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Implementation of The Education Digitalization Policy: Analysis of Strategies and Challenges in The Transformation of Islamic Higher Education at STAI Riyadul Jannah Subang

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ABSTRACT

Digital transformation has become a strategic necessity for higher education institutions in the era of the Fourth Industrial Revolution and Society 5.0. However, gaps remain between digitalization policies and their implementation in Islamic Higher Education Institutions (PTAI). This study examines digital transformation strategies, organizational readiness, and implementation challenges at STAI Riyadul Jannah Subang. Using a descriptive qualitative approach, data were collected through interviews, observations, documentation, and Likert-scale questionnaires, then analyzed using the Miles and Huberman interactive model. The novelty lies in examining the relationship between leadership commitment, policy implementation, and human resource readiness within an Islamic higher education institution. The findings reveal that leadership support (4.00) and digital policy implementation (3.91) are categorized as high, supported by the Learning Management System (LMS) and E-Campus Academic Information System (SIAKAD). However, lecturers' digital competencies (3.09), students' digital literacy, LMS standardization, and infrastructure remain challenges. These findings highlight the importance of strengthening human resource competencies and digital infrastructure to achieve sustainable digital transformation and improve academic service quality.

Keywords: *Digital transformation, Education policy, LMS, Islamic higher education*

ABSTRAK

Transformasi digital telah menjadi kebutuhan strategis bagi institusi pendidikan tinggi di era Revolusi Industri Keempat dan Society 5.0. Namun, masih terdapat kesenjangan antara kebijakan digitalisasi dan implementasinya di Perguruan Tinggi Keagamaan Islam (PTAI). Studi ini mengkaji strategi transformasi digital, kesiapan organisasi, serta tantangan implementasi di STAI Riyadul Jannah Subang. Dengan menggunakan pendekatan kualitatif deskriptif, data dikumpulkan melalui wawancara, observasi, dokumentasi, dan kuesioner berskala Likert, kemudian dianalisis menggunakan model interaktif Miles dan Huberman. Kebaruan penelitian ini terletak pada pengkajian hubungan antara komitmen kepemimpinan, implementasi kebijakan, dan kesiapan sumber daya manusia di lingkungan perguruan tinggi Islam. Hasil penelitian menunjukkan bahwa dukungan kepemimpinan (4,00) dan implementasi kebijakan digital (3,91) tergolong tinggi, yang didukung oleh penggunaan *Learning Management System* (LMS) dan Sistem Informasi Akademik (SIAKAD) E-Campus. Akan tetapi,

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kompetensi digital dosen (3,09), literasi digital mahasiswa, standardisasi LMS, serta infrastruktur masih menjadi tantangan. Temuan ini menegaskan pentingnya penguatan kompetensi sumber daya manusia dan infrastruktur digital guna mencapai transformasi digital yang berkelanjutan serta meningkatkan kualitas layanan akademik.

Kata Kunci: Transformasi digital, Kebijakan pendidikan, LMS, Perguruan Tinggi Islam

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A. INTRODUCTION

Digital technology has shifted from a supportive add-on to a foundational pillar in governing global education system. Driven by the demands of Industry 4.0 and Society 5.0, as well as the imperative adaptation triggered by the COVID-19 pandemic in 2020, educational institutions are compelled to embed digitalization directly into learning management, administration, and institutional governance. In response to this paradigm shift, the Indonesian government—through the Ministry of Education, Culture, Research, and Technology alongside the Ministry of Religious Affair (Riko Pandu Wijaya, 2025)—established a comprehensive national framework. Key initiatives such as the Blueprint for Digital Transformation of Higher Education, Merdeka Belajar–Kampus Merdeka, Pusdatin, SPADA, EMIS 4.0, SIMPATIKA, and the PTKI Smart Campus program collectively serve as the structural backbone intended to guide academic institutions toward systematic modernization.Amidst these developments, several research gaps remain that require attention. Research on educational digitalization has so far focused on large schools or universities with stronger resource capacity. Meanwhile, studies on the implementation of educational digitalization in small-to-medium PTKI (Islamic Higher Education Institutions) like STAI Riyadul Jannah Subang are still limited. Furthermore, most previous studies have focused on the use of e-learning or LMS without considering their connection to national systems such as EMIS, SIMPATIKA, and Pusdatin (Data Center for Data and Information), which are at the core of the special education digitalization policy under the Ministry of Religious Affairs. There is also a paucity of research evaluating the effectiveness of digitalization in improving access, quality, and equity in education at small, regional institutions. The aspects of digital ethics and Islamic values in the digitalization process are also relatively rarely addressed, despite their high relevance in the context of Islamic higher education.

Educational digitalization policies within medium-sized Islamic higher education institutions require a comprehensive analysis to evaluate their practical implementation and overall effectiveness. This research examines the implementation of digital policies at STAI Riyadul Jannah Subang, investigating how digital technologies improve access, quality, and equity in education while identifying the technical and operational challenges encountered during transformation. Furthermore, the study explores how ethical perspectives and Islamic values shape academic responses to digital technology, particularly within the context of artificial intelligence, big data, and modern information

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systems. By integrating technical evaluation, policy assessment, and foundational values, this research provides a holistic examination of digital transformation in higher education governance.

The research objectives are formulated to provide an in-depth overview of the implementation of the education digitalization policy at STAI Riyadul Jannah Subang, evaluate the effectiveness of the use of digital technology in supporting the improvement of education quality, identify supporting and inhibiting factors in its implementation, and examine the relevance of digital ethics and Islamic values in the dynamics of technological transformation in the PTKI environment. Furthermore, this research is directed to produce policy recommendations that can encourage the creation of a more targeted, sustainable digital transformation that is in accordance with the character of Islamic higher education.

This research contributes theoretically to the literature on educational digitalization, change management, and Islamic education policy in small universities—a context frequently overlooked in academic discourse. Practically, it guides institutional leaders toward designing structured digitalization strategies, assists government entities in evaluating regional policy implementation, and equips faculty and students with ethics-based digital literacy. Thus, this study addresses a critical gap in supporting the digital transformation of Islamic higher education across Indonesia.

Existing literature on digital transformation in higher education highlights several critical dimensions of policy implementation.) demonstrated that organizational readiness and human resource digital literacy are the primary determinants of successful digitalization. Focusing on religious institutions, identified persistent structural barriers within Islamic Higher Education Institutions (PTAI), particularly regarding financial constraints and inadequate technological infrastructure. Furthermore, underscored the imperative role of strategic change management in executing digital policies effectively (Zaenal Abidin, 2025). Despite these valuable insights, prior studies have predominantly focused on larger or state institutions, leaving a noticeable empirical gap regarding regional Islamic colleges like STAI Riyadul Jannah Subang. This research addresses this critical gap by investigating how localized institutional dynamics and values shape digital policy adoption in smaller, regional settings.

B. METHOD

This study employs a qualitative approach with a descriptive method to gain an in-depth understanding of the educational digitalization policy implementation at STAI Riyadul Jannah Subang, including its underlying dynamics, operational challenges, and institutional impacts. A qualitative paradigm is particularly suitable for examining educational digitalization as a complex social phenomenon that extends beyond quantitative metrics, requiring nuanced interpretation of the experiences, perceptions, and practices of the academic community. This approach allows the researchers to capture the complete contextual environment of policy execution, actor interactions, and the emerging digital culture on campus (Catur Priyo Utomo, 2026).

The research was conducted at STAI Riyadul Jannah Subang, an Islamic higher education institution undergoing active digital transformation through the integration

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of a Learning Management System (LMS), SIAKAD, EMIS, SIMPATIKA, and technology-driven administrative services. Fieldwork took place during the active academic semester from November 1 to November 14, 2025, enabling direct observation of digital media utilization in classroom instruction and academic operations. The primary object of research encompasses digitalization policy implementation—specifically institutional strategies, technological infrastructure, implementation quality, observed impacts, and field challenges. The research subjects comprise campus leaders, faculty members, administrative staff, and students directly involved in digital operations. Key informants selected through purposive sampling include Afif Nurseha (institutional leader), Ryan Herdiana (lecturer), and two students, Kamila Nuraeni and Sofiyan Azharu, chosen for their direct experience and active engagement with the institution's digital platforms.

Data were obtained through three main techniques: in-depth interviews, observation, and questionnaires. Semi-structured interviews were conducted to explore informants' experiences and perceptions regarding digitalization implementation, technological readiness, lecturers' and students' digital competencies, and the Islamic values they use in assessing technology use. Observations were conducted in classrooms, the LMS system, SIAKAD (Academic Information System), and digital administration activities to directly observe how the systems are used in daily practice. Furthermore, researchers used a Likert-scale questionnaire administered to eleven respondents to strengthen the general perception of the academic community regarding policy support, infrastructure readiness, digital literacy, the effectiveness of online learning, and the technical-cultural challenges that arise during the digital transformation.

Data analysis was conducted using the Miles and Huberman interactive model, which includes data reduction, data presentation, and conclusion drawing. Data reduction began at the initial stage, when researchers began selecting, categorizing, and focusing interview, observation, and questionnaire data on key themes such as LMS effectiveness, digital academic system integration, user perceptions of campus policies, technical barriers, and Islamic values influencing digitalization practices. Once the data was reduced, the findings were presented in narrative form, tables, or matrices, making it easier for researchers to see patterns, trends, and relationships between key elements in the implementation of digitalization policies. The next stage was drawing conclusions, which was carried out gradually through an iterative verification process, comparing data from various sources to obtain a valid and consistent picture of the research phenomenon.

To ensure data credibility, researchers applied triangulation techniques to both sources and data collection techniques. Source triangulation was conducted by comparing the opinions of leaders, lecturers, and students on the same issue. Technical triangulation was conducted by matching interview, observation, and questionnaire data. Furthermore, researchers conducted member checking by asking informants to review the interview summary to ensure that their interpretations did not deviate from their stated intent. Official documents such as academic guidelines, system reports, and campus digital policies were also used as comparative material to enhance the validity of the findings.

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This study also adhered to ethical research principles. Informants were informed of the research objectives before the interviews, personal data was kept confidential, and all findings were used solely for academic purposes. Furthermore, campus digital data management adheres to the principles of prudence and the value of trustworthiness as taught in Islamic ethics, particularly regarding privacy protection, information integrity, and fairness in digital access. With such a methodology, this research is expected to be able to produce in-depth, valid, and scientifically accountable findings regarding how the digitalization policy of education is implemented in the context of Islamic higher education, especially at STAI Riyadul Jannah Subang, along with all the accompanying dynamics.

C. RESULT AND DISCUSION

1. Review of the National Education Digitalization Policy (Ministry of Education and Culture and Ministry of Religious Affairs 2020-2025)

1.1. Ministry of Education and Culture-Research and Technology Digitalization Policy

The Ministry of Education and Culture-Research and Technology's education digitalization policy for the 2020–2025 period focuses on accelerating educational transformation through the use of technology to improve access, quality, and efficiency of the national education system. One of its initial milestones was the Merdeka Belajar (Freedom to Learn) program, which positions digital technology as a catalyst for improving learning quality. Through this policy, the Ministry of Education and Culture developed various digital platforms such as Merdeka Mengajar (Freedom to Teach), the Merdeka Campus Platform, Digital Learning Resources, and Rumah Belajar (Learning House), as well as enhancing the integration of Dapodik (Education Data Center) as the national education data center (Saleh Sarifudin, 2024).

This policy is also reinforced by the 2021–2024 National Digital Roadmap, which emphasizes the importance of digital transformation in the education sector through four main pillars: developing digital education infrastructure, strengthening teacher and student digital literacy, providing quality digital content, and improving data-driven education governance. At the higher education level, digital transformation is driven through the Kampus Merdeka program, which promotes hybrid learning, digital learning resources, and the integration of academic systems within the PDDikti (Independent Campus Program). This policy positions technology as a key element in expanding access and flexibility in learning (Augustin Rina Herawati, 202R).

Furthermore, the Ministry of Education and Culture emphasizes the importance of data interoperability by introducing Digital Talent Management, the Education Report Platform, and the National Digital Learning System (PBDN), designed to serve as the center of the digital ecosystem for all educational institutions. This policy also explicitly mandates the development of a Learning Management System (LMS) at every higher education institution to support online and blended learning. Thus, digitalization is understood not merely as the provision of devices, but as a systemic change encompassing curriculum, learning methods, data management, and digital literacy.

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At the national level, the Ministry of Education and Culture's 2020–2025 policy aims to create a more adaptive, efficient, inclusive, and data-driven education system. This framework is relevant to the context of Islamic higher education, which is also required to adapt to global changes and the needs of a digital society.

1.2. Ministry of Religious Affairs (Kemenag) Education Digitalization Policy

The Ministry of Religious Affairs, as the institution overseeing Islamic Religious Higher Education (PTKI), has a more specific digitalization policy relevant to this research. PTKI's digital transformation is directed through the 2020–2024 Islamic Education Digitalization Roadmap, the PTKI Digital Transformation Blueprint, and priority programs such as strengthening the Education Management Information System (EMIS), SIMPATIKA, SPADA-PTKI, and the Religious Higher Education Data Center (Pusdatin).

EMIS serves as a centralized data center for Islamic education, covering madrasahs (Islamic schools), Islamic boarding schools (pesantren), higher education institutions, teachers, and education personnel. The modernization of EMIS since 2020 aims to improve data accuracy and integration through a cloud-based system that is more stable, faster, and easier to access. Meanwhile, SIMPATIKA serves as the basis for data collection for Islamic Religious Education teachers and lecturers, including workload management and certification. This policy strengthens the governance of Islamic education data, which was previously scattered and unintegrated.

In the field of learning, the Ministry of Religious Affairs developed SPADA-PTKI, a national online learning platform for Islamic higher education institutions. SPADA-PTKI aims to provide digital content, online classes, and collaboration between PTKIs, thereby improving access and quality of lectures. As a derivative of this policy, PTKIs, including STAI Riyadul Jannah Subang, are encouraged to develop independent LMSs tailored to the local context but aligned with national policies.

The Ministry of Religious Affairs introduced the Digital Literacy Madrasah program alongside digital competency training for PTKI lecturers to strengthen academic digital culture. This policy emphasizes that digital transformation involves not only technological infrastructure but also human resource capacity building, digital ethics enhancement, and the integration of Islamic values into technology usage (Helmi, 2024).

Digital ethics within the context of Islamic education encompasses essential principles such as trustworthiness in data management, fairness in learning access, the utilization of technology for the common good, and the development of digital etiquette. These values serve as a moral foundation for PTKIs to implement educational digitalization in a responsible manner.

The Ministry of Religious Affairs' 2020–2025 digitalization policy encompasses three primary components consisting of information system modernization, digital learning transformation, and the strengthening of Islamic value-based governance. These three components form the structural framework underlying the implementation of digitalization at STAI Riyadul Jannah Subang.

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1.3. Integration of the Ministry of Education and Culture's and Ministry of Religious Affairs' Policies in the Context of PTKI

Despite their different focuses and characteristics, the policies of the Ministry of Education and Culture and the Ministry of Religious Affairs share a common direction: improving access, quality, efficiency, and equity in education through digital technology. PTKI, as higher education entities, are at the intersection of these two policies. Specifically, the implementation of digitalization at STAI Riyadul Jannah Subang is carried out within two frameworks simultaneously: the Ministry of Education and Culture's national education standards (through PDDikti, LMS, Kampus Merdeka, and academic data) and the Ministry of Religious Affairs' internal systems (through EMIS, SPADA-PTKI, and Islamic digital ethics).

The integration of these two policy frameworks creates both challenges and opportunities. The challenge lies in the coordination and harmonization of disparate digital systems. The potential for PTKI to have a stronger policy base is due to its support from two ministries. This research found that this dual system impacts administrative burdens, data integration, and the flexibility of LMS use. However, in the long term, this policy provides a more mature and comprehensive direction for digitalization.

The study of the integration and effectiveness of digitalization in education can be explained through three dimensions: access, quality, and equity. The theory of digital education access explains that technology can expand the reach of learning without limitations of space and time, but at the same time, it can widen the gap for groups with limited devices or internet connections. The theory of digital education quality emphasizes that learning quality depends not only on technology, but also on learning design, lecturers' digital competencies, and learning interactions. Meanwhile, the theory of educational equity (equity) views digitalization as a means to provide more equitable educational services, as long as institutions are able to overcome existing socio-technical barriers (Trespalacios, 2025).

From an organizational culture and pedagogical perspective, the success of digitalization is greatly influenced by cultural factors such as mental readiness, lecturer adaptation, student attitudes, and transformational leadership. The theory of organizational change explains that technological change requires changes in culture, mindset, and work habits. In PTKI, this cultural aspect is also related to Islamic values in viewing technology: whether technology is viewed as a means of benefit or a threat to traditional scientific practices.

This entire theoretical framework serves as the basis for analyzing the implementation of educational digitalization policies at STAI Riyadul Jannah Subang. By reviewing innovation theory, technology acceptance theory, public policy implementation theory, digital pedagogy, educational information systems, and Islamic ethics, this study can comprehensively describe how the digital transformation process is carried out, what challenges are faced, and the extent of the effectiveness of digital systems in improving access, quality, and equity in education. This theoretical framework also serves as a conceptual map that connects national policies with the realities on the ground and serves as a basis for formulating sustainable policy recommendations that are appropriate to the needs of Islamic

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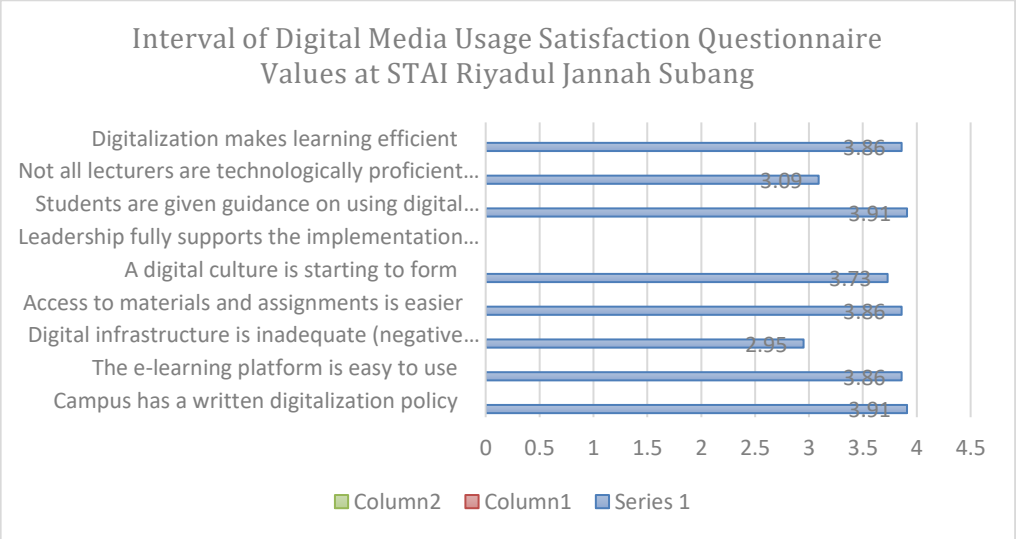
educational institutions (Suwendi, 2025).

2. Research Data on the Implementation of National Education Policy at STAI Riyadul Janah Subang

Based on the processing of data from the "Education Policy Analysis Research Instrument" questionnaire administered to respondents (lecturers, students, and education staff) at STAI Riyadul Jannah Subang from November 1–14, 2025. The analysis was conducted using a quantitative-descriptive approach for the questionnaire data and triangulation through interviews. The questionnaire data consisted of nine statements measuring respondents' perceptions of the implementation of the education digitalization policy. The average score was calculated using a Likert scale of 1–5.

Table 1: Direct output from data processing:

No	Statemen	Average
1	Campus has a written digitalization policy	**3.91**
2	The e-learning platform is easy to use	**3.86**
3	Digital infrastructure is inadequate (negative statement)	**2.95**
4	Access to materials and assignments is easier	**3.86**
5	A digital culture is starting to form	**3.73**
6	Leadership fully supports the implementation of digitalization	**4.00**
7	Students are given guidance on using digital platforms	**3.91**
8	Not all lecturers are technologically proficient (negative statement)	**3.09**
9	Digitalization makes learning efficient	**3.86**



The results of the questionnaire study indicate that the implementation of the digitalization policy at STAI Riyadul Jannah Subang is in the fair to good category. This is evident from the average score of the questionnaire indicators, which ranges from 3.0–4.0 on a Likert scale of 1–5. The majority of respondents assessed that the campus has a clear and structured digitalization policy direction. A written policy at the university serves as a strong foundation for directing all work units to implement digital transformation more systematically.

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The average score of 3.91 for the statement "the campus has a written policy on digitalization of education" indicates that internal regulations are well-functioning. This aligns with interviews with the Student Leadership Council (LPM), which stated that the digitalization policy has been formulated in the form of academic guidelines and standard operating procedures (SOPs) for the use of the LMS. According to Edward III's policy implementation theory, regulatory clarity is a key factor in successful policy implementation.

Support from campus leadership was the strongest indicator in this study, with a score of 4.00. This demonstrates that digital transformation at STAI Riyadul Jannah Subang is not merely administrative but also enjoys full support from the highest levels of leadership. Campus leadership actively encourages the use of the LMS, facilitates training, and allocates funds for strengthening digital infrastructure. This finding aligns with the concept of transformational leadership, which emphasizes the role of leaders in driving organizational change.

On the technical side, the e-learning platform was deemed quite easy to use by lecturers and students, with a score of 3.86. This indicates that the technology used by the university meets the basic needs of digital learning. Student interviews confirmed that the LMS facilitates access to materials, assignment submission, and academic communication. This demonstrates STAI Riyadul Jannah's success in utilizing digital technology as its primary learning medium.

The use of an LMS also makes the learning process more efficient and flexible, with a score of 3.86. Many lecturers have begun providing digital materials such as videos, PDFs, and interactive modules so students can learn independently. This flexibility is one of the important goals of digital transformation in education, as explained in the digital learning ecosystem model, which states that learning should be adaptive, based on broad access, and support lifelong learning.

Infrastructure limitations pose a notable challenge within the institution, yielding a relatively low score of 2.95. While campus-level facilities are moderately developed, internet connection instability severely impacts students living in rural or remote areas. Qualitative feedback indicates that these network disruptions frequently impede LMS access from home, finding that network connectivity remains the primary barrier to digital learning in regional universities (Salim, 2026).

Lecturer digital competency further highlights an area needing targeted support. The score of 3.09 regarding varied faculty tech-proficiency reveals an ongoing digital literacy divide among educators. Interview data showed that senior lecturers encounter technical hurdles when creating digital learning materials and utilizing LMS features effectively. Consequently, digital capacity-building initiatives require broader institutional coverage and continuous delivery (Novi Trilisiana, 2026).

A digital culture on campus is beginning to take shape, with a score of 3.73. The use of digital tools in administrative and academic activities, such as digital attendance, online meetings, and cloud-based document management, has become commonplace. However, this digital culture has not yet fully taken root, as some units still rely on manual processes. Digital culture transformation requires a long time and collective support from all campus elements.

Students were assessed as having received adequate guidance on using digital

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systems, with a score of 3.91. This indicates that the campus not only provides technology but also ensures that primary users—in this case, students—are competent in operating it effectively. Socialization and technical guidance play a crucial role in increasing the effectiveness of LMS use.

the synthesis of questionnaire and interview findings indicates that the implementation of digitalization policies at STAI Riyadul Jannah Subang has shown a positive trend. Policy and leadership support are key strengths, while lecturers' digital competency and infrastructure optimization are factors that need improvement. A combination of the right strategy, ongoing training, and adequate facilities will accelerate the digital transformation of education on campus.

the implementation of digitalization has also influenced changes in learning patterns. Students have become more independent in seeking learning resources, and lecturers are encouraged to provide more varied materials. Academic interactions have also shifted towards being more open and technology-based. This demonstrates that digitalization not only changes technical aspects but also develops new, more modern learning models.

Research findings also indicate that digitalization has a positive impact on learning accessibility. Students can access materials anytime and anywhere, allowing them to flexibly adjust their learning pace. Lecturers can monitor student progress through LMS statistical features such as attendance, quiz results, and activity in the digital classroom (Gediminas Lipnickas, 2025).

digital transformation is not yet fully equitable. Some students and lecturers still encounter obstacles in adapting to technology, particularly with advanced features such as item bank-based question creation or the creation of interactive materials. This demonstrates that digitalization efforts need to be accompanied by advanced digital literacy programs so that technology use extends beyond administrative functions to improve the quality of learning. Considering these findings, it is crucial for STAI Riyadul Jannah Subang to continue developing a digitalization strategy focused on improving human resource competency, equitable infrastructure distribution, and strengthening the organization's digital culture. This will ensure that digital transformation is not merely a reaction to modern demands but becomes an integral part of the institution's development.

this discussion confirms that digital transformation in education is a complex and ongoing process. Its successful implementation is heavily influenced by the synergy between policies, infrastructure, human resource competency, and a supportive academic culture. STAI Riyadul Jannah Subang is on the right track, but further strategic steps are needed to ensure optimal digital transformation and significant impact on improving educational quality.

D. DISCUSSION

1). Impact of the Digital Transformation Policy at STAI Riyadul Jannah Subang

The national policy on education digitalization since 2020 has encouraged PTKI (Islamic Higher Education Institutions), including STAI Riyadul Jannah Subang, to adopt technology-based learning and governance systems. Field results indicate that this policy has had a number of positive impacts. The implementation of a Moodle-based

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Learning Management System (LMS) makes it easier for lecturers and students to access learning materials, submit assignments, and provide more structured feedback. Students such as Kamila Nuraeni and Sofiyan Azharu acknowledged that the LMS helps them learn more flexibly because the materials are always available and accessible at any time.

Campus governance through the Campus Academic Information System (SIAKAD) and EMIS has significantly increased administrative efficiency and data transparency. Institutional leader Afif Nurseha emphasized that digital integration streamlines academic reporting and data management, resulting in faster and more accurate administrative workflows. Additionally, SIMPATIKA serves to record data for Islamic Religious Education faculty, though complete integration with the broader campus information system remains ongoing.

Digital policy adoption has simultaneously driven structural shifts in academic culture across the institution. Faculty members such as Ryan Herdiana increasingly utilize the Learning Management System (LMS) to distribute course materials and facilitate academic interaction, gradually diminishing reliance on conventional lecture-based instruction. Consequently, digital transformation empowers students to cultivate autonomy and advanced proficiency in managing digital learning resources (Magfirah Nurdin, 2025).

Thus, the national digitalization policy has brought significant changes to learning, academic governance, and campus digital culture. The impact is evident in increased access, efficiency, and flexibility in the teaching and learning process and administration.

2). Challenges of Digitalization Implementation: Technical, Cultural, and Structural

Field findings reveal that STAI Riyadul Jannah Subang continues to encounter persistent operational challenges throughout its digital transformation process. A central obstacle involves the digital competency divide among academic faculty. As noted by faculty member Ryan Herdiana, proficiency levels regarding LMS utilization vary significantly across teaching staff. This internal variation is quantitatively corroborated by the lecturer digital competency survey score of 3.09, placing faculty digital literacy within a moderate category that necessitates targeted professional development (Tran Dong Dang, 2024).

Infrastructure constraints represent a parallel barrier to equitable policy implementation, particularly regarding stable internet connectivity. Student accounts, such as that provided by Kamila Nuraeni, highlight frequent network disruptions experienced by individuals residing in suburban and rural areas surrounding Subang. These infrastructure limitations reinforce a localized digital divide, resulting in pronounced disparities in educational technology utilization driven by geographic and socioeconomic factors.

Limited system integration also emerged as a structural challenge. Although the campus has used EMIS for data reporting to the Ministry of Religious Affairs, the integration between EMIS and SIAKAD is not yet automated, requiring manual input. This situation makes data governance less efficient than the interoperability concept

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envisioned in the 2020–2025 PTKI Digital Roadmap.

Cultural inertia represents a significant non-technical barrier to digital policy adoption across the institution. Digital culture remains partially integrated within the academic community, as certain faculty members continue to perceive the Learning Management System (LMS) as a secondary add-on rather than a foundational pedagogical platform. This behavioral pattern corresponds with survey findings on the digital culture indicator, which recorded a score of 3.73—reflecting moderate acceptance that has not yet reached optimal integration. Field observations further confirm that LMS usage remains predominantly administrative, limited primarily to file dissemination rather than interactive digital pedagogy, automated assessments, or artificial intelligence-assisted learning tools (Sims, 2025).

Digital transformation challenges within the institution span technical dimensions of infrastructure and competency, cultural factors surrounding faculty mindsets, and structural issues regarding system integration. These interrelated obstacles demonstrate that effective educational digitalization relies not merely on technological deployment, but fundamentally on human capital and organizational readiness.

3). Evaluation of Technology Effectiveness: Access, Quality, and Equity in Education

The effectiveness of educational digitalization at STAI Riyadul Jannah Subang can be evaluated through three main dimensions: access, quality, and equity.

digitalization has expanded the reach of learning. The Learning Management System (LMS) allows students to access materials flexibly without time and place constraints. However, access is not yet fully equitable due to the limited internet connection experienced by some students. Thus, technology has improved access but has not been able to eliminate all barriers (Minas Michikyan, 2025).

Learning quality demonstrates varied outcomes following the implementation of educational technology across the institution. Students report greater satisfaction with the Learning Management System (LMS) due to improved course material organization and enhanced assessment transparency. However, qualitative pedagogical gains remain uneven, as certain faculty members utilize the LMS merely as a static content repository rather than engaging in digital pedagogical innovation. Survey results corroborate this observation, yielding an LMS effectiveness score of 3.36, which characterizes system utilization as moderately effective rather than optimal.

Educational equity has improved through the standardization of academic information, affording all students uniform access to course schedules, assignment submissions, and official announcements. Complete equity in learning outcomes remains unfulfilled due to variations in faculty digital proficiency and inconsistent instructional quality across departments. Additionally, persistent internet connectivity constraints in rural regions generate localized disparities, preventing remote students from accessing digital educational services on an equal footing (Edith Enciso-Huamani, 2025).

Digital technology integration within the campus environment has generated positive contributions toward operational efficiency and information access, though its

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impact on learning quality and educational equity requires further institutional reinforcement.

4) Ethical Perspectives and Islamic Values in Educational Digitalization

Digitalization of education at PTKI (Islamic Higher Education Institutions) is inseparable from the demand to uphold Islamic values. Field data shows that the academic community views technology as a means of benefit (maslahah) that must be used responsibly. Campus leaders emphasize the importance of academic ethics, particularly in the use of Learning Management Systems (LMS) and digital applications to reduce plagiarism, cheating, and dishonesty (Adiyono Adiyono, 2025).

In the context of Islamic ethics digitalization must adhere to the principles of amanah (responsibility), adl (justice), hifdz al-'aql (protection of reason), and hifdz al-nafs (protection of safety). Students acknowledged that the LMS helps reduce the potential for grade manipulation or cheating in assignment submissions because all activities are recorded digitally (Yahya Shaykh Ahmad1, 2025).

The presence of technology also requires maintaining good manners in digital interactions, such as being polite in forums, respecting time, maintaining data privacy, and utilizing technology for positive purposes. Interviews with students indicated that the use of technology on campus has been directed towards productive academic activities and does not conflict with Islamic values. Thus, digitalization on campus is seen not only as a technological innovation, but also as a process of building an Islamic digital character that is trustworthy, responsible, and beneficial (ur AqilahLutfiya, 2025).

5). Success Factors and Challenges: Comprehensive Analysis

From all field findings the success of digitalization is influenced by several important factors, particularly leadership commitment, the availability of LMS and SIAKAD, and student enthusiasm in using digital media. However, this success is limited by technical challenges such as limited internet access and lecturers' digital competency, structural challenges such as the lack of EMIS-SIAKAD integration, and cultural challenges such as an underdeveloped digital culture.

Theoretically these findings align with the public policy implementation framework that states that policy success requires strong policy communication, resources, and the disposition of implementers. STAI Riyadul Jannah Subang has significant potential for growth, but requires accelerated digital culture transformation and increased human resource capacity (Triska Yuninda Putri Habsana, 2026).

6). Implications for Policy Recommendations

This discussion leads to the need for more strategic policy recommendations, including strengthening digital training for lecturers, integrating campus systems with EMIS and SIMPATIKA, standardizing LMS use across all courses, and improving campus digital infrastructure. From an ethical perspective, strengthening Islamic digital literacy is crucial so that technology not only improves the quality of education but also shapes students' character with integrity (Sandra-Inés Trujillo-Juárez, 2025). 7. Data Triangulation Analysis: Questionnaire – Interview – Theory

The triangulation results show consistency in findings between the quantitative

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questionnaire data and the qualitative interview data:

Table. Summary of Survey Data, Interview Findings, and Interpretation

Aspect	Survey Data	Interview Findings	Interpretation
Leadership Support	Very high (4.00)	Leaders express full commitment	Institutional support is solid
Infrastructure	Adequate (2.95 on negative indicator)	Lecturers and students consider facilities sufficient	Infrastructure is not a major issue
Lecturer Competence	Noticeable gap (3.09)	Confirmed by lecturers and students	More intensive training is needed
Consistency of LMS Use	High effectiveness score but varied	Students report inconsistent use across classes	Technical implementation challenges remain
Digital Culture	Score 3.73	All informants note gradual cultural development	Transformation is ongoing and not yet complete

This triangulation indicates that the implementation of digitalization is in the developing stage and has not yet reached maturity.

8). Implications of Research Findings

Based on these findings, it can be concluded that the implementation of digitalization at STAI Riyadul Jannah Subang has been running well but still needs strengthening in: (1) Regular development of lecturers' digital competencies. (2) Strengthening regulations that require the use of a uniform LMS across all courses. (3) Improving student digital literacy through regular orientations or workshops. (4) Full integration of digital technology into the curriculum and pedagogy. If these recommendations are implemented, STAI Riyadul Jannah Subang has the potential to become one of the Islamic higher education institutions that adapts to digital transformation in the era of education 4.0 (Hendi Sama, 2025).

E. CONCLUSION

Research on the implementation of educational digitalization policies at STAI Riyadul Jannah Subang shows that the digital transformation that has taken place over the past few years has had a significant impact on the learning process and campus governance. The implementation of the Learning Management System (LMS), SIAKAD, EMIS, and several other supporting applications demonstrates that this university has moved in line with the national policy direction of the Ministry of Education and Culture and the Ministry of Religious Affairs in its efforts to modernize technology-based higher education. However, this success is accompanied by various technical, structural, and cultural challenges that require serious attention (Singun, 2025).

digitalization has increased learning accessibility, expanded learning flexibility, and improved the efficiency of academic administration. Students can access learning materials at any time, while lecturers have more systematic means of delivering materials and conducting learning evaluations. However, the effectiveness of this

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technology is not yet optimal, as some lecturers still use the LMS at a basic level and have not yet fully utilized digital pedagogical features. Furthermore, equitable digital access has not been fully achieved due to differences in internet network conditions between students living in urban and rural areas.

Technical challenges are also a key finding of this study. The campus internet network infrastructure still needs strengthening, the integration of the academic system with EMIS and SIMPATIKA has not yet occurred automatically, and the digital competency of lecturers varies, affecting the quality of digitalization policy implementation. These factors indicate that digital transformation is not simply a matter of equipment procurement; it also requires human resource readiness, a new work culture, and more mature system integration (Oki Mushlahuddin, 2026).

in perspective of Islamic ethics and values, the digitalization of education at STAI Riyadul Jannah Subang has been guided by the principles of trustworthiness, justice, and moral responsibility in the use of technology. The academic community strives to maintain good manners in digital interactions and utilize technology for the benefit of all. However, these ethical values need to be strengthened so that digitalization not only produces technical progress but also shapes a digital character that aligns with the vision of Islamic higher education.

Research findings indicate that the success of digitalization is determined by the commitment of leadership, student enthusiasm, and the availability of adequate digital devices. However, this success is still limited by cultural barriers, such as resistance on the part of some lecturers to adapt to technology, and technical obstacles in the uneven distribution of digital infrastructure. Therefore, universities need to strengthen their digital transformation strategies to achieve quality, inclusive, and sustainable educational services. In a policy context, more comprehensive and operational recommendations are needed. First, universities need to expand and intensify digital literacy training programs for lecturers and education staff, so that their skills in using LMS, SIAKAD, and other digital applications become more uniform and optimal. Second, academic system integration needs to be strengthened through synergy between campus SIAKAD and the Ministry of Religious Affairs' EMIS to ensure data accuracy and reduce duplication of administrative work. Third, improving internet network infrastructure is an urgent need to ensure equitable access to digital learning for students, especially those living in areas with limited connectivity (Ajan, 2025).

Furthermore universities need to establish operational standards for LMS utilization so that all courses use the system consistently and with quality, not simply as a place to upload files. Strengthening internal regulations regarding digital ethics and data protection is also necessary to ensure that the digitalization of education remains within the bounds of Islamic morality and values. At the macro level, the Ministry of Religious Affairs is advised to expand its digital mentoring program for small Islamic Higher Education Institutions (PTKI) by providing facilitators, increasing bandwidth, and supporting ongoing system integration (Sharla Aulia Safana, 2026).

this study confirms that the digitalization of education in Islamic higher education institutions (PTKI) is an unavoidable strategic necessity. Successful implementation requires collaborative work between campus leaders, faculty, students, and the government as policymakers. By strengthening infrastructure, improving digital

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literacy, and integrating better governance systems, the digitalization of education at STAI Riyadul Jannah Subang can develop into an effective, Islamic-based, and sustainable digital transformation model (Ngcamu, 2025).

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