

Educational Technology and Innovation in Islamic Education Planning

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ABSTRACT

The purpose of this research was to analyze the application of educational technology and innovation in Islamic education planning in the digital era. This study used literature research methods and qualitative descriptive approaches to explore various literature related to the concept of educational technology, curriculum innovation, collaborative learning models, planning of technology-based facilities and infrastructure. The findings of the study show that the use of technologies such as blended learning, immersive learning (VR/AR), and the integration of digital literacy into the Islamic education curriculum can increase the effectiveness, interactivity, and relevance of learning to the needs of the 21st century. In addition, innovation in human resource development and education budget management is the key to further application of technology in Islamic educational institutions. By integrating Islamic values and technological advancements, the Islamic education system can transform to be more adaptive, innovative and competitive in facing the challenges of the digital era.

Keywords: *Educational Technology; Educational planning innovation; Immersive Learning.*

INTRODUCTION

The world has entered the era of the Industrial Revolution 4.0 and Society 5.0, where every aspect of human life depends on the internet and digital technology. This period has brought significant transformations in various sectors, including economics, politics, culture, art, and education. Indonesia's education system is currently facing challenges associated with these changes. Education and learning in schools are closely related to the dynamics of globalization. In facing this global era, Indonesian society is expected to undertake reforms in the education sector to promote educational advancement (Syuroiyah Nadliroh & M. Yahya Ashari, 2024).

The rapid advancement of technology in the current digital age has significantly influenced various aspects of life, including the education sector. With its numerous advantages, technology provides fast and limitless access to information, enabling learners to easily obtain educational materials (Eka Nurillahwaty, 2021). In the context of Islamic education, the use of technology plays a crucial role in creating adaptive and interactive learning environments that remain aligned with Islamic values.

One of the main challenges still faced by the education sector, from elementary to higher education levels, concerns the issue of quality. This challenge can be addressed through the application of educational technology approaches (Sudi Suryadi, 2019). Innovation in education must be analyzed carefully to develop learning methods that meet the needs of modern students while upholding Islamic principles. Moreover, the use of technology in developing the infrastructure of Islamic education is essential to support effective teaching and learning processes. Through well-structured planning, Islamic educational institutions can create learning environments that are comfortable, effective, and capable of fostering both intellectual and spiritual growth among students.

Based on the explanations above, the purpose of this study is to analyze various forms of educational innovation that are consistent with Islamic principles and to plan the development of facilities and infrastructure that support the implementation of technology in Islamic education. The findings of this research are expected to contribute to enhancing the quality of Islamic education, making it more modern, competitive, and aligned with the challenges and dynamics of the digital era.

METHOD

The research method employed in this study adopts a qualitative descriptive approach, with library research as the primary focus of analysis (Muaddyl Akhyar & Ilpi Zukdi, 2025). The aim is to explore and analyze various innovations and applications of educational technology in the planning and development of the education system in Indonesia. This literature study and review were conducted by examining a range of scholarly articles, reports, and research findings published within the last five years. The main focus of this study is to identify patterns, strategies, and relevant research findings related to the utilization of technology and educational innovation in supporting the effectiveness of adaptive and sustainable educational planning.

FINDINGS AND DISCUSSION

A. The Concept of Educational Technology and Innovation in Islamic Education Planning

The original definition of educational technology was audiovisual communication. Ely (1963) stated, "Audiovisual communication is a field of educational theory and practice primarily concerned with the design and use of messages that guide the learning process." In this sense, audiovisual education refers to a field of educational theory and practice that focuses on designing and utilizing messages that shape the learning process. This concept generally equates educational technology with audiovisual education and communication. According to the AECT Definition Committee (as cited in Emilia & Muhammad Rifky Azmi, 2016), "Educational technology is a field involved in the improvement of human learning through the systematic identification, development, organization, and utilization of learning resources, as well as the management of these processes." (AECT, 1972)

Educational innovation refers to the introduction of new ideas or practices aimed at solving problems in the field of education. It encompasses all components of the educational system, both at the institutional level in a narrow sense and at the national education system level in a broader sense. Innovations in education may take various forms, ranging from products to systems. For example, a teacher might develop instructional media or implement new teaching methods such as question-and-answer-based learning and other strategies. Depending on how these innovations are utilized, they can generate new ideas, simplify educational processes, and drive progress within the education sector (A. Rusdiana, 2014).

According to Nur Kholifah (2021), the word innovation in English refers to something new or the act of making something new. Its verb form, innovate, means “to change” or “to renew.” Therefore, innovation represents a new change that leads to improvement (Azisi, Dwi Juli Priyono, & Nurfaiza, 2025). The Encyclopedia of the Indonesian Language defines innovation as the introduction or creation of new discoveries—whether entirely new, modified from existing ones, or different from known ideas, methods, or tools.

Meanwhile, educational planning is defined as an intellectual process involving continuous analysis, synthesis, evaluation, and decision-making. The decisions made must be internally coherent and aligned with other related decisions (fundamental consistency), both within the educational sector itself and across other areas of development. This type of activity has no fixed time limit and must be carried out in sequence with other developmental activities (Azisi, Priyono, & Nurfaiza, 2025).

B. Analysis of Educational Innovation in Islamic Education

The analysis of educational innovation in Islamic education emphasizes the implementation of new technological models, media, and curricula that enhance the quality of learning while holistically and adaptively preserving Islamic values.

1. Blended Learning Model

Blended learning is a learning model that integrates traditional face-to-face instruction with electronic or online learning through internet-based platforms (Nurul Indah Wahyu Ningsih & Fitri Yuliana, 2024). This instructional strategy enables educators to combine classroom interactions with digital learning activities using various technological applications to achieve specific educational goals.

According to Singh (2003, as cited in Wahyu Ningsih & Yuliana, 2024), the implementation of blended learning has become increasingly widespread across both formal and non-formal educational institutions due to its ability to integrate direct and virtual learning resources. To achieve optimal outcomes, its application involves several stages: determining learning materials, designing instructional models, selecting online formats, testing the system, implementing the learning process, and evaluating the effectiveness of the program. Furthermore, system trials are essential to ensure that the chosen methods are both effective and efficient before being implemented on a larger scale.

The implementation of blended learning should be accompanied by a comprehensive evaluation to assess learning effectiveness and identify necessary improvements. Through such evaluation, blended learning can promote a more dynamic, interactive, and technologically aligned educational experience, ultimately improving the overall quality of learning within Islamic education frameworks.

2. Interactive Learning Media Based on Immersive Technology

In the current era of digital transformation, immersive learning has emerged as one of the most relevant and essential educational approaches. This method utilizes technologies such as Virtual Reality (VR) and Augmented Reality (AR) to create more engaging and interactive learning experiences. The use of Virtual Reality (VR) has been proven to effectively enhance students' communication skills. Through interactive and realistic learning environments, learners can practice speaking and listening with greater confidence and effectiveness (Azisi, Priyono, & Nurfaiza, 2025).

Meanwhile, Augmented Reality (AR) serves as a gateway to the virtual world applied within real-world contexts in both 2D and 3D formats, enabling direct comprehension, observation, and experiential learning. AR has also been shown to be highly effective in science and technology education due to its realistic 3D visualizations and support for real-time practice (Yuthsi Aprilinda et al., 2022).

This approach provides a more immersive, realistic, and contextual learning experience, allowing students not only to understand theoretical concepts but also to experience their application in simulated real-world situations. The primary advantage of immersive learning lies in its ability to improve comprehension, engagement, and the overall effectiveness of the learning process. However, this method still faces certain challenges, such as high implementation costs, limited technological infrastructure, and restricted access to devices and content. Therefore, the integration of immersive learning into curricula and training programs represents a strategic step toward preparing a generation that is adaptive, interactive, and ready to face future challenges (Lovandri Dwanda Putra et al., 2024).

Immersive learning through technologies such as VR and AR is also highly relevant to the context of Islamic education. This method can create interactive and context-rich experiences—such as understanding Islamic teachings, performing worship practices, or interpreting Qur'anic verses in a clear and engaging manner. Although challenges remain, particularly regarding cost and device availability, the integration of immersive learning into Islamic education has the potential to significantly enhance students' understanding of Islamic principles and increase their learning motivation.

In conclusion, this technological innovation serves as a strategic tool to ensure that Islamic education systems remain modern, relevant, and flexible in responding to the dynamic developments of the contemporary world.

3. Integrative Curriculum Based on Digital Literacy

Curriculum innovation in Islamic education today involves not only the inclusion of Information and Communication Technology (ICT) as a subject but also the

integration of digital literacy and digital ethics (akhlaq digital)—that is, Islamic perspectives on responsible and moral use of digital media—across all subjects, including Fiqh, Aqidah, and Akhlak.

A study by M. Mujaab Ali Ma'sum and Khuriyah (2025) found that digital literacy has begun to be integrated into the Islamic Religious Education curriculum through three stages: planning, implementation, and evaluation.

a. Planning

At the planning stage, educational institutions develop learning modules that support digital literacy. These modules incorporate the use of digital media and tools into lesson plans (Rencana Pelaksanaan Pembelajaran, RPP) and emphasize project-based learning strategies. This stage is crucial for setting clear directions and preparing both teachers and students for digital-based instruction.

b. Implementation

During the implementation stage, teachers actively integrate various digital media such as e-books, instructional videos, online learning applications, and digital platforms that facilitate interactive communication between teachers and students. This process not only enhances teaching methodologies but also develops students' digital competencies grounded in Islamic values such as responsibility (amanah), honesty (şidq), and courtesy (adab) in the use of digital media.

c. Evaluation

In the evaluation stage, students' digital literacy skills are assessed using digital tools and applications. This allows teachers to measure the extent to which digital literacy has become an integral part of the learning process. Digital-based assessment also ensures more objective and efficient evaluation in line with the advancement of educational technology.

Educational innovation represents a medium-scale transformation aimed at broadening and enriching functional perspectives within education. In this context, the concept of educational development is embedded in planning processes, where educators or institutions devise strategic frameworks to solve specific problems. The development of the Islamic education curriculum should be conducted progressively, in accordance with the principle of relevance, which implies that the curriculum evolves in alignment with the demands of its time. Such evolution is essential to address the challenges of the 21st century and to implement practical Islamic educational theories, enabling learners to engage more deeply with the material (Ramadhoni Aulia Gusli et al., 2024).

Gradual transformation in the Islamic curriculum—based on the principle of contextual adaptation—is, therefore, a hallmark of educational innovation. The curriculum should not merely serve as a medium for delivering knowledge but also as a platform for developing 21st-century competencies, such as critical thinking, collaboration, and technological literacy. Consequently, the development of an integrated Islamic education curriculum enriched with digital literacy and digital ethics

is expected to foster a generation of Muslims who are adaptive, creative, and morally grounded in Islamic teachings—fully prepared to face the challenges of the digital age.

4. Collaborative Learning Model

Collaborative Learning as an Effective Educational Innovation in Enhancing Social Relationships, Active Participation, and Students' Critical Thinking. Collaborative learning represents one of the most effective educational innovations for enhancing students' social relationships, active participation, and critical thinking skills. This concept emphasizes collaboration and cooperation among students in achieving shared learning objectives. Through this approach, students are not merely recipients of information but also contributors to knowledge through discussions and group activities.

Empirical evidence shows that the implementation of this model occurs through three main stages: planning, implementation, and evaluation. In the planning stage, teachers design learning activities that promote active interaction, form balanced study groups, and determine strategies suited to students' learning characteristics. During the implementation stage, teachers act as facilitators who guide and ensure that every student participates actively in the collaborative learning process. In the evaluation stage, assessment is carried out to measure both the collective performance of the group and the individual contribution of each member in order to determine the overall effectiveness of collaborative learning (Siti Munfiatik, 2023).

It can be concluded that collaborative learning makes a significant contribution to improving the quality of education. This model aligns with the theory of social constructivism, which posits that knowledge is constructed through social interaction and shared learning experiences. Collaboration within groups allows students to exchange ideas, refine their understanding, and collectively develop solutions to learning challenges.

However, the implementation of collaborative learning also faces several challenges and obstacles. These include disparities in students' abilities within groups, lack of social skills, resistance to collaboration, and technical constraints such as limited time and learning resources. To overcome these barriers, teachers should adopt adaptive strategies such as providing social skills training, assigning clear roles within groups, and closely monitoring group dynamics.

By understanding the concept, implementation stages, and potential challenges, collaborative learning can be applied more effectively in the learning process. This approach not only enriches students' learning experiences but also cultivates collaboration skills and interpersonal communication — essential competencies for the 21st century. Successful implementation of this model is expected to improve learning outcomes, foster a spirit of cooperation, and create a more participatory and meaningful learning environment for students.

C. Planning Educational Infrastructure for Islamic Education Based on Technology

A comprehensive study on technological infrastructure is essential to create a flexible and relevant learning environment. This research aims to formulate

infrastructural strategies that not only address technical requirements but also incorporate the principles and values of Islamic education in order to establish a holistic educational system.

The following represents an effective plan for managing the facilities and infrastructure of Islamic education:

1. Network Infrastructure and Hardware

The planning process should include the development of a stable and sufficient internet network, as well as the provision of various hardware such as computers, laptops, projectors, and supporting devices for AR/VR technology. In addition, a reliable electricity supply—including backup resources such as UPS and generators—must be ensured as a critical component.

Optimizing the information technology (IT) network and infrastructure in educational institutions plays a crucial role in enhancing the quality of education and preparing students for the digital era. Through improvements in network speed, the development of e-learning systems, and the provision of adequate digital resources, schools can foster a dynamic, interactive, and collaborative learning environment. Moreover, the training of IT personnel serves as a key determinant of successful implementation. Overall, strengthening IT infrastructure not only increases the efficiency of learning processes but also promotes an inclusive, innovative, and competitive education for the future (Gildan Jaya Muhammad Ramadhan, 2024).

Thus, the integration of technological advancement and Islamic education will produce a learning system that is not only flexible in responding to historical developments but also firmly grounded in moral and spiritual principles.

2. Human Resource (HR) Development

Human resource development (HRD) is a crucial factor in enhancing the quality and performance of organizations, including Islamic educational institutions. This effort not only focuses on improving technical skills but also on fostering competence, motivation, and job satisfaction to ensure that staff members can contribute optimally. Enhancing education, training, and competency development are essential steps toward creating innovative and highly competitive human resources.

In the context of Islamic education, HRD also serves to strengthen the professionalism of educators by integrating educational technology and applying Islamic values in the learning process. However, human resource development continues to face several challenges, such as limited funding, unequal access to training opportunities, and the rapid pace of technological change (Farida Dwi Rahmawati et al., 2024).

To address these issues, collaboration among the government, educational institutions, and the private sector is required to build a sustainable HR development ecosystem. Several strategies can be implemented, including improving access to quality education, promoting a culture of lifelong learning, and implementing mentoring and coaching systems supported by technology. Through these measures, it is expected that human resources will emerge with strong competencies, adaptability, and readiness to

face global challenges while maintaining spiritual values and work ethics consistent with Islamic teachings.

3. Budgeting and Sustainability Aspects

Budgeting is a vital instrument used by governments to guide social and economic development, ensure sustainability, and enhance the quality of life within society. It also functions as a short-term planning tool that translates various programs into more concrete annual financial plans. Before being approved as an official budget, proposed allocations are typically reviewed by higher-level authorities (Ramlah Basri, 2013).

Budgeting plays a crucial role in maintaining sustainable financial performance within organizations. It serves not only as a tool for planning and control but also as a comprehensive strategic approach encompassing long-term planning, operational efficiency, risk mitigation, and sustainable performance improvement. Through well-designed budgeting, organizations can more accurately forecast revenues and expenditures, as well as allocate resources effectively. The budgeting process also enhances operational efficiency by enabling institutions to monitor spending, manage inventory, and adjust performance targets in response to market changes.

Moreover, budgeting acts as a mechanism for risk reduction by establishing reserve funds and contingency plans to address economic uncertainty. Integrating sustainability principles into budgeting strengthens corporate social responsibility and supports environmentally friendly projects that prioritize long-term impact (Muammar Khaddafi et al., 2024).

In the fields of technology, education, and innovation, effective planning and budgeting are key to the success of digital transformation in Islamic education. Achievements in areas such as e-learning, digital media, and modern learning systems depend on sound financial management and institutional budget sustainability. Islamic schools must integrate sustainability and efficiency into their budgeting frameworks to ensure the smooth implementation of technological innovations.

Analytical technologies and cloud-based systems can assist institutions in tracking fund utilization transparently and accurately. Adaptive and well-targeted budgeting within Islamic educational institutions not only improves the quality of learning but also fosters a culture of innovation rooted in Islamic values, harmoniously aligned with the dynamics of contemporary technological advancement..

CONCLUSION

Based on the results and discussion, it can be concluded that the implementation of educational technology and innovation in Islamic education planning plays a crucial role in enhancing the quality of learning, making it more interactive and relevant to contemporary developments. Technologies such as blended learning and immersive learning can create more contextual and in-depth learning experiences. Likewise, curriculum innovations based on digital literacy help integrate the values of digital ethics

into every subject, thereby nurturing a generation of Muslims who are characterized, creative, and technologically literate.

Furthermore, the management of facilities and infrastructure, human resource development, and sustainable budgeting are critical factors in supporting the successful implementation of educational technology. The synergy between innovation, strategic planning, and Islamic values is essential in strengthening the foundation of Islamic education toward an adaptive, effective, and future-oriented learning system.

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