

An Integrative Model for Managing World-Class Education: Organizational Management, Boarding-Pesantren Systems, and Educational Technology at MAN Al Ashriyyah Nurul Iman Parung, Bogor, West Java

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ARTICLE INFO

Article History:

Submitted 03-08-2026

Received 24-08-2026

Published 28-08-2026

Keywords:

World-Class Education;
Educational Organisation;
Bureaucracy;
Boarding School;
Islamic Boarding School;
Educational Technology;

ABSTRACT

This study formulates an integrative model of World-Class Education (WCE)-based educational management at MAN Al Ashriyyah Nurul Iman Parung, Bogor, West Java by combining three dimensions that are often examined separately: educational organisation and bureaucracy, the boarding-pondok system, and educational technology. The article is an integrative synthesis of three mini-studies conducted at the same site. A descriptive qualitative approach with a document-based case-study design was employed, including thematic re-analysis of observation, interview, and documentation data reported in the three manuscripts. Data were analysed through condensation, mapping of similarities and differences, conceptual triangulation, relationship matrices, and model development. The findings show that WCE in a residential madrasah cannot be achieved through isolated flagship programmes. Organisation and bureaucracy provide vision, structure, authority, procedures, and accountability; the boarding-pondok system establishes a twenty-four-hour curriculum, care, adab, independence, well-being, and family partnership; while educational technology strengthens global connectivity, digital learning, information systems, administration, data security, and decision-making. Their integration requires strategic leadership, an integrated curriculum, professional human resources, sustainable financing, student safeguarding, a maintenance system, and data-based quality assurance. The novelty of the article lies in an Integrative WCE-Based Educational Management Model that positions academic quality, spiritual maturity, character, independence, well-being, digital capability, and global outlook as joint outcomes of a single governance architecture.

INTRODUCTION

Social, technological, economic, and cultural transformations have increasingly compelled educational institutions to move beyond administrative effectiveness toward systems that are adaptive, humane, character-building, and responsive to global developments. Contemporary educational institutions are expected to develop governance frameworks capable of navigating uncertainty while simultaneously preserving quality, institutional identity, and social

responsibility. Within this context, World-Class Education (WCE) offers a quality-oriented framework that emphasizes high expectations, teacher professionalism, educational leadership, equitable opportunities, pedagogical innovation, data-driven improvement, and students' capacity to address future challenges (Schleicher, 2018; Huda et al., 2025). However, WCE should not be reduced to international branding, foreign language instruction, expensive infrastructure, or the uncritical adoption of external educational models. As Alexander (2010) and Robertson (2012) critically note, the concept of 'world class' is often driven by international assessment culture and neoliberal agendas that risk reducing quality to measurable indicators while neglecting equity, well-being, and contextual relevance. Altbach and Salmi (2011) identify three essential factors for building a world-class institution: concentration of talent, adequate resources, and effective governance. Salmi further cautions that institutions should 'dare to be different rather than try to copy everybody else' (Salmi, 2013). Rather, WCE fundamentally represents an educational system's capacity to cultivate a high-quality ecosystem that prepares learners through the integration of knowledge, skills, values, attitudes, agency, and both individual and collective well-being (OECD, 2020; Stewart, 2012).

In the context of madrasahs, the implementation of WCE necessitates a deliberate integration of global competencies with Islamic educational values, including tauhid (faith in the oneness of God), adab (ethics), akhlak (morality), religious moderation, national identity, and social responsibility (Mohammad, 2025). Contemporary madrasah education is expected not only to produce academically competent graduates but also individuals characterized by spiritual maturity, strong moral character, independence, and the capacity to contribute meaningfully to society. The recent direction of curriculum development, as articulated in KMA Number 1503 of 2025, emphasizes deep learning, love-based pedagogical approaches, and meaningful, conscious, and joyful learning experiences. This framework aligns with WCE principles because it transcends memorization-oriented instruction toward learning that prioritizes relationships, meaning-making, and practical application (Kementerian Agama Republik Indonesia, 2025a).

In boarding madrasahs, WCE can be operationalized through multiple educational outcomes, including academic excellence, spiritual maturity, character and ethical development, independence, health and well-being, digital literacy, and global awareness. These outcomes require measurable indicators and tangible evidence to ensure that WCE does not remain merely an aspirational vision or institutional slogan. Evidence may include academic achievement records, student portfolios, documentation of religious practice, mentoring records, research products, language proficiency assessments, social participation data, health records, and individual developmental portfolios.

Boarding madrasahs present greater complexity compared to non-boarding educational institutions because educational processes occur continuously across multiple environments, including classrooms, laboratories, mosques, dormitories, dining halls, sports facilities, student organizations, and digital spaces. As students reside within the institutional environment for

nearly twenty-four hours daily, educational quality is determined by the coherence and continuity among formal learning, caregiving, religious habituation, social interaction, health management, security protocols, technology utilization, and family communication. The failure to integrate these components may result in fragmentation: teachers focusing exclusively on academic instruction, caregivers merely maintaining discipline, bureaucratic systems managing only administrative procedures, and technology becoming limited to equipment ownership rather than pedagogical transformation.

Consequently, the first essential dimension in developing WCE-based educational management is the organization and bureaucracy of education. Educational organizations function as social systems comprising people, objectives, structures, resources, processes, and institutional culture. In boarding madrasahs, organizational structures must effectively connect academic units, boarding management, student affairs, religious development, language programs, counseling services, health services, security, facilities, technology, finance, family relations, and quality assurance. Organizational structures should not merely describe positions but should clarify working relationships, information flows, authority distribution, performance indicators, and problem-solving mechanisms.

Bureaucracy plays a vital role in providing procedural certainty, service equity, documentation, protection, financial control, and accountability. However, excessive bureaucratic practices may create organizational silos, duplicated administrative processes, slow decision-making, and compliance-oriented cultures that inhibit innovation. Bush (2020) emphasizes that educational leadership requires alignment between organizational goals, structures, culture, and contextual demands. Within the WCE framework, bureaucracy should transform from a compliance-based mechanism into an enabling bureaucracy, where procedures support educational actors to work safely, clearly, efficiently, innovatively, and responsibly (Bush, 2020).

Adaptive educational bureaucracy requires clear authority distribution, adherence to subsidiarity principles, cross-unit coordination, shared data systems, risk-based standard operating procedures, responsive services, and professional innovation spaces. School leaders should not become the sole decision-makers for all operational matters. Instead, decisions should be resolved at the closest competent level, while high-risk issues are escalated through clearly defined mechanisms. This approach prevents excessive centralization while maintaining institutional control and accountability.

The second essential dimension is the boarding-pondok system as a twenty-four-hour educational ecosystem. The boarding system integrates formal learning with daily life experiences, recognizing that education occurs not only through subjects taught in classrooms but also through congregational prayers, halaqah (religious study circles), language practices, cleanliness routines, dining habits, queuing culture, organizational activities, sports, evening study, peer relationships, conflict management, technology use, and social service activities.

These experiences function as an intentional hidden curriculum that must be designed, managed, and evaluated rather than allowed to develop without direction.

Caregiving represents the core of the boarding system. Musyrif and musyrifah (boarding supervisors) serve not only as supervisors but also as developmental mentors, role models, conflict mediators, observers of student well-being, and communication bridges between students, institutions, and families. Consequently, they require competencies in adolescent development, empathetic communication, positive discipline, basic counseling, child protection, first aid, documentation, and digital literacy. Students' motivation and development are strengthened when their needs for autonomy, competence, and relatedness are fulfilled through clear structures and supportive relationships (Ryan & Deci, 2020).

Student protection must become a primary indicator of educational quality. Regulations from the Ministry of Religious Affairs, including PMA Number 73 of 2022 concerning the prevention and handling of sexual violence in educational institutions and KMA Number 91 of 2025 concerning the roadmap for child-friendly pesantren development, emphasize the importance of risk mapping, ethical codes, education, safe reporting mechanisms, rapid response systems, mentoring, documentation, and recovery processes. Such a framework demonstrates that positive discipline does not mean the absence of rules, but rather the rejection of violence, bullying, humiliation, and abuse of authority (Kementerian Agama Republik Indonesia, 2022, 2025b).

The third dimension is educational technology as a governance ecosystem. Digital transformation expands access to learning resources, communication networks, administrative services, data management, and global collaboration opportunities. Nevertheless, UNESCO emphasizes that technology should be selected based on educational needs rather than merely following modernization trends or technological consumption (Hasan et al., 2023). In boarding madrasahs, technology implementation also creates challenges related to ethics, discipline, data security, content exposure, distraction, access inequality, financial sustainability, and maintenance. Therefore, educational technology should be understood as an ecosystem consisting of networks, devices, platforms, users, policies, financing systems, security mechanisms, and maintenance processes (Ifenthaler et al., 2021; UNESCO, 2023).

Teräs (2022) argues that technology is not neutral because it is always connected to social relations, policies, culture, and organizational interests. Therefore, the procurement of digital devices without pedagogical readiness and institutional capacity does not automatically improve educational quality. In boarding madrasahs, five technological dimensions become essential: global connectivity, bandwidth availability, technology financing, digital infrastructure, and maintenance systems. These dimensions must be strengthened by digital competencies, ethical awareness, data protection, account management, content filtering, backup systems, and recovery plans.

Learning Management Systems (LMS) and madrasah information systems have the potential to integrate learning plans, instructional materials, assignments, assessments, attendance, caregiving records, health information, permission management, family communication, inventory systems, and quality reports. However, data integration must follow role-based access principles. Sensitive student information should not be accessible to all users. Data minimization, consent, account security, access auditing, and data retention policies must become essential components of institutional governance (Sudrajat et al., 2024).

The integration of organization, boarding, and technology forms the foundation of an integrated WCE-based educational management model. These three subsystems have reciprocal relationships. Organization and bureaucracy provide direction, structures, authority, standards, and financial support for boarding systems and technological development. Boarding provides the practical context for curriculum implementation, student development, protection, and meaningful technology utilization. Technology provides data, communication, efficiency, access, and monitoring capabilities for both organizational management and boarding operations. If one subsystem is weak, the others lose their effectiveness and transformative capacity.

The three initial studies conducted at MAN Al Ashriyyah Nurul Iman Parung Bogor, West Java, discuss educational technology utilization, educational organization and bureaucratic management, and WCE-based boarding-pondok systems separately. This separation provides depth in each area but potentially creates repetition and does not fully explain the relationships among these dimensions. In reality, technology requires decision-making structures and financial planning; boarding requires coordination between madrasah and pondok systems as well as integrated information management; and bureaucracy requires digital data and an understanding of twenty-four-hour educational dynamics. Thus, these three themes should be understood as interconnected components within a single educational system.

MAN Al Ashriyyah Nurul Iman Parung Bogor, West Java, is selected as the research locus to formulate a boarding madrasah management model that integrates global quality standards with Islamic educational identity. Supporting institutional data, including the National School Identification Number (NPSN), detailed address, dormitory capacity, number of educators and students, and formal organizational structure, will be completed and verified during the final research stage based on official institutional documents.

The novelty of this research lies in developing an Integrative Model of World-Class Education-Based Educational Management. Unlike approaches that treat organization, boarding, and technology as separate institutional programs, this model conceptualizes them as interconnected subsystems unified through an integrated governance architecture. This architecture includes strategic leadership, integrated curriculum, professional human resources, financing systems, student protection mechanisms, quality culture, data governance, and evaluation systems.

This novelty addresses a significant gap in the existing literature. While previous studies have extensively examined educational organization, boarding school systems, and educational technology as relatively separate domains, they have largely failed to capture the reciprocal relationships and interdependencies among these dimensions. Research on educational bureaucracy has predominantly focused on administrative effectiveness and compliance without adequately connecting these aspects to broader pedagogical and technological transformation. Studies on boarding schools have largely emphasized religious education, character formation, and student discipline, but have rarely integrated these concerns with institutional governance and digital innovation. Investigations into educational technology have generally centered on infrastructure, digital literacy, and pedagogical innovation, yet have not sufficiently connected these to organizational structures and boarding dynamics. This fragmented approach limits our understanding of how these subsystems interact to produce educational outcomes, particularly in the context of boarding madrasahs where students' educational experiences occur across multiple environments simultaneously.

Furthermore, previous research on WCE has predominantly focused on general education systems or non-Islamic contexts, with limited attention to how WCE principles can be contextualized within Islamic educational institutions. The integration of global quality standards with Islamic values, including tauhid, adab, akhlak, religious moderation, and national identity, remains insufficiently explored, particularly in boarding madrasah settings. Empirical research on the implementation of WCE in Indonesian madrasahs remains scarce, and comprehensive models that demonstrate how organization, boarding, and technology can be integrated to achieve WCE outcomes have not been adequately developed or validated.

This study addresses these gaps by integrating three dimensions that have been previously examined separately into a unified analytical framework, contextualizing WCE within an Islamic educational setting that balances global quality standards with Islamic values and national identity, and developing a comprehensive integrative model with explicit governance instruments, risk identification, implementation roadmaps, and quality indicators that can guide institutional transformation toward WCE. Therefore, this research addresses four main questions: how organization and bureaucracy support WCE implementation; how the boarding-pondok system develops a twenty-four-hour educational ecosystem; how educational technology strengthens learning processes and institutional governance; and how these three dimensions can be integrated into a comprehensive educational management model at MAN Al Ashriyyah Nurul Iman Parung Bogor, West Java.

METHODS

This study employs a descriptive qualitative approach with an integrative case study design. The design was selected because the purpose of the research is to understand the relationships among educational organization-bureaucracy, boarding-pondok education, and

educational technology within the context of a single institution. A case study approach enables an in-depth analysis of actors, structures, processes, policies, institutional culture, resources, and educational outcomes within their contextual settings (Ayton, 2023; Yin, 2018).

This article represents a synthesis of three mini-research studies conducted at the research locus of MAN Al Ashriyyah Nurul Iman Parung Bogor, West Java: the implementation of WCE-based educational technology systems, WCE-based educational organization and bureaucratic management, and WCE-based boarding and pondok education systems. Primary and secondary data were derived from manuscripts, observation notes, interview summaries, documentation, and analytical matrices available from the three studies. These data were treated as a unified case study corpus rather than as three separate studies that were mechanically aggregated.

The units of analysis include: institutional vision and organizational structure; authority distribution; standard operating procedures (SOPs) and coordination mechanisms; curriculum integration; student mentoring and discipline systems; human resource competencies; student protection and well-being; digital connectivity and learning; financing and infrastructure; technology maintenance and data security; family partnerships; and quality assurance systems. Each unit was analyzed through three guiding questions: what function does it perform, how does it relate to other subsystems, and what quality evidence is required?

The analysis was conducted through five stages. First, data condensation was carried out by eliminating repetitions and categorizing key findings. Second, open coding was conducted to identify major concepts. Third, axial coding was applied to establish relationships among organization, boarding systems, technology, and educational outcomes. Fourth, conceptual triangulation was conducted by comparing findings with relevant literature and regulations. Fifth, the integrative model and implementation recommendations were developed. This analytical process follows the interactive analysis framework proposed by Mezmir (2020).

Research validity was maintained through cross-document comparison, conceptual source triangulation, consistency checks between claims and supporting evidence, peer discussions among researchers, and an audit trail in the form of synthesis matrices. The confidentiality of personal identities was preserved throughout, and no sensitive student data were presented. As detailed field data are not yet fully available, the findings are positioned as a preliminary analytical model derived from an initial case study, requiring further empirical verification.

Table 1. Dimensions of the Integrative Model of World-Class Education-Based Educational Management

Subsystem	Main Function	Governance Instruments	Key Risks	Outcomes
Organization-bureaucracy	Establishing direction, structure, authority, and accountability	Strategic plans, organizational structure, job descriptions, SOPs,	Organizational silos, excessive procedures, centralization,	Coherence, service efficiency, accountability

		cross-unit meetings, dashboards	administrative compliance orientation	
Boarding-pondok system	Organizing twenty-four-hour education and student development	Curriculum mapping, schedules, dormitory SOPs, mentoring records, health services	Fatigue, violence, fragmentation between academic and dormitory systems, excessive control	Ethics (adab), independence, spirituality, well-being
Educational technology	Expanding access, learning opportunities, data management, and communication	Networks, Learning Management Systems (LMS), information systems, security systems, helpdesk, maintenance mechanisms	Distraction, digital inequality, data breaches, passive device utilization, recurring costs	Digital literacy, efficiency, connectivity, data-driven decision-making
Integration layer	Unifying the three subsystems toward WCE achievement	Leadership, human resources, financing, safeguarding, quality audits	Separate and unsustainable programs	Academic quality, character development, health, and global adaptability

Source: Researcher's synthesis, 2026.

RESULTS AND DISCUSSION

WCE as a Shared Direction for Three Integrated Subsystems

The synthesis findings indicate that the primary challenge is not the absence of programs, but rather the fragmentation among existing initiatives. The organizational system, boarding system, and educational technology infrastructure often operate with their own plans, documents, personnel structures, and financial resources. However, their objectives, data systems, performance indicators, and evaluation mechanisms have not always been integrated. As a result, technological decisions may fail to consider the dynamics of the boarding environment; student care services may lack sufficient academic information; and bureaucratic processes may produce documentation that is not effectively utilized for institutional improvement.

WCE functions as a shared strategic direction that shifts the institutional focus from the question of "what programs are available" toward "what student outcomes should be developed and what evidence demonstrates their progress." This vision is translated into a graduate profile characterized by strong faith and ethical values, academic excellence, critical thinking ability, effective communication skills, independence, health awareness, digital literacy, global perspectives, and social responsibility. Each subsystem subsequently contributes a specific role in achieving these educational outcomes (Songgirin, 2020).

The organizational subsystem ensures that the graduate profile becomes the foundation for strategic planning, task distribution, human resource development, financial management, and evaluation processes. The boarding system ensures that these values are continuously practiced within a 24-hour educational environment. Meanwhile, technology expands learning resources, documents evidence of student development, accelerates communication, and supports data-driven decision-making. This integrated relationship demonstrates that WCE is not an additional educational program, but rather a principle of organizational coherence that connects all institutional components toward a unified educational vision.

Integration of Organizational and Bureaucratic Education Management

The organizational findings indicate the need for a matrix-based structure that connects academic functions with student care management. While a vertical organizational structure remains necessary to maintain accountability, student-related issues are inherently cross-functional. Declining academic performance, for example, may be influenced by sleep patterns, health conditions, boarding school conflicts, device usage, or family-related pressures. Therefore, homeroom teachers, counseling teachers, *musyrif* (boarding supervisors), healthcare personnel, and institutional leaders should establish case management forums supported by proportional access to relevant information.

The distribution of authority should be formalized through a RACI matrix, consisting of parties who are Responsible for implementation, Accountable for final decisions, Consulted during the process, and Informed regarding outcomes. This matrix can be applied to various areas, including student permissions, health management, disciplinary cases, device maintenance, data security, parental visits, external activities, and emergency situations. Clear authority structures help minimize duplication, ambiguity, and conflicting decisions (Lee et al., 2021).

Standard Operating Procedures (SOPs) should be developed based on user experiences and risk management principles. Effective SOPs should not merely contain restrictions but should clearly define objectives, procedures, response timelines, responsible authorities, minimum documentation requirements, evidence collection, escalation pathways, and evaluation mechanisms. The digitalization of procedures should simplify administrative processes rather than merely transferring complex forms into digital platforms. Each document should be reviewed by considering whether it is truly necessary, who utilizes it, and what decisions it supports.

Coordination should be established at three levels. The daily level focuses on operational activities and immediate incidents; the weekly level addresses student development progress and program implementation challenges; while the monthly or semester level evaluates quality indicators, financial conditions, risks, and improvement priorities. Information should not

necessarily be shared with all stakeholders; the need-to-know principle ensures privacy protection while maintaining sufficient contextual information for effective decision-making.

Adaptive bureaucracy also requires a strong communication culture. Formal structures alone are insufficient if organizational members are reluctant to report problems or fear being blamed. Psychological safety enables teachers and caregivers to communicate risks, errors, and support needs openly. Leadership must distinguish between intentional misconduct, negligence, systemic limitations, and experimental failures to ensure fair responses while promoting continuous organizational learning.

Integration of the Boarding School System with the Madrasah Curriculum

The WCE-based boarding system requires an integrated curriculum framework that connects academic subjects, boarding programs, student organizations, languages, research activities, technology, health programs, sports, and community service. This framework can be structured into seven major domains: academic and scientific development; Islamic studies and turats; language and communication; character and leadership development; technology and research; health and life skills; as well as citizenship and social service. Each domain should define its expected outcomes, learning experiences, responsible stakeholders, evidence of achievement, and follow-up actions.

A 24-hour educational schedule must ensure balance and sustainability. High intensity should not be considered the sole indicator of educational quality. Adequate sleep, nutrition, physical activity, personal time, recreation, family communication, and emotional recovery are essential prerequisites for effective learning. Schedule evaluations should incorporate attendance records, lateness data, health complaints, concentration levels, disciplinary incidents, and student feedback. Excessively intensive schedules may produce short-term compliance but can reduce motivation and overall well-being.

Student care requires a structured and tiered mentoring system. *Musyrif* (boarding supervisors) provide daily guidance and support; homeroom teachers monitor academic development; counseling teachers address psychosocial needs; healthcare personnel manage health-related issues; and institutional leaders oversee policies and high-risk cases. The ratio of supervisors to students, shift arrangements, rest periods, supervision mechanisms, and compensation systems must be realistically designed. Maintaining high-quality relationships becomes difficult when caregivers experience prolonged workload and emotional fatigue.

Positive discipline should be implemented through clear rules, meaningful explanations, logical consequences, dialogue, restitution, and restorative approaches. Student violations should be interpreted as information regarding individual needs, skill gaps, peer dynamics, or weaknesses within the system. Responses must remain firm while avoiding humiliation or punitive approaches. Seniority-based practices should be limited; peer mentors may support orientation and learning processes but should not possess disciplinary authority.

Family partnerships should continue beyond the point when students enter the boarding environment. Parents require structured and timely information regarding academic progress, health conditions, student development, achievements, and required support. Conversely, the institution needs to understand students' family backgrounds and significant changes in their circumstances. Communication systems should establish clear channels, frequency, response times, and escalation mechanisms to prevent excessive burdens on teachers and avoid inconsistent information flow.

Integration of Educational Technology with Learning and Student Care

The technological findings indicate that global connectivity must be directed toward pedagogical objectives. Teachers and students require access to digital libraries, academic journals, educational videos, virtual laboratories, webinars, competitions, and collaborative learning platforms. However, access must be accompanied by information literacy, source verification skills, communication ethics, copyright awareness, and digital responsibility. Success should not be measured by the duration of internet usage, but by the quality of learning activities and educational outcomes.

Bandwidth management requires systematic mapping of users, applications, peak usage periods, locations, and critical service requirements. Academic networks, administrative systems, boarding facilities, guest networks, and security devices should be appropriately segmented. Priority should be given to essential educational services, while non-academic usage should be regulated transparently. Monitoring systems must respect privacy principles and avoid excessive surveillance.

A Learning Management System (LMS) can integrate learning materials, assignments, discussions, assessments, portfolios, remedial programs, and enrichment activities. Information systems can connect attendance records, schedules, student care notes, health records, permission management, achievements, disciplinary records, parent communication, inventory management, and financial administration. Integration does not mean that all information must appear in a single interface; access rights should be determined according to roles, and sensitive data must be properly protected.

Technology financing should adopt a Total Cost of Ownership (TCO) approach. Costs include not only procurement but also network infrastructure, licensing, training, technical support, cybersecurity, electricity, spare parts, system upgrades, and replacement cycles (Kraemer et al., 2022). Technology acquisition should be based on educational needs, user numbers, compatibility, human resource capacity, and maintenance plans. Unused devices represent inefficiency even when their initial purchase price is relatively low (World Bank, 2020).

A maintenance system represents an indicator of digital maturity. Institutions require asset inventories, identification systems, inspection schedules, incident reporting mechanisms,

service response targets, backup procedures, system updates, account management, and recovery plans. A simple helpdesk system can record problem categories, frequency, resolution time, and root causes. These data become valuable foundations for budgeting and capacity development.

Strategic Leadership and Human Resource Professionalism

Successful integration highly depends on strategic leadership. Institutional leaders are responsible for aligning priorities across units, building trust, establishing standards, allocating resources, and ensuring continuous follow-up. Leadership is not limited to the head of the madrasah; boarding coordinators, vice principals, senior teachers, musyrif, technology managers, and quality assurance teams also contribute through distributed leadership within their respective authorities.

Human resource development should be based on an integrated competency framework. Teachers require strong pedagogical knowledge, assessment capabilities, technological competence, and understanding of boarding school dynamics. *Musyrif* require competencies in student care, communication, safeguarding, and data literacy. Administrative staff require skills in service management, documentation systems, information systems, and privacy protection. Technology managers require technical expertise combined with pedagogical understanding and ethical awareness.

Training programs should be transformed into continuous development cycles consisting of needs analysis, learning activities, practical application, observation, feedback, reflection, and evidence of improvement. Workshops without follow-up mechanisms rarely generate meaningful transformation. Peer observation, coaching, professional learning communities, lesson study, case simulations, and cross-unit projects can connect competencies with real institutional challenges (Tong, 2026).

Human resource motivation and well-being must also be continuously monitored. Boarding systems and digital environments may increase communication demands and working hours. The Job Demands-Resources Theory explains that high job demands should be balanced with adequate resources, support, autonomy, competence development, and recognition (Bakker & Demerouti, 2017). Institutions should therefore manage work shifts, protected personal time, communication channels, psychological support, recognition systems, and career development pathways.

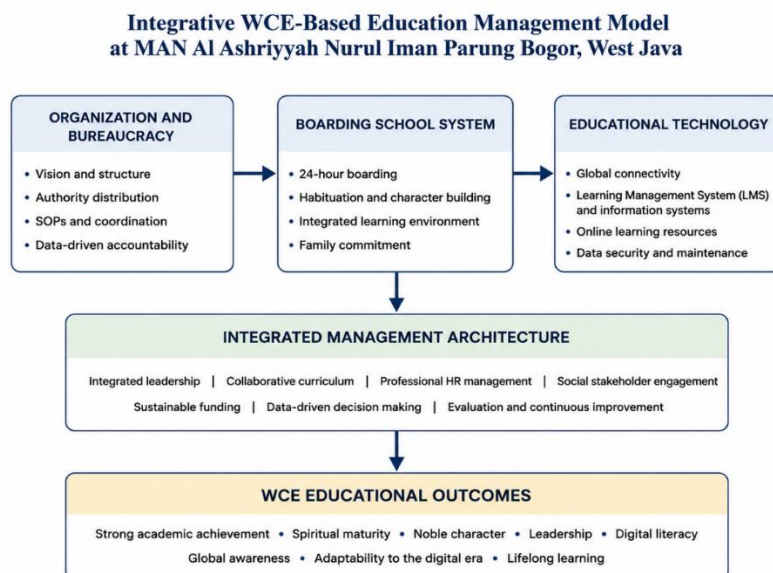


Figure 1. Integrative WCE-Based Education Management Model at MAN Al Ashriyyah Nurul Iman Parung, Bogor, West Java, Indonesia

Source: Developed by the researcher based on the synthesis of three mini-research studies, 2026.

Implementation Stages of the Model

The implementation of the model should be conducted gradually to prevent additional burdens and organizational confusion. The first stage is diagnosis and alignment, which involves verifying institutional identity, mapping organizational structures, programs, data systems, technological capacity, risks, competencies, and workload distribution. The second stage is design, which focuses on establishing the graduate profile, coordination structure, performance indicators, curriculum mapping, safeguarding policies, data architecture, and strategic budget priorities.

The third stage involves a pilot project implemented in high-impact areas, such as the integration of academic and student care records, permission and health management SOPs, quality dashboards, or digital helpdesk systems. Pilot implementation enables limited-scale testing, feedback collection, and continuous improvement before broader adoption. The fourth stage is institutionalization, achieved through internal regulations, professional training, supervision mechanisms, budgeting systems, information systems, and institutional audits.

The fifth stage focuses on network development and benchmarking. Once the core system becomes stable, the institution can expand partnerships with universities, Islamic boarding schools (pesantren), high-performing madrasahs, industries, alumni networks, and international organizations. Partnerships should be selected based on their contribution to achieving the graduate profile rather than solely on institutional reputation. The sixth stage involves

longitudinal impact evaluation to assess student development, human resource well-being, family trust, and organizational sustainability.

Table 2. Implementation Roadmap of the Integrative Model

Stage	Focus	Key Activities	Evidence/Output	Timeline
Diagnosis	Condition mapping	Audit of organizational structure, programs, schedules, data, risks, technology, and human resources	Initial condition map and priority areas	0-3 months
Design	System alignment	Development of graduate profile, curriculum map, RACI matrix, SOPs, indicators, and data architecture	Integrated design documents	3-6 months
Pilot	Limited-scale testing	Integration of academic and student care data, quality dashboard, digital helpdesk, and safeguarding mechanisms	Pilot results and improvement recommendations	6-12 months
Institutionalization	Standardization and expansion	Training, supervision, budgeting, and cross-unit implementation	Operational system and audit results	Year 2
Networking	External collaboration	Benchmarking, research collaboration, language programs, partnerships, and competitions	Collaborative programs and networks	Year 2-3
Impact Evaluation	Sustainability assessment	Longitudinal studies, strategic reviews, and policy updates	Impact report and future development plan	Annually

Source: Researcher's synthesis, 2026

CONCLUSION AND RECOMMENDATIONS

Conclusion

The implementation of WCE-based education management at MAN Al Ashriyyah Nurul Iman Parung Bogor, West Java, requires an integrated governance framework that connects organizational bureaucracy, the boarding school system, and educational technology. Organizational structures provide strategic direction, authority, procedures, financing, and accountability through instruments such as a matrix-based structure linking academic and student-care functions, a RACI-based distribution of authority, risk-based Standard Operating Procedures, and tiered daily, weekly, and monthly coordination forums. The boarding system translates institutional vision into a 24-hour educational ecosystem organized around seven curricular domains academic and scientific development; Islamic studies and turats; language and communication; character and leadership development; technology and research; health and life skills; and citizenship and social service supported by a tiered mentoring structure and sustained family partnerships. Meanwhile, educational technology strengthens learning resources, administrative efficiency, communication, data management, connectivity, and evidence-based decision-making through pedagogically directed connectivity, segmented bandwidth management, an integrated Learning Management System and information system

with role-based access, Total-Cost-of-Ownership-based technology financing, and a structured maintenance and helpdesk system.

The findings emphasize that these three subsystems cannot operate independently: the central challenge identified throughout the analysis is not the absence of programs but the fragmentation of objectives, data systems, and evaluation mechanisms across them. Effective WCE management therefore requires strategic leadership distributed across the head of the madrasah, boarding coordinators, musyrif, and technology managers; integrated curriculum design; professional human resources guided by an integrated competency framework and continuous development cycles; student protection mechanisms grounded in positive discipline and formal safeguarding regulations; sustainable financing; digital infrastructure management; and continuous quality assurance implemented through the six-stage roadmap of diagnosis, design, pilot, institutionalization, networking, and impact evaluation. The proposed Integrative WCE-Based Education Management Model positions academic excellence, spiritual maturity, character development, independence, digital capability, and global awareness as interconnected outcomes of a comprehensive governance architecture.

Recommendations

Based on the findings, the institution should prioritize institutional profiling, governance audits, development of WCE graduate profiles, integrated curriculum mapping, clear authority structures, student protection policies, information system architecture, and quality assurance dashboards. Capacity development for teachers, boarding supervisors, administrative staff, and technology managers should be strengthened through continuous coaching and professional learning communities. From a policy perspective, curriculum alignment, digital governance, cybersecurity, data privacy, and technology lifecycle management should become strategic priorities.

For future research, further field-based validation through longitudinal studies, interviews, surveys, and comparative research with other boarding schools is required to test the applicability of the model across different institutional contexts. Studies examining the relationship between adaptive bureaucracy, boarding management quality, digital readiness, human resource capability, student well-being, and educational outcomes would also be valuable for advancing knowledge in this field. However, this study is limited by its conceptual and document-based approach, with insufficient empirical data regarding institutional profiles, student and staff characteristics, infrastructure capacity, financial resources, digital systems, and performance indicators. Therefore, broader implementation or empirical claims should be established through more robust empirical validation

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