Andi Nurlela¹

¹UIN Sunan Gunung Djati Bandung, Indonesia *Corresponding Address: emailf.working@gmail.com

Received: 20 October 2022 | Approved: 26 November 2022 | Published: 29 December 2022

Abstract: Integrating akhlak values with all subjects at all levels of education is one of the keys to forming students with a religious character. So that science and religion are no longer separated. Including at the Madrasah Aliyah (MA) education level, Islamic-based schools, but in reality, it is still difficult not to separate science and religion, especially in science subjects. Therefore, this study aims to analyze religious values, especially in the akhlak aspect in science textbooks for 10th grade Madrasah Aliyah (MA), and how students internalize these religious values. This research uses a qualitative descriptive approach, specifically content analysis. The results of this study indicate that the learning materials in science textbooks for 10th at Madrasah Aliyah (MA) contain akhlak values, including akhlak to Allah SWT, akhlak to fellow human beings, and akhlak to the environment. The media used to internalize akhlak values in science learning is manufacturing printed and electronic teaching materials so students can easily access and understand them.

Keywords: Akhlak, Madrasah Aliyah, Science

INTRODUCTION

Science subjects at the elementary to senior education level based on sharing knowledge based on this method are included in scientific knowledge. Scientific knowledge is a type of knowledge that uses a unique method, namely the scientific method (Hidayatullah, 2019). Science textbooks at Madrasah Aliyah (MA) can be used as an effective means of instilling akhlak values in students in addition to religious lessons, considering that learning books are mandatory books every student must read. What is learned should have a positive impact on student akhlak. The problem with science subjects is that there are no teaching materials specifically designed to meet learning objectives in Aliyah madrasas, namely science that is integrated with religious values , including akhlak values (Husna et al., 2020; Roziy MF, 2007; Zain & Vebrianto, 2017).

According to the Indonesian Dictionary (KBBI), Akhlak is an important quality for humanity. Religious value is a content of the teachings of Islam to obtain the goodness of the world and the hereafter, which is applied in life. Islamic religious values are divided into two: divine and human. Divine value is a value whose source comes from the Al-Quran and Hadith. Insasi values are values that humans agree on, and human values come from ra'yu (logic), cultures, and natural realities (Muhaimin, 1991).

As for research that has been conducted regarding science learning, which is studied based on the Qur'an, such as regarding the creation of this universe by Allah, which has two functions for humans, the first function is as a temporary residence (for the phases of world life) as well as a means of life, and the second function is as verses that must be studied and examined to gather evidence and clues about the existence, power, knowledge, and wisdom of Allah SWT (Afifah et al., 2020; Pamil & Munir, 2020).

Other research on Kauniyah verses has been carried out by many previous researchers, for example, that was conducted by Khoirudin (2017) titled "Islamic Science Based on Reasoning Verses of the Universe." This study aims to examine the paradigm of Islamic Science based on the logic of universal verses. This study concluded that Islamic knowledge can be built from the Qur'an as the basis of scientific epistemology—revelation as a source that inspires the construction of science (Khoirudin, 2017).

Based on previous research, no specific study has been found that examines religious values, especially akhlak values in science subjects, especially in science textbooks for 10th grade at Madrasah Aliyah. Therefore, learning in Natural Sciences (IPA) subjects, including at the Madrasah Aliyah education level or equivalent, should internalize Akhlak values.

According to the Indonesian Dictionary (KBBI), Akhlak is an essential quality for humanity. At the same time, Religious value is a content of the teachings of Islam to obtain the goodness of the world and the hereafter, which is applied in life. Islamic religious values are divided into two: divine and human. Divine value is a value whose source comes from the Al-Quran and Hadith. Insasi values are values that humans agree on, and human values come from ra'yu (logic), cultures, and natural realities (Muhaimin, 1991).

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Many Muslim scholars criticize the weak study of the Kauniyah verses in the Qur'an, which means that religious values are not fully integrated with science. Besides that, Muslim scientists also say that science and Islam have similarities, namely that there are activities of observation, experimentation, and analysis of nature (Fajar & Habibbulloh, 2021). So it should be that science subjects at all levels, including the Madrasah Aliyah (MA) level, must become one unit with religious values.

Another research was conducted by Rusydi (2018) regarding the Tafsir of Kauniyah Verses. The results of this study concluded that many verses talk about the Kaun (nature) in the Qur'an, which, if Muslims seriously studied it in modern times, nature will increase faith in the truth of the Qur'an, which was revealed from Allah SWT and will also beautify akhlaks (Rusydi, 2018). Research conducted by Rahmawati & Bakhtiar (2019) regarding science learning based on the integration of Science on the Subject of the Creation of the Universe and the Solar System, the results of this research reveals that learning science on the material of the creation of the universe and the solar system is related to Islamic studies where this related to akhlak values to Allah SWT (Rahmawati & Bakhtiar, 2019). The subject of discussion regarding temperature has also been carried out by research, which states that the subject of temperature is related to the akhlak values listed in the Al-

Quran (Sofianto & Irawati, 2020). Therefore, considering the results of previous research, it is essential to explore how science learning can be used to internalize akhlak values so that the religious character of students can also be formed.

This study analyzes religious values, especially akhlak values, in science learning books for 10th grade Madrasah Aliyah students and how students internalize these akhlak values. Through this research, it is hoped that it can provide a clear and in-depth description of the akhlak values contained 10th grade science learning books for Madrasah Aliyah students, as well as make a significant contribution to efforts to internalize akhlak values in subjects Science among Madrasah Aliyah students and in the end can integrate akhlak values with science.

METHODS

This research method employs a qualitative descriptive approach, specifically content analysis, to identify the content of the verses in the science textbooks used in Madrasah Aliyah. A qualitative descriptive research approach explores and understands meaning (John W. Creswell, 2017). Content analysis is a systematic technique for analyzing meaning, messages, and ways of conveying messages (Zuchdi, 1993).

This study's data source is the science learning books for 10th-grade Madrasah Aliyah students. The textbook used as a sample in this research is the science textbook used by Madrasah Aliyah in Indonesia.

In collecting research data, the researcher obtained a sample of the 10th grade class science learning books used by Madrasah Aliyah (MA) from the Indonesian Bookkeeping Information System (https://buku.kemdikbud.go.id/). The following is an overview of the contents of the Science learning book for 10th grade:



Figure 1. Table of Contents on Science Textbook in Madrasah Aliyah

The data analysis technique used in this research is content analysis. Content analysis is used to understand the symbolic messages within unstructured data such as documents, paintings, literary works, articles, books, and other forms (Zuchdi, 1993). The content analysis technique in this research includes reading, note-taking, rereading, data identification, data presentation, and drawing inferences.

RESULTS AND DISCUSSIONS

Akhlak Values on 10th Grade Madrasah Aliyah Science Textbook

Implementing learning that integrates with akhlak values is very important for all levels of education, including the Madrasah Aliyah. Madrasah Aliyah is a school equal to another high school but with the model Islam characterizes. According to the Republic of Indonesia's Religious Decree, Madrasah Aliyah is a general high school with Islamic characteristics organized by the Ministry of Religion. The curriculum system used in madrasah aliyah is not much different from that used in other public schools. The curriculum applied in Indonesia has changed several times. The 2006 curriculum was changed to the 2013 curriculum, and then there was another change to the independent curriculum, which is currently being implemented. The independent curriculum is expected to strengthen various aspects, including students being required to understand the concept of knowledge and instill religious values and character development (Mulyono et al., 2018).

The problem with implementing the independent curriculum experienced by Madrasah Aliyah in internalizing akhlak values, especially in science subjects, is that there are no teaching materials specifically designed to meet learning objectives in Madrasah Aliyah (Roziy MF, 2007). Science subject teachers design science teaching materials integrated with akhlak values (Ihwanudin et al., 2018). Akhlaks are one of the Islamic religious values. Islamic religious values include faith or Aqidah, worship, and akhlaks. Aqidah is a value believed and held firmly, consisting of Divine or Godhead, prophecy or prophethood, spiritual or spiritual, and samm'iyat or Shari'a law. The value of worship is a standard or measure of a person practicing an act based on devotion to Allah SWT (Zainuddin, 1991).

The etymological definition of akhlakity is derived from the word khuluq, which means character, ethics, and akhlaks. Imam Al-Ghazali explained that khulq is a condition or ha'iah in a pure soul, and from this condition grows an easy activity without requiring prior thought and consideration (Al-Ghazali, n.d.). Akhlaks is an attitude that gives birth to human actions and behavior. Akhlak values are attitudes or behaviors that encourage someone to do something spontaneously without consideration. Ahlak consists of ahlak to Allah SWT, ahlak to fellow human beings, and ahlak to the environment (Ilyas, 1999).

Science learning materials for 10th Grade Madrasah Aliyah (MA) in science textbooks consist of viruses and their roles, green chemistry in 2030 sustainable development, basic chemical laws around us, atomic structure, renewable energy, diversity of living things, interactions and its role in nature, and global warming (Puspaningsih et al., 2021). Studying akhlak values in science learning requires studying the Qur'anic verses and the hadiths. There are several patterns of Al-Qur'an 966 information in these kauniyah verses. Qur'anic information about nature is classified into two major groups. The first is to direct information textually so that it does not require further interpretation or understanding. The second is that information is indirectly conveyed and requires further analysis both at the level of language and related phenomena given to small and large objects (Agus Purwanto, 2008; Ardiyanti, 2020; Subagiya et al., 2018).

Akhlak Values on Relation With Allah in 10th Grade Madrasah Aliyah Science Textbook

Akhlak towards Allah SWT is attitudes or actions that humans should carry out as creatures towards God as the creator. According to Abudin Nata, humans must have akhlaks towards Allah SWT for four reasons. First, Allah SWT created humans. Second, Allah SWT has given perfection to humans and sensory equipment. Third, Allah SWT has provided various materials and means needed for human survival. Fourth, Allah SWT has glorified humans (Nata, 2011).

One of the exciting topics in Madrasah Aliyah science textbooks was Viruses. These topics include how students can identify the characteristics of viruses, analyze the process of virus replication, describe the role of viruses, and formulate ways to prevent the spread of viruses (Puspaningsih et al., 2021). The topic of viruses in the textbook discusses viruses related to disease causes, based on the research of Zahari (Zahari et al., 2021). Discussion of viruses related to the causes of a disease is also contained in QS. Al-Anbiya verse 83:

۞ وَأَيُّوْبَ إِذْ نَادى رَبَّهُ أَنِيْ مَسَنِّنِيَ الضُرُّ وَأَنْتَ أَرْحَمُ الرُّحِمِيْنَ ؟

"And [mention] Job, when he called to his Lord, "Indeed, adversity has touched me, and you are the Most Merciful of the merciful."

In this verse, the Prophet Ayyub is stated to have suffered from a skin disease. According to the study, the skin disease suffered by the Prophet Ayyub originated from a virus that infects skin tissue (Zahari et al., 2021). In Rahmanto & Manto's research (2021), the topic of viruses is contained in QS. Hud verses 61-68 which talk about the pestilence virus. Before Allah destroyed the Thamud people, they were overwritten by a plague, making their faces turn yellow-red and even black. According to medical science, these facial changes are caused by a sample virus or bubonic plague (Lipowska et al., 2019).

The topic of science learning related to the creation of the universe also contains akhlak values for Allah SWT. The Quran talks a lot about the creation of the universe. The BIGBANG theory states that the creation of the universe started from one form, then separated due to a big explosion (Rahmawati & Bakhtiar, 2019). The BIGBANG theory is contained in QS. Al-Anbiya verse 30:

اَوَلَمْ يَرَ الَّذِيْنَ كَفَرُوْا اَنَّ السَّمَاوِٰتِ وَالْأَرْضَ كَانَتَا رَتُقًا فَقَتَقْتْهُمَا ۖ وَجَعَلْنَا مِنَ الْمَآءِ كُلَّ شَيْءٍ حَيٍّ أَفَلَا يُؤْمِنُوْنَ

Have those who disbelieved not considered that the heavens and the earth were a joined entity, and We separated them and made from water every living thing? Then will they not believe?

The existence of this nature does not happen by itself. In the Qur'an, the orderliness and various beautiful things about nature are all created by Allah. Not without reason, this creation is a sign of the power of Allah SWT. In Islam, the greatness of nature, such as the sparkling stars, sun, moon, sky, and other planets, is a sign of Allah's power. Learning natural knowledge is undoubtedly not just learning and knowing but ends in faith in the power of Allah.

Ibn Qayyim Al-Gauziyah said, "If you pay attention to Allah SWT's call for contemplation, it will lead to knowledge about Allah, about His oneness, the attributes of His majesty, and His perfections, such as qudrat, knowledge, wisdom, mercy, kindness, justice, ridho, wrath, reward, and punishment. He introduces Himself to His servants and invites them to meditate on His verses (Baiquri, N.A, 1996).

Akhlak Values and Human Interaction in 10th Grade Madrasah Aliyah Science Textbook

Akhlaks towards fellow human beings is an Islamic commandment to its adherents to fulfill their personal rights and treat themselves fairly. Islam also orders that the fulfillment of personal rights must not harm the rights of others. Akhlaks towards fellow human beings are divided into four, akhlaks towards teachers and parents, akhlaks towards siblings, akhlaks towards friends, and akhlaks towards neighbors (Ilyas, 1999).

Science materials regarding basic chemical laws in science textbooks for 10th Grade also contain religious values. According to Asmara's research (2016), the concepts that apply to carbon compounds are related to Islamic character values, including the abundance of carbon compounds due to the ability of carbon atoms to form chain compounds. The ability of the carbon atom to be affected by its four valence electron compounds. This chemical process is related to the value of unity in Islam to achieve the same goal: worship. Without the rapidity between carbon atoms in forming chains, carbon compounds in this world will not be abundant (Asmara, 2016).

The topic of discussion of renewable energy in science textbooks for 10th Grade at Madrasah Aliyah (MA) is an important topic for the continuation of human life on earth. Renewable energy comes from nature and can be regenerated freely and renewed sustainably and unlimitedly (Puspaningsih et al., 2021). Renewable energy is in the form of the utilization of wind, the utilization of water, the utilization of sea heat, and the utilization of sea tides. According to research conducted by Munir (2023), the utilization of natural resources currently used for renewable energy is already

in the Al-Quran. The use of natural sources of wind as renewable energy is in QS. Al-Hijr verse 22 as follows:

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The discussion of renewable energy in science textbooks for ^{10th Grade} at Madrasah Aliyah is essential for continuing human life on Earth. However, renewable energy comes from nature, which can be regenerated freely and renewed sustainably and unlimitedly (Puspaningsih et al., 2021). Some Renewable energy forms are the utilization of wind, water, utilization of sea heat, and utilization of sea tides. According to research conducted by Munir (2023), the utilization of natural resources currently used for renewable energy is already in the Al-Quran. Concerning the use of natural wind sources as renewable energy, it is in QS. Al-Hijr verse 22 as follows:

وَارْسِلْنَا الرِّيٰحَ لَوَاقِحَ فَآثُرَلْنَا مِنَ السَّمَاءِ مَاءً فَاسْقَيْنُكُمُوْ أَ وَمَا اَنْتُمْ لَهُ بِخْزِنِيْنَ

And We have sent the fertilizing winds and down water from the sky and given you drink from it. And you are not its retainers.

According to Syyaid Thantawi, the use of the word lawsuit in verse indicates that the wind functions to deliver plant pollination. Besides functioning as a facilitator for wind pollination, it can also drive transportation. Currently, the wind is used as a wind power plant (Munir, 2023).

Akhlak Values on Environmental Relations in ^{10th} Grade Madrasah Aliyah Science Textbook

Akhlak values are attitudes or behaviors that encourage someone to do something spontaneously without consideration. Ahlak consists of ahlak to Allah SWT, ahlak to fellow human beings, and ahlak to the environment (Zainuddin, 1991). Ahlak is an action related to three elements: cognitive as basic human knowledge through its intellectual potential. Affective, namely developing the potential of human reason through efforts to analyze, and psychomotor, namely implementing

rational understanding into concrete actions (Hamid, 2013). The science textbook for 10th Grade cannot be separated from its content of akhlak values. Global warming material is also related to akhlak values regarding global warming or environmental damage. Allah SWT has warned that the earth's damage is due to repeated human hands in QS. Ar-Rum verse 41:

ظَهَرَ الْفَسَادُ فِي الْبَرِّ وَالْبَحْرِ بِمَا كَسَبَتْ آيْدِي النَّاسِ لِيُذِيْقَهُمْ بَعْضَ الَّذِيْ عَمِلُوْا لَعَلَّهُمْ يَرْجِعُوْنَ

Corruption has appeared throughout the land and sea by [reason of] what the hands of people have earned so He may let them taste part of [the consequence of] what they have done that perhaps they will return [to righteousness].

Allah SWT created all of the resources in the world to support human needs. Nevertheless, these resources should be used sparingly. However, Excessive use results in environmental damage such as global warming that has occurred at this time. Humans should maintain the balance of nature as a form of worship to Allah SWT. Akhlak towards the environment must be maintained to preserve nature (Haryanti et al., 2022; Lala, 2016; Leu, 2021).

The description above confirms that the topic of learning science in science learning books for 10th Grade at Madrasah Aliyah contains akhlak values. The content of akhlak values in the science learning book for 10th Grade includes akhlak values to Allah SWT and akhlak towards fellow human beings and the environment. Based on the presentation of the research results above, akhlak values towards Allah SWT are found in all topics discussed in the material in 10th Grade Science learning books. In contrast, before this science was developed, Allah SWT had already commemorated it in the Al-Quran. Akhlak's values towards fellow human beings are closely related to the topic of discussion in science textbooks for ^{10th} Grade. Topics such as renewable energy, viruses, chemistry, and others require humans to research, which aligns with the command to pay attention and study as a form of worship to Allah SWT. Akhlak's values towards the environment are also contained in science textbooks for 10th Grade. Learning materials regarding the environment from creation, damage, and efforts to preserve the environment are akhlak that humans must have. In addition to human rights, human beings must also pay attention to akhlaks towards the environment, where Islam regulates how to relate to fellow human beings and how to relate to nature.

Integrating Akhlak Values in Science Learning at Madrasah Aliyah

Internalizing Akhlak values in science textbooks for ^{10th} Grade requires supporting media. However, these supporting media, such as articles, comics, and infographics, can be printed or nonprinted, such as audio and video. In science learning for ^{10th} Grade at Madrasah Aliyah (MA), science teaching materials are also developed which are integrated with religious values that intersect with akhlak values by the teacher (Ihwanudin et al., 2018; Nurjanah et al., 2018; Rizqi & Bintari, 2015; Saregar et al., 2016; Sultoni, 2016; Susilowati, 2017).

The natural science teaching materials development at Madrasah Aliyah in Rizqi & Bintari's research (2015) is a verse-kauniya meditation orientation. The results of this study stated that science teachers at MAN 2 Pekalongan developed their teaching materials to integrate science learning materials with akhlak values. Material related to the environment and pollution through the orientation of verse kauniyah contemplation implemented at MAN 2 Pekalongan. The results of this study indicate that the application of teaching materials in the form of the orientation of verses of Kauniyah contemplation related to the environment and its pollution is running quite optimally. Students understand that protecting the environment is one of the acts of worship ordered by Allah SWT (Rizqi & Bintari, 2015) (Rizqi & Bintari, 2015).

In research conducted by Sultoni (2016), the application of science learning patterns at Madrasah Aliyah to internalize akhlak values is done by writing the formulation of learning objectives and linking science learning material delivered with akhlak values. The results of this research are teachers who teach science subjects using the strategy of inserting akhlak values in each material to apply good akhlaks to students (Sultoni, 2016).

Another way to internalize akhlak values in science learning is through smartphones. Some research found that in science learning, especially with discussing biology, it is by developing an android-based encyclopedia. Today's students are very close to technology. Therefore, using technology as a learning medium needs to be maximized. In this study, an Android-based learning application was designed so that students can learn science, especially related to biology topics, and access sources through various references that can be accessed using a smartphone. The results of developing Android-based learning applications based on reviewer assessments from experts and students as users obtain outstanding scores (Noviar, 2016).

CONCLUSION

Based on the description of the research results above, it can be concluded that the science subject materials contained in the science textbooks for ^{10th Grade} are full of akhlak values. Among the akhlak values in the science learning books for 10th-grade Madrasah Aliyah are akhlak values towards Allah SWT, humans, and the environment. Akhlak values towards Allah SWT are found in all topics discussed in the material in the science learning book 10th Grade, where before the science was developed, Allah SWT had already commemorated it in the Al-Quran, and the hadith of

Rasulullah SAW and one of the akhlaks to Allah SWT is to believe and practice faith. Akhlak's values towards the environment are found in topics such as renewable energy, viruses, chemistry, and others that require humans to research, maintain, and develop. This aligns with the command to pay attention and study as a commendable akhlak towards the environment. Learning materials about the environment from creation, damage, and efforts to preserve the environment are akhlaks humans must have towards the environment. Media for internalizing these akhlak values can be applied by developing teaching materials such as compiling learning modules integrated with akhlak values in the form of textbooks and developing smartphone applications related to learning materials that are easily accessible to students.

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