Improving Indonesia's Education Quality through SDGs for Gen Z Empowerment

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ABSTRACT

This study examines how the Sustainable Development Goals (SDGs)—particularly SDG 4 on quality education—can be operationalized to improve education quality in Indonesia and, in turn, empower Generation Z as a demographic dividend. A qualitative, integrative literature review synthesizing policy documents, scholarly articles, and program reports. Sources were mapped to SDG 4 targets (e.g., access, equity, early childhood, TVET, teacher quality, safe learning environments) and analyzed thematically to identify constraints, policy instruments, and implementation gaps. The review identifies four persistent constraints that hinder education quality and equitable outcomes: (1) uneven access and infrastructure (including connectivity in remote areas), (2) curriculum and delivery misalignment with 21st-century competencies, (3) teacher capacity and distribution disparities, and (4) socio-cultural barriers that limit participation for vulnerable groups. Evidence from Indonesian initiatives—such as Kurikulum Merdeka, SATAP (single-roof schools), SM3T (pre-service teacher deployment to 3T regions), and foundational literacy–numeracy (Calistung) programs—shows partial progress but fragmented execution. The study proposes a coherent strategy bundle: targeted infrastructure and digital inclusion, systematic teacher professional development and incentives for underserved areas, strengthened early childhood and TVET pathways, gender and inclusion safeguards, and culturally embedded approaches that leverage local wisdom and community actors. These measures collectively link SDG 4 delivery to Generation Z empowerment through improved learning outcomes, employability, and civic capability. The article integrates dispersed SDG-related programs into a single strategy map explicitly framed around Generation Z empowerment. It contributes a practicable alignment between SDG 4 targets and Indonesia's policy instruments, highlighting how culturally responsive implementation can close quality and equity gaps in remote and diverse settings.

Keywords: *Sustainable Development Goals (SDGs); education quality; Indonesia; Generation Z; teacher development; equity and inclusion.*

INTRODUCTION

The Sustainable Development Goals (SDGs) were formulated as a comprehensive 2030 development agenda with the primary objective of promoting the right to sustainable social, economic, and environmental development. The 2030 Agenda is described as an ambitious and transformative global vision (United Nations, 2015). Indonesia has actively participated in the implementation of the SDGs through the involvement of various governmental entities at the national and sub-national levels. However, Indonesia faces several challenges in operationalizing the SDGs, particularly the persistent

disparities in educational quality and the country's vast geographic landscape, which complicate equitable distribution of educational services.

The SDGs represent an ambitious global development framework supported by all 193 United Nations member states. Consequently, the SDGs offer both significant opportunities and substantial challenges for developing countries worldwide, including Indonesia. Although the SDGs embody a global consensus on a shared future, their adoption occurred during a period marked by considerable uncertainty. The global economy has been experiencing a slow and uneven recovery in the post-COVID-19 era (Habibi & Pratama, 2021).

Indonesia is one of the world's most populous countries, with approximately 279 million inhabitants. According to the 2020 national census, Generation Z constitutes the largest demographic group, totaling 74.93 million individuals or 27.94% of the national population. As a country with a large and youthful population, Indonesia formally committed to the Sustainable Development Goals (SDGs) on 25 September 2015, alongside 192 other United Nations member states. Among the 17 goals, SDG 4—Quality Education—holds particular relevance for Indonesia, given the nation's ongoing efforts to improve educational outcomes by 2030.

Despite the strong alignment between SDG 4 and Indonesia's educational priorities, the reality of educational quality in the country remains far from optimal. The aspiration to achieve a transformative global education agenda by 2030, particularly in empowering Generation Z, is hindered by uneven outcomes and systemic disparities. Education is a crucial determinant of national progress and serves as an indicator of a country's classification as developed, developing, or underdeveloped. Given that Generation Z forms the demographic majority in Indonesia, their future prospects—and Indonesia's broader developmental trajectory—are strongly influenced by the quality of education available to them.

Without high-quality education, a country faces significant challenges in fostering innovation, adapting to rapid technological change, and ensuring workforce readiness. Poor educational outcomes also heighten the risk of unemployment among Generation Z, as inadequate learning and skill acquisition limit their employability. Conversely, a strong educational system enhances human capital development, reduces unemployment rates, and contributes positively to national economic resilience.

Efforts to ensure high-quality education in Indonesia remain a central government priority. However, improving education is not solely the responsibility of the government; private sector actors, educational institutions, and communities also play important roles. Although public understanding of the importance of education varies, many families are willing to invest substantial financial resources to secure the best possible schooling for their children, prioritizing quality facilities and competent instruction (Alifah, 2021).

Alifah (2021) further notes that debates regarding educational quality have intensified in recent years because the quality of an educational system strongly influences the competencies of its graduates. Low educational quality directly affects the quality of human resources, especially among Generation Z, whose developmental stage makes them central to Indonesia's long-term human capital strategy. Consequently, ensuring high-quality education for Generation Z must become a collective societal priority.

Findings from UNESCO's Global Education Monitoring (GEM) Report (2016) indicate that Indonesia ranked 10th out of 14 developing countries in terms of educational quality (Utami, 2019). Similarly, data from the Programme for International Student Assessment (PISA)—a global benchmarking initiative assessing student performance—show that Indonesia ranked 72nd out of 78 participating countries in 2018. These results have remained relatively stagnant over the past 10 to 15 years, demonstrating limited progress in improving educational outcomes (Susiani, 2021).

The SDGs were formulated as a comprehensive development agenda for 2030, with the primary aim of promoting sustainable social, economic, and environmental development. The 2030 Agenda is framed as an ambitious and transformative global commitment (United Nations, 2015). Indonesia has actively engaged in SDG implementation through the involvement of various governmental institutions. However, as Indonesia began operationalizing the SDGs, critical challenges—particularly the persistent low quality of education—became increasingly evident.

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Conference Proceedings of the 4ᵗʰ International Conference on Finance, Business, and Banking (ICFBB)

These empirical findings clearly demonstrate that Indonesia's educational performance continues to lag behind many other countries. Poor educational quality not only limits the development of a competent Generation Z workforce but also increases the risk of unemployment among young people. Therefore, strengthening human capital through high-quality education is essential to ensure that Indonesia remains competitive globally. Achieving educational excellence and equitable access will serve as the foundation for economic stability, sustainable growth, and long-term national development.

METHOD

Research methods refer to systematic procedures used to obtain information and evidence that are relevant, valid, and accountable for addressing specific research objectives (Creswell, 2016). This study employs a literature review approach, synthesizing insights from academic articles, books, reports, and other scholarly sources examined throughout the reading and writing process.

According to Sumantri (2005), qualitative research emphasizes the collection and interpretation of non-numerical data. Following this perspective, the present study adopts a qualitative design based on library research, utilizing both primary and secondary literature such as books, journal articles, and conference proceedings. The research process was conducted in several stages: identifying relevant sources, categorizing them according to the research questions, and analyzing their content to extract key themes. The collected data were then systematically organized, summarized, and interpreted to generate comprehensive findings that support the study's conclusions.

RESULT AND DISCUSSION

Definition and Purpose of Education

Education is fundamentally a process of guiding learners from a state of dependency and limited autonomy toward maturity, independence, and self-determination. Through this process, individuals develop the capacity to understand themselves and assume responsibility for their actions (Nurfatimah, 2022). According to the Indonesian National Education System Law (Undang-Undang SISDIKNAS No. 20 of 2003), education is defined as a conscious and deliberate effort to create learning conditions that enable students to actively develop their potential, including self-control, intelligence, social competence, spiritual strength, personality, and moral character (Vito, 2015).

Education is widely regarded as one of the most crucial components of human life and a key determinant of a nation's progress or decline. The emergence of competitive and innovative human resources in the era of globalization depends heavily on the quality of education. Education shapes individual character and supports the development of interpersonal skills necessary for effective interaction within society (Nurfatimah, 2022).

The purpose of education is to prepare future generations to internalize, understand, and apply essential principles and social norms. By providing learners with knowledge, experience, skills, and talents, education establishes the foundation for lifelong values and standards that guide their actions. Consistent with this, Law No. 20 of 2003 emphasizes that education is an intentional and structured process aimed at creating a learner-centered environment that fosters intellectual growth, self-discipline, independence, moral integrity, and the competencies required for personal, social, and national development. Education also functions as a systematic effort to shape attitudes and behavior through teaching, training, and other instructional processes (Hilmi, 2018).

Ultimately, the goal of education is to equip the younger generation with the abilities needed to understand, embody, and apply societal values. As future leaders, young people must be prepared through comprehensive learning experiences that cultivate knowledge, skills, and character as the foundation for responsible participation in society (Herlambang, 2016).

Quality refers to the extent to which something meets established standards of excellence or fulfills its intended purpose. In the context of education, quality is essential for determining whether an educational system has successfully achieved its goals. According to Ace Suryadi and H.A.R. Tilaar,

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educational quality represents an institution's ability to optimally utilize available resources to enhance students' learning capacity. Thus, educational quality encompasses both the delivery of instruction and the outcomes produced.

Current assessments indicate that the quality of education in Indonesia remains relatively low compared to other countries. Based on the 2018 global assessment released by the Programme for International Student Assessment (PISA), Indonesia ranked 74th out of 79 participating countries, placing it among the lowest-performing nations (Kurniawati, 2022).

Ahmad (2013) explains that quality reflects the overall characteristics of a product or service that demonstrate its ability to meet explicit or implicit expectations. In education, high quality does not emerge automatically; it requires systematic effort and continuous improvement. Azzuhri (2009) differentiates between absolute and relative conceptions of quality. In an absolute sense, a product is considered high-quality only when it meets the highest and most perfect standards—an ideal that is often unattainable in educational settings due to varying institutional capacities and financial limitations. Consequently, when applied to education, absolute quality becomes elastic, as only a few institutions are capable of delivering the highest level of excellence, and only a small number of students can afford such offerings (Nurfatimah, 2022).

Given these challenges, Indonesia must continue to strengthen its efforts to achieve the goals outlined in Article 3 of Law No. 20 of 2003 on the National Education System. This law emphasizes that education should develop learners' potential to become individuals who are devout, knowledgeable, ethical, creative, independent, and democratic. Achieving this vision requires sustained commitment to improving the quality and equity of educational services nationwide.

Sustainable Development Goals (SDGs)

The conceptual foundation of the Sustainable Development Goals (SDGs) can be traced to the 1987 report Our Common Future, authored by Norway's Prime Minister Gro Harlem Brundtland. The report highlighted global challenges related to human resource limitations and unequal distribution of development opportunities. The SDGs constitute the successor framework to the Millennium Development Goals (MDGs), officially adopted by United Nations member states on 25 September 2015 at the UN Headquarters. The SDGs were launched under the theme "Transforming Our World: The 2030 Agenda for Sustainable Development" (Panuluh, 2016).

Sustainable Development Goals
Source: www.umweltbundesamt.de

The MDGs played a significant role in accelerating development achievements in both developed and developing countries. In the field of education, the MDGs aimed to ensure universal access to primary schooling, with 94.7% of children eventually enrolled at the primary level. As noted by Salam (2022), following the conclusion of the MDGs in 2015, the SDGs were introduced to continue and strengthen the progress previously made.

The SDGs consist of 17 goals and 169 targets covering the period 2016–2030. These goals address a broad range of issues, including: (1) ending poverty; (2) eliminating hunger and improving nutrition; (3) ensuring healthy lives; (4) providing inclusive and equitable quality education and lifelong learning opportunities; (5) achieving gender equality; (6) ensuring clean water and sanitation; (7) affordable and modern energy access; (8) promoting sustained and inclusive economic growth and decent work; (9) fostering innovation and resilient infrastructure; (10) reducing inequality; (11) building sustainable cities and communities; (12) ensuring responsible consumption and production; (13) combating climate change; (14) conserving marine ecosystems; (15) protecting terrestrial ecosystems; (16) promoting peaceful and just societies; and (17) revitalizing global partnerships for sustainable development. Collectively, these goals serve as a global blueprint for addressing poverty, environmental degradation, educational inequality, and other persistent global challenges.

As Annur (2018) argues, the SDGs are inherently inclusive, requiring the participation of governments, civil society, private sectors, and communities. Their universal nature obligates all countries—whether developed, developing, or least-developed—to contribute to the achievement of the shared global agenda. In this context, the SDGs seek to advance economic well-being, improve quality of life, and strengthen human development across interconnected sectors, including education.

Education plays a crucial role in advancing sustainable development, as it directly contributes to the achievement of multiple SDG targets. Strengthening educational quality in Indonesia, therefore, is essential for accelerating progress across the 17 SDGs. High-quality, equitable, and inclusive education supports the development of a skilled and knowledgeable population, which ultimately contributes to building a more resilient and sustainable nation.

Current Conditions of Education in Indonesia

Although access to education has expanded in recent decades, the overall quality of education in Indonesia remains comparatively low. Despite the government's 15-year reform initiatives beginning in 2002, key indicators show persistent challenges. Indonesia continues to record one of the highest illiteracy rates among comparable nations, with approximately 15% of children under the age of fifteen still unable to read proficiently—a figure significantly higher than that of many other developing countries (Kurniawan, 2013). These conditions contrast with characteristics of developed countries, which typically exhibit strong educational foundations, high living standards, stable economies, and advanced technological development (Agustang, 2021).

Improving education is therefore essential for Indonesia's aspirations to become a developed nation. Countries that have achieved advanced status consistently prioritize investment in education as a core driver of national growth (Fitri, 2021). High-quality education fosters intelligent, innovative, ethical, and resilient young generations capable of addressing global challenges and contributing to national progress. However, Indonesia's human resource quality remains relatively low, and many citizens have yet to fully enjoy their constitutional right to equitable and quality education, as guaranteed in Article 31 of the 1945 Constitution (Fadia, 2021).

Infrastructural disparities further exacerbate educational inequality. Research by Pribadi (2017) shows that many schools in remote regions lack adequate buildings, suffer from teacher shortages, and have limited access to essential learning materials. In some areas, high education costs prevent students from continuing their studies beyond primary or lower-secondary levels. These structural limitations hinder the effectiveness of the national education system and contribute to uneven development outcomes across Indonesia.

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The importance of education is also emphasized in Islamic teachings, which hold a central place in Indonesian society. The first Qur'anic revelation in Surah Al-'Alaq (96:1)—"Read in the name of your Lord who created"—underscores the divine imperative to seek knowledge. As explained by El-Jambey (2016), this verse highlights that reading, understanding, and learning constitute the foundation of human dignity and intellectual development. Education, therefore, is not only a constitutional and developmental necessity but also a moral and spiritual obligation within the Indonesian context.

Efforts to Improve the Quality of Education in Indonesia Based on the SDGs

According to Law No. 20 on the National Education System, learning is defined as a conscious and deliberate effort to create educational conditions and processes that enable learners to actively develop their potential—including spiritual strength, self-control, intelligence, moral character, and the competencies required for personal and national development. This definition highlights that learning must be intentionally designed and systematically implemented to ensure an effective educational environment (Raharjo, 2012).

Islamic teachings further reinforce the centrality of education. Surah Al-Mujādilah (58:11) affirms that God elevates people of knowledge, while a well-known hadith states that seeking knowledge is obligatory for every Muslim. These teachings demonstrate that education is both a moral imperative and a pathway to societal advancement. In the Indonesian context, integrating local wisdom into learning processes helps students comprehend material more deeply while strengthening cultural identity. Such integration is highly relevant to the fulfillment of SDG 4, which focuses on ensuring inclusive and quality education.

Despite the intent of SDG 4, several challenges persist. Studies show that remote regions face three fundamental barriers: limited access to education, insufficient quality of learning processes, and cultural norms that may restrict participation (R.E.P., 2017). Amedi (2018) adds that inadequate government commitment, political interference in educational affairs, and excessive administrative focus have contributed to stagnation in curriculum implementation and overall system effectiveness.

To meet the educational ambitions of the SDGs, Indonesia must align its national strategies with Presidential Regulation No. 59 of 2017 on SDG implementation. The Regulation outlines key educational priorities that support SDG 4, which emphasizes inclusive, equitable, and lifelong learning opportunities for all. Within this framework, the SDGs articulate several essential aspirations for the education sector. These include ensuring universal completion of free and quality basic education; expanding access to early childhood care and pre-primary education; widening opportunities for technical, vocational, and higher education; and strengthening youth and adult skills for employment, decent work, and entrepreneurship. The SDGs also call for the elimination of gender disparities in education, improved literacy and numeracy for youth and adults, and the integration of knowledge and competencies related to sustainable development, human rights, gender equality, peace, cultural diversity, and global citizenship.

Further, the SDGs underscore the need to upgrade educational facilities so that learning environments are safe, inclusive, disability-friendly, and conducive to learning. They also encourage increased scholarship opportunities for students from developing regions and emphasize the necessity of expanding the supply of qualified teachers through national and international cooperation, particularly in underserved areas. Collectively, these priorities illustrate Indonesia's need to strengthen governance, improve teacher competence, expand access, and ensure that educational quality is equitable across regions. Advancing these efforts is essential to realizing SDG 4 and to supporting the broader objective of enhancing the nation's human capital.

According to Muslim (2021), the implementation of SDGs-based strategies to improve educational quality in Indonesia has begun to show progress in several regions. To advance Goal 4 of the SDGs, various targets have been pursued, including expanding access to early childhood care, primary and secondary education, as well as vocational and higher education. Efforts have also been directed toward promoting gender equality, eliminating educational disparities, developing safe and child-friendly learning facilities, and strengthening the availability of qualified teachers. Additional initiatives include improving the overall quality and accessibility of education, enhancing supporting infrastructure for teaching and learning, expanding special education services, and prioritizing character education as a foundational component of the curriculum.

Based on these developments, it is recommended that other provinces adopt similar strategies to accelerate progress toward equitable and high-quality education nationwide. Regions facing persistent educational challenges can benefit from replicating successful SDG-based initiatives implemented both within Indonesia and in other countries. Given that disparities in educational quality across provinces remain significant, strategic alignment and policy adaptation are essential for achieving comprehensive solutions.

To address these persistent gaps, it is crucial for more provinces to actively support and implement SDG-related educational programs. Strengthening commitment to SDG strategies—particularly those focused on improving educational quality—will enable Indonesia to achieve more equitable educational outcomes, develop stronger human resources, stimulate economic growth, and promote transformative progress across the nation.

Barriers to Implementing SDG Strategies for Improving Educational Quality in Indonesia

Law No. 20 on the National Education System states that learning is a deliberate and structured effort to create educational settings and processes in which students actively develop their potential—including spiritual strength, self-control, personality, intelligence, moral character, and the skills required for personal and national development. This legal foundation indicates that effective learning must be consciously designed and systematically implemented to ensure a functional and efficient educational environment (Raharjo, 2012).

Although improving the quality of education aligns with the aims of SDG 4, the implementation of SDG-based strategies in Indonesia continues to face significant obstacles. Research by Pribadi (2017) highlights four interrelated challenges commonly found in remote areas: curriculum constraints, geographical and infrastructural limitations, quality-related disparities, and local cultural practices that influence participation.

One barrier relates to the constantly changing national curriculum. The most recent Kurikulum Merdeka emphasizes modern, technology-based learning approaches. However, the unequal distribution of internet access across Indonesia limits its successful implementation, especially in rural and remote regions. Infrastructure issues further intensify this problem. Many communities lack adequate roads, reliable electricity, or digital connectivity, forcing students and teachers to travel long distances—often in mountainous terrain—to access schooling.

Teacher capacity also presents a substantial challenge. While teachers play a crucial role in improving student outcomes, educators in remote regions often work in poorly maintained facilities, some of which date back to the colonial era. Additionally, Generation Z students have different learning characteristics and expectations, creating new demands on teachers who may not have access to relevant training or resources. Cultural norms in certain regions also influence educational participation. In parts of Papua, for example, traditional customs assign boys to agricultural work and girls to domestic responsibilities; in some communities, only the children of tribal leaders are encouraged or permitted to attend school. These norms can restrict access to formal education for a large segment of children, hindering the achievement of SDG 4.

Given these challenges, the role of government in improving educational quality is essential. Educational equity requires that all regions—including those with distinct cultural identities and geographical barriers—receive adequate support to ensure that learning outcomes are consistent nationwide (Alifah, 2021). Indonesia's diverse local wisdom and cultural richness, when integrated effectively, can even serve as a model for other nations in implementing SDG-based education that respects cultural contexts (Asriati, 2012).

From the perspective of developed countries, Indonesia's learning outcomes remain relatively low (Kadi, 2017). This situation stems from limited adaptation to advancements in knowledge, technology, and socio-economic changes, compounded by uneven distribution of educational services. Curriculum reform that relies heavily on technology is difficult to apply in small rural villages where learning facilities and infrastructure are insufficient. Goetsch (2006) describes quality as "a dynamic state associated with products, services, people, processes, and environments that meets or exceeds expectations." Applying this concept to education indicates that quality is not static; it requires continuous improvement in teaching, learning environments, and systemic support. Without addressing

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structural inequities, Indonesia will continue to face barriers in fulfilling SDG 4 and achieving educational e The government must continuously evaluate and adopt approaches that can enhance teacher professionalism, including strengthening educational organizational culture and expanding training programs (Indra, 2019). Curriculum improvement remains a key strategy for elevating educational quality. Indonesia's efforts to modernize its curriculum are intended to support more effective learning, and the broader SDG framework reinforces this commitment by promoting long-term, equitable, and sustainable development. As Juniadi (2021) notes, improvements in educational quality contribute directly to poverty reduction, environmental preservation, and the creation of more equitable learning opportunities.

Several national programs have been introduced to support the expansion and equalization of educational access across diverse regions of Indonesia. These include curriculum adjustment initiatives, the Satu Atap (SATAP) integrated school model, the Sarjana Mendidik di Daerah Terdepan, Terluar, dan Tertinggal (SM3T) program, and the foundational literacy and numeracy initiative known as Calistung (reading, writing, arithmetic).

The Kurikulum Merdeka reform represents a major government effort to modernize education by incorporating digital tools and flexible learning approaches into daily classroom practice. Public and private schools across the country have begun adopting this curriculum. However, its implementation remains uneven, particularly in remote regions lacking internet connectivity or trained teachers capable of delivering technology-based instruction. Ongoing curriculum adjustments are therefore essential so that educational innovation can be extended to rural areas, supported by competent teachers and adequate technological infrastructure.

The SATAP initiative introduces an integrated school model designed to support children from disadvantaged backgrounds by ensuring continuous access to basic education in a single institution. Beyond addressing the nine-year compulsory education mandate, the SATAP program aims to provide children with sustained opportunities to continue their studies. UNICEF has also supported this initiative, implementing SATAP programs in more than 120 schools across Papua between 2011 and 2015 in collaboration with the Indonesian government. These efforts seek to evaluate and promote long-term, contextually appropriate approaches to improving learning outcomes in remote regions.

The SM3T program addresses the unique and varied educational needs of Indonesia's frontier, outermost, and underdeveloped regions. Operated by the Ministry of Research, Technology, and Higher Education, SM3T is aligned with the national teacher professional development scheme (PPG). Beyond teaching duties, SM3T educators often facilitate after-school literacy classes in their own homes or community spaces. Reports from border areas such as Entikong in West Kalimantan and several small islands in Riau highlight critical issues—including unreliable electricity, limited transportation, and weak internet connectivity—that hinder educational progress. Through the placement of dedicated SM3T teachers and adequate policy support, the government aims to gradually elevate educational quality in these challenging contexts.

The Calistung program focuses on strengthening basic literacy and numeracy skills among children and adults in remote communities. By ensuring foundational competency in reading, writing, and arithmetic, the initiative enables individuals in isolated areas to engage in formal education and participate more effectively in social and economic activities. This foundational literacy is widely recognized as an essential component of lifelong learning and plays a critical role in supporting educational equity. Overall, these programs illustrate Indonesia's multifaceted efforts to reduce disparities in educational access and quality. Strengthening these initiatives, supported by policy innovation and consistent government commitment, is essential for advancing SDG 4 and promoting long-term human capital development.xcellence.

CONCLUSION

This study concludes that the overall quality of education in Indonesia remains uneven and insufficiently aligned with the aspirations of Sustainable Development Goal 4, which calls for inclusive, equitable, and high-quality education for all. Despite measurable progress in expanding educational access, Indonesia continues to face systemic barriers that hinder the realization of SDG 4

in practice. These persistent challenges include frequent curriculum fluctuations, limited accessibility in geographically remote areas, significant cultural diversity that influences educational participation, and disparities in teacher competence—particularly in disadvantaged regions where professional development opportunities are scarce.

The country's vast archipelagic geography and large demographic composition—dominated by Generation Z—further complicate efforts to deliver consistent and equitable educational services nationwide. As a result, educational quality gaps remain visible across provinces, urban–rural divides, and socioeconomic groups. These disparities not only impede the development of a competitive young workforce but also limit Indonesia's broader human capital potential, which is essential for sustaining long-term national development.

Nevertheless, the Indonesian government has demonstrated a growing commitment to addressing these challenges through various initiatives. Policies such as the *Kurikulum Merdeka*, which promotes flexible and technology-integrated learning; the *Satu Atap* (SATAP) program, which expands access to basic education in remote communities; the SM3T initiative that deploys trained teachers to frontier and marginalized regions; and literacy-strengthening efforts like *Calistung* provide strategic pathways toward improving educational equity and quality. These programs signify important steps toward operationalizing SDG 4 within the Indonesian context.

However, achieving meaningful and sustainable progress requires more than programmatic interventions. A long-term, coordinated strategy is needed—one that prioritizes teacher professionalization, reinforces educational governance, strengthens infrastructure, and ensures equitable allocation of resources across regions. Equally important is the integration of local cultural values into educational approaches, as culturally responsive education can enhance engagement, preserve identity, and promote social cohesion.

Ultimately, Indonesia's pursuit of SDG 4 must be grounded in sustained policy commitment, collaborative multi-stakeholder engagement, and adaptive implementation that considers the country's sociocultural and geographic complexities. With continued investment, innovation, and consistent monitoring, Indonesia holds significant potential to transform its education system into one that not only meets global standards but also empowers its rapidly growing Generation Z to contribute meaningfully to national development and global sustainability efforts.

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