I often read books on Western philosophy to broaden my view of things. From these readings, I found points of intersection that sometimes make sense, sometimes they don't. However, the Islamic base provided by the pondok is sufficient to limit me so that I don't think too freely.*

In this aspect, the assignment given by the teacher in the form of freedom to read various kinds of literature also gives positive results in forming students' thinking frameworks so that they are not fixated on one opinion by ignoring other opinions. However, the students have also been provided with a boarding school for religious strengthening, so that they are still able to choose the right reading so that it does not fall outside the limits of Islamic values.

Implementing of Scientific Integration

Learning at Pondok Shabran applies the integration of Islamic and Western knowledge in an academic frame. This means that teachers do not only use Islam as a source of knowledge, but also use Western scientific references that focus on natural science and technology as a basis for thinking and practice. This is revealed in the Fiqh material, when discussing the issue of purification or Taharah. "S" argues:

> *When we discussed why using water as a tool for purification, it turned out that in the scientific aspect it has a truly extraordinary wisdom. In the Qur'an it is stated that one of the benefits of water is the source of life for all God's creatures. Especially for humans, water turns out to be the most powerful medium for rejuvenating dead body cells. So, when a Muslim performs ablution, he also tries to make his body healthy.*

The merging of two sciences to find the answer to a problem is one way to build cognitive, affective, and psychomotor aspects. In this case, students are not only fixated on the knowledge gained, but are able to identify how that knowledge was obtained and what are the benefits of learning it.

The strengthening of scientific integration carried out by Pondok Shabran for students occurs because the curriculum used is in line with that obtained by students at Muhammadiyah University, Surakarta. Although there is no specific curriculum that combines the two poles of

science, but in the cognitive domain, many theories obtained by students at the University are used as references in learning at the Shabran cottage, as stated by "D" and "M":

> *Since the beginning of my arrival at this lodge, I have never received a guide or curriculum that I will study for 4 years. However, every teacher who enters a certain subject has their own curriculum, which has a wedge with the curriculum I got in lectures (D).*
>
> *Since I was studying here, there was no special curriculum given to us. What happened was that each lecturer provided his own guide and curriculum, because Pondok Shabran did not provide a guide for students (M).*

The recognition of "A" and "M" is indeed a weakness of the integration practice that occurs at Pondok Shabran, because the curriculum is an important key in planning the integration of two different poles of science. However, what lecturers do is quite an important element for the practice of scientific integration based on the guidelines they make for students.

Discussion

Studying Islamic subjects which are integrative in Pesantrens is a necessity. Although it has a weakness where there are no teachers who have a science education background. What happened was that teachers with Islamic educational backgrounds were forced to combine the two poles of science with existing knowledge. On the cognitive aspect, it is relatively successful, but on the affective and psychomotor side it is somewhat hampered, due to the inability to prove the theory scientifically. However, utilizing the findings of established science as supporting knowledge to understand the messages of the Qur'an can be used as a source of inspiration for conducting studies in the natural sciences.

The fact that happened at Pondok Shabran is an weakness for Islamic educational institutions that seek to update students' scientific values without a clear guide or curriculum. In fact, in the application of scientific integration, it must have planning, implementation, and evaluation so that the results produced are in accordance with the competencies and outputs of the educational institution.

However, the existence of Pesantrens that teach two poles of science can erode the strong assumption in society which says that religion and natural science cannot be reconciled. Both have their own areas, separated from one another, both in terms of formal objects-scientific materials, research methods, criteria for truth, the role played by scientists and the status of their respective theories, even to the institution of administration. In other words, science does not care about religion and religion does not care about science. At this point, the assumption changed with the ability of the students in the boarding school who were able to answer the problems of society from the mastery of comprehensive knowledge.

CONCLUSION

For Islamic educational institutions such as Pesantrens that do not have teachers with a scientific background, combining Islamic and general knowledge is not easy. It takes more effort to manage learning so that when the process takes place, students are able to properly digest the material presented by the teacher. The success of the implementation of scientific integration at the Shabran cottage can be seen from the ability of students to relate Islamic material to natural phenomena that occur around them, as well as provide an understanding of Islamic values as a whole. In addition, the critical power of students from the results of

discussions that took place in class brought a new understanding of knowledge other than Islam that was able to be elaborated so that it became scientific evidence that was able to be harmonized by reason.

Bibliography

Abdullah, M. Amin. "Islamic Studies in Higher Education in Indonesia: Challenges, Impact and Prospects for the World Community." *Al-Jami'ah* 55, no. 2 (2017): 391–426. https://doi.org/10.14421/ajis.2017.552.391-426.

———. "Mendialogkan Nalar Agama Dan Sains Modern Di Tengah Pandemi Covid-19." *MAARIF* 15, no. 1 (2020): 11–39. https://doi.org/10.47651/mrf.v15i1.75.

———. ""Religion, Science and Culture: An Integrated, Interconnected Paradigm of Science." *Al-Jami'ah* 52, no. 1 (2014): 175–203. https://doi.org/10.14421/ajis.2014.521.175-203.

Ali, Nur. "INTEGRATIVE CURRICULUM OF RELIGION AND SCIENCE AT SPECIAL PESANTREN FOR UNIVERSITY STUDENTS." *ULUL ALBAB Jurnal Studi Islam* 20, no. 1 (2019): 95–122. https://doi.org/10.18860/ua.v20i1.6353.

Amir, Ahmad Nabil, Tasnim Abdul Rahman, Wan Sabri Wan Yusof, and Zuriati Mohd Rashid. "Al-Faruqi's Fundamental Ideas and Philosophy of Education." *DINAMIKA ILMU* 15, no. 2 (2015): 235. https://doi.org/10.21093/di.v15i2.146.

Asy'ari, Hasyim. "Renaisans Eropa Dan Transmisi Keilmuan Islam Ke Eropa." *JUSPI (Jurnal Sejarah Peradaban Islam)* 2, no. 1 (2018): 1. https://doi.org/10.30829/j.v2i1.1792.

Bretl, Brandon. "Religious and Scientific Concept Integration in Developmental, Cultural, and Educational Context." *Religion and Education* 47, no. 3 (2020): 257–72. https://doi.org/10.1080/15507394.2019.1643217.

Chaney, Eric. "Religion and the Rise and Fall of Islamic Science Extremely Preliminary and Incomplete," 2013.

Gent, Bill, and Leni Franken. "Islamic Religious Education in Europe: Introduction." *Islamic Religious Education in Europe: A Comparative Study*, 2021. https://doi.org/10.4324/9780429331039-101.

Haji Yahya Zikri, Solihah Binti. "A Comparative Analysis of The Conceptions of Muhammad Naquib Al-Attas and Ismail Raji Al-Faruqi in Islamization of Knowledge." *Dirosat : Journal of Islamic Studies* 2, no. 1 (2017): 17. https://doi.org/10.28944/dirosat.v2i1.41.

Hardianto, Hardianto. "Reposition of Historical Pesantren, Madrasah and Integrated Islamic School." *Edumaspul: Jurnal Pendidikan* 3, no. 2 (2019): 75–86. https://doi.org/10.33487/edumaspul.v3i2.106.

Hasanah, Nur, and Anggun Zuhaida. "DESAIN MADRASAH SAINS INTEGRATIF: INTEGRASI SAINS DAN AGAMA DALAM PERANGKAT DAN PELAKSANAAN PEMBELAJARAN." *Edukasia : Jurnal Penelitian Pendidikan Islam* 13, no. 1 (2018): 155. https://doi.org/10.21043/edukasia.v13i1.3517.

Hasbiansyah, O. "Pendekatan Fenomenologi: Pengantar Praktik Penelitian Dalam Ilmu Sosial Dan Komunikasi." *Mediator: Jurnal Komunikasi* 9, no. 1 (2008): 163–80. https://doi.org/10.29313/mediator.v9i1.1146.

Khoirudin, Azaki, and Ma'arif Jamuin. "Kontinuitas Dan Diskontinuitas Pendidikan Kader

Pondok Hajjah Nuriyah Shabran (1982-2014)." *Jurnal Muhammadiyah Studies* 1, no. 1 (2020). https://doi.org/10.22219/jms.v1i1.11412.

Kurniawan, Syamsul. "Sukarno's Thought on the Importance of Reintegration of Religion and Science in Pesantren Education in Indonesia." *Journal of Indonesian Islam* 12, no. 2 (2018): 219–46. https://doi.org/10.15642/JIIS.2018.12.2.219-246.

Kuswandi. "Dinamika Pendidikan Pesantren Di Muhammadiyah." *Shahih: Journal of Islamicate Multidisciplinary* 5, no. 1 (2020): 2020.

Mabud, Shaikh Abdul. "World Conferences on Muslim Education: Shaping the Agenda of Muslim Education in the Future." In *Philosophies of Islamic Education: Historical Perspectives and Emerging Discourses*, 129–44, 2016. https://doi.org/10.4324/9781315765501.

Miswanto, Agus. "Eksistensi Pesantren Muhammadiyah Dalam Mencetak Kader Persyarikatan (Studi Di Kabupaten Magelang)." *Tarbiyatuna* 10, no. 1 (2019): 81–102. https://doi.org/10.31603/tarbiyatuna.v10i1.2717.

Munadi, Muhammad. "Integration of Islam and Science: Study of Two Science Pesantrens (Trensain) in Jombang and Sragen." *Jurnal Pendidikan Islam* 5, no. 2 (2016): 287. https://doi.org/10.14421/jpi.2016.52.287-303.

Muslam, Muhammad, and M. Abdul Fattah Santoso. "Mohamad Djazman and Muhammadiyah Cadre Education: Case Study of Pondok Hajjah Nuriyah Shabran, Universitas Muhammadiyah Surakarta." *Iseedu: Journal of Islamic Educational Thoughts and Practices* 2, no. 1 (2018): 94–124.

Naim, Ngainun. "Mystico-Philosophy; The Integration Epistemologies of Mulyadhi Kartanegara." *Epistemé: Jurnal Pengembangan Ilmu Keislaman* 13, no. 2 (2018): 361–79.

Nuryantini, Ade Yeti. "Integration Science and Religion: An Analysis in Islamic Higher Education." *TARBIYA: Journal of Education in Muslim Society* 5, no. 1 (2018). https://doi.org/10.15408/tjems.v5i1.9508.

Pondok, Tim. *Buku Pedoman Penyelenggaraan Pondok Muhammadiyah "Hajjah Nuriyah Shabran" Universitas Muhammadiyah Surakarta*. Surakarta: PM HNS-UMS, 2004.

Rahardjanto, Abdulkadir, and Retno Susilowati. "Study of Learning Strategy Integration of Science and Religion on the Development of Student Character," 2018. https://doi.org/10.2991/amca-18.2018.178.

Rasyid, Ramli. "The Integration Of The National Curriculum Into Pesantren Education System." *Jicsa* 1 (2012): 1–16.

Sahin, Abdullah. "Critical Issues in Islamic Education Studies: Rethinking Islamic and Western Liberal Secular Values of Education." *Religions* 9, no. 11 (2018). https://doi.org/10.3390/rel9110335.

Sappe, Sukman. "Differences in Knowledge Science in Islamic Education Philosophy Perspective." *International Journal of Asian Education* 1, no. 1 (2020): 1–8. https://doi.org/10.46966/ijae.v1i1.22.

Siswanto, Siswanto. "Perspektif Amin Abdullah Tentang Integrasi-Interkoneksi Dalam Kajian Islam." *Teosofi: Jurnal Tasawuf Dan Pemikiran Islam* 3, no. 2 (2015): 376. https://doi.org/10.15642/teosofi.2013.3.2.376-409.

Srimulyani, Eka. "Women and Pesantren Education: History, Kinship, and Contents." In *Women from Traditional Islamic Educational Institutions in Indonesia*, 37–62, 2021. https://doi.org/10.1017/9789048516216.002.

Suharto, Toto. "Transnational Islamic Education in Indonesia: An Ideological Perspective." *Contemporary Islam* 12, no. 2 (2018): 101–22. https://doi.org/10.1007/s11562-017-0409-3.

Sumpeno, Ahmad, and Andi Muhammad Yauri. "Understanding of Religion , Science , and Technology Integration in Islamic Civilization : A Critical Insight of Harun Nasution." *TEST Engineering and Management* 83, no. March-April 2020 (2020): 2771–81.

Syah, M Noor Sulaiman. "Challenges of Islamic Education in Muslimworld : Historical , Political , and Socio-Cultural Perspective." *QIJIS: Qudus International Journal of Islamic Studies* 4, no. 1 (2016). http://journal.stainkudus.ac.id/index.php/QIJIS/article/download/1580/1449.

Syarif, Fajar. "REINTEGRATION OF RELIGIOUS KNOWLEDGE AND GENERAL KNOWLEDGE (CRITICISM OF THE DISCOURSE OF SCIENCE DICHOTOMY)." *TRANSFORMATIF* 4, no. 1 (2020): 1–18. https://doi.org/10.23971/tf.v4i1.1850.

Taher, Muhammad Tarmizi. "INTEGRASI AGAMA DALAM PEMBELAJARAN SAINS." *Jurnal Al Muta'aliyah: Pendidikan Guru Madrasah Ibtidaiyah* 6, no. 1 (2021): 66–85. https://doi.org/10.51700/almutaliyah.v6i1.120.

Woodward, Kathleen E. "Indonesian Schools: Shaping the Future of Islam and Democracy in a Democratic Muslim Country." *Journal of International Education and Leadership* 5, no. 1 (2015). http://www.jielusa.org/.