

## SCIENCE DEVELOPMENT STRATEGY IN ISLAMIC BOARDING SCHOOL IN THE CONTEXT OF ISLAMIC EDUCATION

**Zidni Husein (1)**

UIN Syarif Hidayatullah Jakarta (1)

[Zidni.husein23@mhs.uinjkt.ac.id](mailto:Zidni.husein23@mhs.uinjkt.ac.id) (1)

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### Abstract

*Islamic boarding school as a traditional Islamic educational institution has a strategic role in character formation and scientific development of the younger generation. The rapid development of science and technology requires Islamic boarding schools to innovate in order to be able to produce graduates who are competent in the field of religion as well as adaptive to the demands of the times. This research aims to examine the scientific development strategy in Islamic boarding schools, the challenges faced, and the impact on the quality of Islamic education. The research method uses a qualitative approach with a case study on an integrated Islamic boarding school in West Java. Data was obtained through in-depth interviews, participatory observation, and documentation analysis, then analyzed thematically. The research results show that the scientific development strategy is carried out through the integration of religious science and general science, the improvement of teacher competence, as well as the implementation of an adaptive curriculum to global needs. The main challenges include limited resources, the dominance of traditional learning methods, and the narrow public perception of the role of Islamic boarding schools. Practically, the scientific development strategy in Islamic boarding schools has a positive impact on the quality of learning and the relevance of Islamic education with the modern context. This finding is expected to be a reference for Islamic boarding school managers and policy makers in formulating sustainable Islamic education development policies.*

**Keywords:** *Islamic Boarding School; Islamic Education; Science Development; Science Integration; Education Challenges*

### INTRODUCTION

Islamic boarding school as a traditional Islamic educational institution has a strategic role in character formation and scientific development for the younger generation of Muslims. Islamic boarding schools not only function as a religious learning center, but also as an institution that is able to integrate religious science with general knowledge to face the challenges of the times (Nata, 2013). However, the rapid development of science and technology requires Islamic boarding schools to continue to innovate in scientific development so that graduates not only understand the religious aspect in depth, but also be able to compete and adapt in the modern world (Azra, 2014).

The development of science in Islamic boarding schools is crucial to improve the quality of Islamic education as a whole. Therefore, this research aims to examine the scientific development strategies applied in Islamic boarding schools and understand the challenges faced in their implementation.

The formulation of the problem in this study is:

1. How is the Islamic boarding school-based science development strategy applied in the context of Islamic education?
2. What are the challenges faced by Islamic boarding schools in developing science?
3. How does this strategy affect the quality of education in Islamic boarding schools?

This research has important significance theoretically and practically. Theoretically, this research can enrich the study of the integration of religious science and science in Islamic education (Sulaiman, 2017). Practically, the research results are expected to be a reference for Islamic boarding school

managers, educators, and policy stakeholders in formulating a scientific development program that is effective and relevant to the needs of the times.

The method used in this research is a qualitative method with a case study approach. Data was collected through in-depth interviews with caregivers, teachers, and students, participatory observation of the learning process, as well as documentation related to the curriculum and activities of the Islamic boarding school. Data is analyzed thematically to explore scientific development strategy patterns and identify emerging challenges (Creswell & Poth, 2018).

## RESEARCH METHODOLOGY

This research uses a qualitative approach with a case study method to gain an in-depth understanding of Islamic boarding school-based science development strategies. Case studies were chosen because they allow a comprehensive exploration of phenomena in the real-life context of Islamic boarding schools, so that they can explore the dynamics, challenges, and best practices in detail (Yin, 2018). This approach is very suitable to understand the process and context of scientific development holistically.

### Location and Research Subject

The research was conducted on an integrated Islamic boarding school in the West Java region that has implemented the integration of religious science and general knowledge in its curriculum progressively. The research subject consists of Islamic boarding school caregivers, teaching teachers, and active students who are directly involved in the learning process. The selection of location and subject is based on the criteria of relevance to the research focus and the readiness of the Islamic boarding school in systematically developing science (Creswell & Poth, 2018).

### Data Collection Technique

Data is collected through several complementary techniques to obtain rich and valid information, including:

- In-depth interviews with caregivers, teachers, and students to gain views and experiences related to scientific development strategies (Seidman, 2013).
- Participatory observation during the learning process and Islamic boarding school activities to understand the implementation of the strategy directly and contextually (Angrosino, 2007).
- Documentation in the form of curriculum, learning plans, and activity reports as supporting data to strengthen field findings.

### Data Analysis Technique

Data was analyzed using systematic thematic analysis methods to identify patterns and main themes in the data (Braun & Clarke, 2006). The analysis process includes coding, categorization, and narration that describes scientific development strategies and the challenges faced. To increase the validity and credibility, this study uses data triangulation by comparing the results of interviews, observations, and documentation to ensure the consistency of the findings (Patton, 2015).

## RESULTS AND DISCUSSION

The scientific development strategy in Islamic boarding schools (pesantren) shows significant progress in efforts to improve the quality of Islamic education. Based on the findings in the article, several Islamic boarding schools have implemented an integrative approach between religious and general knowledge, reflected in a curriculum that is more adaptive and relevant to current needs. Furthermore, there has been an increase in the use of information technology as a learning medium, as well as efforts to strengthen the capacity of teaching staff through training and professional development. Further findings indicate that Islamic boarding schools that successfully implement this strategy tend to produce more competent graduates, both spiritually and intellectually. They are able to contribute in various fields, not only within the religious realm but also in the social, educational, and economic sectors. This demonstrates that Islamic boarding schools have great potential as educational institutions capable of producing superior and competitive generations. However, not all Islamic boarding schools

are at the same level of readiness. Obstacles remain, such as limited facilities, lack of access to modern learning resources, and challenges in changing traditional mindsets. Nevertheless, the spirit of transformation remains a key driving force in the scientific development process within Islamic boarding schools.

The strategy for developing knowledge in Islamic boarding schools (*pesantren*) is a response to the increasingly complex demands of the times. This article explains that Islamic boarding schools are no longer solely focused on teaching yellow books and traditional sciences, but are beginning to open themselves to the integration of general knowledge and information technology. This demonstrates a paradigm shift in Islamic education from a conservative one to a more progressive and inclusive approach. The implementation of an integrated curriculum is one concrete manifestation of this strategy. By combining religious and general knowledge, Islamic boarding schools strive to produce students who not only have a deep understanding of Islamic teachings but are also able to contribute to social and professional life in society. Furthermore, the use of technology in the learning process, such as digital media and online platforms, expands students' access to broader and more up-to-date sources of knowledge. However, this transformation process is not without obstacles. Some Islamic boarding schools still face challenges such as limited facilities, a lack of competent teaching staff in general sciences, and resistance from some groups to changes in teaching methods. Deeply entrenched cultural and traditional factors also pose challenges in adopting new approaches. Nevertheless, this article shows that Islamic boarding schools (*pesantren*) that are able to manage change wisely and strategically tend to experience improvements in the quality of their education. Students from these Islamic boarding schools demonstrate critical thinking skills, social skills, and a readiness to face global challenges without abandoning their Islamic identity. Thus, this discussion emphasizes that a strategy for developing knowledge in Islamic boarding schools is not only important but also urgently needs to be implemented comprehensively and sustainably. Islamic boarding schools play a strategic role in shaping a superior generation of Muslims, and knowledge transformation is key to realizing this vision.

## CONCLUSION

The strategy for developing knowledge in Islamic boarding schools (*pesantren*) is a crucial step in strengthening their role as Islamic educational institutions relevant to the demands of the times. Studies show that the integration of religious and general knowledge, the use of technology in learning, and improving the quality of teaching staff have had a positive impact on the quality of education in Islamic boarding schools.

This transformation not only enhances the spiritual competence of students but also expands their abilities to face social and professional challenges. Although obstacles such as limited facilities and resistance to change persist, the spirit of innovation and commitment of Islamic boarding school administrators are key factors in the success of this strategy.

Thus, the development of knowledge in Islamic boarding schools is not merely a necessity but a necessity for producing a superior, competitive generation of Muslims who remain rooted in Islamic values. Islamic boarding schools that are able to adapt and innovate will be at the forefront of building an advanced and inclusive Islamic civilization.

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