

Development of Islamic Educational Institutions Through the Integration of Modern Science and Contemporary Educational Innovation

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Abstract

This study examines the development of Islamic educational institutions in the context of the advancement of modern science. This topic was chosen because there is still a dichotomy between religious science and general science which has an impact on the low ability of Islamic educational institutions to respond to the challenges of the times. In the era of globalization and rapid technological development, efforts are needed to integrate Islamic values and modern science to produce graduates who are not only intellectually superior, but also have a strong spiritual foundation. This study uses a qualitative approach with *the library research method*. Data is obtained from various scientific sources such as books, journal articles, and other academic publications, which are then analyzed using content analysis techniques to find key patterns and concepts relevant to the focus of the research. The results of the study show that the development of Islamic educational institutions can be carried out through three main strategies, namely curriculum integration between religious and general sciences, improving the competence of educators, and the use of digital technology in the learning process. However, there are various challenges faced, such as resistance to change, limited resources, and still strong scientific dualism. In conclusion, the integration between Islamic values and modern science is a strategic step in the development of Islamic educational institutions so that they remain relevant, adaptive, and able to compete in the global era.

Keywords: Islamic Education, Modernization, Integration of Knowledge

Abstrak

Penelitian ini mengkaji pengembangan lembaga pendidikan Islam dalam konteks kemajuan ilmu pengetahuan modern. Topik ini dipilih karena masih adanya dikotomi antara ilmu agama dan ilmu umum yang berdampak pada rendahnya kemampuan lembaga pendidikan Islam dalam merespons tantangan zaman. Di era globalisasi dan perkembangan teknologi yang pesat,

diperlukan upaya integrasi antara nilai-nilai Islam dan ilmu pengetahuan modern guna menghasilkan lulusan yang tidak hanya unggul secara intelektual, tetapi juga memiliki landasan spiritual yang kuat. Penelitian ini menggunakan pendekatan kualitatif dengan metode *library research*. Data diperoleh dari berbagai sumber ilmiah seperti buku, artikel jurnal, dan publikasi akademik lainnya, yang kemudian dianalisis menggunakan teknik analisis isi untuk menemukan pola dan konsep utama yang relevan dengan fokus penelitian. Hasil penelitian menunjukkan bahwa pengembangan lembaga pendidikan Islam dapat dilakukan melalui tiga strategi utama, yaitu integrasi kurikulum antara ilmu agama dan ilmu umum, peningkatan kompetensi pendidik, serta pemanfaatan teknologi digital dalam proses pembelajaran. Namun demikian, terdapat berbagai tantangan yang dihadapi, seperti resistensi terhadap perubahan, keterbatasan sumber daya, dan masih kuatnya dualisme keilmuan, integrasi antara nilai-nilai Islam dan ilmu pengetahuan modern merupakan langkah strategis dalam pengembangan lembaga pendidikan Islam agar tetap relevan, adaptif, dan mampu bersaing di era global.

Kata kunci: Pendidikan Islam, Modernisasi, Integrasi Ilmu, Pengembangan Lembaga

INTRODUCTION

The development of science and technology in the era of globalization has brought fundamental changes in various aspects of life, including in the education system. The industrial revolution 4.0 and digital transformation require educational institutions to be able to adapt quickly to these changes, not only in the technological aspect, but also in the scientific paradigm and education management. In the global context, the integration between spiritual values and the mastery of modern science is one of the important issues in the development of sustainable education. Educational institutions are required not only to produce academically competent graduates, but also to have strong moral and spiritual integrity.

The lagging behind Islamic educational institutions in mastering science and technology is often caused by the view that modern science is secular. In fact, in the midst of the flow of disruption, mastery of data and technology literacy is no longer an option, but a prerequisite for Islamic values to be disseminated more widely and effectively in the global public space.

In the national context, Islamic educational institutions in Indonesia have a strategic role in shaping the character of the nation while educating people's lives. However, Islamic educational institutions still face various structural and cultural challenges, especially related to the still strong dichotomy between religious and general sciences. This separation has an impact on the suboptimal development of the curriculum and the quality of graduates who are not fully able to compete in the global era. This dualism creates an epistemological gap; Where religious education graduates sometimes stutter in the face of technocratic socio-economic realities, while general education graduates often lose their ethical compass in practicing their knowledge. Integration is not just about 'attaching' subjects, but fusing the paradigm of thinking. On the one hand, there are strong institutions in the mastery of religious knowledge, but weak in science and technology. On the other hand, there are institutions that excel in general science, but lack in strengthening Islamic values. This condition shows that there is an urgent need to carry out systematic scientific integration in the development of Islamic educational institutions.

Historically, the Islamic scientific tradition has not recognized the dichotomy between religious science and general science. In the golden age of Islamic civilization, scientists such as Ibn Sina and Al-Farabi were able to develop various disciplines in an integrated manner within a single complete epistemological framework. The success of these golden age figures is rooted in the belief that all knowledge comes from one estuary, namely the verses of Allah (good *Kauliyah* or *Squirt*). This decline in the spirit of empirical observation then widens the

distance between religious texts and natural reality. However, in subsequent developments, there was a paradigm shift that caused a separation between the two types of science. The impact is still felt today in the Islamic education system, which tends to run in two separate streams.

A number of previous studies have examined various aspects of Islamic education modernization and science integration. Some studies emphasize the importance of Islamization of science as an effort to restore the values of monotheism in the development of science, while other studies develop the concept of integration-interconnection as a more contextual approach in connecting religious science and general science. In addition, there is also research that discusses the development of an integration-based curriculum and the use of technology in Islamic education. However, most of the research is still partial and has not comprehensively examined how the strategy for the development of Islamic educational institutions that are able to integrate modern science at the institutional level in a systematic manner.

Based on the analysis of previous research, it can be identified that there is a research gap (*Research gap*), namely the lack of optimal studies that integrate conceptual, strategic, and implementive aspects in the development of Islamic educational institutions based on modern science. Many studies focus on the level of ideas or concepts, but have not provided an applicable and structured development framework for educational institutions. Most previous studies have stopped at the philosophical level of 'why' integration is important, but ignored the aspect of 'how' institutional management bureaucratically and managerially responds to these curriculum changes in the field. Therefore, a more comprehensive study is needed to answer these needs.

The urgency of this research lies in the importance of presenting a model for the development of Islamic educational institutions that are able to answer the challenges of the times without losing their Islamic identity. In an era of global competition, Islamic educational institutions are required to not only survive, but also to be able to become centers of excellence (*Center of Excellence*) that produce intellectual, professional, and spiritual superior human resources. Without systematic development efforts, Islamic educational institutions have the potential to lag behind and lose their relevance in the midst of the times.

The novelty in this research lies in the effort to integrate various scientific perspectives in formulating a model for the development of Islamic educational institutions based on the integration of modern science. This research not only examines the concept of science integration, but also relates it to institutional development strategies that include aspects of curriculum, human resources, and technology utilization. Thus, this research is expected to make a theoretical as well as practical contribution to the development of Islamic education that is more adaptive, integrative, and sustainable.

LITERATURE REVIEW

Studies on the development of Islamic educational institutions based on the integration of modern science have been widely discussed in various previous studies. In general, these studies highlight the importance of integration between Islamic values and modern science as an effort to overcome scientific dichotomy and answer global challenges.

First, research conducted by Satri Handayani emphasizes that the integration between Islamic education and science literacy is not just a merger of two disciplines, but an epistemological alignment between revelation and scientific rationality.¹ This integration is able to form students who not only have the ability to think critically, but also have spiritual

¹ Satri Handayani, "The Concept of Integrating Islamic Education and Science Literacy as an Answer to the 21st Century Value Crisis," *Al-Hikmah: Journal of Religion and Science* 22, no. 2 (2025): 313–22, [https://doi.org/10.25299/ajaip.2025.vol22\(2\).23558](https://doi.org/10.25299/ajaip.2025.vol22(2).23558).

and social awareness. The approach used is holistic and transdisciplinary, so that it is able to develop cognitive and affective aspects in a balanced manner.

In line with that, research by Aidil Ridwan Daulay and Salminawati revealed that the integration of religious science and science in Islamic education is an urgent need in the modern era.² This integration can be realized through aspects of curriculum, learning methods, and educational strategies that eliminate the dichotomy between religious science and general science. The results of this study show that educational institutions that are able to integrate these two aspects will produce a more comprehensive education system.

Furthermore, research by Suryati, Yelliza Gusti, and Julhadi highlights the importance of an interdisciplinary approach in Islamic studies.³ The integration between religious and social sciences provides a broader understanding of social reality and is able to offer practical solutions to various societal problems. This shows that the integration of science is not only theoretical, but also has practical implications in social life.

In the context of the curriculum, research by Sumiati et al. shows that the integration of Islamic pillars (aqidah, sharia, and morals) in the Islamic Religious Education curriculum is very important to form the character of students as a whole.⁴ This integration not only emphasizes the cognitive aspect, but also the affective and psychomotor aspects, resulting in more holistic and applicative learning.

In addition, research by Ridwan Taufiq et al. examines curriculum innovation and the integration of modern science in Islamic education.⁵ The results of the study show that the integration of knowledge can be carried out through an interdisciplinary approach, the use of digital technology, and the development of competency-based curriculum. This integration has been proven to be able to improve the quality of learning and form adaptive and competitive students in the global era.

From a historical perspective, research by Muhammad Galih Kusuma Wardhana and Baidi reveals that the concept of knowledge integration has long been developed in the thinking of Islamic educational figures such as Mahmud Yunus.⁶ He emphasized the importance of integrating religious science and general science in the curriculum as an effort to modernize Islamic education without abandoning Islamic values.

Furthermore, research by Basori et al. highlights the importance of integrating spiritual values in the modern education system.⁷ Islamic education is not only oriented to the cognitive aspect, but must also balance the intellectual and spiritual dimensions. The integration of

² Aidil Ridwan Daulay and Salminawati, "INTEGRATION OF RELIGIOUS SCIENCE AND SCIENCE INTO ISLAMIC EDUCATION IN THE MODERN ERA," *Journal of Social Research* 1, no. 3 (2022): 716–24, <https://doi.org/10.55324/josr.v1i3.75>.

³ Heti Suryati, "Epistemology of Science: Foundations of Philosophy in the Development of Knowledge," *Journal of Innovation in Teaching and Instructional Media* 5, no. 2 (2025): 626–38, <https://doi.org/10.52690/jitim.v5i2.987>.

⁴ Sumiati Sumiati and Mumtahanah Mumtahanah, "THE CONCEPT OF INTEGRATING THE PILLARS OF ISLAMIC TEACHINGS IN THE ISLAMIC RELIGIOUS EDUCATION CURRICULUM," *Mudarrisuna Journal: Islamic Religious Education Study Media* 15, no. 2 (2025): 370–86, <https://doi.org/10.22373/es2y6k70>.

⁵ Ridwan Taufiq et al., "Curriculum Innovation and Integration of Modern Science in Islamic Education: A Literature Review," *Indonesian Education Journal: Theory, Research, and Innovation* 5, no. 4 (2025), <https://doi.org/10.59818/jpi.v5i4.1671>.

⁶ Muhammad Galih Kusuma Wardhana and Baidi Baidi, "Islamic Education Reform by Mahmud Yunus: The Integration of Religious and General Sciences in the Modern Curriculum," *TSAQOFAH* 5, no. 4 (2025): 3646–61, <https://doi.org/10.58578/tsaqofah.v5i4.6414>.

⁷ Basori Basori et al., "The Philosophy of Islamic Education: The Integration of Spiritual Values in the Modern Education System," *Reflection : Islamic Education Journal* 2, no. 2 (2025): 256–68, <https://doi.org/10.61132/reflection.v2i2.829>.

spiritual values in the curriculum is the key in shaping the character of students who are moral and competitive.

In the institutional context, research by Hidra Ariza shows that Islamic educational institutions are experiencing dynamic development with the changing times.⁸ Islamic educational institutions that are able to survive are those that are able to adapt to the development of science and technology without abandoning the basic values of Islam.

Another study by Choirun Niswah et al. confirms that Islamic boarding schools as Islamic educational institutions have a strategic role in integrating character education and science.⁹ A holistic pesantren education system includes cognitive, affective, and psychomotor aspects, so that it is able to produce graduates who are knowledgeable and moral at the same time.

In addition, research by Rina Setyaningsih et al. shows that Islamic educational institutions also have an important role in facing global challenges such as radicalism through the integration of religious moderation values.¹⁰ This integration is carried out through the curriculum, the example of educators, and the use of digital technology.

Finally, research by Fahmi Azis Lukianto et al. shows that curriculum integration between formal education and tahfidz Al-Qur'an can improve the quality of education as a whole.¹¹ This integration is able to produce students who excel academically while having a strong spiritual foundation.

Based on these various studies, it can be concluded that the integration of knowledge in Islamic education has been studied from various perspectives, both from the aspects of curriculum, spiritual values, and interdisciplinary approaches. However, most of the research is still partial and has not comprehensively examined the integration of knowledge in the context of the development of systemic Islamic educational institutions that include curriculum, human resources, technology, and management in one integrated framework. Therefore, this study seeks to fill this gap by offering a model for the development of Islamic educational institutions based on the integration of modern science that is holistic, systematic, and applicative.

RESEARCH METHODS

This research uses a qualitative approach with the type of literature research. This approach was chosen because the focus of the research is not on the collection of field data, but on an in-depth study of the concepts, theories, and results of previous research that are relevant to the development of Islamic educational institutions based on modern science. Literature research allows researchers to gain a comprehensive understanding of the conceptual constructions and theoretical frameworks that have been developed by experts in the field of Islamic education and science integration.

⁸ Hidra Ariza, "Islamic Educational Institutions in the Historical Trajectory in Indonesia (Historical Study of the Development of Islamic Education Institutions)," *SURAU : Journal of Islamic Education* 1, no. 1 (2023): 1–14, <https://doi.org/10.30983/v1i1.6697>.

⁹ Choirun Niswah et al., "Analysis of the Role of Islamic Boarding School Educational Institutions in Building Character and Science," *Multidisciplinary Scientific Journal* 3, no. 6 (2025): 308–16, <https://doi.org/10.60126/jim.v3i6.984>.

¹⁰ Rina Setyaningsih et al., "Religious Moderation as a Strategy to Prevent Radicalism in Islamic Educational Institutions: Research," *Journal of Community Service and Educational Research* 4, no. 1 (2025): 6280–84, <https://doi.org/10.31004/jerkin.v4i1.2417>.

¹¹ Fahmi Azis Lukianto et al., "Integration of the Tahfidz Al-Qur'an Curriculum with Formal Education at PPTQ Nurul Istiqlal Wonosari Klaten: Research," *Journal of Community Service and Educational Research* 4, no. 2 (2025): 9319–25, <https://doi.org/10.31004/jerkin.v4i2.3155>.

Methodologically, *library research* is a systematic method of identifying, reviewing, and synthesizing various sources of scientific literature to produce new analytical and critical understandings. According to Zed Mestika, literature research does not only collect data from various references, but also requires the ability to critically analyze the content of literature so that it can produce a meaningful synthesis of knowledge¹². Therefore, this method is considered appropriate to examine the issue of integration of knowledge in the development of Islamic educational institutions that are conceptual and theoretical.

The data sources in this study consist of primary and secondary data. Primary data includes major scientific works that discuss Islamic education, educational modernization, and scientific integration, both in the form of books and reputable journal articles. Meanwhile, secondary data is obtained from other relevant scientific publications, such as proceedings, research reports, as well as academic documents that support the research analysis. The selection of sources is carried out selectively by considering the credibility of the author, the relevance of the topic, and the novelty of the publication. The criteria for literary inclusion in this study are limited to scientific works published in the last 10 to 15 years to ensure the actuality of the data, except for the fundamental works (baboons) of key figures such as Ismail Raji al-Faruqi and Syed Muhammad Naquib al-Attas which are still used as a philosophical basis.

The data collection technique is carried out through documentation studies, namely by searching, identifying, and classifying literature related to the focus of the research. This process is carried out systematically to ensure that the data obtained has a direct relationship with the problem being studied. In this case, the researcher uses a thematic approach to group the literature based on key issues, such as the concept of Islamic education, modernization, integration of knowledge, and institutional development.

Operationally, this research follows four stages of literature research procedures: (1) Preparing research tools (work bibliography); (2) Compiling a literature mapping guide; (3) Regulating the timing and consistency of the focus of the study; and (4) Processing research notes into conceptual drafts. This is done to maintain accuracy in filtering information from various heterogeneous sources.

The data analysis in this study uses the content analysis technique (*Content Analysis*), which is an analysis method used to systematically examine the meanings, messages, and patterns contained in texts. This approach allows researchers to identify key themes, compare different views, as well as formulate conceptual synthesis that is relevant to the research objectives. The analysis process is carried out through several stages, namely data reduction, data presentation, and inductive conclusion drawn. The content analysis process is carried out by coding key quotations, categorizing similar ideas from different figures, and finding a common thread between modern management theories and Islamic institutional values.

In addition, to strengthen the validity of the findings, this study uses the source triangulation technique, which is by comparing various references that have different perspectives on the same topic. This approach is important to avoid bias and ensure that the results of the analysis have a high level of validity. As explained by Norman K. Denzin, triangulation is one of the main strategies in qualitative research to increase the credibility and reliability of data¹³.

The selection of this method is also based on the consideration that the issue of the development of Islamic educational institutions based on modern science is a conceptual and

¹² Zed Mestika, *Literature Research Methods* (Yayasan Obor Indonesia, 2008), <https://doi.org/10.31219/osf.io/abcd1>.

¹³ Norman K. Denzin, *The Research Act: A Theoretical Introduction to Sociological Methods* (McGraw-Hill, 1978).

multidisciplinary study, so it requires an in-depth analytical approach. Thus, *Library Research* Content analysis is considered the most relevant method to produce a comprehensive, systematic, and scientifically accountable study. Although the focus is on literature studies, the analysis is still based on the factual phenomenon of the development of Islamic educational institutions in Indonesia, so that the resulting synthesis has practical relevance for education policy makers.

RESULTS & DISCUSSION

1. The Concept of Islamic Education Institutions in a Contemporary Perspective

Islamic educational institutions are institutions that function to transmit Islamic values while developing the intellectual potential of students as a whole. In the classical perspective, Islamic education is not only oriented towards the transfer of knowledge, but also character formation and purification of the soul. This shows that Islamic education has a holistic dimension, including spiritual, intellectual, and social aspects. In the contemporary context, Islamic educational institutions are no longer only interpreted as a place for the transfer of religious knowledge in a narrow way, but as a growth ecosystem that must be able to synthesize prophetic ethics with the demands of professionalism in the 21st century. This institution serves as a 'bridge' that connects classical texts with complex global realities.¹⁴

According to the thought of Syed Muhammad Naquib al-Attas, Islamic education must be based on the concept of *Ta'dib*, which is the process of instilling manners that reflect the regularity of knowledge in humans¹⁵. This concept emphasizes that science is not value-free, but must be integrated with monotheistic values. Application of the concept *Ta'dib* This in a contemporary perspective requires institutions to de-secularize modern science. This means that science is not taught neutrally, but is framed within the framework of human moral responsibility as a caliph on earth.¹⁶ Meanwhile, Azyumardi Azra sees that modern Islamic education must be able to adapt to social changes without losing its Islamic identity¹⁷.

In the current context, Islamic educational institutions are faced with the demand to not only maintain traditional values, but also develop innovations in the education system. This includes strengthening institutional management, improving the quality of human resources, and adapting to technological developments. Therefore, the governance of contemporary Islamic educational institutions must adopt the principles of *Good Governance* transparent and accountable, but still based on the values of trust and the benefit of the people. This transformation includes a shift from a traditional administrative-work culture to an innovative, data-driven work culture.¹⁸ Thus, Islamic educational institutions are required to be able to carry out comprehensive transformation to remain relevant in the modern era.

The synthesis of the thoughts of the above figures shows that the concept of contemporary Islamic educational institutions is a dynamic entity. Its success is measured by the extent to which the institution is able to maintain its 'roots' (basic Islamic values) while allowing its 'branch' (educational and technological practices) to develop according to the weather of the times.

2. Modernization of Islamic Education: Between Adaptation and Identity

¹⁴ Mujamil Qomar, *Islamic Education Strategy* (Jakarta: Erlangga, 2013), p. 45.

¹⁵ Syed Muhammad Naquib al-Attas, *The Concept of Education in Islam* (ISTAC, 1999), <https://doi.org/DOI:%2520https://doi.org/10.2307/159585>.

¹⁶ Adian Husaini, *Philosophy of Science: Western and Islamic Perspectives* (Jakarta: Gema Insani, 2013), p. 112.

¹⁷ Azyumardi Azra, *Islamic Education: Tradition and Modernization* (Kencana, 2012), <https://doi.org/DOI:%2520https://doi.org/10.31219/osf.io/xyz111>.

¹⁸ Jejen Musfah, *Education Management: Theory, Policy, and Practice* (Jakarta: Kencana, 2015), p. 89.

Modernization of Islamic education is a process of updating the education system that aims to adapt to the times. However, modernization in this context cannot be understood as a total adoption of the Western system, but rather as a selective process that still maintains Islamic values. Modernization here should not be stuck in outward formalism, such as simply replacing signage or adding physical facilities. The essence of modernization lies in transformation *Mindset* education managers in viewing objective reality and scientific progress as part of the signs of God's greatness that must be studied empirically.

Fazlur Rahman's thinking emphasizes the importance of Islamic educational reform through a historical-critical approach to the Islamic scientific tradition¹⁹. He argues that stagnation in Islamic education is caused by a lack of dynamics in the development of thought. Therefore, efforts are needed to reinterpret Islamic teachings to remain contextual. Rahman's historical-critical approach requires Islamic educational institutions to dare to perform 'educational *ijtihad*'. This means that the curriculum should not be static on classical literature alone, but must be able to engage in creative dialogue with the findings of modern science to answer increasingly complex human problems.

On the other hand, modernization also presents challenges in the form of the potential for secularization of education. In this regard, Ismail Raji al-Faruqi's thoughts on the Islamization of science become relevant. He emphasized that modern science needs to be filtered and integrated with Islamic values so as not to contradict the principles of monotheism²⁰. On a practical level, the Islamization of science acts as a critical filter. Educational institutions must be able to sort out which aspects of technology are benefit-neutral and which aspects of Western philosophy contain values that are contrary to Islamic epistemology, such as radical materialism or nihilism.

From these two approaches, it can be seen that there is a dialectic between adaptation to modernity and efforts to maintain Islamic identity. Therefore, the modernization of Islamic education must be carried out critically and selectively so as not to eliminate the essence of Islamic teachings.

3. Scientific Integration: Overcoming the Scientific Dichotomy

One of the main issues in Islamic education is the dichotomy between religious science and general science. This dichotomy not only has an impact on the curriculum structure, but also on the mindset of students and education managers. This dichotomy is not just a separation of subjects, but a form of 'veiled secularization' that separates revelation and reason. As a result, religious science is often seen as a static science of the past, while general science is considered a future science free of moral values.

In the history of Islamic civilization, the integration of knowledge has become part of the scientific tradition. Figures such as Ibn Sina and Al-Farabi show that religious science and rational science can run in harmony. However, in modern developments, there is a fairly sharp separation between the two types of science.

The concept of science integration was then developed in various models. One of them is the Islamization model of science initiated by Ismail Raji al-Faruqi, which emphasizes the reconstruction of modern science based on Islamic values. Meanwhile, the integration-interconnection approach that is developing in Indonesia offers a more dialogical model, which is to connect various disciplines without having to eliminate their respective characteristics. In this model, various disciplines are likened to interconnected spider webs, where one science becomes an instrument to deepen understanding of other sciences. For example, science is used

¹⁹ Fazlur Rahman, *Islam and Modernity* (University of Chicago Press, 1982), <https://doi.org/10.7208/chicago/9780226702866>.

²⁰ Ismail Raji al-Faruqi, *Islamization of Knowledge* (IIIT, 1982), <https://doi.org/DOI:%2520https://doi.org/10.2307/159607>.

to explain the natural phenomena mentioned in the Qur'an, while Islamic values provide an ethical corridor for the use of such science.²¹

The results of the analysis show that the integration of knowledge is not only conceptual, but must also be implemented in the curriculum, learning methods, and evaluation systems. Without concrete implementation, the integration of knowledge will only become a theoretical discourse that does not have a significant impact on the quality of education. This integration demands a 'curriculum reposition' in which the general sciences are charged with divine values (*Divine*), and religious sciences are given a dimension of social-professional usefulness. Without synchronization at the level of the syllabus and teaching materials, integration efforts will be difficult for students to internalize.

4. Strategy for the Development of Islamic Educational Institutions Based on Modern Science

Based on literature studies, there are several main strategies in the development of Islamic educational institutions based on modern science.

First, **curriculum integration**. The curriculum must be designed in an integrative manner by combining religious science and general science in a whole unit. This approach allows learners to comprehensively understand the relationships between various disciplines. Technically, this integration can be realized through *the thematic teaching method*, where a natural phenomenon is studied simultaneously through a scientific perspective (natural law) and a theological perspective (creation wisdom). This requires a restructuring of the lesson schedule that is no longer rigidly blocked by the subject wall.²²

Second, **Strengthening the competence of educators**. Educators have a central role in the success of the educational process. Therefore, improving the competence of teachers and lecturers in mastering modern science and Islamic values is very important. Strengthening this competence is not only through formal training, but also through a collaborative research culture between religious teachers and general teachers. In addition, educators in Islamic educational institutions must play the role of *Muaddib* (adab supervisor) who is able to provide an example in the use of science for the benefit of society.²³

Third, **Utilization of digital technology**. Digital transformation in education opens up great opportunities for Islamic educational institutions to improve the quality of learning. The use of digital platforms, e-learning, and interactive media can expand access to education and increase learning effectiveness. The use of technology must not only stop at the digitization of materials, but must penetrate into the creation of an inclusive digital learning ecosystem. Usage Learning Management System (LMS) that is integrated with character values can help monitor the intellectual development as well as the behavior of students in cyberspace.²⁴

Fourth, **Strengthening Institutional Management**. The management of educational institutions that are professional and based on modern management principles is indispensable to support the successful development of Islamic education. The management of the institution must start applying the principle of Quality Assurance that meet international standards without abandoning the tradition of deliberation. Visionary leadership is needed to conduct regular

²¹ M. Amin Abdullah, *Integration and Interconnection in Science* (Yogyakarta: Suka Press, 2014), p. 78.

²² Muhaimin, *Development of Islamic Religious Education Curriculum in Schools, Madrasas, and Universities* (Jakarta: Rajawali Pers, 2012), p. 156.

²³ Ngainun Naim, *Becoming an Inspirational Teacher* (Yogyakarta: Pustaka Siswa, 2011), p. 74.

²⁴ Rusman, *Information and Communication Technology-Based Learning* (Jakarta: Rajawali Pers, 2012), p. 211.

quality audits to ensure that the vision of science integration is truly implemented down to the classroom level.²⁵

These four strategies are a systemic unity; Failure in one aspect will hinder the effectiveness of the other. Therefore, institutional developers must synchronize policies that ensure synchronization between curriculum vision, human resource capacity, technological infrastructure, and organizational governance.

5. Analysis of Findings and Theoretical Implications

The results of this study show that the development of Islamic educational institutions cannot be carried out partially, but must be done through a holistic and integrative approach. This holistic approach dismisses the notion that institutional development is only technical-administrative. These findings affirm that transformation must begin at the epistemological level, where educational institutions redefine their identity as centers of civilization that blend spiritual intelligence (*Spiritual*) with intellectual intelligence (*Aqliyah*). The integration of modern science with Islamic values is the main key in creating an education system that is relevant to the needs of the times.

These findings reinforce the theory of science integration that has been put forward by previous experts, but also show the need for further development in the implementation aspect. In this case, this research offers the perspective that the integration of science must be followed by a comprehensive institutional transformation, including in the aspects of curriculum, human resources, and technology. Theoretically, this shifts the paradigm of science integration from the original *Text-based* (based on textbook synchronization) to *system-based* (based on institutional system synchronization). The implication is that the success of integration is no longer measured only by curriculum content, but also by the organizational culture and readiness of the institution's digital infrastructure.

In addition, this research also shows that the modernization of Islamic education does not have to be contrary to Islamic values. On the contrary, modernization can be a means to strengthen the role of Islamic education in the face of global challenges. These findings prove that modernity is not a threat to the authenticity of Islamic education. In contrast, modern science serves as a tool (*Squirrel*) to actualize Islamic values to be more functional in addressing contemporary humanitarian issues, such as environmental crises, artificial intelligence ethics, and social justice. Thus, this research contributes in the form of strengthening institutional-based integrative models, which can be the basis for the development of Islamic education in the future.

The systemic integration described in the Conceptual Model (Figure 1) shows that superior Islamic educational institutions are institutions that are able to 'synchronize frequencies' between global external challenges and religious internal potential. This model offers a roadmap for institutional managers to make gradual but measurable improvements.

Table 1. Comparison of Approaches to Integrating Knowledge in Islamic Education

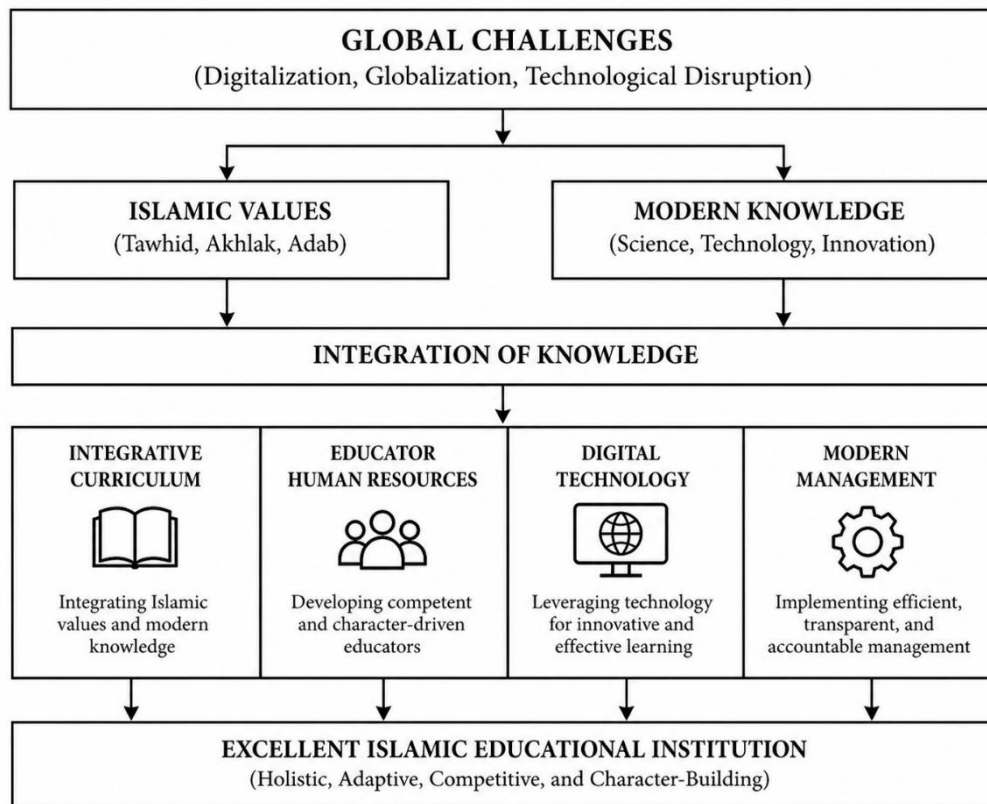
No.	Characters	Key Concepts	Focus Approach	Pros	Disadvantages
1.	Syed Muhammad Naquib al-Attas	Ta'dib (Cultivation of Customs)	Character formation based on monotheism	Maintaining spiritual values	Lack of operational in modern curriculum
2.	Ismail Raji al-Faruqi	Islamization of Knowledge	Reconstruction of modern	Systematic and Ideological	Complex implementation

²⁵ Nanang Fattah, *Foundations of Education Management* (Bandung: Remaja Rosdakarya, 2012), p. 103.

No.	Characters	Key Concepts	Focus Approach	Pros	Disadvantages
			Islamic-based science		
3.	Fazlur Rahman	Neo-modernism	Historical and critical approach	Adaptive to the times	Still gradual
4.	Azyumardi Azra	Modernization of Islamic Education	Integration of traditional and modern systems	Contextual and Applicative	Still gradual
5.	Integration-Interconnection Model	Multidisciplinary Integration	Dialogue between sciences	Flexible and Implementative	Need for a mature curriculum design

From the table above, it can be seen that there is no one approach that is completely perfect. Normative approaches such as *Ta'dib* excels in value aspects, but weak in technical implementation. In contrast, modern approaches such as integration-interconnection are more applicable, but have the potential to lose philosophical depth if they are not controlled by Islamic values.

Figure 1. The Development Model of Islamic Educational Institutions Based on the Integration of Modern Sciences



This conceptual model shows that the development of Islamic educational institutions must depart from a response to global challenges characterized by digitalization, globalization, and technological disruption. In facing these challenges, Islamic educational institutions

cannot rely only on traditional approaches, but must integrate Islamic values with modern science.

This integration is the core of educational transformation which is then implemented through four main aspects, namely integrative curriculum, improving human resource competencies, utilizing digital technology, and strengthening institutional management. These four aspects are interrelated and form a complete system in the development of educational institutions. The end result of this process is the formation of superior Islamic educational institutions, which are institutions that are able to produce graduates who are not only academically competent, but also have strong character and spiritual values. This model is also a theoretical contribution to this research, as it integrates various previous approaches into a more applicative and systematic framework.

CONCLUSION

This research aims to analyze concepts, strategies, and challenges in the development of modern science-based Islamic educational institutions. Based on the results of the study and discussion, it can be concluded that the development of Islamic educational institutions cannot be done partially, but must be through an integrative and systematic approach, conceptually, the integration between Islamic values and modern science is the main foundation in building an education system that is relevant to the demands of the times. This integration is not only interpreted as a merger of the curriculum, but also as an effort to unite the scientific paradigm that has been separated due to the dichotomy between religious science and general science. Strategically, the development of Islamic educational institutions can be carried out through four main aspects, namely: (1) the development of an integrative curriculum that connects religious and general sciences holistically; (2) improving the competence of educators who not only master the scientific field, but also have pedagogic and spiritual capacity; (3) the use of digital technology as a means of learning innovation; and (4) strengthening institutional management that is professional and adaptive to change. However, the implementation of the development faces various challenges, including resistance to change, limited human resources and infrastructure, and the still strong paradigm of scientific dualism. Therefore, a joint commitment from all stakeholders is needed to encourage the transformation of Islamic education in a sustainable manner. The essence of the findings in this study lies in the importance of developing an institutional-based integrative model that connects Islamic values with modern science in one complete system. This model not only strengthens the theoretical dimension of knowledge integration, but also provides an implementable direction for Islamic educational institutions in facing global challenges. Thus, this research contributes in the form of strengthening the integrative paradigm in Islamic education and offers a conceptual framework that can be used as a reference in the development of Islamic educational institutions that are more adaptive, competitive, and sustainable in the modern era.

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