Artificial: Journal of Technology, Information, and Communication

https://jurnalnalar.com/index.php/artificial

Vol. 1 No. 2 (2026) 156 – 161

Submitted: 12-10-2026 | Accepted: 20-10-2026 | Published: 06-11-2026

Integration of Artificial Intelligence in Managerial Decision-Making in Islamic Educational Institutions

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Abstract

This study aims to analyze the integration of Artificial Intelligence (AI) into managerial decision-making in Islamic educational institutions, particularly in supporting institutional management effectiveness, improving decision accuracy, and enhancing the quality of educational services. This study employs a descriptive qualitative approach using the library research method. Data were obtained through a review of books, scientific journal articles, and other written sources relevant to the application of artificial intelligence in educational management. The analysis was conducted by identifying, examining, and synthesizing information to gain an understanding of the opportunities, benefits, and challenges associated with implementing AI in managerial decision-making. The findings indicate that AI has the potential to assist leaders of Islamic educational institutions in processing data, identifying institutional needs, mapping problems, planning programs, and evaluating performance more systematically. The use of AI can also support administrative efficiency and provide information as a basis for policy considerations. However, its implementation faces several challenges, including limited digital competencies among human resources, data security and privacy concerns, potential algorithmic bias, and the need for adequate technological infrastructure. Therefore, AI integration should be accompanied by human oversight, improved digital competencies, and the implementation of ethical principles aligned with Islamic values, such as trustworthiness, justice, responsibility, and public benefit. This study concludes that AI can serve as a supporting instrument for more effective and data-driven managerial decision-making, but it cannot replace leadership, ethical judgment, or human wisdom in managing Islamic educational institutions.

Keywords: *Artificial Intelligence, managerial decision-making, Islamic educational management, Islamic educational institutions.*

INTRODUCTION

Digital technology has brought changes to many areas of life, including the management of educational institutions. One technology that is receiving growing attention is *Artificial Intelligence* (AI), a technology that allows computer systems to process information, recognize patterns, analyze data, and generate recommendations. In education, AI has the potential not only to support learning activities but also to be used in administration, program planning, performance evaluation, and decision-making. Research developments show that AI applications in education include adaptive learning, intelligent assessment, predictive analytics, and educational management systems (Wang et al., 2024). This shows that AI has the opportunity to become a supporting instrument for improving the effectiveness of educational institution management.

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Managerial decision-making is an important part of running education because it relates to setting policy, using resources, preparing programs, and resolving institutional problems. Good decisions require information that is relevant, accurate, and accountable. However, the complexity of educational management requires leaders to consider many aspects, from learners' needs, educators' competence, and the availability of facilities and infrastructure to institutional development planning. Under these conditions, AI has the potential to help process data, identify problems, and provide information as material for determining policy. Even so, using AI still requires human oversight because the results of technological analysis need to be adjusted to the context, needs, and real conditions of the educational institution.

Integrating AI in Islamic educational institutions is important to study because their management is oriented not only toward administrative effectiveness and academic achievement but also toward character formation and the application of Islamic values. Islamic educational institutions, such as madrasahs, pesantren, and Islamic universities, need to ensure that technology use is in line with educational goals and moral responsibility. AI can help manage information and support the efficiency of educational processes, but its application also faces challenges in the form of limited infrastructure, digital competence, privacy protection, and potential algorithmic bias. The study by Bastomi et al. (2024) shows that using AI in Islamic education needs to be accompanied by improved digital literacy, infrastructure development, and policies that take Islamic values into account. Therefore, AI integration needs to consider the principles of *amanah* (trustworthiness), justice, responsibility, and public benefit (*maslahah*) so that technology is used not only to improve efficiency but also to support educational goals as a whole.

Besides its technological benefits, applying AI in education requires responsible governance. Personal data protection, institutional readiness, and human involvement in decision-making are important aspects that need attention. UNESCO stresses that the use of generative AI in education needs to be human-centered, pay attention to data security and privacy, and be supported by adequate policy and institutional readiness (Miao & Holmes, 2023). This principle is relevant for Islamic educational institutions because managerial decisions concern not only information processing but also the interests of learners, educators, and the institution's sustainability. Thus, AI needs to be positioned as a tool that strengthens leaders' judgment, not as a substitute for human responsibility and wisdom.

Based on this description, integrating AI in managerial decision-making in Islamic educational institutions needs to be studied in a focused way, especially regarding its benefits, challenges, and fit with Islamic values. This study uses a descriptive qualitative approach with the *library research* method, through a review of books, scientific journal articles, and other relevant written sources. These sources were analyzed to gain an understanding of the role of AI in supporting decision-making, the opportunities for its application in institutional management, and the various aspects that need attention so that its use proceeds responsibly.

This study aims to analyze the integration of *Artificial Intelligence* in managerial decision-making in Islamic educational institutions, identify the benefits and challenges of its application, and examine the alignment of AI use with Islamic values. The study is expected to give conceptual understanding to leaders and managers of Islamic educational institutions in using technology critically, effectively, and responsibly. The discussion focuses on the relationship among AI's function as a managerial decision-support tool, technological limitations, and ethical considerations suited to the characteristics of Islamic education.

METHODS

This study uses a qualitative approach with a descriptive-analytical *library research* design to examine the integration of *Artificial Intelligence* (AI) in managerial decision-making in Islamic educational institutions. Library research was chosen because it allows researchers to examine and synthesize various written sources to obtain a systematic understanding of a problem (Adlini et al., 2022). Planning began by formulating the problem and objectives of the study, followed by searching, selecting, organizing, and integrating findings into a systematic account. The literature search was carried out online through Google Scholar, scientific journal databases, digital libraries, and the official websites of academic publishers during the preparation of the article in 2026. Because it uses library research, this study has no field location and involves no

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informants; instead, scholarly documents are the subject of study. The data sources include books, scientific journal articles, previous research results, and official documents that discuss artificial intelligence, managerial decision-making, and Islamic education management. Data were collected through documentation using the keywords "*Artificial Intelligence in education*", "pengambilan keputusan manajerial", and "manajemen pendidikan Islam". The sources collected were selected based on relevance, recency, publication credibility, and fit with the research objectives. The selected data were analyzed using *content analysis* in three stages. Data reduction was carried out by selecting information that fit the focus of the study. Data presentation was carried out by grouping findings into the themes of AI use in managerial decision-making, the benefits of its application, technological challenges and limitations, and its fit with Islamic values. Conclusions were drawn by synthesizing findings from various sources, while the validity of the review results was maintained by comparing information across sources and checking its fit with the research focus. The document review was carried out systematically to produce interpretations consistent with the content of the sources reviewed (Morgan, 2022).

DISCUSSION

Integration of *Artificial Intelligence* in Managerial Decision-Making in Islamic Educational Institutions

Integrating *Artificial Intelligence* (AI) in managerial decision-making is one effort to support the management of educational institutions so that it is more effective and data-based. AI can help leaders process information, recognize patterns, compile summaries, and provide alternative considerations before setting policy. In Islamic educational institutions, such use can be directed at managing learners, educators, budgets, facilities and infrastructure, and the implementation of educational programs. Information that is arranged systematically can help leaders understand problems and set priorities based on the institution's needs.

Dai, Thomas, and Rawolle (2025) explain that AI can play a role in collecting and analyzing information, while educational leaders retain responsibility for determining policy direction, managing conflict, and involving stakeholders. This view shows that AI should be positioned as a tool, not a substitute for leaders. Technology can provide information, but the final decision still requires human judgment because each institution has different conditions, goals, and needs.

Based on this, integrating AI in Islamic educational institutions needs to begin by identifying the managerial problem to be solved. Leaders need to determine whether the technology is truly needed, what data must be prepared, and how the analysis results will be used. This step is important so that AI application does not merely follow technological trends but gives real benefits for improving the quality of educational management.

The Use of *Artificial Intelligence* in Islamic Education Management Functions

AI has the potential to support various management functions, from planning and organizing to implementing, supervising, and evaluating. At the planning stage, AI can help process data on educators' needs, the number of learners, facility conditions, and budget use. That information can be used as material in preparing work programs and determining priority needs. For example, data on the condition of facilities and infrastructure can help leaders identify which facilities need to be checked or repaired first.

In organizing and implementing, AI can be used to help group documents, compile report summaries, arrange schedules, and support the coordination of administrative work. Meanwhile, at the supervision and evaluation stage, the technology can help compare targets with program achievements and indicate parts that need further examination. Such use has the potential to reduce the time needed for routine work so that education staff can focus more on tasks that require communication and professional judgment.

Even so, AI processing results do not always describe the whole condition of an institution. For example, low learner outcomes cannot be directly regarded as the result of teacher

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performance because they can be influenced by facilities, attendance, family environment, and other learning factors. Therefore, information produced by AI needs to be checked and compared with real conditions before being used as a basis for policy. Thus, the use of AI in management functions must be accompanied by oversight so that the decisions taken remain in line with the institution's needs.

Benefits and Opportunities of *Artificial Intelligence* Integration

One benefit of AI in managerial decision-making is helping speed up information processing and improve administrative work efficiency. Data that were previously scattered across various documents can be processed into more structured information. This can make it easier for leaders to understand the institution's condition, prepare reports, and determine which aspects need attention. In addition, data analysis can help institutions recognize patterns of problems so that corrective action can be planned in a more focused way.

Nguyen (2026) identifies predictive analytics, automation of operational work, and data-based decision-making as potential uses of AI in educational management. These findings show that technology can support managerial processes when used according to need and supported by adequate governance. In the Islamic education context, these opportunities can be used to help with program planning, administration management, and the evaluation of resource use.

Efficiency should not be the only measure of the success of AI application. A quick decision is not necessarily correct if the data used are incomplete or the system's recommendations do not fit field conditions. Therefore, the benefits of AI need to be assessed by its ability to help solve problems, improve the accuracy of information, and support the quality of educational services. Technology used appropriately can support management, while application without planning risks adding costs and new work.

Challenges and Risks of Applying *Artificial Intelligence*

Applying AI in Islamic educational institutions faces a number of challenges, especially related to data quality, user ability, technological infrastructure, and information protection. Incomplete or inaccurate data can produce mistaken analysis. In addition, limited internet access and devices can hinder consistent technology use. Differences in digital ability among educators and education staff also need attention so that AI use is not mastered by only some users.

Other risks relate to privacy, bias, and clarity of responsibility. Information about learners, teachers, and parents needs to be managed carefully so that it is not used improperly. AI recommendations should also not be directly regarded as objective because their results can be influenced by the quality and characteristics of the data used. Chen and Ma (2026) stress the importance of responsible AI application that attends to fairness, transparency, security, privacy, and the role of humans in educational leadership.

To face these challenges, educational institutions need to draw up rules for AI use, restrict access to sensitive data, give users training, and check analysis results before making decisions. Application can also be carried out in stages, starting from administrative work whose needs are clear and whose risks can be controlled. Through these steps, institutions can evaluate the benefits of the technology and correct shortcomings before expanding its use.

Integration of *Artificial Intelligence* Based on Islamic Values

Applying AI in Islamic educational institutions needs to consider the values that underlie the provision of education. *Amanah*, justice, responsibility, and *maslahah* can be used as an ethical framework to assess technology use. The value of *amanah* relates to the obligation to protect data and use information responsibly. Justice requires that decisions consider the needs of various parties proportionally, while responsibility requires leaders to be willing to check analysis results and be accountable for the policies they set.

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As an illustration, AI can help process data on the condition of school or madrasah facilities to determine which needs should be prioritized. However, the system's recommendations must still be checked by leaders, taking into account urgency, safety, equitable access, and the availability of budget. In this way, decisions are oriented not only to data-processing results but also to justice and benefit for members of the educational institution.

The value of *maslahah* can also serve as a consideration to ensure that AI use truly supports the improvement of educational quality, not merely easing administrative work. Technology should help educators and education staff perform their tasks better without removing the human role in character formation, communication, and problem-solving. Therefore, using AI in Islamic education needs to combine technical considerations with moral responsibility so that the resulting decisions remain in line with educational goals.

Overall, this literature review shows that AI has opportunities to support managerial decision-making through data processing, administrative efficiency, and program evaluation. However, these benefits depend on data quality, human resource readiness, information security, and leaders' ability to assess analysis results. In Islamic educational institutions, AI application also needs to consider the values of *amanah*, justice, responsibility, and *maslahah*. Thus, AI should be positioned as a decision-support tool, while authority and responsibility for policy remain with the leaders of the educational institution.

CONCLUSION

Based on the results of the literature review, integrating *Artificial Intelligence* (AI) in managerial decision-making in Islamic educational institutions has the potential to support administrative efficiency, information processing, planning, and the evaluation of educational programs. AI can help leaders obtain more structured information as material for setting policy. However, these benefits depend on data quality, human resource readiness, information protection, and leaders' ability to examine analysis results critically. This study affirms that AI should function as a tool, not a substitute for the role and responsibility of humans in decision-making. In the Islamic education context, its application needs to consider the values of *amanah*, justice, responsibility, and *maslahah* so that technology supports the improvement of educational quality responsibly. The implication of this study is the need for improved digital competence, good data governance, and clear guidelines for AI use in educational institutions. Because this study uses library research, future studies can conduct field research to learn directly about AI application practices, benefits, and obstacles in Islamic educational institutions.

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