

---

# SAIZU INTERNATIONAL CONFERENCE ON TRANSDISCIPLINARY RELIGIOUS STUDIES (SAIZU ICON-TREES)

ISSN 2964-5859, 2024, Pages 101-120

DOI: <https://doi.org/10.24090/icontrees.2024.1109>

## Proceeding of 3<sup>rd</sup> Internasional Conference on Integrating Religion, Contemporary Environmental Issues and SDGs

---

Curriculum Management in Pesantren-Based Madrasah Aliyah:  
Science and Technologi Integration at Madrasah Aliyah (MA) Minhajut  
Tholabah Bukateja Purbalingga Central Java

Faizin<sup>1\*</sup>; Atabik<sup>1</sup>

<sup>1</sup>Universitas Islam Negeri Profesor Kiai Haji Saifuddin Zuhri Purwokerto,  
Indonesia

Corresponding author's email: [faizinfaiz689@gmail.com](mailto:faizinfaiz689@gmail.com)

---

**Abstract:** This study examines curriculum management at Madrasah Aliyah Minhajut Tholabah Bukateja Purbalingga, which integrates pesantren, science, and technology. The importance of this study lies in the effort to balance religious values with the demands of scientific and technological advancements in education. The main issue faced is how to design an effective and relevant curriculum that addresses the needs of the digital era without neglecting pesantren principles. This research aims to evaluate managerial strategies in implementing a pesantren-based curriculum that includes science and technology aspects. The research methods used include case studies with in-depth interviews, observations, and document analysis. The main findings show that curriculum integration successfully enhances educational quality by strengthening science and technology skills without sacrificing pesantren values. A significant finding is the development of an innovative curriculum model, which can serve as a reference for other madrasahs in creating synergy between religious values and modern educational needs.

**Keywords:** *curriculum management; pesantren-based; science and technology*

---

### A. INTRODUCTION

In the current era of globalization and technological revolution, the education world faces significant challenges in aligning the curriculum with rapid advancements in science and technology. Education in Indonesia, especially in the context of pesantren-based Madrasah Aliyah, requires a prudent approach to integrate religious

values with the demands of science and technology. This research focuses on curriculum management at Madrasah Aliyah Minhajut Tholabah Bukateja Purbalingga, which strives to combine three main elements: pesantren, science, and technology.

Here is a description of how the madrasah integrates these aspects:



Copyright © 2024 The Author

This is an open access article Under the Creative Commons Attribution (CC BY) 4.0 International License

1. **Pesantren-based approach:** Although this madrasah includes elements of science and technology, its primary approach remains pesantren-based. This is reflected in the strong focus on Islamic education, including the teaching of the Qur'an, Hadith, Fiqh, and Islamic history, which are integrated into the curriculum. Islamic education in Southeast Asia, particularly in Indonesia, within the context of modernity, includes analysis on how Islamic education adapts to the challenges of modernization and globalization in this region (Ali, M, 2022).
2. **Integration of science and technology:** Madrasah Aliyah Minhajut Tholabah acknowledges the importance of science and technology education in the modern era. Therefore, they include subjects such as mathematics, natural sciences, and information technology in their curriculum. The integration of science and technology education in Islamic education focuses on developing a curriculum that combines Islamic values with scientific knowledge and technological skills in Islamic schools (Abdul, R and Yusuf, A, 2020).
3. **Project-based learning:** To enhance understanding of science and technology concepts, this madrasah applies project-based learning methods. Students are given the opportunity to conduct experiments, research, or technology projects relevant to their studies. This journal explores the use of project-based learning in Islamic schools to enhance students' understanding of science and technology, focusing on the implementation and outcomes of this learning method within the context of Islamic education (Hasan, M, 2020).
4. **Use of technology in learning:** Despite being pesantren-based, this madrasah also utilizes modern technology in the learning process. This can include the use of educational software, multimedia presentations, or even online learning platforms to expand access to educational resources. The utilization of digital learning tools in the context of Islamic education discusses the opportunities available and the challenges faced in integrating digital technology into the learning process within Islamic educational institutions (Rahman, H and Ali, A, 2019).
5. **Islam-based character development:** In line with the pesantren approach, this madrasah also pays special attention to character development according to Islamic values. This may include developing attitudes such as perseverance, patience, and honesty in the context of science and technology. It focuses on

character building in Islamic schools, discussing the principles and practices used to develop students' character based on Islamic values (Ibrahim, K, 2021).

6. Development of critical and creative thinking skills: In addition to focusing on technical knowledge and skills, this madrasah also emphasizes the development of critical and creative thinking skills in students. They are encouraged to develop analytical and problem-solving skills in addressing challenges in science and technology. This journal highlights strategies to enhance critical and creative thinking skills in the Islamic education environment (Ahmad, S, 2020).
7. Parental and community involvement: Madrasah Aliyah Minhajut Tholabah recognizes the importance of parental and community involvement in education. Therefore, they organize collaborative activities between the school, parents, and the local community to support students' learning. It explores community engagement in Islamic schools, offering strategies and collaborations that can enhance the quality of education and relationships between schools and the local community (Yusuf, A and Ahmed R, 2023).

With this holistic approach, Madrasah Aliyah Minhajut Tholabah in Bukateja

Purbalingga aims to create a balanced educational environment that combines Islamic values with relevant scientific and technological knowledge and skills to meet the demands of the times.

## **B. MATERIALS AND METHODS**

Research Methodology includes the approach and type of research, research location, researcher presence, research subjects, data sources, data collection techniques, data analysis, data validity, research stages, and research systematics. The research methodology is a crucial component of research that must be fulfilled. The credibility of the research results is determined by the use of appropriate and effective research methods and procedures.

### **1. Type and Approach of Research**

This study employs qualitative research with a multisite study type (Kaelan, 2010). This type of research is used because it is relevant for addressing the research focus (Jerome Kirk and Marc L. Miller, 1986). A multisite study is used because the two research sites share similar traditions, characteristics, and types in terms of curriculum management in pesantren-based madrasahs, rather than their uniqueness (Yonna S. Lincoln and Egon G. Guba, 1985). The element of similarity is relevant for multisite research.

The multisite research process involves three steps. First, data is collected as material for analysis to address two focuses according to the informants' perspectives. Second, the collected data is analyzed to derive

meaning about the curriculum management of pesantren-based Madrasah Aliyah, focusing on the two predetermined areas. The third step involves analyzing the data's meaning in relation to relevant previous literature to determine the research results' position.

According to Bogdan and Taylor, as cited by Wiratna Sujarweni, qualitative research is a research procedure that generates descriptive data in the form of spoken or written words and the behavior of observed individuals. The qualitative approach is expected to produce in-depth descriptions of speech, verbal communication, and/or observable behavior from an individual, community group, and/or specific organization within a specific context, examined from a comprehensive, holistic perspective (Wiratna Sujarweni, 2014). This research is a type of qualitative study. The author gathers data from MA Maarif Minhajut Tolabah Bukateja Purbalingga. In conducting field research, the targets are the Islamic Education Supervisors in the curriculum section of Madrasah Aliyah, the Principal, the Curriculum Vice Principal, the Curriculum Team, and teachers of Islamic Education (PAI), Counseling teachers, caregivers, and pesantren staff. This aims to assist the researcher in analyzing and discovering the implementation of curriculum management in pesantren-based Madrasah Aliyah in Purbalingga Regency.

## 2. Research Location and Time

This research is conducted at MA Maarif Minhajut Tolabah Bukateja Purbalingga. The research is expected to take approximately three years, from April 2021 to April 2024. This period will be used for preliminary research, finalizing the research proposal, conducting observations and interviews, data collection, and compiling the research results.

## 3. Subjects and Objects of Research

As the primary subject, the researcher relies heavily on themselves and serves as the main decision-maker in the research. The researcher is responsible for the research policy regarding design, focus, theory, data, analysis, and results. The researcher holds full accountability for the results and findings.

Additionally, informants also serve as subjects of the research. They are regarded as authoritative experts on curriculum management and religious moderation competencies. Informants provide information freely and responsibly based on their expertise. According to Moleong (2010), informants provide information about the situation, conditions, and phenomena observed at the three research sites.

The subjects of this research include the Islamic Education Supervisors in the Madrasah Aliyah curriculum section, the Principal, Curriculum Deputy, Curriculum Team, PAI teachers, BK teachers, caretakers,

and staff of the pesantren. This data is considered capable of explaining the situation and conditions related to the research on "Curriculum Management of Pesantren-Based Madrasah Aliyah in Purbalingga Regency." The object of this research is Madrasah Aliyah Minhajut Tholabah Bukateja

#### 4. Data and Sources of Data

Data are the primary material for analysis. The data examined in this study includes primary, main, and supporting data (Moh. Nazir, 2000). Primary data includes records, files, and other materials related to the research focus, namely curriculum management of pesantren-based madrasah, curriculum implementation, curriculum organization, and curriculum evaluation. Secondary data are obtained from magazines, articles, madrasah documents, and other sources that provide information related to the research background.

Sources include the pesantren caretakers, the madrasah principal and staff, current students and alumni with regional or national roles (Sugiyono, 2008). Secondary sources comprise academics, pesantren observers, the community, and others. The selection of informants is purposive, based on specific objectives. They are chosen because they have the authority to speak about pesantren-based madrasah curriculum management.

The madrasah principal, curriculum deputy, and pesantren administrators are also informants.

They provide information about institutional profiles, pesantren-based madrasah curriculum management, learning implementation in madrasah and dormitories, and evaluations. They also provide insights into strategic environment analysis, the presence of curriculum development teams, and their results. Pesantren administrators are asked about the madrasah's position in relation to the pesantren and the integration within it.

According to Sugiyono, data collection involves both primary and secondary sources. Primary sources are those that directly provide data to the data collector, while secondary sources are those that do not directly provide data to the collector (Sugiyono, 2016).

- a. Primary Data refers to data that consist of direct responses from informants. This data includes results from in-depth interviews conducted by the researcher with the Department of Religious Affairs curriculum section, the principal, curriculum deputy of the madrasah, pesantren caretakers, curriculum deputy of the pesantren, and teachers of Islamic Education at MA Maarif Minhajut Tolabah Bukateja Purbalingga.
- b. Secondary Data refers to data obtained from written sources, such as documentation, archives, and physical research materials as supplementary data. Archives, documentation,

and physical materials obtained from MA Maarif Minhajut Tolabah Bukateja Purbalingga are considered relevant along with other additional data as evidence of the implementation of pesantren-based madrasah curriculum management at Madrasah Aliyah in Purbalingga Regency.

## 5. Data Collection Techniques

Sources of evidence that can be the focus of data collection include:

### a. Participant Observation

According to Nasution, as cited by Sugiyono, observation is the basis of all knowledge. Scientists can only work based on data, which are facts about the real world obtained through observation (Sugiyono, 2016). In this observation, the researcher engages with the daily activities of the individuals being observed or who are used as data sources. While observing, the researcher participates in what the data sources do and experiences their joys and sorrows. With participant observation, the data obtained will be more comprehensive, nuanced, and reach the level of understanding the meaning behind each visible behavior. This includes the implementation and evaluation of curriculum management in pesantren-based madrasahs at MA Minhajut Tholabah.

Interviews are a process of obtaining explanations to gather information through a question-and-answer method, either face-to-face or through telecommunication media between the interviewer and the interviewee, with or without a guide (Wiratna Sujarweni, 2014). The interview methods used in this study include: first, in-depth interviews and observations at MA Maarif Minhajut Tholabah Bukateja Purbalingga. Interviews are used to gather information about the scope of implementing curriculum management in pesantren-based madrasahs at Madrasah Aliyah Minhajut Tholabah Bukateja Purbalingga. In-depth interviews are conducted with the Principal, Curriculum Deputy, pesantren caretakers, and Curriculum Deputy of the pesantren.

Wiratna Sujarweni describes a situation where the researcher is deeply involved with the subjects being studied, conducting question-and-answer sessions without using pre-prepared guides, and performing them repeatedly (Wiratna Sujarweni, 2014). Additionally, the author also uses observation while actively participating in the process of implementing curriculum management in pesantren-based madrasahs at MA Maarif Minhajut Tholabah Bukateja Purbalingga.

b. Documentation

Document studies in qualitative research complement the use of observation and interview methods. Documentation studies involve collecting documents and data relevant to the research issues and then analyzing them intensively to support and validate an occurrence. Results from observations or interviews are more credible if supported by documents related to the research focus (Djam'an Satori and Aan Komariah, 2014). For qualitative research, the most important use of documents is to support and add evidence from other sources. Given their overall value, documents play a crucial role in data collection through systematic exploration of relevant documents. In addition to interviews and observations, the researcher uses various reference sources, meeting summaries, written reports of events, as well as administrative documents and photographs related to curriculum management in pesantren-based madrasahs at MA Maarif Minhajut Tholabah Bukateja Purbalingga.

Archival recordings and others can be used together with other sources of information in case studies. Recordings are so important that they become objects of extensive retrieval and analysis (Robert K. Yin, 1982). The archives obtained from the research site include statistical data about the

number of students at MA Maarif Minhajut Tholabah Bukateja Purbalingga, other data related to the curriculum such as the school's vision, mission, and objectives, school and pesantren regulations, students residing in the pesantren, pesantren and mosque activity schedules, and other additional data

c. Direct Observation

Observational evidence is often useful for providing additional information about the topic under investigation, which is the management of pesantren-based curriculum in Madrasah Aliyah Minhajut Tholabah in Purbalingga Regency. By conducting field visits, the researcher creates opportunities for direct observation, starting from formal data collection activities such as visits to Madrasah Aliyah, pesantren, the Department of Religious Affairs, meetings with the Head of the School, Curriculum Vice Principal, meetings with teachers and students, as well as with pesantren caretakers and staff.

d. Physical Artifacts

Another source of evidence is physical or cultural artifacts, including technology tools, instruments, or other physical evidence. Such artifacts can be collected or observed as part of field visits (Robert K. Yin, 1982). The researcher examines physical

artifacts in the pesantren-based curriculum at MA Maarif Minhajut Tholabah Bukateja Purbalingga.

## 6. Data Analysis Techniques

Data analysis in this research process involves describing the data. According to Sukardi, describing data means portraying the existing data to obtain a tangible form from the respondents, making it easier for researchers or others interested in the research results to understand. Data processing is carried out by describing information from respondents through organizing and grouping the available data, providing a clear picture of the respondents, and inventorying and classifying the collected data for subsequent objective and systematic description (Sukardi, 2016).

The technical analysis of data is conducted to understand the concepts and implementation of pesantren-based curriculum management at MA Maarif Minhajut Tholabah Bukateja Purbalingga. The analysis technique used in this research is the interactive model analysis developed by Miles and Huberman, which includes:

### a. Data Reduction

Data reduction means summarizing, selecting essential elements, focusing on important aspects, identifying themes and patterns, and eliminating unnecessary information (Sugiyono, 2016). In this study, the data reduction process involves summarizing all data from

observations, interviews, archives, physical devices, and documentation, then selecting the necessary data, focusing on aspects related to pesantren-based curriculum management at MA Maarif Minhajut Tholabah Bukateja Purbalingga.

### b. Data Display

After data reduction, the next step is to present the data. Data presentation can be done in the form of brief descriptions, charts, relationships between categories, flowcharts, and similar formats. The most commonly used form of data presentation is narrative text (Emzir, 2011). In this study, the data presentation is done using narrative text, detailing the implementation of pesantren-based curriculum management at MA Maarif Minhajut Tholabah Bukateja Purbalingga, the process of collaboration among the pesantren curriculum team, the school principal, the curriculum deputy, the pesantren caretaker and staff, and the achievements of curriculum management at the pesantren-based Madrasah Aliyah

### c. Verification (Verification / Conclusion Drawing)

The third step in qualitative data analysis according to Miles and Huberman is drawing conclusions and verification. Initial conclusions are tentative and may change if strong evidence



supporting them is not found in subsequent data collection stages. However, if the initial conclusions are supported by valid and consistent evidence when the researcher returns to the field to collect data, then the conclusions drawn are considered credible (Sugiono, 2016). Thus, conclusions in research may answer the research questions formulated at the beginning, but they may also not, as the research questions are preliminary and will evolve as the researcher is in the field. Therefore, after performing data reduction and data presentation, the researcher will conduct verification based on the data and realities observed at the research site. The conclusions drawn will relate to pesantren-based curriculum management, science, and technology at Madrasah Aliyah, and the achievements already attained at MA Maarif Minhajut Tholabah Bukateja Purbalingga.

From the analysis results, conclusions and recommendations can be determined, which can serve as a reference for educational institutions, particularly Madrasah Aliyah or senior high schools, in implementing pesantren-based curriculum management, science, and technology.

### **C. RESULT AND DISCUSSION**

Significant findings from this research include the development of an innovative

curriculum model, encompassing planning, implementation, supervision, and evaluation, which can serve as a reference for other madrasahs in creating synergy between religious values and modern educational needs.

#### **1. Planning**

The planning of pesantren-based curriculum management, science, and technology at Madrasah Aliyah (MA) Minhajut Tholabah Bukateja integrates Islamic values with scientific and modern technological approaches. The planning process includes the following:

- a) Identification of Pesantren Values: The initial step involves identifying pesantren values to be emphasized, such as perseverance, honesty, discipline, and generosity. These values will serve as the foundation for directing education integrated with science and technology. At Madrasah Aliyah, these values include faith, piety, honesty, discipline, responsibility, love of knowledge, self-confidence, social responsibility, hard work, justice, and tolerance (Zainudin, 2021).
- b) Development of an Integrated Curriculum: The integrated curriculum will include subjects related to Islamic studies, science, and technology. This approach allows students to develop a holistic understanding of the

world and its relationship to Islamic teachings. The integrated curriculum aims to align the ideals of educational institutions with the realities of students' daily lives, ensuring coherence, relevance, and contextualization of learning materials. Erickson supports the integrated curriculum approach (H. Lynn Erickson, 2002). This curriculum bridges the ideals of educational institutions with the everyday lives of students, where coherence, relevance, and contextualization are key features (Wina Sanjaya, 2008). This curriculum ensures that education is not detached from students' real-life experiences but rather intertwined and interactive.

- c) Development of Science and Technology Curriculum: Science and technology subjects are designed with consideration of the national curriculum and the latest developments in these fields. Learning materials can also be adjusted to incorporate Islamic values and practical applications in daily life. This journal explores the use of project-based learning in Islamic schools to enhance students' understanding of science and technology, focusing on the

implementation and outcomes of this learning method within the context of Islamic education (Hasan, M., 2021).

- d) Integration of Subjects: In addition to Islamic studies, general subjects such as mathematics, languages, and social sciences are also integrated into the curriculum. This ensures that students receive a balanced and comprehensive understanding of various aspects of life. Integrating Islamic values into the curriculum is crucial for madrasahs to ensure that students not only learn academic subjects but also internalize the ethical teachings of Islam (Aksin, S., 2020).
- e) Utilization of Technology in Learning: Modern technology, such as computers, the internet, and educational software, can be used to enhance students' learning experiences. This may include project-based learning, simulations, and access to digital educational resources. The utilization of digital learning tools in the context of Islamic education discusses the opportunities available and the challenges faced in integrating digital technology into the learning process within Islamic educational

institutions (Rahman, H. and Ali, A., 2019).

- f) **Development of Pesantren-Based and Scientific Skills:** Besides academic skills, planning also includes the development of practical skills that align with Islamic teachings and scientific advancements. For example, students may be taught sustainable modern agricultural skills or environmentally friendly practices in accordance with Islamic principles. Providing skill training to equip graduates with life skills for community involvement with competitive advantages (Ihsan, 2020).
- g) **Periodic Evaluation and Adjustment:** The curriculum will be evaluated periodically to ensure relevance, effectiveness, and alignment with students' needs. Evaluation results will be used to make necessary adjustments and improvements. Regular evaluations are conducted to measure the performance of the institution, the learning process, and the school. This evaluation is crucial for ensuring the effectiveness and efficiency of the program and as a basis for continuous improvement to achieve

optimal educational goals (Sri Setyo, 2021).

By planning a curriculum management system that integrates pesantren values, science, and technology, Madrasah Aliyah Bukateja can provide holistic and relevant education, preparing students to face future challenges with confidence and courage.

## 2. Implementation

The implementation of pesantren-based curriculum management, science, and technology involves a series of planned and directed steps. The following describes how the implementation is carried out:

- a) **Integration of Pesantren Values:** During implementation, pesantren values encompassing spiritual, moral, and ethical aspects of Islam are integrated into every aspect of school activities. This is achieved through religious practices, character development, and instilling noble attitudes in daily life. Madrasahs emphasize Islamic values in their curriculum, focusing on moral education, ethical conduct, and spiritual development. This approach aims to cultivate a holistic understanding of Islam among students by integrating religious teachings into various aspects of their learning

- experience (Mahmud, A., and Ciftci, Y., 2021).
- b) Teaching Religious Subjects: Islamic subjects, including the Qur'an, Hadith, Fiqh, and Islamic history, are primary focuses in the curriculum implementation. Teachers present the material using approaches that emphasize deep understanding and practical application in students' lives. The scope of pesantren education includes: the Qur'an and Hadith, faith, ethics, Fiqh/worship, and history. In other words, the scope of pesantren education emphasizes harmony, alignment, and balance in the relationship between humans and Allah, oneself, fellow humans, other creatures, and the environment (Iin Khozainul Khoiriyah, Muchammad Miftachur Roziqin, and Widya Kurnia Ulfa, 2020).
  - c) Development of Science and Technology Curriculum: Science and technology subjects are also integral parts of the curriculum. Learning materials can be adjusted to reflect the latest developments in these fields, and applied within the context of Islamic values and practical daily applications. The integration of science and technology education in Islamic education focuses on developing a curriculum that combines Islamic values with scientific knowledge and technological skills in Islamic schools (Abdul, R., and Yusuf, A., 2020).
  - d) Utilization of Technology in Learning: Modern technology, such as computers, the internet, and educational software, is used in the learning process to enhance students' learning experiences. This includes the use of multimedia, simulations, and digital educational resources. Modern pedagogical frameworks in Muslim education emphasize developing practical skills alongside academic knowledge. This includes training in communication skills, problem-solving abilities, and familiarity with technological tools, preparing students for contemporary challenges (Ali, A., and Amin H., 2020).
  - e) Development of Practical Skills: In addition to academic knowledge, the madrasah also focuses on developing practical skills relevant to science and technology. This may include computer skills, scientific research, or laboratory experiments. Supporting facilities include computer labs, language labs, multimedia classrooms, digital

data centers, digital libraries, and art creativity centers (Ramzi, Muhajirin, 2022). The utilization of digital learning tools in the context of Islamic education discusses the opportunities and challenges of integrating digital technology into the learning process within Islamic educational institutions (Rahman, H., and Ali, A., 2019).

- f) Evaluation and Adjustment: Continuous evaluation is conducted to monitor the effectiveness of the curriculum implementation. Evaluation results are used to make necessary adjustments and improvements to ensure the curriculum remains relevant and meets students' needs. This process assesses the utilization and implementation of the curriculum in the teaching and learning process (Oemar Hamalik, 2021).
- g) Involvement of Parents and the Community: The madrasah also involves parents and the community in the curriculum implementation process. They may be invited to participate in school activities, provide feedback, and support the madrasah's educational initiatives. This explores community engagement in Islamic schools, offering strategies and collaborations

that can enhance the quality of education and relationships between schools and the local community (Yusuf, A., and Ahmed R., 2023).

With directed and continuous implementation, Madrasah Aliyah Minhajut Tholabah in Bukateja Purbalingga can provide holistic education encompassing religious, scientific, and technological aspects while shaping students' character and morals in accordance with Islamic values.

### 3. Supervision

Supervision of the pesantren-based curriculum management, science, and technology is conducted regularly and systematically to ensure the effectiveness of curriculum implementation. The following are some steps involved in the supervision process:

- a) Monitoring Curriculum Implementation: Supervisors or monitoring teams periodically conduct direct observations of curriculum implementation in the classrooms. They observe teaching activities, interactions between teachers and students, and the application of appropriate teaching methods. Specifically, curriculum monitoring aims to:
  - (1) Provide feedback on educational program needs.
  - (2) Offer feedback on the

- achievement of curriculum goals. (3) Provide feedback on planning methods. (4) Give feedback on curriculum assessment systems. (5) Provide materials for examining issues and obstacles encountered in the field (Oemar Hamalik, 2008).
- b) Evaluation of Learning Outcomes: Supervision includes evaluating students' learning outcomes, including academic achievements, understanding of religious, science, and technology subjects, and students' ability to apply learned concepts. Responsible and objective evaluations can measure student capabilities, leading to continuous quality improvement (Dadang Suhardan, 2014).
- c) Examination of Teaching Materials: Teaching materials used in curriculum implementation, including textbooks, presentation materials, and other learning resources, are reviewed to ensure they meet curriculum standards and pesantren, science, and technology values. Learning materials, as part of the curriculum content, focus more on the learning experiences that students should gain during the educational process (Dadang Suhardan, 2014).
- d) Assessment of Teaching Methods: Supervisors or monitoring teams also evaluate the teaching methods used by teachers. Are these methods appropriate for the students' characteristics and effective in achieving learning objectives? The methods used in processing traditional texts, like the yellow books, can globally be mapped into deductive, inductive, and dialectic methods (Abdurahman, 2017). Traditional teaching methods in Islamic education, including memorization and classical pedagogical techniques, are integral to educational practices in madrasahs (Khan, F., and Haq, I., 2021).
- e) Teacher Development: Supervision includes the training and development of teachers to enhance their teaching quality. This may involve additional training, mentoring, or experience exchange among teachers. Improving educators' competencies through training, seminars, subject teacher associations, and comparative studies is also a priority for enhancing academic and non-academic achievements (Handoyo, Karseno, 2022).

Teacher skill development is conducted through training and workshops (Nurmayani, 2017).

- f) Consultation with Stakeholders: Supervision also involves consulting with various stakeholders, including teachers, students, parents, and the local community. Feedback from these groups can be used to refine and improve curriculum implementation. This feedback helps improve and perfect the curriculum and the overall learning process (Nurmayani, 2017).
- g) Preparation of Improvement Plans: Based on the results of supervision and evaluation, the madrasah can develop improvement plans aimed at enhancing educational quality. Concrete steps can be taken to address identified weaknesses and reinforce existing successes. It is essential to develop various problem-solving alternatives for curriculum improvement (Hamid Hasan, 2007).

By conducting meticulous and continuous supervision, Madrasah Aliyah Minhajut Tholabah in Bukateja Purbalingga can ensure that the pesantren-based curriculum in science and technology provides quality education in line with their educational vision and mission.

#### 4. Evaluation

Evaluating the pesantren-based curriculum management in science and technology at Madrasah Aliyah Minhajut Tholabah in Bukateja is a crucial step to assess the effectiveness of curriculum implementation and ensure that the established educational goals are achieved. The following are some aspects evaluated in this process:

- a) Achievement of Learning Objectives: This evaluation includes assessing the extent to which the learning objectives set in the curriculum have been achieved. This involves evaluating students' academic performance, their understanding of the subject matter, and their ability to apply concepts in science and technology. As modern Islamic education, it is expected to produce a generation that not only masters science and technology but also practices Islamic values that are a mercy to the worlds (Juhri, 2021).
- b) Relevance and Connection of Subjects: Evaluation is conducted to ensure that the subjects taught are still relevant to students' needs and the demands of the times. Religious, science, and technology subjects must be interconnected and provide a holistic understanding of the world. Madrasahs emphasize

Islamic values in their curriculum, focusing on moral education, ethical conduct, and spiritual development. This approach aims to cultivate a holistic understanding of Islam among students, integrating religious teachings into various aspects of their learning experience (Mahmud, A., and Ciftci, Y., 2021).

- c) **Use of Technology in Learning:** Evaluation includes assessing the use of technology in the learning process. The technology used should support students' learning experiences and enhance their understanding of science and technology concepts. Here, pesantren are expected to develop and influence Islamic traditions amidst the powerful influences of globalization that aim to standardize cultures through technological products (Mahmud, A., and Ciftci, Y., 2021).
- d) **Integration of Pesantren Values:** Supervision ensures that the pesantren values integrated into the curriculum are reflected in daily life at the madrasah. This includes monitoring worship practices, ethics, and student attitudes. The madrasah consistently instills pesantren values throughout all aspects of school life, including worship

practices, ethics, discipline, and respect for religious traditions. Pesantren values, such as traditions, behaviors, and symbols, enrich students' overall spiritual and moral experiences (Moh Mundzir, 2023).

- e) **Parental and Community Involvement:** Evaluation includes assessing the level of parental and community involvement in the madrasah's education. Parents and the local community should be encouraged to participate in school activities and support curriculum implementation. The article discusses the significant role played by parents and the community in supporting madrasahs' educational efforts, emphasizing the importance of collaborative efforts in shaping students' religious and moral upbringing (Rahman, A., 2019).
- f) **Improvements and Development:** Evaluation provides the basis for the madrasah to develop improvement and development plans for curriculum management. Concrete steps can be taken to address identified weaknesses and enhance the quality of education offered. To address identified weaknesses and



reinforce existing successes, various problem-solving alternatives need to be developed for curriculum improvement (Hamid Hasan, 2007).

Through comprehensive evaluation like this, Madrasah Aliyah Minhajut Tholabah in Bukateja Purbalingga can ensure that their pesantren-based curriculum in science and technology provides quality education that aligns with their educational vision and mission.

#### **D. CONCLUSION**

This study explores curriculum management at Madrasah Aliyah Minhajut Tholabah Bukateja Purbalingga, focusing on the integration of pesantren values, science, and technology. The findings provide in-depth insights into how a curriculum that combines religious values with technical aspects can be effectively implemented.

1. **Effective Curriculum Integration:** Madrasah Aliyah Minhajut Tholabah has successfully designed a curriculum that integrates pesantren values with science and technology. This curriculum includes in-depth religious lessons as well as science and technology subjects relevant to contemporary developments. This implementation not only enhances students' technical competencies but also strengthens their understanding of religious values.

2. **Improvement in Academic Achievement and Skills:** The research findings indicate a significant improvement in students' academic performance in the fields of science and technology. Additionally, students' soft skills have also developed through extracurricular activities involving science and technology projects. Emphasizing practical skills and technology in learning contributes to students' readiness to face challenges in the modern world.

3. **Challenges in Curriculum Balance:** A major challenge faced is maintaining a balance between religious values and technological needs in the curriculum. Achieving this balance can be difficult, and some educators struggle to align pesantren-based teaching materials with the ever-evolving technological demands.

4. **Resource Limitations:** Limitations in resources, such as laboratory equipment and software, hinder the effectiveness of technology-based learning. Although technology is used in the classroom, improvements in facilities and resources are still needed to support optimal curriculum implementation.

#### **REFERENCES**

- Abdul, R., & Yusuf, A. (2020). *Science and Technology Education in Islamic Schools*. Routledge.

- Ahmad, S. (2020). Enhancing Critical and Creative Thinking Skills in Islamic Schools. *International Journal of Islamic Education*, 7(1).
- Ali, A. (2022). *Islamic Education and Modernity in Southeast Asia: The Case of Indonesia*. Springer Singapore.
- Ali, A., & Amin, H. (2020). *Pedagogical Models in Muslim Education: A Theoretical Framework*. Palgrave Macmillan.
- Aksin, S. (2020). Integrating Islamic Values into Education: A Case Study of Madrasah Curriculum. *Journal of Islamic Education*, 8(2).
- Dadang Suhardan. (2007). *Manajemen Pendidikan*. Bandung: Alfabeta.
- Djam'an Satori, & Aan Komariah. (2014). *Metodologi Penelitian Kualitatif*. Bandung: Alfabeta.
- Emzir. (2011). *Metodologi Penelitian Kualitatif: Analisis Data*. Jakarta: PT Raja Grafindo Persada.
- Erickson, H. Lynn. (2022). *Concept Based Curriculum and Instruction*. California: Corwin Press.
- Hasan, M. (2021). Project-Based Learning in Islamic Schools: Enhancing Understanding of Science and Technology. *Journal of Islamic Education*, 18(2).
- Handoyo, Karseno. (2022). Implementasi Manajemen Berbasis Madrasah dalam Meningkatkan Mutu Pendidikan di Madrasah Ibtidaiyah Negeri (MIN) Sukoharjo. Dissertation, Surakarta: UIN Raden Mas Said.
- Ibrahim, K. (2021). *Character Building in Islamic Schools: Principles and Practices*. Oxford University Press.
- Ihsan. (2020). *Madrasah Berbasis Pesantren*. Yogyakarta: Lkis.
- Juhri. (2021). Manajemen Pembelajaran pada Pendidikan Diniyyah Formal Ulya di Mangkoso: Studi Komparatif pada SMA Islam Athirah Boarding School Bukit Baruga. *Manajerial*, 1(3).
- Kaelan. (2010). *Metode Penelitian Agama Kualitatif Interdisipliner*. Yogyakarta: Paradigma.
- Khan, F., & Haq, I. (2021). *Traditional Teaching Methods in Islamic Education*. Routledge.
- Khozainul Khoiriyah, Iin, Roziqin, Muchammad Miftachur, & Ulfa, Widya Kurnia. (2020). *Pengembangan Kurikulum Pesantren Dan Madrasah: Komponen, Aspek Dan Pendekatan*. Qudwatuna, 3(1).
- Lincoln, Yonna S., & Guba, Egon G. (1985). *Naturalistic Inquiry*. Beverly Hills: Sage Publications.
- Mahmud, A., & Ciftci, Y. (2021). *Islam, Education and Cultural Modernity in Southeast Asia: The Madrasah Tradition*. Routledge.

- Moh. Nazir. (2000). *Metode Penelitian*. Jakarta: Ghalia Indonesia.
- Moh Mundzir. (2023). *Model Penguatan Materi Pendidikan Agama Islam Berbasis Pesantren di Madrasah Aliyah Negeri 1 Banyuwangi dan Madrasah Aliyah Negeri 3 Srono Banyuwangi*. Dissertation, Jember: UIN KHAS.
- Nasution, S. (n.d.). *Metode Penelitian Naturalistik Kualitatif*. Bandung: Rosda Karya.
- Nurmayani. (2017). *Implementasi Kurikulum Dalam Meningkatkan Mutu Lulusan Di Pesantren Ar-Raudlatul Hasanah Medan Sumatera Utara*. Dissertation, Sumatra: Universitas Islam Negeri Sumatera Utara.
- Rahman, A. (2019). *Involvement of Parents and Community in Islamic Education: A Perspective from Indonesian Madrasah*. *Journal of Islamic Educational Research*, 11(3)
- Rahman, H., & Ali, A. (2019). *Digital Learning Tools in Islamic Education: Opportunities and Challenge*. Palgrave Macmillan.
- Ramzi, Muhajirin. (2022). *Digitalisasi Pesantren: Inovasi Media Pembelajaran Pendidikan Agama Islam Berbasis ICT di Pondok Pesantren Nurul Haramain Narmada Lombok Barat*. Dissertation, Mataram: UIN Mataram.
- Rosdakarya, M. (2010). *Metodologi Penelitian Kualitatif*. Bandung: PT Remaja.
- Sanjaya, Wina. (2008). *Kurikulum dan Pembelajaran: Teori dan Praktek Pengembangan KTSP*. Jakarta: Kencana.
- Sugiyono. (2008). *Memahami Penelitian Kualitatif*, dilengkapi contoh proposal dan laporan penelitian. Bandung: Alfabeta.
- Sugiyono. (2016). *Metode Penelitian Pendidikan: Pendekatan Kuantitatif, Kualitatif, dan R&D*. Bandung: Alfabeta.
- Sugiyono. (2016). *Metodologi Penelitian Pendidikan*. Bandung: Alfabeta.
- Sukardi. (2016). *Metodologi Penelitian Pendidikan Kompetensi dan Prakteknya*. Jakarta: Bumi Aksara.
- Sujarweni, Wiratna. (2014). *Metodologi Penelitian*. Yogyakarta: Pustaka Baru.
- Sutrisno Hadi. (2000). *Metodologi Research I*. Yogyakarta: Andi Offset.
- Wina Sanjaya. (2008). *Kurikulum dan Pembelajaran: Teori dan Praktek Pengembangan KTSP*. Jakarta: Kencana.
- Yusuf, A., & Ahmed, R. (2023). *Community Engagement in Islamic Schools: Strategies for Collaboration*. Springer Singapore.
- Zainudin. (2021). *Implementasi Religious Culture di Madrasah: Studi Atas*

Pendidikan Akidah Akhlak Pada  
Madrasah Aliyah Di PP. Qamarul  
Huda Bagu, PP. Nahdlatul Wathan  
Pancor Dan PP. Abu Hurairah  
Mataram. Dissertation, Mataram:  
UIN Mataram.