Edukasi Islami: Jurnal Pendidikan Islam, VOL: 15/No: 03 **P-ISSN: 2252-8970**
DOI: 10.30868/ei.v15i03.10305 **E-ISSN: 2581-1754**

Date Received	**:**	**May 2026**
Date Revised	**:**	**July 2026**
Date Accepted	**:**	**August 2026**
Date Published	**:**	**August 2026**

DIGITAL LITERACY BASED CURRICULUM DEVELOPMENT AS AN ADAPTIVE RESPONSE TO TECHNOLOGICAL DISRUPTION AT KH. ABD. WAHAB HASBULLAH JOMBANG'S LEADING ISLAMIC HIGH SCHOOL

M. Aliyul Wafa[1]
Universitas KH. A. Wahab Hasbullah Jombang, Indonesia (wafa@unwaha.ac.id)

Saihul Atho Alaul Huda
Universitas KH. A. Wahab Hasbullah Jombang, Indonesia (saihul@unwaha.ac.id)

Khoirun Nisa'
Universitas KH. A. Wahab Hasbullah Jombang, Indonesia (neesaalkhoirot@unwaha.ac.id)

Muhammad Fodhil
Universitas KH. A. Wahab Hasbullah Jombang, Indonesia (mfodhil@unwaha.ac.id)

Kata Kunci:
Pengembangan Kurikulum; Literasi Digital; Disrupsi Teknologi

ABSTRAK

Latar Belakang: Disrupsi teknologi menuntut madrasah merancang kurikulum yang memadukan literasi digital, nilai keislaman, dan budaya pesantren untuk membentuk karakter religius peserta didik. Penelitian terdahulu mengkaji manajemen kurikulum bagi pengendalian mutu lulusan, namun belum mengoperasionalkan literasi digital maupun basis teoretis integrasi pesantren. **Tujuan Penelitian:** Penelitian ini bertujuan menganalisis proses perencanaan, implementasi, dan evaluasi kurikulum berbasis literasi digital di MA Unggulan KH. Abd. Wahab Hasbullah Jombang, serta menjelaskan secara teoretis peran nilai pendidikan Islam, budaya pesantren, dan pembentukan karakter religius dalam membentuk desain kurikulum tersebut. **Metode:** Penelitian menggunakan pendekatan kualitatif desain studi kasus tunggal berbasis jenis penelitian lapangan. Data dikumpulkan melalui observasi partisipatif, wawancara semi-terstruktur, dan dokumentasi, dianalisis dengan model interaktif Miles-Huberman-Saldana, serta diuji keabsahannya melalui triangulasi sumber, teknik, dan waktu. **Hasil:** Pengembangan kurikulum melalui tiga tahap terintegrasi: perencanaan partisipatif berbasis visi-misi madrasah, implementasi enam program unggulan dengan penguatan kompetensi digital, dan evaluasi berlapis. Literasi digital lebih menekankan media interaktif serta akses-evaluasi informasi, berbeda secara konseptual dari teknologi administratif seperti CCTV dan presensi digital. **Kesimpulan:** Model kurikulum madrasah ini mengintegrasikan literasi digital dan nilai kepesantrenan dalam sistem manajemen berjenjang; tanpa uji dampak empiris, klaim peningkatan mutu lulusan dimaknai sebagai potensi kontribusi, bukan hubungan kausal terbukti.

[1] Correspondence author

Keywords:
Curriculum Development; Digital Literacy; Technological Disruption

ABSTRACTS

Background: Technological disruption demands that Islamic schools (madrasahs) design curricula that integrate digital literacy, Islamic values, and Islamic boarding school culture to shape students' religious character. Previous research has examined curriculum management for graduate quality control, but has not yet operationalized digital literacy or provided a theoretical basis for Islamic boarding school integration. **Purpose of the Study**: This study aims to analyze the planning, implementation, and evaluation of a digital literacy-based curriculum at the KH. Abd. Wahab Hasbullah Islamic Boarding School in Jombang, and to theoretically explain the role of Islamic educational values, Islamic boarding school culture, and religious character formation in shaping the curriculum design. **Methods**: The study employed a qualitative approach with a single case study design based on fieldwork. Data were collected through participant observation, semi-structured interviews, and documentation. Data were analyzed using the Miles-Huberman-Saldana interactive model. Their validity was tested through triangulation of sources, techniques, and time. **Results**: Curriculum development involves three integrated stages: participatory planning based on the madrasah's vision and mission, implementation of six flagship programs with digital competency strengthening, and multi-layered evaluation. Digital literacy emphasizes interactive media and information access and evaluation, conceptually distinct from administrative technologies such as CCTV and digital attendance. **Conclusions**: This madrasah curriculum model integrates digital literacy and Islamic boarding school values within a tiered management system; without empirical impact testing, claims of improved graduate quality are interpreted as potential contributions, not proven causal relationships.

A. INTRODUCTION

Education is a strategic instrument in building superior, adaptive and characterful human resources, in accordance with the values of Pancasila and the demands of modern developments (Romadlon dkk. 2025). The development of digital technology is disrupting education, requiring curriculum institutions to adapt innovatively and responsively (Zhu dkk. 2021). In this context, digital literacy is a basic need for students to be able to face the challenges of globalization, information development, and changes in communication patterns in modern society (Afista dkk. 2020). The reality of Indonesian education still leaves the quality of graduates low, especially in terms of mastery of technology, critical thinking, creativity, and digital communication (Asykur dkk. 2025). This condition shows that the development of a digital literacy based curriculum is an urgent need to improve the quality of education in a sustainable manner and is relevant to contemporary technological developments (Rohman dkk. 2025).

Technological disruption presents educational problems not only in the mastery of ICT, but also in the readiness of adaptive learning systems at the institutional level (Moh. Saddad dkk. 2025). Contemporary education is shifting from mere knowledge transfer to strengthening digital literacy, media ethics, virtual collaboration, and critical information selection (Suratin dkk. 2024). However, most educational institutions still manage the curriculum administratively, without accommodating the needs of students amidst dynamic technological changes (Lutfiani dkk. 2026). As a result, the graduates produced often have difficulty adapting to developments in the digital based world of work (Budiman dan Zainuri, 2025). The development of a digital literacy based

curriculum is needed to integrate academic, technological, and religious competencies holistically (Wafa dkk. 2022).

Normatively, the National Education System Law No. 20/2003 requires technology based education to form faithful, intelligent, creative and responsible individuals (Kementerian Pendidikan, Kebudayaan, Riset, Dan Teknologi, 2023). This policy is strengthened through digital education transformation that places technological literacy as an important part in developing 21st-century student competencies (Ciptadi dkk. 2023). In addition, the National Education Standards emphasize the importance of mastering literacy, numeracy, communication, and technology competencies as indicators of educational quality (Ghozali dkk. 2024). Policy implementation is hampered by digital infrastructure, teacher competency, and a suboptimal digital literacy curriculum (Zahara dkk. 2025). This condition shows the need for curriculum innovation that is able to answer the challenges of technological transformation effectively and systematically (Munawarsyah dan Suratin, 2026).

This research is based on Terry's management theory, namely: planning, organizing, implementing, and supervising as the basis for effective educational management (Terry, 1960). This research uses a framework that positions the curriculum as a systemic process of designing learning experiences that are responsive to social dynamics and the times (Miller dan Seller, 1985). This research applies digital literacy: access, understanding, evaluation, and use of information wisely and responsibly (Dewi dkk. 2025). Digital literacy is operationalized through three capabilities, namely: technical, cognitive, and ethical, which distinguish it from the adoption of administrative technology and institutional supervision that does not necessarily strengthen students' digital capacity.

The digital literacy curriculum based on Islamic values, Islamic boarding school culture, and religious character positions technology as a means of strengthening religious moderation, ethics, and the integration of Islamic Religious Education with social emotional learning for the sake of moderate character (Rohman dkk. 2025), and strengthening the value of tolerance in Islamic Education learning (Firdaus dan Mustajab, 2025). The teacher-student relationship and community discipline in Islamic boarding school culture significantly influence the adoption of learning technology and the transformation of Islamic education (Suratin dkk. 2024), and hybridization of Islamic education with contemporary scientific approaches (Safrial 2021). Religious character becomes the ethics that limits technology from technical reduction for the sake of contextual Islamic curriculum (Firmansyah dkk. 2026), as well as the madrasa and Islamic boarding school curriculum model that integrates Islamic values into the framework of modern curriculum development (Zahara dkk. 2025). Thus, the development of a digital literacy curriculum for Islamic boarding schools is a negotiation between modern digital skills and traditional Islamic identity.

Previous research has proven that technology-based curriculum improves the quality of education and student competency, as found by Astuti that the integration of digital media in madrasas effectively improves learning (Astuti, 2022). Lateh proved that the adaptive curriculum at MAN Kota Batu with the integration of religious, general and ICT knowledge improves the quality of education (Lateh, 2020). Sholihah proves that modernizing the Islamic boarding school curriculum increases the competitiveness of graduates by strengthening 21st century digital skills (Sholihah dan Syah, 2022). Zakiyah and Ibad proved that teacher readiness, leadership, and technological infrastructure are

the determining factors for the success of a digital curriculum (Zakiya dan Ibad, 2022). International studies emphasize curriculum design that integrates cognitive, social, and emotional dimensions in technology based learning (Zhu dkk. 2021), and digital visual arts play a role in strengthening the critical creativity of 21st century students (Ardani dkk. 2025), and the transformation of the role of teachers in the artificial intelligence-based learning ecosystem (Munawarsyah dan Suratin, 2026).

While research on technology-based curricula has been extensive, studies on digital literacy in superior Islamic boarding schools (pesantren) that explicitly integrate religious values, local culture, and global competencies into a single system are still limited. Previous research has focused more on technology implementation or quality management, while digital literacy, as a distinct construct from administrative technology adoption and institutional oversight, and its interaction with Islamic values in Islamic boarding schools, has not been widely explored. This research should be specifically distinguished from the studies of Wafa, Putri, and Ya'la (Wafa dkk. 2022) conducted at the same institution. The study focuses on curriculum management for graduate quality control, making digital literacy the primary analytical construct. The novelty of this research includes: (a) a focus on digital literacy curriculum development, rather than general management; (b) operationalization of digital literacy as an explicit construct; (c) an extension of Terry and Miller-Seller's theory with Islamic and Islamic boarding school dimensions; and (d) a theoretical contribution in the form of Islamic value mechanisms in limiting and directing the adoption of curriculum technology.

This study analyzes the development of a digital literacy curriculum at the KH. Abd. Wahab Hasbullah Islamic Boarding School in Jombang, including planning, implementation, and evaluation as an adaptive response to technological disruption. The aim is to describe the curriculum development model and analyze the role of Islamic educational values and Islamic boarding school culture in shaping its design. The novelty of the study lies in: (1) the operationalization of digital literacy that is explicitly distinguished from the use of administrative and supervisory technology, and (2) the theoretical explanation of the integration of Islamic boarding school values into the three stages of the curriculum, dimensions that have not been analyzed in depth in previous studies at the same institution or other Islamic schools. The contribution of the research results includes enriching Islamic education management and practical references for the development of an adaptive curriculum in the era of digital transformation of education.

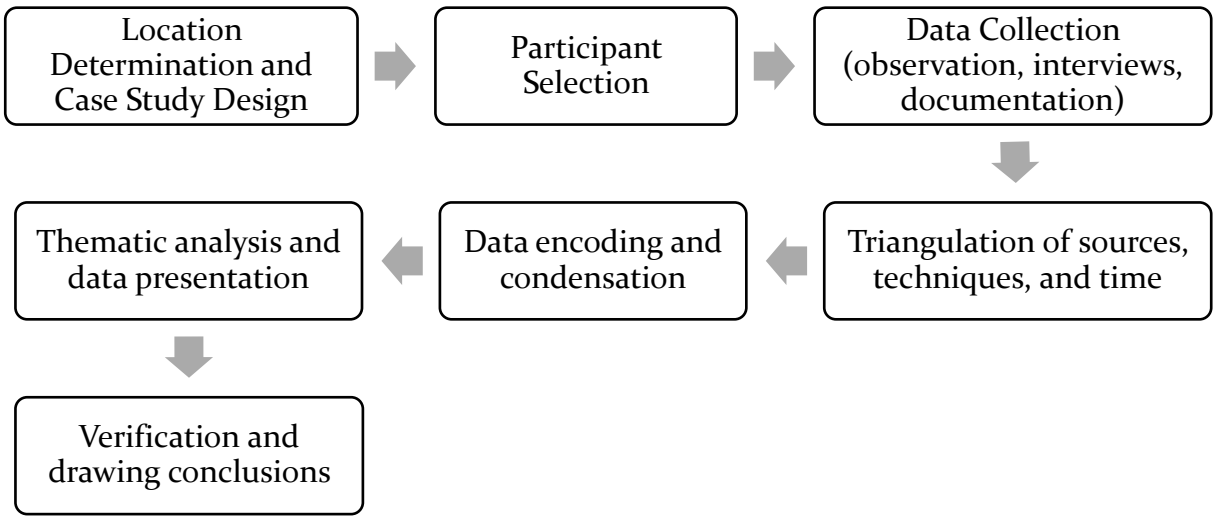
B. METHOD

This research applies a qualitative single case study field approach to explore the development of a digital literacy curriculum as an adaptive response to technological disruption (Sugiyono, 2017). Case studies were chosen considering the "how" and "why" questions of contemporary phenomena bound by institutional context (Robert K. Yin, 2018). Research at MA Unggulan KH. Abd. Wahab Hasbullah Jombang, conducted from January–April 2026, examined the planning, implementation, and evaluation of the digital literacy curriculum. Purposive participants (head, curriculum deputy, UPM coordinator, 2 teachers, 2 students) with the criteria of direct involvement, ≥2 years of experience, and informed consent. The main instruments: participant observation (14 weeks, 2×/week) and semi-structured interviews (45–60 min) based on

Terry & Miller-Seller, supported by RKM, EDM, PKG documentation. Ethics and triangulation of sources, techniques, and time were applied (Lexy J. Moleong 2018).

The data was analyzed using the interactive model of Miles, Huberman, and Saldana, including data condensation, data presentation, verification, and systematic drawing of conclusions (Miles dkk. 2014). Coding was carried out in stages: open coding of interview transcripts and observation notes, categorization based on curriculum management stages, and theme development through constant comparison until a stable pattern of interaction between digital literacy and Islamic values in Islamic boarding schools was obtained. Analysis was inductive and ongoing from the time of data collection. Data validity was tested through triangulation of sources, techniques, and time to ensure credibility, dependability, and validity (Anto dkk. 2024). This research obtained permission from the madrasah and applied qualitative ethical principles, including participant consent, data confidentiality, and honest presentation of findings, including findings critical of the institution.

Figure 1. Research Methodological Flowchart



C. RESULT AND DISCUSSION

Digital Literacy-Based Curriculum Planning in Strengthening the Vision of Madrasah Education Transformation

The development of a digital literacy based curriculum is a strategic step for educational institutions in responding to the dynamics of technological disruption in the era of digital transformation which is taking place rapidly and continuously (Wafa dkk. 2025). The curriculum shifts from a cognitive orientation and academic material towards strengthening 21st century competencies, namely: digital literacy, critical thinking, creativity, collaboration, and problem solving (Ardani dkk. 2025). In this context, students are expected to be prepared to face increasingly complex and competitive global challenges (Atho' Alaul Huda dan Latifatul Aini, 2022). The curriculum planning of the KH. Abd. Wahab Hasbullah Jombang Islamic Senior High School (MA Unggulan) is systematically designed based on the school's vision and mission, integrating the 2013 Curriculum and the adaptive Merdeka (Freedom) to produce superior, religious, professional, and adaptive graduates who are responsive to technological disruption. The principal of the school, Mr. Faizun, M.Pd., stated that:

> "The initial formation of a plan cannot be separated from the vision and mission of this madrasah, namely the realization of a superior generation that is smart, righteous, professional, cares about the environment and is pious to God Almighty."

Curriculum planning is directed at achieving academic competencies, character building, spirituality, social skills, and professionalism of students. In the transformation of digital literacy-based education, this vision becomes the foundation for madrasas to build an education system that produces a generation that is adaptive, critical, creative, and has moral integrity. The implementation of the curriculum at MA Unggulan KH. Abd. Wahab Hasbullah Jombang integrates the national curriculum with a systematic madrasa curriculum and is oriented towards 21st-century competencies, according to the needs of students, science and technology, and the local-global community. The Deputy Head of Curriculum, Mrs. Hayyinatul Wafda, S.H.I., M.Ag., explained that:

> "Starting this year, we have implemented the Merdeka Curriculum for grade X, while grades XI and XII are still using the 2013 Curriculum which was previously implemented in this school in stages here."

The implementation of the Independent Curriculum is part of the transition strategy for madrasah education to face technological disruption through more flexible, collaborative, and student-centered learning. This integration is combined with the values of the Bahrul Ulum Islamic boarding school through local content such as Nahwu Sharaf (Islamic teachings), Tahfidz Al-Qur'an (Quran memorization), Ke-NU-an (Nuclear belief), and Keaswajaan (Aswajaan). Furthermore, curriculum development is also directed at strengthening digital literacy and global competency through learning Arabic and English as instruments of international communication. This pattern indicates that the madrasah curriculum is designed to strengthen students' religiosity while building their readiness to face global challenges based on digital technology. Although the extent to which this readiness is achieved requires direct measurement of student competency, which is beyond the scope of this research data.

The KH. Abd. Wahab Hasbullah Islamic Boarding School in Jombang has established six flagship programs: Tahfidz (Memorization of Quran), Arabic, English, Yellow Books, Religious Skills, and KTI (Knowledge of Islam) in a transformative curriculum to strengthen students' academic, religious, intellectual, and critical competencies. The principal emphasized that:

> "We implement a curriculum that combines the national curriculum and a curriculum developed by prioritizing local wisdom so that learning becomes more contextual, relevant, and tailored to the needs of students in the local school environment."

This statement demonstrates that curriculum development is carried out through an integrative approach between local needs, Islamic boarding school values, and the demands of global developments. This flagship program is the madrasa's strategy in building an educational identity that is religious and responsive to technological developments and the needs of modern society. In the context of the operationalization of digital literacy described in the introduction, the Scientific Writing program most clearly represents the cognitive dimension of digital literacy because it directly trains students to access, analyze, and manage digital information

critically and responsibly, unlike other programs that emphasize language or religious proficiency.

Curriculum planning at MA Unggulan KH. Abd. Wahab Hasbullah Jombang is carried out in a participatory manner in an early-year meeting involving all stakeholders (head, curriculum vice, teachers, education personnel, staff, and committee) to formulate curriculum policies relevant to current needs and developments. Ms. Hayyinatul Wafda stated:

> "Before the start of the school year, we held a preparatory meeting to evaluate the shortcomings of the previous year and discuss the implementation of the flagship programs that will be carried out in this school year better with the school."

The forum serves as an evaluation and work program development tool to guide curriculum implementation. Participatory planning is a strategy for strengthening quality based on collaboration and academic culture, not merely administrative. The stages include curriculum structure, teaching materials, governance of flagship programs, and teacher empowerment through the Teacher Working Group (KKG). The principal explained:

> "For educators, before the teaching process begins, it is best to first make a presentation regarding the material that will be delivered to students so that learning is more focused, clear, and easy for students to understand."

These activities are conducted periodically to ensure teachers' readiness in mastering the material, utilizing innovative learning methods, and utilizing digital-based learning media. Furthermore, teaching materials such as the educational calendar, annual program, and semester program are designed in accordance with the national calendar and Islamic boarding school foundation policies. This demonstrates that curriculum planning is not solely focused on fulfilling educational administration requirements but also aimed at enhancing teacher professionalism and strengthening the quality of digital technology based learning.

The curriculum planning of the KH. Abd. Wahab Hasbullah Jombang Islamic Boarding School reflects the theories of Terry and Miller & Seller through its vision and mission, integration of K13-Merdeka, stakeholder engagement, flagship programs, digital literacy, teaching tools, and teacher evaluation. This continuity guides educational transformation in the era of disruption, with Islamic boarding school values as an ethical framework that makes technology a means of developing religious character, not an autonomous goal.

Table 1. Curriculum Development Planning

Planning Aspects	Brief Description	Implications
Vision and Mission Basis	Curriculum planning is based on the madrasah's vision, which combines academic excellence, professionalism, and piety	Directing the formation of graduates with integrity, religiousness, and adaptability to current developments
Curriculum Integration	Gradual and adaptive integration of the 2013 Curriculum and the Independent Curriculum	Strengthening academic competencies and 21st-century skills

Planning Aspects	Brief Description	Implications
Islamic Boarding School Values Integration	Local content on Nahwu, Sharaf, Tahfidz, NU-ness, and Aswajaan as an ethical framework for technology use	Strengthening religious character and religious moderation
Global Language Strengthening	Arabic and English language learning and the development of KTI as a vehicle for cognitive digital literacy	Supporting global competitiveness and information literacy skills
Stakeholder Participation	Annual meetings involving the principal, teachers, committees, and educational staff	Planning is more participatory, evaluative, and responsive
Teacher Preparation	Presentation of teaching materials and evaluation through the KKG (Work Group)	Improving professionalism and readiness for digital-based teaching
Madrasah Flagship Programs	Memorization of the Quran, Islamic Recitation (KTI), Yellow Books, religious skills, and language	Strengthening students' academic, spiritual, and intellectual competencies

As presented in Table 1, findings regarding curriculum planning indicate that every aspect of planning, from the basic vision and mission to the flagship programs, consistently integrates the digital or global competency dimension with the Islamic values of Islamic boarding schools, and not a single aspect is purely technological without an accompanying religious value framework. Based on these findings, it can be concluded that curriculum planning at MA Unggulan KH. Abd. Wahab Hasbullah Jombang is carried out systematically and participatory, with digital literacy positioned as one of several competencies developed in parallel with strengthening Islamic boarding school values, not as the sole objective of the curriculum.

Implementation of a Digital Literacy Based Curriculum through Innovative and Adaptive Learning

The implementation of digital literacy-based curriculum development is a strategic response to technological disruption that demands adjustments to the education system in madrasas (Fakhrurridha dkk. 2025). The integration of digital literacy in the curriculum aims to strengthen students' competencies to be more adaptive, critical, creative, and able to compete in the global era, especially in the context of Islamic education which remains based on Islamic values (Shobiri dkk. 2023). In addition, this development is also directed at improving information literacy skills, digital ethics, and the productive use of technology in the learning process (Huda dan Hayaa, 2025). Thus, the digital literacy curriculum is positioned as a pedagogical instrument as well as a means of character formation and strengthening religious moderation, in line with the idea of synergy in sustainable education based on multicultural values (Huda dan Ariffaturakhman, 2021).

The implementation of the curriculum of MA Unggulan KH. Abd. Wahab Hasbullah Jombang integrates the national and Islamic boarding school curriculum

with an orientation towards digital literacy, character, and 21st-century skills. Learning tools (RPP, syllabus, modules, digital media, interactive teaching materials) are prepared by teachers based on student needs and the flagship program. Learning forms religious, social, communication, collaboration, creativity, critical thinking, and digital adaptive competencies, not just academic ones. Mr. Faizun, M.Pd., stated:

> "In developing the curriculum structure, we have adapted the Independent Curriculum method to the school's flagship program to make it more relevant, flexible, and optimally support the development of student competencies at our school."

The integrated curriculum structure at MA Unggulan KH. Abd. Wahab Hasbullah Jombang plays a strategic role in supporting innovative and adaptive learning and aligning the madrasah's vision of facing technological disruption. The implementation of digital literacy is supported by academic and linguistic culture, with teachers required to speak Arabic or English in daily learning and communication, as a means of cultivating global communication and preparing for international connectivity. Dr. Miftakhul Arif, M.H.I. stated:

> "As teachers, we are required to communicate in English or Arabic. Even when students enter the office, we strictly instruct them to use both languages."

The implementation of the curriculum of MA Unggulan KH. Abd. Wahab Hasbullah Jombang is not merely a transfer of knowledge, but rather the creation of a collaborative-sustainable environment. Language habituation as a strengthening of global communication intersects but is not identical to digital literacy, both complement each other for global readiness, but conceptual differences are important so that language achievement is not automatically read as digital literacy achievement. Strengthening the implementation of digital literacy is carried out through work ethic training, digital media workshops, and teacher professionalism with LP Ma'arif PWNU East Java, to improve the pedagogical, professional, social, and personality of teachers in technology learning. Mrs. Hayyinatul Wafda, S.H.I., M.Ag. stated:

> "We carry out work ethic training and teacher professionalism development by presenting resource persons from the LP Ma'arif PWNU East Java so that educators and education personnel are able to guide curriculum management in accordance with the objectives of the madrasah."

Thus, curriculum implementation is not only oriented toward developing student competencies but also emphasizes the importance of human resource readiness as key actors in the digital education transition. However, this research data does not include direct measurements of teachers' post-training digital competency levels, so the training's contribution to learning quality cannot be empirically confirmed and requires verification through further research.

At the educational unit level, curriculum implementation is realized through various flagship programs integrated into teaching and learning activities, such as Quran memorization, Arabic, English, scientific writing, yellow book reading skills, and the development of student digital literacy through the use of learning technology. All programs are implemented based on student interest groups and are scheduled in a structured manner during active teaching and learning hours. One student explained that:

> "In our opinion, the flagship program is implemented during teaching and learning hours, while we carry out Arabic muhadatsah during the oth hour before

entering class as a way of getting used to everyday language at school, which we carry out together routinely."

Furthermore, the Student Council (OSIS) Chairperson also stated that the implementation of digital-based learning helps students access learning materials more flexibly. He stated that:

"In today's learning, we often use digital media such as interactive presentations, Google Classroom, and searching for references via the internet so that the learning process becomes easier, more interesting, and helps us understand the material more quickly."

Information from students is a direct indicator of the cognitive dimension of digital literacy (access and evaluation of sources, not just device usage). The implementation of the curriculum of MA Unggulan KH. Abd. Wahab Hasbullah Jombang is designed through complementary academic management and digital learning, but limited generalization due to the small sample requires further surveys. The implementation of the curriculum also shapes character through habituation and socio-religious programs (Dhuha prayer, istighasah, greeting neighbors, Bahrul Ulum devotion) for social awareness and spiritual strengthening in the digital era. Mr. Faizun, M.Pd. stated:

"In learning, I see that the process is not only a transformation of knowledge, but also a transformation of values that shape the character, attitudes, and perspectives of students in a sustainable manner in life."

In addition, the madrasah also organizes various special development programs, such as college entrance preparation, academic olympiad training, scientific writing training, and biblical reading training, as a systematic effort to improve the quality of graduates according to students' interests, talents, and potential. Furthermore, the project exhibition program serves as a means of actualizing student competencies, both in academic and non-academic fields, through the development of creativity, critical thinking skills, and digital literacy skills.

The implementation of a digital literacy-based curriculum that is integrated between the national curriculum and the Islamic boarding school curriculum shows its conformity with George R. Terry's management theory which emphasizes the functions of planning, organizing, implementing, and supervising (Terry, 1960). Curriculum implementation is carried out through planning lesson plans, syllabi, and digital modules; organizing flagship programs and language programs; implementing technology-based learning; and monitoring through evaluation and ongoing teacher development in accordance with the Miller and Sellers concept (Miller dan Seller, 1985).

Based on the research results, the implementation of the digital literacy-based curriculum at the KH. Abd. Wahab Hasbullah Jombang Islamic Senior High School is structured and adapts to technological developments, although its success rate in measurably improving student learning outcomes cannot yet be concluded from the qualitative data of this study. Its implementation is a synergy of the national curriculum and Islamic boarding school-based flagship programs supported by efforts to strengthen teacher professionalism, academic language culture, utilization of digital technology, student development, and strengthening Islamic character. Thus, as perceived by the research participants, the curriculum is directed as a strategy to produce graduates who are competitive, religious, and adaptive to technological disruption; claims regarding

actual graduate outcomes require verification through learning achievement data or alumni tracking that are beyond the scope of this study.

Evaluation of Digital Literacy-Based Curriculum as an Effort to Improve the Quality of Education

The development of digital technology has brought significant disruption to various aspects of life, especially in the field of education (Firmansyah dkk. 2026). This condition requires educational institutions to carry out curriculum transformation systematically and responsively to the dynamics of rapid change (Safrial, 2021). One form of strategic response that can be carried out is through evaluation and development of a digital literacy based curriculum (Jedlicka dan Havenith, 2025). Strengthening digital literacy in the curriculum is not only oriented towards mastering technology alone, but also towards improving critical, collaborative, creative and ethical thinking skills in the use of technology (Liana dan Suyadi, 2024). Thus, the implementation of a digital literacy-based curriculum is expected to support improving the quality of learning and developing student competencies according to the demands of the 21st century (Wafa dan Iffah, 2024).

The implementation of a digital literacy-based curriculum at the KH. Abd. Wahab Hasbullah Jombang Islamic Senior High School is complemented by a multi-layered learning evaluation system oriented towards improving the quality of graduates. The evaluation is conducted systematically through direct and indirect supervision to ensure that all digital-based learning processes are running according to the established curriculum plan. Direct evaluation is carried out by the principal along with a curriculum monitoring team consisting of the vice principal, the vice principal of curriculum, teacher disciplinary staff, religious staff, and curriculum administration staff. The principal emphasized that:

> "Controlling carried out by me and assisted by the curriculum monitoring team was carried out to assess the achievement of curriculum implementation, whether it was in accordance with curriculum planning."

This statement demonstrates that evaluation serves as both an administrative control instrument and a reflective mechanism to ensure curriculum implementation aligns with established planning. This evaluation is reinforced through the use of surveillance technology in the form of Closed Circuit Television (CCTV) installed in all classrooms and strategic areas of the madrasah. Monitoring is carried out directly by the madrasah principal and the curriculum vice principal through the control room to oversee teacher and student activities throughout the learning process. Mr. Faizun, M.Pd., stated that:

> "All classrooms in our school are equipped with CCTV, allowing direct monitoring of student and teacher activity. This helps us maintain discipline and a safe learning environment on a daily basis."

The use of CCTV, Teacher Performance Assessment (PKG) instruments, disciplinary check-ins, and manual attendance lists represent digitalization of madrasah governance and administrative oversight, not part of student digital literacy as defined in this study. These two domains need to be analytically separated: the use of technology for supervision reflects the madrasah's managerial adaptation to technological availability, while digital literacy refers to students' cognitive, technical, and ethical competencies in utilizing digital information. Equating the two risks overestimating

digital literacy achievements based solely on the level of institutional technology adoption. With this distinction, the data driven evaluation system in madrasahs can be understood as strengthening the governance and professionalism of educators, with its indirect contribution to students' digital literacy.

In addition to direct evaluation, KH. Abd. Wahab Hasbullah Jombang's Leading Islamic Senior High School also implements indirect evaluation through annual and weekly evaluation meetings. The annual evaluation meeting is led directly by the principal to discuss the achievements of the work program and obstacles to curriculum implementation during the academic year. Meanwhile, weekly evaluation meetings are led by each head of each field to review the effectiveness of additional programs supporting the digital literacy-based curriculum. Ms. Hayyinatul Wafda, S.H.I., M.Ag. stated that:

> "We carry out evaluations continuously every week so that additional activities that support the curriculum can run optimally and in a targeted manner according to the goals that we have set together at our school."

These periodic evaluations enable madrasas to more quickly identify various obstacles to digital learning implementation. Through this process, madrasas can adjust their learning strategies to reflect evolving student needs, technological changes, and the dynamics of global education. Thus, the implementation of a digital literacy based curriculum is not static but undergoes continuous adjustments through a periodic evaluation process integrated with the institution's needs.

Curriculum evaluation at the KH. Abd. Wahab Hasbullah Jombang Islamic Senior High School was also conducted through a Madrasah Self-Evaluation (EDM) activity, which refers to the Madrasah Work Plan (RKM). This evaluation aims to measure the level of achievement of digital literacy-based learning programs and follow up on programs that have not been optimally implemented. The madrasah principal explained that:

> "We will evaluate together what has not been optimally implemented, then we will reincorporate it into the following year's program so that its implementation can be better, more focused, and more effective than before."

This statement demonstrates that curriculum evaluation is geared toward continuous improvement, while also implicitly acknowledging that not all digital literacy-based programs are implemented as planned. One implementation barrier identified in this study is the discipline of teachers who have interests outside the institution, which affects their active participation in technology-based learning processes. In response, the madrasah implemented a coordination system and assigned substitute teachers to ensure the learning process continues and avoids gaps in class time. The findings regarding this barrier also serve as a case study demonstrating that the implementation of the digital literacy-based curriculum in this madrasah has not been without challenges, contrary to the impression that might arise if only success narratives were emphasized. Other barriers identified from the research data include reliance on individual teacher readiness to utilize digital media, which, according to participants, varies among teachers despite regular training.

The implementation of a digital literacy-based curriculum at this madrasah is also reflected in the graduate quality evaluation system, which focuses not only on academic aspects but also encompasses religious competencies, digital literacy skills, global communication skills, and students' scientific thinking abilities. Evaluation is

conducted through individual assignments, daily tests, semester assessments, language certification exams, and the preparation of scientific papers. Each specialization has graduation standards tailored to the characteristics of the field of study and the needs of 21st century competencies. Ms. Hayyinatul Wafda explained that:

> "The graduation standard is not only a score above the Minimum Competency Minimum (KKM), but also memorization of at least two chapters of the Qur'an, foreign language skills, and the writing of scientific articles."

These graduation standards demonstrate that madrasas establish explicit criteria that integrate academic, religious, and literacy achievements an institutional operationalization of the concept of competency integration discussed in the introduction. However, this study did not obtain data on the percentage of students meeting these standards or on direct measures of students' digital competencies or post-graduation outcomes. Therefore, the effectiveness of these graduation standards in developing the intended competencies cannot be empirically determined based on this research.

Theoretically, the implementation of digital literacy based curriculum evaluation at MA Unggulan KH. Abd. Wahab Hasbullah Jombang reflects the controlling function in George R. Terry's management theory, where direct supervision, the use of CCTV, Teacher Performance Assessment (PKG), and periodic evaluations serve to ensure the conformity of curriculum implementation with predetermined plans. In addition, the involvement of the curriculum supervisory team and weekly and annual evaluations demonstrate the integration of organizing and actuating functions in educational management, in line with the idea of continuous curriculum implementation according to Miller and Seller. Considering the distinction between administrative supervision and student digital literacy outlined above, curriculum evaluation at this madrasah is best understood as an instrument for controlling the quality of educational governance that has the potential to support, but has not yet directly proven, the improvement of digital competence and the quality of graduates; proving this relationship requires a research design with learning outcome measurements or alumni tracking.

CONCLUSION

The development of a digital literacy-based curriculum at the KH. Abd. Wahab Hasbullah Islamic Boarding School in Jombang was implemented through three integrated stages: participatory planning based on vision and mission, implementation of six flagship programs that integrate language, religion, and technology, and multi-layered evaluation through direct supervision, performance assessment, and madrasah self-evaluation. Empirical contributions show that these three stages are consistently guided by the Islamic values of the Islamic boarding school, making technology a means of forming religious character, not an independent goal. The theoretical contribution expands Terry's management theory and the Miller-Seller curriculum model by adding dimensions of Islamic values and Islamic boarding school culture as a guiding framework for the digital curriculum, and offers an operationalization of digital literacy that is distinguished from administrative use and institutional oversight.

This study has three limitations. First, the single-case study makes the findings contextual and non-generalizable. Second, without direct measurement of digital competency and graduate outcomes, claims of curriculum contribution are indicative,

not causal. Third, the limited number of participants reduces the diversity of perspectives. Further research is recommended using a mixed approach, direct measurement of digital outcomes, comparisons between Islamic boarding schools (pesantren), and graduate tracking to more validly test the relationship between curriculum and graduate quality.

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