

TRANSFORMING THE ISLAMIC EDUCATION CURRICULUM THROUGH A DATA-DRIVEN MANAGEMENT APPROACH

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ABSTRACT

This study aims to examine the transformation of Islamic education curriculum through a data-driven management approach at MA Modern Sahid Bogor. In modern education, curriculum development must be based on accurate and relevant data rather than normative assumptions. Using a descriptive qualitative approach, data were collected through interviews, observations, and document analysis involving school leaders, teachers, and curriculum staff. The findings show that data-based management supports adaptive and measurable curriculum planning, implementation, and evaluation. Both academic and non-academic data are utilized to identify student needs, design learning programs, and shape sustainable curriculum policies. This approach also promotes teacher participation and fosters a culture of continuous improvement. By integrating Islamic values, information technology, and modern management principles, curriculum practices become more relevant and effective. The study emphasizes the importance of data literacy among educators and the development of integrated information systems. The main contribution lies in offering a contextual model of data-driven curriculum management that can be replicated by other Islamic schools seeking evidence-based improvements.



INTRODUCTION

Islamic education in the modern era faces the challenge of transforming its curriculum to remain relevant to contemporary demands without losing its foundational identity. The curriculum is no longer merely a compilation of instructional content but a dynamic framework that must reflect developments in science, technology, and the spiritual and moral needs of learners (Aisyah et al., 2023). Therefore, the development of the Islamic education curriculum must be managed systematically and data-driven to ensure that decision-making is accurate and relevant (Mas'ud et al., 2024). A data-driven management approach offers a strategic solution for curriculum administration that is not only efficient but also responsive to students' needs and social change (Schildkamp & Poortman, 2021).

Madrasah Aliyah (MA) is the equivalent of senior high school within Indonesia's Islamic education system. Its uniqueness lies in the integration of general education and Islamic studies, equipping students with both secular knowledge and comprehensive Islamic values. As such, the MA curriculum holds a strategic position in shaping graduates who are intellectually competent and morally grounded. Consequently, curriculum transformation at this level must balance academic demands, character development, and Islamic values (Mardapi et al., 2020).

MA Modern Sahid Bogor, as a progressive Islamic high school, aims to produce graduates who excel in knowledge and character. However, curriculum transformation in this madrasah still faces challenges. One of the main issues is the suboptimal use of data in planning, implementing, and evaluating the curriculum. Decision-making remains predominantly normative and experience-based rather than grounded in systematic data analysis. This results in a curriculum direction that may not align with students' actual needs, local potential, and the evolving demands of the era (Wayman, Cho, & Jimerson, 2020; Suparman, 2021).

On the other hand, there is considerable opportunity to develop a more adaptive curriculum through effective data utilization. Data sourced from assessments, student participation, teacher feedback, and parental involvement can serve as a basis for designing relevant, inclusive, and contextual curricula (Mandinach & Gummer, 2019). The data-driven management approach also aligns with principles of accountability and continuous improvement, which are increasingly emphasized in modern education systems (Jimerson, Wayman, & Parrish, 2021).

The transformation of Islamic education curriculum through data-driven management also resonates with the spirit of the Merdeka Curriculum, which grants schools autonomy to design curricula that suit their specific contexts and learner characteristics (Wang & Tang, 2020). In this context, data management becomes a crucial instrument for determining instructional direction, content, and methods (Rahmawati et al., 2023). Islamic schools are expected to not only provide strong religious content but also address 21st-century competencies such as critical thinking, collaboration, and digital literacy (Marsh & Farrell, 2021).

The central issue at MA Modern Sahid Bogor is the absence of a structured data management system to support curriculum development. Although various forms of data such as learning outcomes, attendance records, and activity documentation are available, they are not optimally used in decision-making. Additionally, gaps remain in teachers' capacity to interpret and use data for curriculum-related purposes (Van Geel et al., 2019). These challenges hinder the development of a curriculum that aligns with students' actual needs and future challenges.

This study aims to analyze the transformation process of the Islamic education curriculum through a data-driven management approach at MA Modern Sahid Bogor. It explores the types of data used, the managerial strategies applied, and the extent to which data-based decision-making

impacts curriculum development in a contextual and Islamic framework. Ultimately, this research is expected to offer both conceptual and practical contributions to curriculum management in Islamic educational institutions.

The approach examined in this study is not only administrative but also reflects the core values of Islamic education. The integration of Islamic values with data-driven curriculum management characterizes this model. Within the madrasah context, such strategies enhance curriculum relevance while preserving the Islamic identity that underpins education. Therefore, the development of models like this is essential amid rapid educational transformation (Datnow & Park, 2019).

METHODS

This research employed a descriptive qualitative approach using a case study method, focusing on the application of data-driven management in the transformation of the Islamic education curriculum at MA Modern Sahid Bogor. Participants included the head of the madrasah, the vice principal for curriculum affairs, Islamic studies teachers, and administrative staff. Data were collected through in-depth interviews, participatory observation, and documentation of curriculum files, education reports, and student performance evaluations. The research site was selected purposively, as MA Modern Sahid Bogor has implemented data-informed curriculum decisions for more than three years.

Data analysis followed the interactive model by Miles, Huberman, and Saldaña (2018), comprising data reduction, data display, and conclusion drawing. Data validity was ensured through triangulation of sources and techniques (Siregar et al., 2025). The key indicators analyzed in this study included: (1) mechanisms for collecting academic and non-academic data; (2) the use of data in curriculum planning and evaluation; and (3) the involvement of teachers and stakeholders in the data-based management process. This research aimed to provide an in-depth description of curriculum management practices grounded in data analysis to enhance the quality of Islamic education.

RESULTS

This study identified three key areas in the application of data-driven management to Islamic curriculum transformation at MA Modern Sahid Bogor.

1. Management of Academic and Non-Academic Data

Interviews with the Vice Principal for Curriculum revealed that MA Modern Sahid Bogor uses a digital system based on Google Workspace to manage student data regularly. The system records academic performance, attendance, character traits, and participation in non-academic activities such as extracurriculars and student organizations.

Table 1. Types and Sources of Data at MA Modern Sahid Bogor

No	Data Type	Source	Frequency	Used By
1	Academic Scores	Subject Teachers	Semesterly	Curriculum, Subject Teachers
2	Attendance	Homeroom, Admin Staff	Daily	Student Affairs, Counselors
3	Character & Ethics	Teachers, Counselors	As Needed	Principal, Counseling Unit
4	Extracurriculars	Club Advisors	Monthly	Student Affairs Department

2. Use of Data in Curriculum Planning

Document analysis of staff meeting minutes indicated that student scores, character evaluations, and attendance data are used to develop differentiated instructional plans. The school principal explained that data are used to group students into remedial, enrichment, or character development programs.

Table 2. Examples of Data Use for Curriculum Policy

No	Data Used	Purpose of Use	Resulting Curriculum Policy
1	Daily Scores	Identifying underachievers	Scheduled Remedial Program
2	Attendance	Detecting at-risk students	Counseling and Home Visit Support
3	Extracurricular Records	Talent and interest mapping	Activity and Competition Planning

3. Teacher Involvement and Data-Based Curriculum Evaluation

Interviews with three Islamic studies teachers and curriculum meeting records confirmed that teachers are actively involved in data-based curriculum evaluation. Teachers analyze learning outcomes and propose revisions to lesson plans and instructional strategies.

Table 3. Teacher Involvement in Curriculum Evaluation

No	Evaluation Aspect	Form of Teacher Involvement	Frequency
1	Learning Outcome Review	Score analysis and discussion	End of Each Semester
2	Lesson Plan and Material Review	Suggestions based on data	Twice per Semester
3	Curriculum Differentiation	Data-informed performance mapping	Quarterly

DISCUSSION

The findings affirm that data-driven management plays a crucial role in transforming the Islamic education curriculum at MA Modern Sahid Bogor. Curriculum development has shifted from normative, routine-based practices to decisions grounded in systematic and holistic data analysis, including academic achievement, student behavior, attendance, and extracurricular engagement. This aligns with Suparman (2021), who argues that Islamic curriculum decision-making becomes more effective when supported by structured, valid data.

The use of data for curriculum planning enables the school to accurately identify students' learning needs. Grouping students into enrichment or remedial tracks based on academic performance and attendance exemplifies personalized learning strategies, supporting Wang and Tang's (2020) view that data enable educators to tailor instruction to student profiles. Here, data serve not only evaluative purposes but also function as a foundation for responsive pedagogical planning.

Curriculum policy-making based on data marks a shift from administratively driven models to evidence-based approaches, rendering curriculum management more adaptive and accountable. Teachers are no longer passive executors of curriculum but become active participants in analyzing data and influencing instructional decisions. This supports Aisyah et al. (2023), who

emphasize that teacher involvement in data-based reflection improves both teaching quality and curriculum effectiveness.

Despite these successes, the study identifies limitations. It mainly focuses on institutional and teacher perspectives, without thoroughly exploring students' and parents' perceptions of the curriculum transformation. Moreover, the current digital data system is still internally managed and not yet fully integrated. Future innovations may include the adoption of big data platforms or real-time dashboards to enhance curriculum responsiveness and quality assurance.

To move forward, Islamic schools must go beyond data collection and prioritize strengthening data literacy among educators. A collaborative approach involving teachers, administrators, and parents in evaluating the curriculum is also essential to ensure that transformation addresses the cognitive, affective, and spiritual needs of learners holistically.

CONCLUSION

The transformation of the Islamic education curriculum through a data-driven management approach at MA Modern Sahid Bogor has resulted in a more adaptive, accountable, and student-centered curriculum model. Data function not only as monitoring tools but also as the foundation for curriculum decision-making, enabling the school to design learning programs that align more closely with students' real conditions. This approach fosters teacher involvement in curriculum planning and evaluation, creating synergy between Islamic values and 21st-century competency development. The transformation process also includes comprehensive analysis of learning outcomes, character development needs, and student learning patterns, which collectively reinforce curriculum effectiveness. Additionally, continuous data use promotes a culture of quality and shared educational direction. The main contribution of this study lies in its conceptual foundation for data-informed Islamic curriculum management. It offers a contextual model that addresses educational demands in the digital era while preserving Islamic identity and pedagogical integrity.

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