

DIGITALIZATION OF LEARNING AND SCHOOL REVITALIZATION AS PUBLIC POLICY FOR EDUCATIONAL EQUITY IN INDONESIA

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Abstract. Educational equity in Indonesia is increasingly shaped by two national policy agendas: digitalization of learning and school revitalization. While digital devices can expand access to quality content, and revitalized facilities can make schools safer and more supportive, both policies may reproduce inequality if they are implemented mainly as procurement or construction programs. This article analyzes the integration of learning digitalization and school revitalization as a public policy pathway for educational equity in Indonesia. Using qualitative policy analysis, the study reviews recent government regulations, official education reports, and international literature on digital equity, school infrastructure, and evidence-based governance. The analysis shows that the two agendas are complementary. Learning digitalization can reduce disparities in content, teacher support, and learning resources, especially in remote and underserved schools. School revitalization provides the physical foundation for digital learning through safe classrooms, electricity, connectivity readiness, and inclusive learning spaces. However, the equity impact depends on targeting mechanisms, teacher capacity, maintenance financing, local government coordination, and data transparency. The paper argues that Indonesia needs an equity-by-design approach: priority should be given to schools with the deepest infrastructure and learning gaps, accompanied by teacher professional development, accessible digital content, community accountability, and use of Rapor Pendidikan as a monitoring instrument. The article concludes that digitalization and revitalization should be framed not as separate technical programs, but as integrated public policy instruments for building resilient, inclusive, and equitable education.

Keywords: Digitalization of Learning; Educational Equity; Indonesia; Public Policy; School Revitalization

1. INTRODUCTION

Educational equity has become one of the most urgent public policy issues in Indonesia because access to schooling alone no longer guarantees equal opportunity to learn. Many learners are formally enrolled in schools, yet they experience different qualities of classrooms, teachers, learning resources, digital access, and school environments. In this situation, the question of equity shifts from whether children can enter school to whether every child can learn meaningfully in a safe, inclusive, and future-oriented environment. The theme of global resilience through innovation is relevant to Indonesia because education systems must recover from learning disruption, respond to technological change, and reduce persistent disparities among regions and social groups.

Two national policy agendas are especially important for this discussion: digitalization of learning and revitalization of educational units. The Ministry of Primary and Secondary Education has described revitalization of educational facilities and digitalization of learning as priority national programs, arguing that quality education requires both proper infrastructure and learning that is adaptive to technological development (Kemendikdasmen, 2026a). In 2025 the government allocated Rp16.9 trillion for revitalization and development of new schools at 16,171 educational units, while also distributing 288,865 interactive digital boards to schools across Indonesia (Kemendikdasmen, 2026a). These figures show that digitalization and revitalization are no longer marginal projects; they have become major policy instruments with direct implications for educational equity.

However, technology and infrastructure do not automatically create equity. UNESCO (2023) reminds policymakers that technology in education must be governed carefully because it can support inclusion when it is appropriate, affordable, and teacher-supported, but can also deepen gaps when access,

capacity, and content quality are uneven. OECD (2023) similarly emphasizes that digital transformation in schooling requires attention to inclusive access, teacher readiness, governance, data use, and learning design. In Indonesia, these issues are more complex because schools vary widely in electricity reliability, connectivity, classroom condition, teacher distribution, local fiscal capacity, and student socioeconomic background.

This article therefore analyzes digitalization of learning and school revitalization as an integrated public policy strategy for educational equity in Indonesia. The main argument is that the two agendas should not be treated as separate technical programs, such as device procurement and building renovation. Instead, they should be designed as one policy package that links access, quality, resilience, inclusion, and accountability. The article asks: how can digitalization of learning and school revitalization be positioned as public policy instruments for reducing educational inequality in Indonesia? The objective is to formulate a conceptual policy analysis and practical recommendations for making these programs more equitable and sustainable.

2. LITERATURE REVIEW

2.1 Educational Equity as A Public Policy Goal

Educational equity means that students' learning opportunities are not determined by their place of birth, school location, family income, gender, disability, language background, or other social conditions. In public policy terms, equity is different from simple equality. Equality distributes the same inputs to all schools, whereas equity allocates resources according to different levels of need. For Indonesia, an equity approach is essential because the country combines large population size, archipelagic geography, decentralized governance, and uneven school conditions. A policy that gives the same package to all schools may look fair administratively, but it can be unfair substantively when schools start from very different baselines.

The Rapor Pendidikan Indonesia 2025 report provides a relevant evidence base because it analyzes priority indicators such as literacy, numeracy, character, quality of learning, school safety climate, and diversity climate. The report also examines gaps by regional characteristics, socioeconomic status, level of education, school governance, and infrastructure (Kemendikdasmen, 2025). This makes Rapor Pendidikan useful not only as a diagnostic platform, but also as a policy targeting instrument. If revitalization and digitalization are intended to reduce inequity, they should be guided by the schools and regions where the data show the deepest learning and service gaps.

2.2 Digitalization of Learning

Digitalization of learning refers to the integration of digital devices, platforms, content, data systems, and pedagogical practices to improve learning quality. In the Indonesian context, digitalization includes provision of interactive learning tools, digital content, learning management systems, teacher professional development, and data-driven planning. The policy value of digitalization is not found in the technology itself, but in its ability to expand access to quality learning experiences, provide differentiated instruction, support teachers, and connect schools with wider sources of knowledge.

International literature shows that digital tools can contribute to equity when they are designed around learners' needs and when teachers are supported to use them pedagogically. Digital resources can help small or remote schools access updated learning materials, simulations, language resources, assessment tools, and professional learning networks. Yet digitalization can also generate a second-order digital divide. The first divide concerns physical access to devices and connectivity; the second concerns the ability to use technology for meaningful learning. A school may receive devices, but without teacher training, technical support, maintenance budgets, accessible content, and local adaptation, the devices may have limited impact.

2.3 School Revitalization

School revitalization refers to improving physical facilities, classrooms, sanitation, accessibility, safety, and the overall learning environment. It is often associated with construction and renovation, but in public policy it should be understood more broadly as improving the conditions that allow learning to occur. Safe buildings, adequate sanitation, inclusive toilets, electricity, learning furniture, ventilation, and digital readiness are not merely supporting facilities; they are part of the learning ecosystem. A classroom with damaged roofs, poor lighting, unsafe sanitation, or no electricity limits both student well-being and teacher performance.

In education policy, infrastructure has an equity dimension. Students in well-resourced schools usually learn in environments that are more comfortable, connected, and digitally enabled. Students in disadvantaged schools may experience the opposite. Revitalization can reduce this gap when it prioritizes schools with the most severe infrastructure problems and links construction with learning improvement plans. It becomes less equitable when project selection is driven by administrative convenience, political visibility, or equal distribution across regions without considering need intensity.

2.4 Integration of Digitalization and Revitalization

Digitalization and revitalization are mutually dependent. Digital learning requires basic physical readiness: electricity, secure classrooms, sufficient space, internet connectivity, and maintenance systems. At the same time, revitalized buildings produce stronger learning benefits when they are connected to improved pedagogy, digital content, and teacher development. A renovated classroom without learning innovation may improve comfort but not necessarily improve learning. Conversely, digital devices placed in unsafe or poorly equipped schools may fail to produce sustained use. Therefore, an integrated policy design is needed.

Table 1. Policy Logic for Linking Digitalization, Revitalization, and Equity

Policy component	Equity contribution	Potential risk	Equity-oriented safeguard
Learning digitalization	Expands access to quality content, interactive learning, teacher support, and data-informed instruction.	Benefits concentrate in schools with stronger connectivity and more digitally ready teachers.	Target underserved schools first, provide teacher training, offline content, assistive technology, and technical support.
School revitalization	Improves safe, comfortable, inclusive, and digitally ready learning environments.	Renovation becomes construction-oriented and weakly connected to learning quality.	Link infrastructure plans with learning goals, accessibility standards, maintenance funds, and school-based accountability.
Rapor Pendidikan and data systems	Identify schools with the deepest gaps and support evidence-based targeting.	Data are used only for reporting, not for decision making or community reflection.	Use indicators as criteria for prioritization, monitoring, and public communication.
Local implementation	Adapts national programs to geographical, cultural, and fiscal realities.	Decentralized capacity gaps create uneven delivery among regions.	Strengthen provincial/district facilitation, transparent procurement, and community participation.

3. RESEARCH METHODS

This article uses a qualitative policy analysis method. The object of analysis is not a single school program, but the policy relationship between digitalization of learning, school revitalization, and educational equity in Indonesia. The analysis is based on document review and conceptual interpretation. The main documents reviewed include recent Indonesian education policy statements, Rapor Pendidikan Indonesia 2025, regulations and official communications related to revitalization and digitalization, and international literature on digital equity and school infrastructure. The method is appropriate because the research question concerns policy design, implementation logic, and strategic recommendations rather than the measurement of program impact through experimental data.

The analysis followed three steps. First, the relevant policy instruments were identified: provision of digital learning tools, revitalization of school facilities, evidence-based planning through Rapor Pendidikan, teacher capacity strengthening, and local government coordination. Second, the instruments were examined through an equity lens by asking who benefits, who may be left behind, what conditions are required for effective use, and what accountability mechanisms are needed. Third, findings were synthesized into policy implications and recommendations. Because this is a conceptual policy article, the limitations are that it does not present primary survey data, classroom observation, or statistical causal estimation. Future empirical research should test the framework using school-level data and field evidence from different regions.

4. RESULTS AND DISCUSSION

4.1 Digitalization and Revitalization as Complementary Policy Instruments

The first finding is that digitalization and revitalization are complementary rather than substitutive. Digitalization answers the problem of unequal access to learning resources, while revitalization answers the problem of unequal access to learning environments. In many underserved schools, these problems occur together. A school may lack adequate classrooms, electricity, sanitation, and digital devices at the same time. If policy addresses only one side, the impact may be partial. For example, providing interactive boards without ensuring electricity, secure classrooms, teacher readiness, and maintenance can produce underutilization. Renovating classrooms without improving content and pedagogy can improve comfort but leave learning gaps intact.

Government statements in 2026 explicitly describe revitalization and digitalization as two pillars of national education transformation, aiming to create schools that are safe, comfortable, and relevant to the needs of the times (Kemendikdasmen, 2026a). This framing is useful because it moves the discussion beyond procurement. The policy challenge is to make the two pillars operationally integrated at school level. A revitalization plan should include digital readiness indicators, while a digitalization plan should assess infrastructure readiness and maintenance capacity. Schools with combined deprivation should receive integrated packages rather than fragmented assistance.

4.2 Equity Requires Need-Based Targeting

The second finding is that equity depends heavily on how beneficiaries are selected. Public policy for educational equity should prioritize schools with the most serious deficits in learning outcomes, infrastructure, teacher availability, digital access, and student vulnerability. A simple distribution formula based on equal quotas across regions can be politically acceptable but may not be sufficiently equitable. Equity-by-design requires a transparent prioritization formula that combines Rapor Pendidikan indicators, infrastructure condition data, school location, student socioeconomic conditions, disability inclusion needs, and disaster or geographic vulnerability.

Rapor Pendidikan can strengthen this process because it provides a structured diagnosis of learning and service conditions. The updated 2025 data are intended to support evidence-based planning at the level of education units and local governments (Kemendikdasmen, 2026b). Therefore, the platform should not only function as a reporting tool; it should guide the allocation of revitalization and digitalization support. Schools with low literacy and numeracy, weak learning quality, unsafe school climate, or serious infrastructure limitations should be prioritized for more intensive support. This is consistent with the principle that those with greater barriers need stronger policy intervention.

4.3 Teacher Capacity is the Bridge Between Technology and Learning

The third finding is that teachers are the decisive factor in transforming digital tools into learning improvement. Technology can display content, visualize concepts, and support assessment, but teachers determine whether students use it passively or actively. Teachers also mediate between standardized digital content and local student needs. Without teacher professional development, digitalization may result in technology-centered lessons rather than student-centered learning. This is especially important in schools where teachers have limited prior exposure to digital pedagogy.

The current policy discourse on deep learning or pembelajaran mendalam, which includes mindful, meaningful, and joyful learning, offers a pedagogical direction for digitalization. Digital tools should support learning that is reflective, relevant, and engaging, not merely replace whiteboards with screens. Professional development should therefore cover lesson design, formative assessment, inclusive digital content, classroom management with technology, ethical use of artificial intelligence, and adaptation for

students with disabilities or limited connectivity. Teacher communities of practice can also reduce isolation among remote schools by sharing lesson plans, troubleshooting strategies, and locally relevant content.

4.4 Infrastructure Lifecycle and Maintenance Determine Sustainability

The fourth finding is that sustainability depends on maintenance, not only initial investment. Infrastructure and digital devices have lifecycles. Buildings need maintenance; digital boards, computers, routers, and electricity systems need technical support; content and software need updating. If maintenance costs are not planned from the beginning, schools may face a new form of inequality after several years: schools with stronger community support and local funds can maintain assets, while poorer schools cannot. This would weaken the equity objective of the policy.

An equity-oriented revitalization policy should therefore include lifecycle budgeting. Maintenance funds, local technician networks, warranties, replacement plans, and school-level asset management should be part of the policy design. For remote areas, support models should consider long distances, limited service providers, and higher transport costs. The government can also develop regional technical support hubs or partnerships with vocational schools, universities, and local communities to support maintenance and device use.

4.5 Governance, Transparency, and Community Accountability

The fifth finding is that governance determines whether large-scale programs remain aligned with equity. Digitalization and revitalization involve significant public spending, procurement processes, intergovernmental coordination, and implementation deadlines. These features create risks of uneven quality, late delivery, weak monitoring, or misalignment with local needs. Transparent criteria and participatory oversight are therefore essential. School communities should understand why a school is selected, what support it receives, how it will be maintained, and how success will be evaluated.

In decentralized education governance, national policy must be translated by provincial, district, and school actors. Local governments are responsible for many operational decisions, yet their capacities differ. Capacity building for local planning, procurement, data interpretation, and monitoring is therefore part of the equity agenda. National ministries can provide standards and funding, but equitable outcomes depend on local implementation quality. Community participation also matters because parents and school committees can help monitor construction quality, encourage device use, and ensure that revitalized facilities serve all learners, including girls, students with disabilities, and students in vulnerable situations.

Table 2. Policy Recommendations for Equitable Implementation

No.	Recommendation	Practical implication
1	Use equity-based targeting.	Prioritize schools with combined learning, infrastructure, digital access, and vulnerability gaps using Rapor Pendidikan and verified facility data.
2	Integrate revitalization with digital readiness.	Ensure classrooms have electricity, security, connectivity readiness, accessibility, and space for active digital learning.
3	Invest in teacher digital pedagogy.	Provide continuous training, mentoring, and peer communities focused on meaningful, inclusive, and locally relevant technology use.
4	Plan lifecycle financing.	Include maintenance budgets, technical support, warranties, replacement plans, and asset management from the first year.
5	Strengthen transparency and accountability.	Publish criteria, progress, budgets, and school-level outputs; involve school committees and local stakeholders in monitoring.

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6	Measure equity outcomes, not only outputs.	Evaluate whether programs reduce gaps in learning quality, attendance, safety, teacher practice, and access for vulnerable students.
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5. CONCLUSION

Digitalization of learning and school revitalization are strategic public policy instruments for advancing educational equity in Indonesia. Their value lies not in technology procurement or construction completion alone, but in how they change students' opportunities to learn. When integrated, digitalization can expand access to quality content and pedagogical innovation, while revitalization can provide the safe and inclusive physical conditions needed for such learning to occur. The integration is especially important for remote, disadvantaged, and underserved schools where learning gaps and infrastructure gaps often overlap.

The article concludes that Indonesia should apply an equity-by-design approach. This means prioritizing schools with the greatest need, linking infrastructure improvement with digital learning readiness, strengthening teacher capacity, ensuring maintenance financing, involving communities, and using Rapor Pendidikan for evidence-based monitoring. Future studies should examine the implementation of this policy framework through empirical research at provincial, district, and school levels. By treating digitalization and revitalization as one integrated public policy package, Indonesia can move closer to education that is not only modern and innovative, but also fair, inclusive, and resilient.

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