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## Educational Problematics in Indonesia: Achievements and Threats Related to SDG Attainment

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### Abstract

Indonesia has made notable progress in expanding education access, strengthening gender parity in participation and completion, and scaling public financing mechanisms to support schooling. At the same time, persistent—and in some areas widening—gaps in learning outcomes, equity, and system effectiveness pose serious risks to achieving the Sustainable Development Goals (SDGs), especially SDG 4 (Quality Education) and its interlinkages with poverty, health, decent work, inequality, and governance. This article synthesizes evidence from policy reports, large-scale assessments, and peer-reviewed studies up to 2024 to map Indonesia's education achievements and threats in relation to SDG attainment. Using a framework-synthesis method, we organize the problematics into six domains: (1) access and participation, (2) learning quality and foundational skills, (3) equity and inclusion, (4) teacher quality and incentives, (5) governance and financing effectiveness, and (6) digitalization and post-pandemic recovery. Results show that while primary-age schooling deprivation is relatively low, disparities rise at secondary levels and are extreme for learners with disabilities. Learning poverty remains high, and international benchmarks reveal low shares of students reaching minimum proficiency. Post-pandemic learning loss, uneven digital access, and variable local capacity intensify risks. We propose an SDG-aligned risk-to-response agenda emphasizing foundational learning recovery, targeted inclusion financing, teacher professional support tied to practice and outcomes, data-driven subnational accountability, and resilient digital infrastructure paired with pedagogical capacity.

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**Keywords:** Indonesia; SDG 4; Learning Poverty; Educational Equity; Learning Loss; Teacher Policy; Education Financing; Decentralization; Digital Divide

### 1. Introduction

Education is central to Indonesia's human capital development and to the SDGs' integrated agenda. SDG 4 frames inclusive and equitable quality education and lifelong learning opportunities for all, while also serving as a catalyst for poverty reduction, health improvement, gender equality, decent work, innovation, and reduced inequalities.

Indonesia's education story is best understood as a dual reality. On one hand, access has expanded and participation has improved across many levels, supported by large public investments and national programs. On the other hand, learning outcomes remain a major concern: substantial shares of children and adolescents do not reach minimum proficiency in foundational skills, and equity gaps persist—particularly for rural learners, poorer households, and persons with disabilities.

This article synthesizes evidence up to 2024 to map achievements and threats related to SDG attainment, focusing on SDG 4 and its spillovers. It asks: (1) what achievements support SDG progress, (2) what threats may hinder progress, and (3) what evidence-based responses can strengthen equity, learning, and system resilience.

## 2. Literature Review

**2.1. SDG 4 and the quality–equity–relevance triad** SDG 4 emphasizes learning outcomes, inclusion, and lifelong learning. Internationally, SDG 4 scholarship highlights that enrollment gains alone do not guarantee learning, and that equity challenges require targeted policies for marginalized groups. Indonesia's SDG 4 mid-term reporting similarly stresses both access and quality assurance and recognizes disparities among regions and social groups (Indonesia SDG 4 Mid-Term Review, 2024).

### 2.2. Foundational learning, learning poverty, and assessment evidence

Learning poverty summarizes the share of children unable to read and understand a simple text by the end of primary age. Indonesia's Learning Poverty Brief reports learning poverty at 52.8% (World Bank & UIS, 2022). International assessments provide another lens: PISA 2022 indicates low shares of Indonesian students reaching minimum proficiency thresholds (OECD, 2023).

### 2.3. Decentralization, governance capacity, and uneven performance

Evidence suggests decentralization does not automatically improve learning outcomes and can preserve regional gaps when local capacity varies. Dewi (2021) <sup>[2]</sup> reports that curriculum reform under decentralization did not yield substantial returns in learning outcomes and highlights persistent regional quality gaps. Subnational public expenditure analyses point to planning and execution challenges tied to learning results (World Bank, 2020).

### 2.4. Teacher policy: incentives, certification, and classroom practice

Teacher policies such as certification and allowances have improved welfare but do not reliably translate into learning gains without strong instructional support. Experimental evidence found that large unconditional salary increases improved teacher satisfaction but produced no meaningful improvement in student learning outcomes in the short-to-medium term (De Ree *et al.*, 2016).

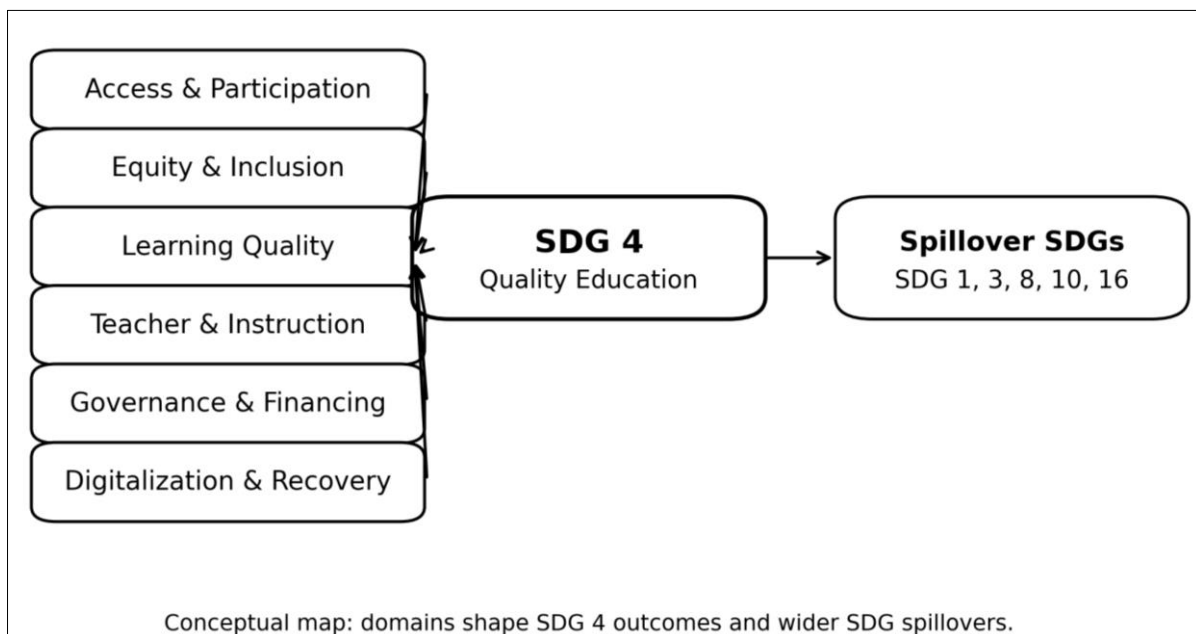
### 2.5. Post-pandemic learning loss and the digital divide

COVID-19 amplified learning loss risks and highlighted digital inequalities. Learning recovery depends on remediation and the effectiveness of hybrid/distance learning approaches (World Bank, 2021) <sup>[9]</sup>. Studies of the digital divide in Indonesia emphasize uneven ICT access and multidimensional gaps in access and usage quality (Valentia, 2023) <sup>[6]</sup>.

## 3. Method

This study uses a framework synthesis method. Rather than generating new primary datasets, we integrate evidence from national SDG education reporting, large-scale assessment indicators, peer-reviewed studies on teacher policy and reforms, and policy analyses on pandemic impacts and digitalization, limited to sources published no later than 2024. We organize evidence into six SDG-relevant domains: (1) access and participation, (2) learning quality, (3) equity and inclusion, (4) teachers and instruction, (5) governance and financing, and (6) digitalization and recovery. For each domain, we identify achievements, threats, and SDG linkages.

## 4. Results and Discussion



**Fig 1:** SDG-linked education problem map

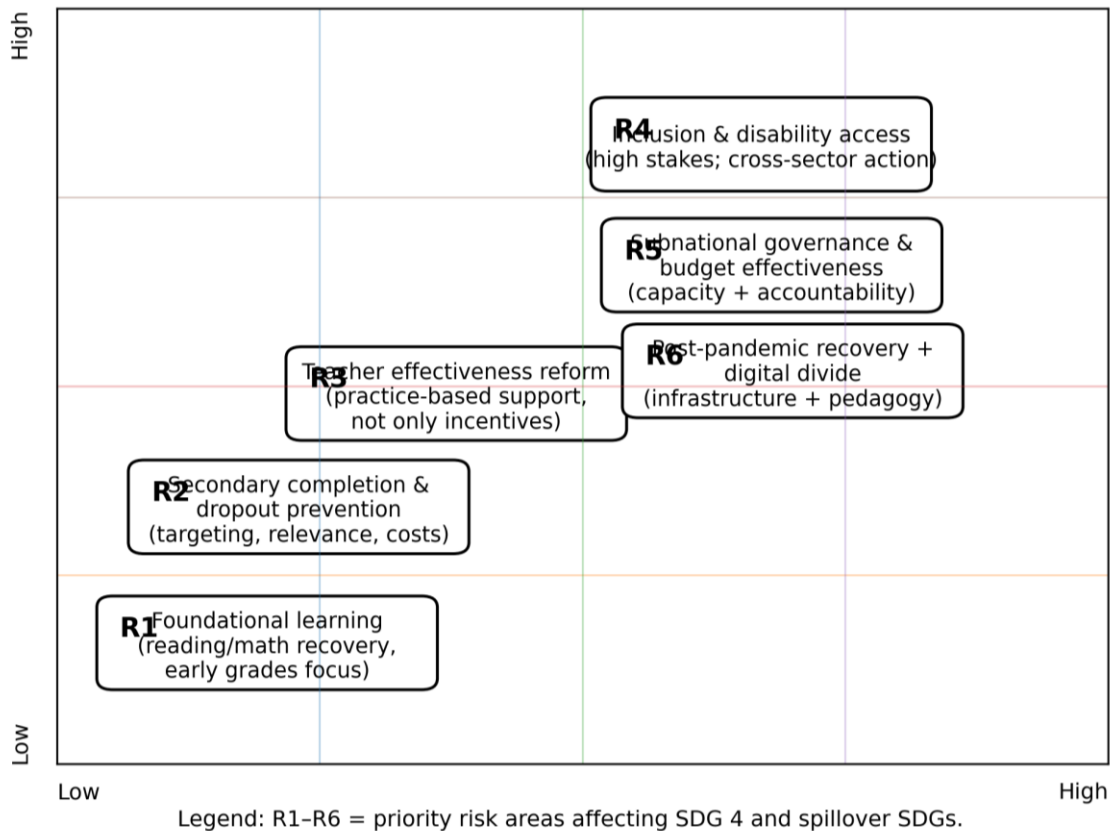


Fig 2: Indonesia education risk matrix for SDG attainment

**4.1. Achievements: progress that supports SDG attainment**

Indonesia’s education system has achieved important gains that support SDG attainment, including expanded participation, strengthening gender parity in completion at certain levels, and sustained financing mechanisms that reduce barriers to schooling. National SDG reporting emphasizes policy alignment with SDG 4 through compulsory education strengthening, teacher management, quality assurance, and governance improvements (Indonesia SDG 4 Mid-Term Review, 2024).

Financing instruments such as School Operational Assistance (BOS) and targeted support programs have been evaluated and refined. Empirical studies report associations between BOS and learning outcomes under specific conditions, suggesting that well-targeted operational funding can support learning when paired with effective school management (Kurniawan & Rakhmawati, 2022) [4].

**4.2. Threats and persistent problematics: barriers to SDG attainment**

Despite progress in access, learning outcomes remain a major

threat to SDG 4. Learning poverty is reported at 52.8% in Indonesia’s Learning Poverty Brief (World Bank & UIS, 2022), indicating that a large share of children do not reach minimum reading proficiency by the end of primary age. International benchmarks also show low shares of students reaching minimum proficiency thresholds in mathematics, reading, and science (OECD, 2023) [5].

Equity challenges are especially severe for learners with disabilities and for those in poorer or rural settings, with SDG reporting highlighting sharp disparities in out-of-school rates and literacy across demographic groups (Indonesia SDG 4 Mid-Term Review, 2024). Post-pandemic learning loss and unequal digital access further intensify these risks (World Bank, 2021; Valentia, 2023) [6].

Teacher policy remains a pivotal constraint. Evidence suggests that welfare improvements alone do not automatically improve student learning in the absence of practice-focused instructional support and accountability mechanisms (De Ree *et al.*, 2016). At the system level, subnational planning and budget execution challenges can weaken learning-oriented governance (World Bank, 2020).

**Table 1:** Achievements and threats mapped to SDG linkages (Indonesia, evidence up to 2024).

Domain	Key achievements	Persistent threats	Primary SDG linkages
Access & participation	Low primary-age schooling deprivation; compulsory education commitment	Secondary exclusion for vulnerable groups	SDG 4.1, 4.5
Learning quality	Reforms signal commitment to improvement	High learning poverty; low minimum proficiency shares	SDG 4.1
Equity & inclusion	Gender parity improving in completion (some levels)	Disability-related exclusion; wealth/rural disparities	SDG 4.5; SDG 10
Teachers & instruction	Professionalization and welfare policy attention	Incentives not consistently improving learning; variable enactment	SDG 4.c
Governance & financing	Large-scale funding programs and monitoring efforts	Input-focused planning; uneven execution; capacity gaps	SDG 16; SDG 4
Digitalization & recovery	Greater recognition of digital learning needs	Digital divide; learning loss recovery uneven	SDG 4; SDG 9; SDG 10

**Table 2:** Evidence-based problem-to-response agenda for SDG-aligned education policy.

Core problem	Evidence signal ( $\leq 2024$ )	SDG risk	Response (high-level)
High learning poverty	Learning poverty 52.8% (World Bank & UIS, 2022) <sup>[7]</sup>	SDG 4.1	Early-grade reading/math acceleration; tutoring; formative assessment routines
Low minimum proficiency among adolescents	Low shares reaching PISA Level 2 thresholds (OECD, 2023) <sup>[5]</sup>	SDG 4.1; SDG 8; SDG 10	Secondary learning recovery; strengthen core literacies; align curriculum + instruction to competencies
Secondary exclusion for vulnerable groups	Sharp disability-related out-of-school disparities (Indonesia SDG 4 Mid-Term Review, 2024)	SDG 4.5; SDG 10	Inclusive education financing; assistive technology; accessible facilities; outreach + flexible pathways
Teacher incentives not translating into learning	No learning gains from unconditional salary doubling (De Ree <i>et al.</i> , 2016)	SDG 4.c	Practice-based coaching; classroom feedback; learning-focused professional development
Weak learning-oriented budgeting at local level	Planning and execution issues in subnational expenditure (World Bank, 2020)	SDG 16; SDG 4	Standardized reporting; capacity building for local planning using learning metrics; outcome-oriented accountability
Digital divide and uneven recovery	Unequal ICT access and usage quality (Valentia, 2023; World Bank, 2021) <sup>[6,8]</sup>	SDG 4; SDG 9; SDG 10	Resilient connectivity and devices with equity targeting; teacher digital pedagogy; low-tech alternatives

## 5. Conclusion

Indonesia's education sector demonstrates substantial achievements relevant to SDG attainment, including expanded participation, improving gender parity in completion at some levels, and sustained financing mechanisms supported by ongoing reform efforts. However, persistent threats jeopardize SDG progress—especially SDG 4.1 and SDG 4.5—including high learning poverty, low shares of students achieving minimum proficiency, steep equity gradients by disability and wealth, uneven subnational governance capacity, and post-pandemic learning loss compounded by the digital divide. Strengthening SDG attainment requires prioritizing foundational learning recovery, targeted inclusion financing, teacher development centered on classroom practice, learning-oriented subnational budgeting and accountability, and resilient digital infrastructure paired with pedagogical capacity and equity safeguards.

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