

Can Indonesia's Decentralized Education Technology Governance Policy: Evidence from Muslim Countries

Mohammad Thoha^{a,1,*}, Abdul Haq Syawqi^{a,2}, Mohammad Zaini Yahaya^{b,3}, Dimas Danar Septiadi^{a,4}, M Haris Hidayatulloh^{a,5}

^a Institut Agama Islam Negeri Madura, Pamekasan, Indonesia.

^b University Kebangsaan Malaysia, Selangor, Malaysia.

¹ mohammadthoha@iainmadura.ac.id *; ² asyawqi@iainmadura.ac.id; ³ zainiyahya@ukm.edu.my; ⁴ septiadi.dimasd@iainmadura.ac.id; ⁵ m.harishidayatulloh@iainmadura.ac.id;

* corresponding author

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ABSTRACT

Decentralization of education policies has been implemented in Indonesia and Malaysia; however, their potential impact on Islamic education technology innovation remains to be seen. Comparing and contrasting the Education Decentralization Policies of Malaysia and Indonesia is the objective of this study. This is normative legal research derived from tertiary, primary, and secondary legal sources. First, decentralization policies for the development of Islamic education technology are complicated, according to the research findings, because the Ministry of Education and Culture and the Ministry of Religion have a dualism of regulation and management that violates the concepts and spirit of regional autonomy. Second, regulatory dualism affects the quality of education in Indonesia, whereas integrated management is implemented in a single institution for education in Malaysia. Thirdly, Malaysia has endeavored since elementary school to integrate science and technology. Over the past decade, the Indonesian central government has implemented the Madrasah Reform program, among other initiatives and developments, to develop IT-based Islamic education.



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1. Introduction

Muslim countries, including Malaysia and Indonesia, have witnessed a substantial technological revolution within their Islamic education systems throughout history.¹ This transition is observable from a minimum of two perspectives. Initially, technological

¹ A. Suradi, 'The Social, Political, and Cultural Perspective of Islamic Education in Palembang Malay: A Continuous Evaluation from the Dutch Colonial Period to Today', *Journal of Ethnic and Cultural Studies*, 2022, p. 57 <https://doi.org/10.29333/ejecs/1200>

advancement is presumed to be an inexorable reality for developed nations such as Malaysia.² However, developing nations such as Indonesia are witnessing a monumental transformation and advancement, particularly concerning Islamic education. Furthermore, concerning regulation, this facet of transformation is an exceptional occurrence in Indonesia and Malaysia, both of which are lawful nations characterized by Muslim majorities and a multicultural framework.³

According to Article 179, paragraph 2 of the Dutch constitution, the teaching of Islamic education in public institutions is unequivocally prohibited. A national curriculum comprising 70% general and 30% religious subjects was also instituted in 1975. This ratio indicates that Malaysia is not only a multiethnic and multireligious nation but also a multicultural one. Intriguingly, Malaysia's constitution designates Islam as the official state religion (Article 3, Paragraph 1), elevating religious protection to a universal and fundamental status while permitting the practice of other faiths.⁴

The regulatory framework governing Islamic education can be delineated along two distinct levels: national and regional. Law No. 4 of 1950, in conjunction with Law No. 19 of 1954, unequivocally declares that the execution of Islamic education in Indonesia has transformed since the colonial era. The distinction lies in the fact that the education system during the colonial period was focused on producing economically viable, well-educated labor forces.⁵ In the interim, the focal point of Islamic education during that era was cultivating individual and communal piety. The national education system is divided into three categories: Law No. 2 of 1989 and Law No. 20 of 2003. The first category consists of government-regulated state education institutions. Institutions regulate the private education entities comprising the second group.⁶ The regulatory authority for the third category, higher education levels, is the respective institution. These three classifications represent the implementation or embodiment of the national curriculum, which possesses both overarching and particularized national goals within the regulatory framework. Generally speaking, the regulations enacted by the government serve a broad objective, such as educating the populace of Indonesia and cultivating virtues of faith, piety, and morality among the Indonesian people.⁷

² Karta Jayadi, Amirullah Abduh, and Muhammad Basri, 'A Meta-Analysis of Multicultural Education Paradigm in Indonesia', *Heliyon*, 8.1 (2022), e08828 <https://doi.org/https://doi.org/10.1016/j.heliyon.2022.e08828>

³ Mohd Shuhaimi Bin Haji Ishak and Osman Chuah Abdullah, 'Islamic Education in Malaysia: A Study of History and Development', *Religious Education*, 2013 <https://doi.org/10.1080/00344087.2013.783362>

⁴ Ali Mas'ud, Ah Zaki Fuad, and Ahmad Zaini, 'Evolution and Orientation of Islamic Education in Indonesia and Malaysia', *Journal of Indonesian Islam*, 2019 <https://doi.org/10.15642/JIIS.2019.13.1.21-49>

⁵ Ali Riaz, 'Madrassah Education in Pre-Colonial and Colonial South Asia', *Journal of Asian and African Studies*, 2011, p. 69 <https://doi.org/10.1177/0021909610387758>

⁶ Kwan Ben Sim and others, 'Perception on Landslide Risk in Malaysia: A Comparison between Communities and Experts' Surveys', *International Journal of Disaster Risk Reduction*, 95 (2023), 103854 <https://doi.org/https://doi.org/10.1016/j.ijdr.2023.103854>

⁷ Ervan Nurtawab and Dedi Wahyudi, 'Restructuring Traditional Islamic Education in Indonesia: Challenges for Pesantren Institution', *Studia Islamika*, 2022, p. 58 <https://doi.org/10.36712/sdi.v29i1.17414>

Moreover, with the implementation of the Regional Autonomy Law in 2014, a novel era of education commenced within the confines of the national legal framework: the era of regional autonomy. In order to establish the implementation of education, including Islamic education, Law No. 23 was enacted. Official delegation of authority for establishing this regulation occurred via Regional Regulations (*PERDA*). According to numerous sources, this delegation of authority will result in numerous complications in the future. Concerns include the development and implementation of a technology-based curriculum and the establishment of a standardized curriculum.⁸

The education system in Malaysia is centralized within the federation state, whereas Indonesia's education system, including Islamic education, is highly decentralized. Malaysia, being a federated nation comprising thirteen federal countries, has nine administrative areas of centralization, one of which is education.⁹ This may impact centralized system regulation in both favorable and unfavorable ways. Adverse in that the alliance's member states may be subject to additional regulatory burdens due to potential misunderstandings between the central government (State Council) and the People's Council.¹⁰ In the interim, stakeholders will be able to comprehend and execute a student-appropriate curriculum, which will include guidance on how to integrate a technology-based curriculum. The establishment of the Malaysian education system represents an endeavor to foster scientific integration between the Islamic and non-Islamic faiths.¹¹ This action is taken for two primary purposes. Initially, it aims to elevate Malaysia's scientific standing. Furthermore, this rationale fulfills a constitutional requirement outlined in the Education Law of Malaysia 1996. This law unequivocally declares that the Malaysian education system is an integrative framework grounded in divine values, aiming to foster harmonious coexistence among communities, families, and individuals.¹²

Regional regulations exist, such as those about Bangkalan, Sampang, Pamekasan, and Sumenep Regencies, relevant to the present article. Region 7 of 2013, Regional Regulation Number 6 of 2-5, and Regional Regulation Number 4 of 2016 are examples. Regional Regulation Number 8 of 2014 is also included. The Regional Regulation regulates education development, beginning with institutions and teaching staff and including students and parents, in such great detail during this term. In addition, it governs how education is developed following the unique characteristics of each region. Experts assert

⁸ A. Akrim and others, 'Transformation of Islamic Education Curriculum Development Policy in the National Education System', *Cypriot Journal of Educational Sciences*, 2022, p. 6 <https://doi.org/10.18844/cjes.v17i7.7685>

⁹ Rorlinda Yusof and others, 'Identifying Emotional Intelligence Competencies among Malaysian Teacher Educators', *Procedia - Social and Behavioral Sciences*, 159 (2014), 485–91 <https://doi.org/https://doi.org/10.1016/j.sbspro.2014.12.411>

¹⁰ Febblina Daryanes and others, 'The Development of Articulate Storyline Interactive Learning Media Based on Case Methods to Train Student's Problem-Solving Ability', *Heliyon*, 2023, p. 3 <https://doi.org/10.1016/j.heliyon.2023.e15082>

¹¹ Chatia Hastasari, Benni Setiawan, and Suranto Aw, 'Students' Communication Patterns of Islamic Boarding Schools: The Case of Students in Muallimin Muhammadiyah Yogyakarta', *Heliyon*, 2022, p. 2 <https://doi.org/10.1016/j.heliyon.2022.e08824>

¹² Muhammad Adzran Che Mustapa, Latifah Amin, and Ahmad Firdhaus Arham, 'Stakeholders' Intention to Adopt Gene Therapy in Malaysia: Effects of Age, Education, and Religion', *SAGE Open*, 2020, pp. 1–2 <https://doi.org/10.1177/2158244020970206>

that character education serves as the foundation and defining attribute of the educational system. It is noteworthy that this character possesses a facet of autonomy, as exemplified by how pupils comprehend different regulations, culminating in the formation of a consistent moral value (*akhlak*).¹³ Also explicitly stated in Article 11, Paragraph 1 of Pamekasan Regional Regulation No. 8 of 2014 is this crystallization of moral values. Students are required to adhere to this regulation's educational standards in order to ensure that the entire learning process is successful following the stated objectives.¹⁴

Further research is warranted on the impact of decentralization and centralization on technological aspects of Islamic education regulations, which has received less attention in prior investigations.¹⁵ Academic research on the decentralization and centralization of Islamic education regulations focuses on two primary aspects. Firstly, these regulations are consistently regarded as normative even though the matter has been contentious since colonial times and has given rise to numerous challenges.¹⁶ Presently, one such challenge is the effective implementation of centralized and decentralized Islamic education regulations technology. How Madrasah and Islamic boarding schools are accommodated is outlined in Law No. 18 of 2019, a derivative regulation of Law No. 20 of 2003. In a decentralized or centralized government, as well as a federal state, the government prepares detailed regulations for its implementation. Commencing from primary education and extending to tertiary levels, encompassing both public and private institutions, the technology is comprehensively and seamlessly incorporated into the digital age.¹⁷

Regional regulation has replaced national law as the second development. Despite being perceived as a significant advancement, this exacerbates challenges at the local level, specifically within every *Madrasah* (Islamic school) in the area. The challenges at hand pertain to various aspects of Madrasah administration, including technology, infrastructure, curriculum, and faculty and student personnel.¹⁸ Equal regulations, particularly those of subsidies, are imperative for the advancement of Islamic education in the realm of infrastructure. In terms of faculty caliber, student population, classroom infrastructure, and more, Islamic and conventional institutions will be comparable. One instance of a

¹³ Jeffrey Guhin, 'The Boundaries of Pragmatism in Muslim Education: Comparing the Islamic Pedagogies of Sayyid Qutb and Fethullah Gülen', *Critical Research on Religion*, 2020, p. 11 <https://doi.org/10.1177/2050303220952866>

¹⁴ Jakhongir Shaturaev, 'A Comparative Analysis of Public Education System of Indonesia and Uzbekistan', *Bioscience Biotechnology Research Communications*, 2021, p. 61 <https://doi.org/10.21786/bbr/14.5/18>

¹⁵ Yashar Salamzadeh and others, 'Entrepreneurial Universities and Social Capital: The Moderating Role of Entrepreneurial Intention in the Malaysian Context', *The International Journal of Management Education*, 20.1 (2022), 100609 <https://doi.org/https://doi.org/10.1016/j.ijme.2022.100609>

¹⁶ Filomena Pietrovito and others, 'Fiscal Decentralization and Income (Re)Distribution in OECD Countries' Regions', *Structural Change and Economic Dynamics*, 67 (2023), 69–81 <https://doi.org/https://doi.org/10.1016/j.strueco.2023.07.002>

¹⁷ Yong Wang, 'Fiscal Decentralization, Endogenous Policies, and Foreign Direct Investment: Theory and Evidence from China and India', *Journal of Development Economics*, 103 (2013), 107–23 <https://doi.org/https://doi.org/10.1016/j.jdeveco.2013.01.006>

¹⁸ H M Tuihedur Rahman, Gordon M Hickey, and Swapan Kumar Sarker, 'A Framework for Evaluating Collective Action and Informal Institutional Dynamics under a Resource Management Policy of Decentralization', *Ecological Economics*, 83 (2012), 32–41 <https://doi.org/https://doi.org/10.1016/j.ecolecon.2012.08.018>

curriculum incorporating Islam was the science textbooks, which were predominantly developed by the education commissioner of Brunei Darussalam in 1972 and revised in 1985.¹⁹

As the principal policy regulator, the government has inadvertently positioned itself as the party that has accurately implemented the rules, when in fact it has implemented the decentralization policy as required by the regional autonomy law and engaged in the practice of centralization. As a consequence, the purpose of this study is to determine why the government is implementing the aforementioned second trend. The government lacks comprehension regarding the necessity for diverse stakeholders to contribute to the achievement of the national education system. Stakeholders of the Madrasah include the Muslim community, religious leaders, and educators.²⁰ This circumstance is unquestionably dissimilar to that of Malaysia, whose national education system has been characterized by a consistent implementation of centralization-integration since its inception prior to independence.²¹ This study examines three pivotal inquiries; what is the nature of regulatory dualism in Malaysia and Indonesia, both of which are Muslim nations, in Muslim countries, what is the regulatory mapping framework pertaining to the advancement of educational technology, and What measures has the government implemented to facilitate the decentralization of educational technology regulation within the Islamic education system? A comprehensive comprehension of the multifaceted aspects of regulatory decentralization furnishes a framework for addressing challenges and imparts insights that can inform the development of future action plans aimed at reforming the Islamic education system.²²

The study examines the impact of technological advancements on the decentralization and centralization of Islamic education regulations in Muslim countries. It argues that the divergent legal and practical foundations of national and international regulations have influenced the evolution of Islamic education technology. As of 2014, community and Madrasah (Islamic School) stakeholders in a number of regions have yet to respond uniformly to the regional autonomy regulations.²³ Difficulties in problem-solving have been caused by a number of elements, including social and Islamic culture, infrastructure, human resources, and technology. Certain individuals rely on religion as an ideological

¹⁹ Q M Malluhi and others, 'Decentralized Ciphertext-Policy Attribute-Based Encryption Schemes for Lightweight Devices', *Computer Communications*, 145 (2019), 113–25 <https://doi.org/https://doi.org/10.1016/j.comcom.2019.06.008>

²⁰ Mohd Hafizal Ishak, Abdul Hamid Mar Iman, and Maimunah Sapri, 'Theoretical Postulation of Energy Consumption Behaviour Assessment in Malaysian Higher Education Institutions', *Procedia - Social and Behavioral Sciences*, 65 (2012), 891–96 <https://doi.org/https://doi.org/10.1016/j.sbspro.2012.11.216>

²¹ Mohd Amzari Tumiran and others, 'Sleep from Neuroscience and Islamic Perspectives: Comprehension and Practices of Muslims with Science Background in Malaysian Education System', *Procedia - Social and Behavioral Sciences*, 9 (2010), 560–64 <https://doi.org/https://doi.org/10.1016/j.sbspro.2010.12.197>

²² Zohre Kordvarkane and others, 'Effect of Education Based on the Common-Sense Model of Self-Regulation on Blood Pressure and Self-Management of Hypertensive Patients: A Clinical Trial Study', *International Journal of Nursing Sciences*, 10.3 (2023), 294–301 <https://doi.org/https://doi.org/10.1016/j.ijnss.2023.06.009>

²³ Irini Ibrahim, Noraini Aminudin, and Michael Andrew Young @ Suleiman Abdullah Ibn Yahya, 'Education for Wetlands: Public Perception in Malaysia', *Procedia - Social and Behavioral Sciences*, 42 (2012), 159–65 <https://doi.org/https://doi.org/10.1016/j.sbspro.2012.04.177>

foundation to interpret and comprehend current events.²⁴ Others formulate their positions on the challenges they encounter on the basis of an integration of scientific knowledge and social conditions. It is currently extremely susceptible to both decentralization and centralization in its oversight of Islamic education. Hence, specifically with regard to technological advancements, the Islamic education system in Muslim countries generates and perpetuates both decentralization and centralization of regulations.

2. Research Method

This study is normative legal research. This study employs both primary and secondary sources of information to conduct qualitative research.²⁵ Field research in Madura schools collected primary data through interviews and in-depth observations. Participants in this study comprised educators and interested parties affiliated with *Madrasah Diniyah*, located in the Sampang, Pamekasan, Sumenep, and Bangkalan districts. In the interim, secondary data were acquired from various sources, including online documents and news outlets, as well as research reports conducted by UNICEF and legal and regulatory documents. The researcher conducted method triangulation and conducted periodic assessments of transferability at the institution where the research was conducted in order to ascertain the validity of the obtained data. Following this, the data were analyzed in four phases following Miles, Huberman, and Saldana. The process of data analysis is conducted concurrently with data collection. The analysis of data is performed interactively at every stage.

3. Results and Discussion

3.1. Dual Regulation in Managing Islamic Education in Muslim Countries

The management of Islamic education in Indonesia is characterized by a paradoxical dualism concerning regulations. The education system in Indonesia is divided into two components: religion and secular education. It is noteworthy that Islamic education falls under the jurisdiction of the Ministry of Education and Culture, following Law No. 20 of 2003 on the National Education System.²⁶ Nevertheless, concerning administration, the Ministry of Religion pertains to Islamic and other religious education, *Madrasah*. This nationally binding dualism of management and regulation is an incompatible policy that undermines the comprehension of grassroots stakeholders. One of the principals of *Madrasah* (Islamic schools) in East Java Province concurred with this contradiction, stating that numerous regulations appeared to conflict with the desires of those of us who are knowledgeable about Islamic education and those of the government; consequently, we were perplexed by these regulations. This fact demonstrates a rule contradiction, as matters

²⁴ Mateen Zayani bin Abu Bakar and Zeeda Fatimah binti Mohamad, 'Local Government Capacity for Earthquake Disaster Risk Reduction in Malaysia: Case Studies in Bentong and Selayang Areas', *International Journal of Disaster Risk Reduction*, 97 (2023), 103987 <https://doi.org/https://doi.org/10.1016/j.ijdr.2023.103987>

²⁵ Abdul Kadir Jaelani and Resti Dian Luthviati, 'The Crime Of Damage After the Constitutional Court's Decision Number 76/PUU-XV/2017', *Journal of Human Rights, Culture and Legal System*, 1.1 (2021), 2807–12 <https://doi.org/10.53955/jhcls.v1i1.5>

²⁶ Satia Zen, Eero Ropo, and Päivi Kupila, 'Constructing Inclusive Teacher Identity in a Finnish International Teacher Education Programme: Indonesian Teachers' Learning and Post-Graduation Experiences', *Heliyon*, 9.6 (2023), e16455 <https://doi.org/https://doi.org/10.1016/j.heliyon.2023.e16455>

about Islam cannot be encompassed within a public or general system of regulations. It is necessary to clarify the numerous central regulations that are in conflict and seem to converge. This is particularly relevant for the general public and, in this instance, observers of Islamic education in the regions.²⁷

Malaysia's educational system, in contrast to Indonesia's, is not dualistic and requires greater consistency. Indeed, as mandated by regulations, the Islamic education system in Malaysia is presently progressing toward integration through the implementation of diverse methodologies.²⁸ The multi-approach pertains to integrating various religious disciplines, including Arabic language courses, Islamic Sharia, and the Quran Sunnah, into national or public institutions. Islam is the official religion of the federation, as stated unequivocally in Part I, Article 3, Number 1 of the Malaysian Federal Constitution, which serves as the foundation for scientific incorporation within the Islamic education system in Malaysia. Other religions, nevertheless, are permitted or may be observed. This demonstrates that the Malaysian constitution holds a significant and influential position and is subject to direct oversight by the *Jabatan Kemajuan Islam (JAKIM)*, an institution headed by the paramount ruler Raja Yang Di-Pertuan Agong. Several madrasah administrators in Malaysia, including the head of Madrasah Sri & Tadika Abu Bakar As Siddiq Taman Sri Gombak, Batu Caves Malaysia, have acknowledged the critical nature of scientific integration. He defined scientific integrated education in Malaysian primary schools as a synthesis of knowledge derived from the world and the afterlife, namely *fardhu kifayah* and *fardhu ain, aqli, and naqli*.²⁹

Malaysia's implementation of the Islamic education system incorporates all available scientific resources, both religious and non-religious, holistically, incorporating technological advancements. The Ministry of Education technically regulates the Malaysian education system. It is based on the following six pillars: communication, spirituality, humanism, self-appearance, physical and aesthetic development, science, and technology. It is noteworthy that Malaysia incorporates Arabic and English as the fundamental languages in its educational integration system. As a consequence, pupils in their primary and secondary education must proficiently grasp this verbal component in order to adequately equip themselves for subsequent endeavors in higher education and internationalization.³⁰

In Indonesia, regulations on Islamic education are subsequently highly complex. As a result of the overlap between regional and central regulations, two institutions appear on a single level, which is the complexity in question. An illustration of this can be found in Law No. 20 of 2003, which specifies the existence of *Madrasah Tsanawiyah* (Islamic et al. School) and Junior High Schools despite their substantive and educational levels being

²⁷ Qorinah Estiningtyas Sakilah Adnani, Andrea Gilkison, and Judith McAra-Couper, 'A Historical Narrative of the Development of Midwifery Education in Indonesia', *Women and Birth*, 36.1 (2023), e175–78 <https://doi.org/https://doi.org/10.1016/j.wombi.2022.06.007>

²⁸ Fendy Suhariadi and others, 'Work from Home: A Behavioral Model of Indonesian Education Workers' Productivity during Covid-19', *Heliyon*, 9.3 (2023), e14082 <https://doi.org/https://doi.org/10.1016/j.heliyon.2023.e14082>

²⁹ Avianto Amri and others, 'Pathways to Disaster Risk Reduction Education Integration in Schools: Insights from SPAB Evaluation in Indonesia', *International Journal of Disaster Risk Reduction*, 73 (2022), 102860 <https://doi.org/https://doi.org/10.1016/j.ijdr.2022.102860>

³⁰ Suyadi and others, 'Academic Reform and Sustainability of Islamic Higher Education in Indonesia', *International Journal of Educational Development*, 89 (2022), 102534 <https://doi.org/10.1016/j.ijedudev.2021.102534>

identical. Educational experts classify differences in substance at a single level as intricate, convoluted, or complicated circumstances. Many Madrasah leaders in East Java, Indonesia, concur regarding the intricate nature of the Islamic education system in the country.³¹

Due to this dualism of management and regulation, the Islamic education systems of Indonesia and Malaysia confront a minimum of two obstacles. First, how can the government ensure and standardize the quality of an Islamic school (madrasah) if the regulations continue to be flawed. The issue at hand is illustrated in Government Regulation (PP) Number 17 of 2010, specifically in paragraph 2 of Article 190. This regulation stipulates that Islamic education institutions can incorporate religious attributes that reflect their cultural and social surroundings.³² Such regulation will generate many possibilities, including variations in student caliber resulting from disparities in facilities, resources, and culture. One of the madrasa heads at one of the madrasahs in East Java remarked that many students in his educational unit are more proficient in Islamic knowledge than others. This is attributed to the fact that a significant number of the instructors at this institution are graduates of Islamic boarding schools, and the community atmosphere is also religious. Second, how can the government integrate general knowledge, particularly on science and technology, into the curriculum and learning of Islamic education.

Attempting to implement this scientific integration is difficult due to the absence of legislation aimed at doing so. The current regulations, such as Regulation 67-70 of the Ministry of Education and Culture (*Permendikbud*) of 2013, are inherently provisional. For further clarification, refer to Decree 183 of 2019, issued by the Minister of Religion. The purpose of these two regulations is to specify that religious subjects occupy a more significant proportion of the curriculum in Madrasah (Islamic Schools) compared to general subjects. Conversely, public institutions receive a mere two hours of instruction per week. This was corroborated by one of the madrasah instructors in East Java, who stated that the lack of integration between secular and religious curricula severely hindered the ability of schools and students to advance education, including technological and scientific developments.³³

In contrast, educational institutions in Malaysia encounter various circumstances. For instance, an Islamic elementary school situated in the Batu Cave region of Selangor, Malaysia, employs a wireless system that integrates projector learning media into nearly every class. It is widely recognized that every student will gain advantages, specifically enhancing classroom communication. This is possible, according to the school principal,

³¹ Qorinah Estiningtyas Sakilah Adnani, Andrea Gilkison, and Judith McAra-Couper, 'The Interplay of Structural and External Factors for Strengthening Midwifery Education in Indonesia', *Sexual & Reproductive Healthcare*, 33 (2022), 100734 <https://doi.org/https://doi.org/10.1016/j.srhc.2022.100734>

³² Isti Hidayati and others, 'Violations of Mobility Restrictions during COVID-19 in Five Indonesian Cities: A Reflection of Transport Policy-Practice Gap', *Asian Transport Studies*, 9 (2023), 100112 <https://doi.org/https://doi.org/10.1016/j.eastsj.2023.100112>

³³ Marvello Yang, Abdullah Al Mamun, and Anas A Salameh, 'Leadership, Capability and Performance: A Study among Private Higher Education Institutions in Indonesia', *Heliyon*, 9.1 (2023), e13026 <https://doi.org/https://doi.org/10.1016/j.heliyon.2023.e13026>

because the government finances all the necessary facilities for the institution's development.³⁴

3.2. Muslim Countries Decentralized Education Technology Governance Policy

Islamic educational technology constitutes a subset of the broader domain of educational technology. Technology encompasses five domains, according to Simonson: design, development, utilization, management, and evaluation. Consequently, advancements in these five domains constitute a progression in educational technology within the context of Indonesia.³⁵ Similar to other domains, the integration of educational technology into Islamic education is crucial. The implementation of educational technology, according to Waghid, could enrich and enliven Islamic education. Teachers must be more resourceful in utilizing all facets of learning, technological and contextual when employing educational technology. The administration of educational technology is governed by some regulations established by the Indonesian government.³⁶

Opportunities for the development of Islamic educational institutions have been made available by the Indonesian government. When an educational establishment, and Islamic education specifically, evolves, some guidelines can be consulted for guidance. Naturally, this regulation serves as the foundation for formulating a policy concerning the administration and growth of an Islamic educational establishment.³⁷ Table 1 provides a mapping of Indonesian regulations on Islamic education. Regional autonomy has been regulated, developed nations such as Indonesia must still be prepared to implement technological educational advancements. The development of educational technology by Madrasah (Islamic School) stakeholders in Indonesia is significantly impeded by dual regulation and management.

Table 1. Mapping Regulations on Education Development in Indonesia

No	Regulations	Level	Explanation
1.	Law Number 4 of 1950 on the Fundamentals of Education and Teaching, in combination with Law Number 19 of 1954	National	The implementation of Indonesian education must be different from education in Dutch era Indonesia. Indonesian education must be national and based on its own culture.
2	Law Numbers 2 and 20 of 1989 and 2003, respectively, pertaining to the National Education System	National	Educational development is carried out by three institutions. Firstly, state education units are regulated by the government, private education units are regulated by institutions, and higher education levels are regulated by the relevant agency.
4	Law No. 12 of 2012 on Postsecondary Education	National	Give universities the freedom to carry out comprehensive scientific development. Meanwhile, religious scholarship is regulated by the Ministry of Religion.
5	The Regional Government	National	It has not been specifically regulated. Contains the

³⁴ Theresia B. Sumarno, Parulian Sihotang, and Widhyawan Prawiraatmadja, 'Exploring Indonesia's Energy Policy Failures through the JUST Framework', *Energy Policy*, 164.March (2022), 112914 <https://doi.org/10.1016/j.enpol.2022.112914>

³⁵ Rian Saputra and others, 'Artificial Intelligence and Intellectual Property Protection in Indonesia and Japan', *Journal of Human Rights, Culture and Legal System*, 3.2 (2023), 210–35 <https://doi.org/10.53955/jhcls.v3i2.69>

³⁶ Asrizal Saiin and others, 'The Property Rights Regulation, Semenda Marriage, and Exploring the Determinants in ASEAN Countries', *Journal of Human Rights, Culture and Legal System*, 3.2 (2023), 134–59 <https://doi.org/10.53955/jhcls.v3i2.68>

³⁷ William R I Sopaheluwakan and others, 'Two-Decade Decentralization and Recognition of Customary Forest Rights: Cases from Special Autonomy Policy in West Papua, Indonesia', *Forest Policy and Economics*, 151 (2023), 102951 <https://doi.org/https://doi.org/10.1016/j.forpol.2023.102951>

	Law, Number 23 of 2014.		basis for the development of religious activities which can be further regulated through regional regulations*
6	Number 57 of 2021 Government Regulation (PP) pertaining to National Education Standards	National	Regulates the implementation of education as a whole starting from implementation, evaluation and other developments.
7	The 87th Presidential Decree of 2017 pertains to the reinforcement of character education.	National	Contains the authority to develop activities that develop the character of students
8	Regional Regulation Number 9 of 2014 for the East Java Province about the Implementation of Education	Regional	Strictly regulate that the government guarantees self-development in institutions, education personnel and educators in the province of East Java
9	Regarding the Education Delivery System, the following regional regulations apply: Sumenep Regency Regional Regulation Number 7 of 2013, Pamekasan Regency Regional Regulation Number 8 of 2014, Bangkalan Regency Regional Regulation Number 6 of 2015, Sampang Regency Regional Regulation Number 4 of 2016.	Regional	Regulates educational development from various aspects starting from institutions, educational staff, educators, students, and parents. Apart from that, this regulation also regulates the development of education according to the content and characteristics of each region.

Source: Indonesian laws and regulations accessed via: <https://peraturan.bpk.go.id>

Based on Table 1 shown, the Indonesian government has, in general, enacted written regulations pertaining to education management. In addition to overseeing education as a whole, the government has established a multitude of regulations pertaining to the implementation of Islamic education. At the regional level, as well as at the national level, regulations governing the implementation of education have been formulated. Table 2 contains a listing of the regulations that regulate Islamic education.

Table 2. Mapping of Islamic Education System Regulations in Indonesia

No	Reguations	Level	Explanation
1	The Minister of Religion's Decree No. 183 of 2019 pertaining to Islamic education curriculum	National	Regulates the content that must be contained in Islamic education subjects. There are no detailed regulations regarding the development of educational management and technology.
2	Concerning the Education Implementation System, Pamekasan Regency Regional Regulation Number 8 of 2014, Bangkalan Regency Regional Regulation Number 6 of 2015, Sampang Regency Regional Regulation Number 4 of 2016, and Sumenep Regency Regional Regulation Number 7 of 2013.	Regional	This regulation gives regional and community authority to organize education according to their locality, such as organizing <i>Madrasah Diniyah</i> , <i>MTQ</i> , and so on.

Source: Indonesian laws and regulations accessed via <https://peraturan.bpk.go.id>

Based on Table 1 and 2 shown, the regulations on the implementation of education in Indonesia were established by the Ministry of Education and Culture and Regional Governments. In addition to the aforementioned, *Permendikbud* Regulation No. 37 stipulates that students must possess informatics proficiency, with technology informatics being identified as a pivotal skill. Due to this regulation, technology becomes an essential competency in educational activities. As a result, the Indonesian Ministry of Education and Culture is attempting to enhance the country's current educational resources. The United Nations Children's Fund (UNICEF) has documented that Indonesia has made significant strides in the development of educational technology, especially in light of the 2020 COVID-19 pandemic. Figure 2 illustrates the progression of Indonesian educational technology as documented by UNICEF, spanning 2004 to 2021.

Technological advancements in education are proliferating throughout Indonesia. Between the years 2004 and 2021, the number of platforms offering online learning resources will exceed ten. Unfortunately, this pedagogical resource is limited to topics of a general nature.³⁸ The facilitation of the subjects comprising the Islamic education curriculum has not yet taken place. This would not have been as enormous if not for the Ministry of Education and Culture, Research and Technology's coordination. No provision governs the advancement of Islamic education learning, in accordance with the directive of *KMA No. 183 of 2019*, Law No. 2 of 1989, and Law No. 20 of 2003 pertaining to the National Education System.³⁹ Following this regulation, an IT-based curriculum was developed for Islamic education under its supervision. In order to preserve the individualized nature of learning and rely on the expertise of instructors, educational establishments and instructors, who hold a critical position in the learning process, develop their own learning materials. The inability to attain educational equality transcends religious and general spheres for this reason. The achievements of educational technology in the general and religious sectors attest to its development in practice. K. Subkhi asserts that *Madrasah Diniyah* is an informal Islamic institution. Miftahul Ulum Sumberjati argues that the policies conveyed by the madrasah chief are similarly capricious and inherently subjective. At present, nevertheless, modifications have occurred in response to technological advancements.⁴⁰

It is evident from the interview outcome that *Madrasah Diniyah* is making an effort to embrace advancements in information technology. Permitting students to carry cell phones is one approach. This pertains to the authority of the institution to regulate home-based learning. The statement of Subkhi demonstrates that Sampang Regency's Regional

³⁸ Imam Sefriyadi and others, 'Private Car Ownership in Indonesia: Affecting Factors and Policy Strategies', *Transportation Research Interdisciplinary Perspectives*, 19 (2023), 100796 <https://doi.org/https://doi.org/10.1016/j.trip.2023.100796>

³⁹ Anne Charina and others, 'Sustainable Education and Open Innovation for Small Industry Sustainability Post COVID-19 Pandemic in Indonesia', *Journal of Open Innovation: Technology, Market, and Complexity*, 8.4 (2022), 215 <https://doi.org/https://doi.org/10.3390/joitmc8040215>

⁴⁰ Lisa McKenna and others, 'Postgraduate Nurse Education in Indonesia and Australia: A Comparative Analysis', *Nurse Education Today*, 131 (2023), 105954 <https://doi.org/https://doi.org/10.1016/j.nedt.2023.105954>

Regulation No. 14 2016 was effective.⁴¹ However, specific management is required in Islamic boarding institutions with regard to the use of cell phones as a learning tool. Furthermore, religion-based institutions encounter additional challenges due to governmental regulations that have been implemented. It is accurate to say that educational institutions in Madura, including those in Sampan, Bangkalan, Pamekasan, and Sumenep, have been granted authority and assurance to develop curricula in accordance with their specific local attributes through regional regulations. Nonetheless, this results in disparities regarding the advancement of educational technology.⁴²

On the basis of these statistics, Indonesia's regulatory framework is extremely problematic. In education, policy dualism exists. One is regulated by the Ministry of Education and Culture, while the other is regulated by the Ministry of Religion.⁴³ This results in a clear manifestation of the equitable allocation of learning resources, infrastructure, and other resources, including IT-based learning. This is in stark contrast to the findings of Damayanti et al., who reported that Indonesian education has made swift strides in the implementation of an independent curriculum, particularly with regard to the attainment of twenty-first-century competencies. This study was conducted for educational purposes on behalf of the Ministry of Education and Culture of Malaysia.⁴⁴

To advance madrasah education, the Indonesian government continued to exercise centralized authority after implementing policy decentralization via regional autonomy in madrasah administration. The government is undertaking innovative initiatives and endeavors to enhance Islamic education. According to ACDP Indonesia, the Ministry of Religion, which is responsible for Islamic Education, strives ceaselessly to harmonize it with the Ministry of Education and Culture's general education.⁴⁵ This action was executed in adherence to the National Education System Law. Presently, the Ministry of Religion continues to endeavor to harmonize itself with the broader academic community, employing many policies and ongoing projects.⁴⁶ Madrasah Reform delineates four distinct categories of projects, each subsequently delineated into four distinct components: e-RKAM implementation, learning outcomes assessment, professional development for education

⁴¹ Seonkyung Choi, Huihui Li, and Keiichi Ogawa, 'Upper Secondary Vocational Education and Decent Work in Indonesia: A Gender Comparison', *International Journal of Educational Development*, 101 (2023), 102833 <https://doi.org/https://doi.org/10.1016/j.ijedudev.2023.102833>

⁴² Jayadi, Abduh, and Basri.

⁴³ Richard Smiley and Brendan Martin, 'Simulation in Nursing Education: Advancements in Regulation, 2014–2022', *Journal of Nursing Regulation*, 14.2 (2023), 5–9 [https://doi.org/https://doi.org/10.1016/S2155-8256\(23\)00086-8](https://doi.org/https://doi.org/10.1016/S2155-8256(23)00086-8)

⁴⁴ Sherrill J Smith and Sharon L Farra, 'The Impact of Covid-19 on the Regulation of Nursing Practice and Education', *Teaching and Learning in Nursing*, 17.3 (2022), 302–5 <https://doi.org/https://doi.org/10.1016/j.teln.2022.01.004>

⁴⁵ Brina Kurent and Stanislav Avsec, 'Examining Pre-Service Teachers Regulation in Distance and Traditional Preschool Design and Technology Education', *Heliyon*, 9.2 (2023), e13738 <https://doi.org/https://doi.org/10.1016/j.heliyon.2023.e13738>

⁴⁶ Shuang Zhao and Kenny S L Cheah, 'The Challenges of Malaysian Private Universities in Reaching Sustainable Education toward Responsible Consumption', *Cleaner and Responsible Consumption*, 10 (2023), 100130 <https://doi.org/https://doi.org/10.1016/j.clrc.2023.100130>

staff and teachers, and system support for quality development. The intended duration of this program is from 2020 to 2024.⁴⁷

For Islamic education to obtain legal recognition, the government supports its development through non-formal education. The establishment of the PKPPS was met with a favorable reception by Salaf Islamic boarding schools. These institutions believed that the PKPPS granted equivalent official recognition to students who developed an interest in studying the Yellow Book.⁴⁸ The Pursuit of Packages program has thus far enabled these Salaf students to accommodate the greater community. PMA No. 31 of 2020 pertains to the regulatory framework surrounding Islamic education. Although the initial madrasah curriculum focused solely on book study (kitab), this regulation has enabled and altered the inclusion of additional subjects. Additional provisions regarding these rules can be found in Decree No. 1626 of 2023, issued by the Director General of Education.⁴⁹

4. Conclusion

An essential finding of this study, as deduced from the discourse thus far, is that there are substantial variations concerning the regulations governing the Islamic education system in Malaysia. The regulatory management structure in Indonesia has undergone a transformation from centralized to decentralized. Malaysia, meanwhile, has implemented the constitution of the highest leadership consistently since the British colonial era until the present. The Malaysian Islamic education system continues to adhere to a centralized governance model. Malaysia stands out due to its early incorporation of Islamic religious values. This is accomplished by incorporating Sharia sciences, Arabic, and Al-Quran Hadith into the curriculum of public institutions. In addition to that, the article's findings establish three additional conclusions. Initially, dual regulation and administration in Indonesia posed a challenge for the staff of Madrasah (Islamic-based Schools) in their efforts to innovate educational technology. Secondly, developing nations such as Indonesia must still be prepared to demonstrate a technological advancement that balances general and Islamic education. Even with the establishment of central regulations and the implementation of regional autonomy provisions, the absence of specific provisions governing the advancement of educational technology in Islamic education in both the Law and PERDA remains the reason. In Malaysia, ongoing endeavors to incorporate science and technology have been pursued since primary education. Thirdly, through the Madrasah Reform and PKPPS programs, the central government is exerting considerable effort to advance Islamic education. Nevertheless, additional optimization is required for their execution. Comparing the regulatory systems for implementing Islamic education in numerous other nations would be a significant improvement over the scope of this study, which was restricted to two nations. Hence, additional research is imperative in order to fortify Indonesian policies on the implementation of Islamic education.

⁴⁷ Gillvest Mathew and others, 'Survey on Actions and Willingness towards the Disposal, Collection, and Recycling of Spent Lithium-Ion Batteries in Malaysia', *Journal of Cleaner Production*, 421 (2023), 138394 <https://doi.org/https://doi.org/10.1016/j.jclepro.2023.138394>

⁴⁸ Jasvir Kaur Nachatar Singh and Hazri Jamil, 'International Education and Meaningful Contributions to Society: Exploration of Postgraduate International Students' Perspectives Studying in a Malaysian Research University', *International Journal of Educational Development*, 81 (2021), 102331 <https://doi.org/https://doi.org/10.1016/j.ijedudev.2020.102331>

⁴⁹ bin Abu Bakar and binti Mohamad.

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