

Integration of the Qur'an and Science: Building a Holistic Learning Model in the 21st Century

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Abstract: The development of science and technology in the 21st century demands that education should not only focus on cognitive mastery but also on strengthening spiritual and moral values. In the context of Islamic education, the integration of the Qur'an and science becomes a strategic approach to shaping learners who are intellectually competent, faithful, and possess strong character. This study aims to explore the concept and implementation of an integrative approach between the Qur'an and science in 21st-century learning. The method used is library research by analyzing Qur'anic interpretations, Islamic education literature, and modern learning theories. The findings indicate that *kauniyyah* verses in the Qur'an can serve as pedagogical foundations for science learning that fosters both scientific and spiritual awareness. This integrative approach has the potential to create a holistic learning model that balances rationality and spirituality, making it relevant in addressing ethical and moral challenges in the digital era.

Keywords: Al-Qur'an, Holistic Learning, Islamic Education, Integration, Science.

Introduction

The 21st century has become a sign that the world is developing markets with existing technological advances. In this century, it is possible for humans to do everything digitally, including experiencing the dynamics of education, both in developed and developing countries. This can be interpreted as meaning that everything digital also provides easy access to education. The 21st century is also known as the age of knowledge, meaning that everything related to human needs is always based on knowledge (Atmojo, Chumdari, Matsuri, & Adi, 2023). In line with this, entering the 21st century has seen rapid developments in technological advances, and digital technology is one form of these advances (Widiandari, Khoiri, & Syahnaz, 2023).

Therefore, educating the nation's children is not enough; it must be accompanied by developing their abilities, shaping their character, and cultivating a dignified and virtuous civilization in order to enlighten the life of the nation. This means

becoming individuals who are faithful, God-fearing, noble, knowledgeable, capable, creative, independent, and responsible democratic citizens in order to become children of the nation who possess noble values and character. From this, we can see that the importance of education is not only to educate the nation's children, but also to make them noble in character. Educating the nation's children is not enough; it must be accompanied by developing their abilities, shaping their character, and cultivating a dignified and virtuous civilization in order to enlighten the nation. Thus, they become individuals who are faithful, devoted to God, noble in character, knowledgeable, capable, creative, independent, and democratic citizens who are responsible in order to become children of the nation who possess noble values and character. From this, we can see that the importance of education is not only to educate the nation's children, but also to make them noble in character (Widiandari & Amin, 2024).

Based on this perspective, Islamic education that integrates faith and knowledge is a fundamental principle taught by the Qur'an. Islam views knowledge as inseparable from religious values, but rather as an integral part of human efforts to recognize and understand the greatness of Allah through His creation. This can be seen in many verses in the Qur'an that encourage humans to think, research, and observe the universe as signs (ayat kauniyyah) of His greatness. Ayat kauniyyah are Allah's verses found in the universe, which are unwritten and present in the form of natural phenomena such as the alternation of day and night, the order of the cosmos, the cycle of life, and various signs of His greatness that can be captured through human reason and observation (Daulay, 2014). Therefore, the integration of the Qur'an and science is an urgent need in developing a holistic education model in the modern era.

Basically, the educational paradigm in many institutions still tends to separate religious knowledge and general knowledge. This dichotomy causes students to experience a gap in understanding the relationship between knowledge and spiritual values. Science is often considered neutral from a moral and religious aspect, while religious education is seen as only relevant in the context of worship and personal morals. In fact, the Qur'an provides clear guidance that knowledge and faith must go hand in hand to shape individuals who are knowledgeable, faithful, and of noble character.

Based on this thinking, this study aims to examine the concept and implementation of integration between the Qur'an and science in 21st century learning. This study seeks to explore the conceptual basis of kauniyyah verses and their relevance to the development of a holistic learning model that is able to balance the relationship between rationality and spirituality. It is hoped that the results of this study can make a real contribution to the development of Islamic education that is more contextual, integrative, and responsive to the challenges of the digital era

Materials and Methods

This study uses the library research method, which is to collect data from various valid written works such as books, journals, magazines, documents, and other scientific sources relevant to the focus of the study (Arikunto, 2014). In the process, this study uses a qualitative approach with content analysis to explore themes related to the integration of the Qur'an and science in 21st-century learning. In addition, this study also refers to secondary literature in the form of Islamic education books, journal articles, and previous studies as a conceptual basis (Sari & Asmendri, 2020). Therefore, all data were analyzed systematically through the steps of literature collection, theme identification, and conclusion drawing to produce a holistic learning model relevant to the needs of the digital era.

Results and Discussion

The Paradigm of Scientific Integration in the Islamic Perspective

In Islam, knowledge cannot be separated from the values of monotheism. Islam views knowledge as a means to know Allah SWT and understand the signs of His greatness in the universe. Therefore, the concept of knowledge integration in Islam is based on the belief that the source of all knowledge comes from Allah, both through revelation (the Qur'an) and through His creation (the universe). This integration aims to eliminate the dichotomy between religious knowledge and general knowledge, which has long been a problem in modern education. The paradigm of knowledge integration emphasizes that all knowledge is essentially a manifestation of Allah's verses, both qauliyyah (explicit in the Qur'an) and kauniyyah (implicit in nature). Historically, the spirit of knowledge integration has been practiced by classical Muslim scientists such as Al-Farabi, Ibn Sina, and Al-Ghazali. They did not see any contradiction between revelation and reason, but rather combined the two as a path to ultimate truth. For Al-Ghazali, for example, religious knowledge and rational knowledge are equally important as

long as both lead humans to the recognition and worship of Allah SWT. In this framework, knowledge in Islam has a tauhid orientation, which is knowledge that unites the spiritual, moral, and rational dimensions, so as to produce a complete understanding of the function of knowledge in human life. This perspective shows that Islam does not reject modern science, but demands that science be directed towards strengthening human faith and morals.

In line with the integration of these sciences, the relationship between science and faith cannot be separated, because both complement each other in shaping human understanding of reality. The role of reason in transcendental reality cannot be separated from a person's position of faith. Reason and faith work in harmony, as both are the foundation for humans in understanding the truth (Ali & Idris, 2021). In Islam, faith is understood as an inner belief that shows a person's deep relationship with God and His teachings. Faith becomes a form of solid worship, bringing peace, a sense of security, and protection from various disturbances in life. Ibn Sina divides the levels of faith, and according to him, a person who has strong belief - both in knowledge and in practice - has the highest degree of faith. This group is described as those who will be at the highest level in paradise and are among the first to believe. As quoted by Amir, Ibn Sina also emphasized that true happiness is achieved by those who combine faith, knowledge, and good works. This group occupies the most noble level in heaven, able to establish a connection between the three realms and the realm of reason, purify themselves physically and spiritually, and be at the forefront of faith (Ariani & Muchtar, 2024). Therefore, in the view of Muslim philosophers, the integrity of faith is always closely related to the depth of knowledge and consistency of deeds.

In the context of contemporary education, the paradigm of science integration becomes the philosophical foundation for developing a learning system that is not only oriented towards cognitive mastery, but also the formation of character and spirituality in students. This is in line with the concept of holistic education, which is education that encourages the development of all human potential—intellectual, emotional, social, moral,

and spiritual. This approach shows that education is not enough to produce intellectually intelligent students, but also morally wise and spiritually mature ones. The integration of Qur'anic values in the science learning process will help students understand that science is not just a tool for technological advancement, but also a means to foster awareness of the greatness and order of Allah SWT's creation. In addition, the Qur'an itself contains many verses that inspire humans to think critically and explore the universe scientifically. Verses such as QS. Ali-Imran [3]: 190–191 describe people of understanding as those who constantly reflect on the creation of the heavens and the earth, which ultimately leads them to acknowledge the greatness of Allah. ⁵ This scientific attitude became the foundation for the emergence of a progressive Islamic scientific tradition during the golden age of Islamic civilization, when scientific activity was considered a form of intellectual worship. So that in the view of the Qur'an, the terminology of science is not limited to the term “religious sciences,” but also includes other sciences that can be used for the benefit of humanity (Rosa, 2021). Therefore, every form of science that brings benefits is seen as part of human efforts to understand the verses of Allah.

The Relevance of Kauniyyah Verses to Science Education

Through an interconnected approach, the integration of Islam and science does not simply place revelation as a legitimization of scientific findings, but rather makes it an ethical, philosophical, and epistemological foundation for the development of science. Therefore, understanding Allah's verses, both qauliyah and kauniyah, must be done in an integrated approach in order to produce knowledge that is not only scientifically objective, but also valuable and beneficial to humanity (S. Rahmawati, 2025). This approach emphasizes that science developed without monotheistic values risks losing its moral orientation, so that the integration of kauniyyah verses serves as a guide for the development of science to remain within the corridor of humanity and civility.

The verses of kauniyyah in the Qur'an are verses that invite humans to reflect on natural phenomena

as signs (ayat) of the greatness of Allah SWT. Through these verses, the Qur'an not only serves as a book of moral and spiritual guidance, but also as a source of inspiration for the development of science. The Qur'an provides many examples of verses that directly guide humans towards the scientific process, such as observing, investigating, analyzing, and learning lessons. An example of this can be found in QS. Al-Imran verses 190-191, which means *"Indeed, in the creation of the heavens and the earth, and the alternation of night and day, there are signs for those of understanding. (190) (namely) those who remember Allah while standing, sitting, or lying down, and they reflect on the creation of the heavens and the earth (saying), 'Our Lord, You did not create all this in vain; You are Holy, protect us from the punishment of Hell (191).'"*

In QS. Al-Imran: 190-191 above, it is stated that the creation of the heavens and the earth and the alternation of night and day are signs for people of understanding. This verse emphasizes that cosmic phenomena must be analyzed in depth and not merely viewed as physical events, but as scientific clues that lead to the strengthening of faith and spiritual awareness. Becoming Ulul Albab means becoming intelligent human beings who are able to utilize their five senses to perceive facts and natural phenomena, and to utilize their intellect to always remember and reflect on the essence of all of Allah SWT's creations in the heavens and on earth (Sarjuni, Tjahjono, Sholeh, & Anwar, 2023).

Then in QS. Al-Ghashiyah verses 17 to 20, which means *"Do they not observe the camel, how it is created, and the sky, how it is raised, and the mountains, how they are erected, and the earth, how it is spread out?"* Allah commands humans to observe camels, the sky, mountains, and the earth a sign that observation of nature is part of the scientific thought process. These verses contain a message for humans to use their intellectual potential to understand the laws of nature created by Allah, which will ultimately strengthen their faith and foster spiritual awareness. In other words, the Qur'an encourages the emergence of a scientific culture based on contemplation and empirical observation. In the context of science education, verses about nature can be used as an epistemological basis for developing an integrative learning model. Every

scientific concept in science, such as gravity, ecosystems, or atomic structure, can be linked to the values of monotheism and awareness of the orderliness of Allah's creation.

This approach not only broadens students' scientific understanding, but also shapes ethical and value-oriented scientific attitudes. When students study natural phenomena with spiritual awareness, the learning process becomes more meaningful because it connects science and faith. This learning model also helps to erode the dichotomy between religious and general knowledge that has been deeply rooted in the modern education system (Amin, 2021). In addition, the integration of kauniyyah verses in science learning can strengthen the character of Muslim scientists who balance rationality and spirituality. This is in line with Al-Attas' view that science in Islam must lead humans to adab, which is placing things in their proper place, including placing science as a path to recognizing the Creator. Therefore, science education based on Qur'anic values not only fosters intellectual intelligence, but also shapes ethical awareness and responsibility towards the environment as a trust from Allah SWT. This balance between reason, faith, and ethics is the foundation for the emergence of a holistic Islamic civilization.

The application of kauniyyah verses in science education can also encourage students to think critically and reflectively. For example, when studying the water cycle, teachers can relate it to QS. An-Nur [24]: 43, which explains the process of rainfall as a sign of Allah's greatness. This approach makes science no longer secular, but rather part of strengthening faith and developing human potential as a whole (Suyadi, 2022). In this way, science does not stand alone, but becomes an instrument for understanding Allah's verses spread throughout the universe. This integration ultimately leads students to the paradigm that learning science is part of intellectual.

Holistic Learning Model Based on the Integration of the Qur'an and Science

The integration of the Qur'an and science in 21st-century learning does not stop at the conceptual level, but needs to be realized in the form of an

applicable and contextual learning model. This holistic learning model based on integration seeks to develop the full potential of students—spiritual, intellectual, emotional, and social—in a balanced manner (Amin, 2021). In practice, teachers act as facilitators who not only transfer scientific knowledge but also instill Qur'anic values through reflection and appreciation of natural phenomena. This requires teachers to have adequate Islamic and scientific literacy so that the learning process can provide meaningful learning that combines scientific observation with theological reflection.

This approach can be realized through an integrated curriculum-based learning model, in which science material is linked to the values of monotheism. For example, in biology lessons about ecosystems, teachers can link the material to the concept of *khalifah fil ardh* (humans as stewards of the earth) as mentioned in QS. Al-Baqarah [2]: 30. In this way, learning not only fosters scientific understanding, but also moral awareness of ecological responsibility. In addition, project-based learning can also be applied by inviting students to conduct simple research related to *kauniyyah* verses, so that the scientific process goes hand in hand with spiritual reflections (Suyadi, 2022). Other models such as inquiry-based learning can also be used by encouraging students to ask critical questions about natural phenomena, then guiding them to find scientific answers as well as the Qur'anic wisdom behind them.

This model is highly relevant to the nature of 21st-century learning, which demands critical, collaborative, creative, and communicative thinking skills (4C skills). When Qur'anic values are integrated into learning activities, students not only master 21st-century skills, but also have a moral compass in using knowledge wisely. This integration is also a solution to the ethical crisis in modern education, which tends to neglect spirituality. Therefore, this model not only addresses global competency needs, but also builds a strong character foundation based on values of faith.

Furthermore, this holistic learning model can be an alternative paradigm for Islamic education in the digital era. In a situation where the flow of information is very fast and materialistic values are

getting stronger, an integrative approach helps students connect modern knowledge with principles of faith.⁸ Therefore, the integration of the Qur'an and science is not only an academic strategy, but also a spiritual movement to shape a generation that is intelligent, moral, and has divine awareness in interpreting science. **This model ultimately aims to produce students who are able to combine rationality and spirituality in facing the challenges of modern civilization (I. M. Rahmawati, 2025).

Conclusions

The integration of the Qur'an and science in 21st-century education is an important necessity because modern learning requires not only mastery of scientific knowledge, but also the formation of strong spiritual and moral character. Through its verses on nature, the Qur'an encourages humans to think critically, research, and understand natural phenomena, so that science and faith can coexist harmoniously without dichotomy. This holistic approach balances cognitive, emotional, social, and spiritual aspects by presenting learning that connects scientific concepts with monotheistic values—for example, linking ecosystem material with humanity's mandate as caliphs as in QS. Al-Baqarah [2]: 30. Through models such as integrated curriculum, project-based learning, and inquiry-based learning, Qur'anic-Science integration also supports the development of 21st-century skills such as critical thinking, creativity, collaboration, and communication, while instilling a moral compass so that knowledge is used wisely. In the context of the digital age, which is filled with information flows and materialistic influences, this approach helps students understand science as part of worship and spiritual reflection, so that education not only produces an intelligent generation, but also one that is moral, faithful, and has divine awareness in developing knowledge for the common good

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