

2025

The Global Education Polycrisis

Navigating the Convergence of Funding Gaps, Systemic Inequity, and an Uncertain Future

A Strategic Analysis by



Executive Summary

The global education sector is confronting a crisis of unprecedented complexity and scale. This is not a series of isolated challenges but a compounding "polycrisis" where severe financial shortfalls, a profound deficit in foundational learning, acute workforce instability, disruptive technological integration, and deep-seated structural inequities are converging and mutually reinforcing one another. This report provides a comprehensive analysis of this polycrisis, drawing on data and assessments from leading international bodies, including UNESCO, the World Bank, and the OECD.

The analysis begins by examining the twin crises of funding and learning. A staggering \$97 billion annual funding gap obstructs the achievement of Sustainable Development Goal 4 (SDG 4) in low- and lower-middle-income countries, a deficit that has more than doubled in recent years.¹ This financial chasm is mirrored by a devastating learning crisis, where an estimated 70% of 10-year-olds in these nations are afflicted by "learning poverty," unable to read and understand a simple text.² The COVID-19 pandemic acted as a catastrophic accelerant, deepening these pre-existing fissures and threatening the current generation of students with a projected loss of \$21 trillion in lifetime earnings.³

At the heart of this crisis is the human element: a global teaching profession on the brink. Intensifying teacher shortages, particularly in the Global South, are crippling education systems. Educators are simultaneously facing escalating demands to integrate complex technologies and foster 21st-century skills, often without adequate training, resources, or supportive working conditions. This has created a dangerous "competency-scarcity loop," where the increasing complexity of the teaching role further depletes the pool of qualified professionals.

Technology, often heralded as a solution, presents a double-edged sword. Its integration is governed by the critical question: "A tool on whose terms?"⁴ A persistent digital divide ensures that technology often amplifies existing inequalities rather than closing them. The rapid, often uncritical, adoption of EdTech is occurring in a regulatory vacuum, with little robust evidence of its pedagogical value and mounting risks to student data privacy and cybersecurity.

These challenges are compounded by deep, structural inequities. Disadvantages intersect and multiply for the most vulnerable learners, particularly girls with disabilities, children in rural and conflict-affected regions, and those from impoverished backgrounds. External shocks, most notably climate change, are no longer peripheral concerns but direct threats to educational continuity, acting as "inequity accelerators" that disproportionately harm the most marginalized communities.

Finally, the report examines the widening chasm between educational outputs and the demands of the future of work. A "systemic velocity gap" exists, where slow-moving, bureaucratic education systems are failing to keep pace with the exponential rate of change in the labor market, driven by AI and digitalization. This mismatch threatens to leave a generation of students unprepared for the economic realities of the 21st century.

Confronting this polycrisis requires more than incremental adjustments. It demands a fundamental transformation in how education is financed, delivered, and valued. The path forward necessitates a combination of smarter, more effective investment; the scaling of proven pedagogical innovations; and a renewed commitment to global cooperation and policy coherence to forge a new social contract for education that is equitable, resilient, and fit for the future.

Michael Dalsgaard

Founder



Introduction: The Promise and Peril of Global Education

Throughout human history, education has stood as a foundational pillar for progress, equity, and empowerment. The 2030 Agenda for Sustainable Development enshrined this principle in Sustainable Development Goal 4 (SDG 4), which aims to "ensure inclusive and equitable quality education and promote lifelong learning opportunities for all".⁵ This goal represents a global promise—a recognition that investing in human capital is the most effective path toward reducing poverty, improving health outcomes, fostering peaceful societies, and driving sustainable economic growth.

Yet, this promise is in profound peril. The global education landscape is not merely facing challenges; it is engulfed in a polycrisis. This term describes a state where disparate crises converge and interact in ways that magnify their collective impact, creating a complex and deeply entrenched predicament. The financial shortfalls are no longer separable from the learning deficits; the teacher shortage cannot be divorced from the pressures of technological disruption; and the persistent scourge of inequity is being dangerously amplified by the emergent threats of climate change and global instability. These forces are intertwined in a feedback loop, where failure in one domain precipitates and exacerbates failure in others.

This report provides a detailed analysis of the constituent elements of this global education polycrisis. It moves beyond a simple catalog of problems to explore the systemic connections and feedback mechanisms that make the current situation so intractable. The analysis is structured to guide the reader through these interconnected crises, beginning with the foundational pillars of funding and learning, which form the economic and pedagogical bedrock of the system. It then examines the state of the teaching profession, the human element at the core of any educational endeavor. Following this, the report critically assesses the role of technology, questioning its deployment and governance. It delves into the deep divides of equity and inclusion, demonstrating how intersecting disadvantages create compounded barriers for the world's most vulnerable learners. Finally, it looks to the future, analyzing the growing mismatch between education and the evolving demands of the 21st-century economy. By dissecting these interconnected challenges, this report aims to provide a clear-eyed assessment of the state of global education and underscore the urgent need for a coordinated, systemic, and transformative global response.

Section 1: The Twin Crises of Funding and Foundational Learning

The stability and effectiveness of any education system rest upon two fundamental pillars: adequate financial resources and the successful impartation of foundational skills. Currently, both pillars are crumbling on a global scale. The sector is grappling with a massive and growing funding deficit that starves schools of essential resources, which in turn fuels a devastating crisis in foundational learning. These are not parallel problems but two sides of the same coin, locked in a vicious cycle where underinvestment guarantees poor learning outcomes, and poor learning outcomes undermine the future economic capacity required for investment.

1.1 The \$97 Billion Chasm: Quantifying the Global Education Funding Gap

The ambition of achieving universal quality education by 2030 is confronting a stark financial reality. According to the UNESCO Global Education Monitoring (GEM) Report, there is a staggering \$97 billion annual funding gap required to provide pre-primary, primary, and secondary education in low- and lower-middle-income countries.¹ This figure represents a dramatic and alarming escalation of the crisis; it is a significant increase from the initial annual financing gap of \$39 billion estimated for the period from 2015 to 2030, signaling that the world is moving further from, not closer to, its educational goals.¹

This financial chasm is not distributed evenly. The largest and most critical financing gap is concentrated in sub-Saharan Africa, which requires an additional \$70 billion per year to meet its targets.¹ This is the very region with

the furthest to travel, where 20% of primary school-age children and nearly 60% of upper secondary school-age youth are not in school.¹ The consequences of this underfunding are tangible and severe: a chronic lack of proper classrooms, insufficient learning materials, and an inability to recruit, train, and adequately compensate a sufficient number of teachers.

The sources of this gap are multifaceted. Domestically, public debt is increasingly crowding out spending on social services, with some African nations spending nearly as much on debt servicing as they do on education.¹ Internationally, donor commitments are falling short. The share of official development assistance dedicated to education has declined, and it is estimated that only about one-third of the total funding gap could be filled even if donors fulfilled all their aid commitments and prioritized basic education in the poorest countries.¹ This chronic under-investment creates the conditions for educational failure on a massive scale.

1.2 The Scourge of "Learning Poverty": A Foundational Skills Deficit

The direct consequence of systemic underfunding is a crisis not just of schooling, but of learning itself. The World Bank has conceptualized this failure through the metric of "learning poverty"—defined as the percentage of 10-year-old children who cannot read and understand a simple, age-appropriate text.² This skill is the gateway to all further education; a child who fails to achieve it is unlikely to ever become a fluent reader, severely limiting their ability to thrive in later schooling and their future career.

Even before the COVID-19 pandemic, the world was mired in a learning crisis. In 2019, the learning poverty rate in low- and middle-income countries stood at an alarming 57%.² The pandemic, however, transformed this crisis into a catastrophe. Prolonged school closures, which at their peak kept 1.6 billion children out of school, combined with the varied and often ineffective implementation of remote learning, caused a dramatic surge in learning poverty.³ The latest estimates indicate that the rate has risen to 70%.² This means that today, seven out of every ten children in low- and middle-income countries are being denied the most fundamental skill required for a life of learning and opportunity.

The regional disparities are stark and deeply concerning. In the world's poorest countries, the learning poverty rate was close to 90% even before the pandemic.² In sub-Saharan Africa, the figure is now estimated to be at or near this level, meaning that the vast majority of children are being left behind.² This is not merely an educational failure; it is a profound developmental crisis that jeopardizes progress across all other Sustainable Development Goals. Without a literate and skilled population, efforts to improve health, reduce poverty, and build stable societies are fundamentally undermined.

1.3 The Long Shadow of COVID-19: Economic Scars and Exacerbated Losses

The pandemic's impact extends far beyond the classroom, casting a long economic shadow over an entire generation. The unprecedented disruption to education is now projected to cost the current generation of students a staggering \$21 trillion in potential lifetime earnings in present value.³ This figure, equivalent to 17% of today's global GDP, represents a sharp and devastating increase from the 2021 estimate of a \$17 trillion loss, indicating that the full scope of the damage is still coming into focus.³

This catastrophic economic loss was compounded by a perverse and counterintuitive policy response in many of the hardest-hit nations. At the very moment when investment was most needed to mitigate learning losses, two-thirds of low- and lower-middle-income countries cut their public education spending in the first year following the onset of the pandemic.³ Globally, less than 3% of governments' stimulus packages were allocated to education, with that share falling to less than 1% in the poorest countries.³ This created a vicious cycle of disinvestment at the precise time that learning deficits were exploding.

The convergence of these factors reveals a self-reinforcing developmental trap. The failure to address the \$97 billion annual funding gap directly produces the conditions for high learning poverty. A generation deprived of foundational skills is unable to become a productive, innovative workforce, leading to lower national economic growth and a diminished tax base. This, in turn, erodes the future fiscal capacity of these nations to adequately fund public services, including education. The \$21 trillion in lost earnings is not a distant future cost; it is a direct and ongoing erosion of the very resources needed to solve this crisis. Therefore, the twin crises of funding and learning are not merely correlated; they are causally intertwined in a downward spiral that threatens to lock the world's most vulnerable countries into a state of perpetual underdevelopment.

Table 1: The Global Education Funding and Learning Crisis at a Glance

Indicator	Pre-Pandemic Figure (c. 2019)	Post-Pandemic Figure (c. 2022-2023)	Key Region of Concern
Annual Funding Gap to meet SDG 4	\$39 billion (estimate for 2015-2030) ¹	\$97 billion ¹	Sub-Saharan Africa (\$70B gap) ¹
Learning Poverty Rate (LMICs)	57% ²	70% ²	Sub-Saharan Africa (~90%) ²
Projected Lifetime Earnings Loss	\$10 trillion (2020 estimate) ³	\$21 trillion ³	Global
Children Out of School (Global)	~250 million ⁶	251 million (stagnant progress) ⁶	Sub-Saharan Africa ¹

This table juxtaposes key metrics before and after the COVID-19 pandemic, illustrating its role as a massive shock that accelerated pre-existing crises in funding, learning, and long-term economic outlook.

Section 2: The Human Element: A Profession on the Brink

While funding and curricula form the structure of education, it is the teaching profession that provides its lifeblood. The successful transmission of knowledge and skills is entirely dependent on a motivated, well-trained, and adequately supported corps of educators. Today, this vital human element of the education system is under unprecedented strain globally. A severe and worsening teacher shortage, coupled with escalating professional demands and deteriorating working conditions, has placed the profession on the brink of a systemic crisis that represents a primary bottleneck to improving learning outcomes.

2.1 The Global Teacher Shortage: A Crisis of Attraction, Retention, and Training

Education systems across the world are struggling to balance the supply and demand for qualified teachers, with shortages becoming an urgent priority.⁷ In developed nations, the problem has intensified significantly. Across OECD countries, nearly half (47%) of school principals reported in 2022 that a lack of teaching staff was hindering instruction, a sharp increase from 29% in 2015.⁸ This indicates a growing crisis of attraction and retention even in relatively well-resourced systems.

The situation is far more dire in the Global South, where the scale of the shortage is a direct impediment to achieving SDG 4. To meet 2030 targets, low-income countries need to triple their number of pre-primary teachers and increase their primary school teacher workforce by nearly 50%.⁴ Globally, an estimated 44 million new teachers are required by 2030 to achieve universal primary and secondary education.⁴ Sub-Saharan Africa is the epicenter of this crisis, with a need for an estimated 15 million new teachers over the same period.⁴

This is a systemic failure rooted in the inability to make teaching a professionally attractive and sustainable career path. Analysis of policy priorities shows that education ministries are often more focused on short-term recruitment strategies than on the more complex challenge of long-term retention.⁷ Addressing this requires a comprehensive approach that goes beyond recruitment campaigns. Key policy levers include raising the social

and professional status of teaching, enhancing institutional leadership, improving salaries and working conditions, and creating more diverse and flexible pathways into the profession.⁷ Without these fundamental reforms, the pipeline of qualified educators will continue to shrink, making quality education for all an impossibility.

2.2 Redefining the Role: Equipping Educators for 21st-Century Demands

The numerical shortage of teachers is compounded by a qualitative crisis in skills and training. The rapid advance of technology, particularly artificial intelligence, is fundamentally reshaping society and the economy, placing new and complex demands on educators. Teachers are now expected to be not only subject-matter experts but also facilitators of digital learning, curators of online resources, and guides who can help students develop so-called "21st-century skills" such as critical thinking, collaboration, and creativity.⁹

However, the systems for teacher training and professional development have failed to keep pace with this evolution. Globally, only half of all countries have established standards for developing teacher ICT skills, and crucial emerging topics like cybersecurity are rarely covered in training programs.⁴ This leaves educators unprepared and lacking confidence in their ability to integrate technology effectively into their teaching practices. This is a critical failure, as evidence increasingly shows that technology initiatives that bypass or fail to adequately engage and train teachers do not lead to improved student learning.⁴

The challenge is therefore twofold. First, there is an urgent need to provide teachers with the technical competencies required to navigate the digital classroom, including training in digital pedagogies and AI literacy. Second, and more fundamentally, professional development must be reoriented to equip teachers with the pedagogical skills needed to foster higher-order thinking. This requires a move away from one-off workshops and toward systems of continuous, embedded support, such as robust mentoring programs for both new and experienced teachers.

The convergence of these trends is creating a "competency-scarcity loop." As the role of the teacher becomes more complex and demanding - requiring a blend of pedagogical expertise, digital fluency, and socio-emotional intelligence - the pool of candidates who are both qualified and willing to enter the profession is shrinking due to poor status and working conditions. This forces systems to hire under-qualified individuals or overburden existing staff, which in turn drives down the quality of instruction, reduces learning outcomes, and further devalues the profession in the public eye. This feedback loop ensures that the more the system demands of its teachers, the less capable it becomes of attracting and retaining the talent needed to meet those demands, creating a downward spiral in the quality of the professional workforce.

2.3 Working Conditions and Motivation in Low-Resource Contexts

In many low- and middle-income countries, the challenges facing teachers are far more fundamental. Education systems frequently fail to provide the basic conditions necessary for educators to perform their jobs effectively. This includes a lack of safe and adequate classrooms, a severe shortage of essential learning materials like textbooks, and salaries that are often low relative to those of other professions requiring similar qualifications.¹⁰ These poor working conditions are a primary driver of low teacher motivation, which manifests in problems such as high rates of absenteeism and poor performance in the classroom - factors often cited as the proximate causes of the learning crisis.¹⁰

Analysis suggests that isolated, atomistic interventions, such as performance-based pay schemes or singular training programs, are unlikely to have a transformative effect when these basic needs are not met. Drawing on motivational theories, it becomes clear that until the foundational requirements for professional dignity and efficacy are in place, higher-level incentives will fail. Therefore, a systems-level approach is required. Improving

teacher performance and, by extension, student learning outcomes in these contexts is contingent upon first addressing the fundamental deficits in the teaching environment. This means ensuring that every teacher has a safe classroom, the necessary materials to teach, and a salary that allows for a dignified standard of living. The well-being and professional satisfaction of teachers are not secondary concerns; they are essential prerequisites for any meaningful and sustainable improvement in education quality.

Section 3: Technology in Education: A Tool on Whose Terms?

The rapid proliferation of digital technology has been widely positioned as a potential panacea for the myriad challenges facing global education. Proponents argue it can democratize access to resources, personalize learning, and bridge geographical divides. However, its deployment has been uneven, often uncritical, and poorly regulated, raising the crucial question posed by UNESCO: Is technology in education "a tool on whose terms?"⁴ A critical examination reveals that rather than being a universal solution, technology is a powerful and disruptive force whose benefits are highly conditional. Its ultimate impact hinges on resolving fundamental issues of equity, ensuring its integration is based on robust evidence, and establishing strong governance frameworks to manage its risks.

3.1 The Persistent Digital Divide: An Equity Multiplier

The promise of digital education is built on the assumption of universal access, yet this foundation is fundamentally flawed. A deep and persistent digital divide continues to cleave the global education landscape, ensuring that the benefits of technology are distributed unequally. Globally, internet connectivity remains a luxury, not a given. Only 40% of primary schools, 50% of lower secondary schools, and 65% of upper secondary schools are connected to the internet.⁴

This divide is a stark reflection of broader socioeconomic inequality. Within countries, access to both devices and reliable internet is strongly correlated with household income and parental education levels. In California, for instance, while progress was made during the pandemic, full digital access - defined as having both a computing device and a reliable internet connection - remained available to only 59% of low-income households in 2021, compared to much higher rates for their wealthier peers.¹¹ This gap is not merely about having a connection, but about the *quality* of that connection. Students from lower-income families are significantly more likely to rely on less stable and often capped mobile data plans for their learning, whereas their more affluent counterparts typically have access to high-speed broadband.¹¹

This disparity ensures that technology, when deployed in an unequal system, functions as an inequality multiplier. The shift to remote learning during the COVID-19 pandemic provided a stark illustration of this principle: analysis of student performance in the United States found that learning gaps widened significantly when instruction was delivered exclusively online.¹² Socio-economically advantaged schools are invariably better prepared for digital learning, possessing superior infrastructure, more experienced staff, and a student body with reliable home access. Without a concerted global and national effort to achieve universal, meaningful connectivity, the continued push for digitalization in education risks becoming a powerful engine of exclusion, further marginalizing the very learners who have the most to gain.

3.2 Beyond Access: The Challenge of Evidence and Effective Integration

Even where access is not a barrier, the educational value of technology is far from guaranteed. The EdTech market is evolving at a blistering pace, with products changing on average every 36 months - a rate that far outstrips the capacity of researchers and education systems to conduct rigorous evaluations of their effectiveness.⁴ This has created an evidence vacuum, where policy decisions are frequently driven by marketing claims rather than independent, robust research.

A significant portion of the available "evidence" on the impact of EdTech is generated by the very companies seeking to sell these products, creating a clear conflict of interest. A survey in the United States revealed that only 11% of school administrators requested peer-reviewed evidence prior to adopting a new technology.⁴ This lack of critical evaluation has led to massive investments with little to no demonstrable impact on learning. A landmark example occurred in Peru, where the government distributed over one million laptops to students; because the initiative was not accompanied by a strategy to integrate the devices into pedagogical practice, it produced no improvement in learning outcomes.⁴

This highlights the critical need to shift the focus from digital inputs to learning outcomes. The mere presence of technology in a classroom is not transformative. Its value is realized only when it is thoughtfully integrated into pedagogy to support specific learning goals. Technology should be a complement to, not a substitute for, the vital human connection between teachers and students. Effective integration requires that technology serves the educational purpose, rather than the education system contorting itself to serve the technology.

3.3 "Target Rich, Cyber Poor": Data Privacy and Security in the Digital Classroom

The rapid digitalization of education has created a vast new ecosystem of student data, transforming schools into highly valuable targets for malicious cyber actors. The U.S. Cybersecurity and Infrastructure Security Agency (CISA) has aptly described K-12 schools as "target rich, cyber poor" - they hold enormous amounts of sensitive personal and financial data but often lack the financial resources and technical expertise to implement comprehensive cybersecurity programs.¹³

The threat is no longer theoretical; it is a clear and present danger. A 2025 report from the Center for Internet Security found that a staggering 82% of reporting K-12 schools in the U.S. had experienced cyber threat impacts, with over 9,300 confirmed incidents in an 18-month period.¹⁴ These attacks range from ransomware that paralyzes school operations to data breaches that expose the personal information of children and staff.

This vulnerability is exacerbated by a profound lack of regulation and governance in the EdTech space. The rush to adopt new tools, especially during the pandemic, occurred with little scrutiny of their data privacy practices. One analysis found that 89% of 163 EdTech products recommended during the crisis could survey children's online activity.⁴ Critically, only 16% of countries worldwide have laws that explicitly guarantee data privacy in the education sector.⁴ This regulatory void has created a digital Wild West where children's data is routinely collected, used, and exposed with minimal oversight.

The uncritical embrace of EdTech is creating a dangerous "dependency trap," particularly for under-resourced education systems. Lacking the capacity to develop their own digital solutions, these systems become reliant on commercial, often foreign, technology providers for core educational functions. This can lead to vendor lock-in, where a school's curriculum, assessment data, and administrative processes become inextricably tied to a single proprietary platform. This cedes significant control over educational strategy and sensitive national data to external commercial entities whose primary motivations may not align with pedagogical best practices or the public good. This dependency creates a fragile system, vulnerable to price hikes, product discontinuations, and the exploitation of student data, ultimately undermining the long-term sovereignty and resilience of national education systems.

Section 4: Deepening Divides: The Imperative of Equity and Inclusion

While the crises of funding, teacher shortages, and technological disruption affect all education systems, their impacts are not felt equally. The greatest and most persistent challenge in global education is the existence of deep, structural inequalities that systematically disadvantage certain groups of learners. These are not peripheral issues but are central to the polycrisis, as disadvantages intersect and are compounded by external shocks.

Achieving SDG 4 is impossible without a direct and sustained assault on the barriers of gender, disability, poverty, geography, and fragility that deny millions of children their right to education.

4.1 Intersecting Disadvantages: The Compounded Barriers of Gender, Disability, and Poverty

The most significant barriers to education arise not from a single source of disadvantage, but from the intersection of multiple forms of discrimination. Girls with disabilities represent perhaps the most excluded group of learners worldwide, facing compounded obstacles on the basis of both their gender and their disability.¹⁵ The statistics are stark: the global literacy rate for women with disabilities may be as low as 1%.¹⁵ While 52.9% of girls without disabilities complete primary school, that figure drops to just 41.7% for girls with disabilities.¹⁶

These outcomes are the result of a complex interplay of factors. Harmful stereotypes about the abilities and future potential of girls with disabilities often lead families to perceive their education as unworthy of investment. Poverty exacerbates this, forcing families in low-income countries to make difficult choices about which children to send to school, with girls often being deprioritized for domestic labor or early marriage. Furthermore, education policies themselves frequently fail to address this intersectionality, creating separate programs for gender equality and disability inclusion without acknowledging the unique, compounded challenges faced by girls with disabilities.¹⁶

This phenomenon can be understood through the lens of the World Inequality Database on Education (WIDE), which visualizes how disadvantages multiply when they intersect. A child's educational prospects are not determined by a single factor but by the cumulative weight of their circumstances. A poor, rural girl with a disability faces a set of barriers exponentially greater than those faced by an urban boy without a disability. Addressing this requires a holistic approach that moves beyond siloed interventions to tackle the root causes of exclusion, challenge harmful social and gender norms, and provide targeted, integrated support for the most marginalized learners.

4.2 The Geography of Opportunity: Rural-Urban and Regional Disparities

A child's "lottery of birth"—the country and community into which they are born—remains one of the single greatest determinants of their educational destiny. Stark regional and geographic disparities persist at every level. Globally, sub-Saharan Africa remains the epicenter of the education crisis, home to the largest funding gap (\$70 billion annually) and the highest rates of out-of-school children, with nearly 60% of its upper-secondary-age youth not enrolled in school.¹ Within countries, a sharp divide often exists between urban centers and rural areas. Rural communities typically face far higher levels of deprivation, with limited access to quality schools, trained teachers, and essential infrastructure, including electricity and internet connectivity. This geographic penalty is evident across all key indicators, from the allocation of public funds and qualified teachers to the availability of digital learning resources. The result is a system where opportunity is geographically concentrated, leaving rural and remote populations systematically behind. Overcoming this requires deliberate policies focused on equitable resource distribution, including financial incentives for teachers to work in underserved areas and targeted investments in rural school infrastructure, to ensure that geography does not dictate a child's future.

4.3 Education in Fragility: The Impact of Conflict and Climate Change

The challenges of inequity are being dangerously amplified by two powerful external shocks: armed conflict and climate change. These forces are no longer distant threats but immediate and disruptive realities for millions of learners, transforming already fragile educational environments into zones of acute crisis. The World Bank has recognized this growing threat by rapidly increasing its engagement in settings of Fragility, Conflict, and Violence (FCV), which accounted for 22% of its education portfolio in fiscal year 2022.³

Simultaneously, climate change has emerged as a direct and growing threat to educational continuity. Between January 2022 and June 2024 alone, over 400 million students worldwide faced school closures due to extreme weather events such as heatwaves, floods, and wildfires.¹⁷ These events not only damage or destroy school infrastructure but also lead to increased student absenteeism and demonstrably harm academic achievement.¹⁷

Crucially, these external shocks function as "inequity accelerators." They do not impact all learners equally; instead, they disproportionately dismantle the already fragile support systems available to the most marginalized. A climate-related disaster, for example, is far more devastating for a low-income rural community with poorly constructed schools than for an affluent urban one with resilient infrastructure and options for remote learning. The rural family, already in poverty, cannot afford to relocate or purchase digital devices for distance learning. The damaged local school, in a system with a massive funding gap, may not be rebuilt for years. In this way, the climate shock exploits the pre-existing fault lines of inequality, pushing the most vulnerable children out of the education system permanently and making the educational divide intergenerational. To counter this, education systems must be fundamentally re-engineered for resilience. This requires investing in climate-resilient school infrastructure, developing robust plans for learning continuity during crises, and integrating climate change education into the curriculum to empower students as future agents of change.

Section 5: Bridging the Chasm: Aligning Education with the Future of Work

As education systems grapple with the foundational crises of funding, learning, and equity, they are simultaneously facing a profound challenge of relevance. The global economy is undergoing a rapid and radical transformation driven by technological innovation, the green transition, and geopolitical shifts. This has created a growing and dangerous mismatch between the skills and knowledge imparted by traditional education models and the competencies demanded by the 21st-century labor market. Urgent and systemic curriculum reform is required to bridge this chasm and prepare learners for an uncertain future.

5.1 The Evolving Skills Landscape: From Foundational Literacy to AI Fluency

The world of work is in a state of unprecedented flux. The World Economic Forum's *Future of Jobs Report 2025* projects that, on average, 39% of a worker's core skills will be disrupted or transformed by the year 2030.¹⁸ Employers across the globe now identify skills gaps as the single greatest barrier to their organizational transformation.¹⁸

The most in-demand skills fall into several key categories. Technological skills are growing in importance more rapidly than any other set, with AI and big data, networks and cybersecurity, and general technological literacy topping the list of fastest-growing competencies.¹⁸ Alongside these are higher-order cognitive skills, with analytical and creative thinking remaining highly sought after.¹⁸ Finally, there is a rising premium on socio-emotional skills - often termed "soft skills" - such as resilience, flexibility, agility, leadership, and social influence.¹⁸

This creates a fundamental disconnect. While education systems in many parts of the world are still struggling to ensure that children master basic foundational literacy and numeracy (as detailed in Section 1.2), the labor market is demanding a workforce fluent in AI, capable of complex problem-solving, and adept at collaboration and adaptation. This widening gap threatens to create a lost generation of young people who, despite years of schooling, graduate without the skills necessary to secure dignified employment and contribute to the modern economy.

Table 2: The Shifting Skills Landscape (2025-2030)¹⁸

Rank	Top 10 Fastest-Growing Skills	Top 10 Most In-Demand Core Skills	Key Driver(s)
1	AI and big data	Analytical thinking	Technology
2	Networks and cybersecurity	Resilience, flexibility, and agility	Technology, Geopolitics
3	Technological literacy	Leadership and social influence	Technology
4	Creative thinking	AI and big data	Technology, Economic Uncertainty
5	Resilience, flexibility, and agility	Curiosity and lifelong learning	Economic Uncertainty
6	Curiosity and lifelong learning	Creative thinking	Technology, Demographics
7	Leadership and social influence	Technological literacy	Demographics
8	Talent management	Networks and cybersecurity	Demographics
9	Analytical thinking	Talent management	Technology
10	Environmental stewardship	Environmental stewardship	Green Transition

This table, based on data from the World Economic Forum, distinguishes between the fastest-growing emerging skills and the most in-demand core skills, highlighting the dual challenge for education systems to both build enduring competencies and adapt to new technological demands.

5.2 Curriculum in the Crucible: The Challenge of Systemic Reform

Responding to this shifting landscape requires more than minor adjustments to existing curricula; it demands a fundamental rethinking of what is taught and how. However, systemic reform faces immense institutional inertia. A significant initial hurdle is the lack of a clear, internationally agreed-upon definition of "21st Century Skills," a term that is often used interchangeably with concepts like "life skills" or "soft skills," hindering the development of coherent teaching and assessment strategies.⁹

Many education systems remain locked into standardized, examination-driven models that prioritize rote memorization over the development of skills like creativity, critical thinking, and collaboration. To be effective, reform must be demand-led, adapting global frameworks to local economic and cultural contexts, and must be built upon a strong foundation of literacy and numeracy, which are prerequisites for the development of most higher-order skills.⁹ The challenge is not simply to add a "coding class" or a module on "critical thinking" but to transform pedagogy itself, moving toward more active, playful, project-based, and interdisciplinary learning approaches that embed these skills across the entire curriculum. This, in turn, requires a massive and sustained investment in teacher professional development to equip educators with the pedagogical tools and confidence to teach in this new way.

The core dilemma is a "systemic velocity gap." The labor market, driven by the exponential pace of technological change like AI, is evolving at a rate that far outstrips the linear, bureaucratic pace of educational reform. An EdTech product lifecycle is around 36 months, while a national curriculum reform cycle can take five to ten years to fully design, approve, and implement.⁴ This temporal mismatch means that by the time a curriculum designed to teach a specific set of "future skills" is rolled out, those skills may already be partially obsolete.

This reality challenges the traditional model of "front-loading" all necessary education in youth. The goal of education can no longer be to impart a fixed body of knowledge or a static set of skills. Instead, it must be to cultivate the meta-skill of "learning how to learn" - fostering curiosity, adaptability, critical thinking, and a disposition for lifelong learning. This necessitates a paradigm shift toward a more flexible and continuous model

of education, featuring diversified pathways, micro-credentials, and robust systems for adult learning and reskilling that allow individuals to adapt their skill sets throughout their careers.

Section 6: Charting a Path Forward: Policy, Innovation, and Global Cooperation

Analyzing the depth and interconnectedness of the global education polycrisis can be a sobering exercise, but it must not lead to paralysis. The scale of the challenge demands an equally ambitious and multifaceted response. The path forward requires a decisive shift from identifying problems to implementing solutions. This involves not only mobilizing more resources but investing them more effectively, learning from and scaling up promising innovations in pedagogy and technology, and forging a new era of global cooperation to ensure that policy is coherent and action is coordinated.

6.1 Investing Smarter: Innovative Financing and Efficient Resource Allocation

Closing the \$97 billion annual funding gap is an absolute necessity, but simply calling for more money is insufficient. The conversation must evolve to include a focus on "spending smarter" and making every dollar more effective. This begins with a reassessment of domestic priorities. Education financing must become a national investment priority, protected from fiscal pressures and recognized for its long-term returns.

On the international stage, there is a need to explore innovative financing mechanisms that can alleviate the fiscal constraints on the most indebted nations. One promising avenue is the expansion of debt-for-education swaps, a mechanism through which a portion of a country's foreign debt is forgiven in exchange for the government's commitment to invest that amount in domestic education programs. UNESCO is calling for the creation of a multilateral platform to scale up these efforts, allowing countries burdened by unsustainable debt to convert those liabilities into crucial investments in their human capital.¹

Effective investment also means ensuring that resources are allocated efficiently and equitably. This requires evidence-based policymaking that directs funding toward interventions with proven impact on learning. It also involves a more strategic allocation of human resources, implementing policies that ensure qualified teachers are deployed to the schools and regions with the greatest need.

6.2 Lessons from the Field: Promising Innovations in Pedagogy and Technology

Amid the widespread crisis, pockets of innovation offer valuable lessons and scalable models for transformation. Many of these promising examples are emerging from the Global South, where resource constraints are forcing creative and context-specific solutions.

In the realm of technology, recent pilot programs have demonstrated that AI, when implemented thoughtfully, can yield remarkable results. An after-school program in Edo, Nigeria, which combined AI-powered tutoring with guidance from trained teachers, produced learning gains equivalent to 1.5 to 2 years of typical schooling in just six weeks.¹⁹ The success of this initiative was rooted in a "people-centered" approach that started by identifying the specific educational problem, designed the intervention around the local context (including limited connectivity), and empowered teachers as central actors rather than attempting to replace them.¹⁹ This provides a powerful counter-narrative to the technology-first approach, proving that EdTech's value is unlocked through its service to human-led pedagogy.

Beyond technology, innovations in pedagogy are also showing a path forward. The "Education for Sharing" (E4S) model, implemented in underserved communities across 13 countries, utilizes a unique "play, reflect, act" framework.²⁰ This approach uses structured, playful learning to help students engage with complex global challenges, like the SDGs, and develop crucial social-emotional skills, civic values, and a sense of personal

agency.²⁰ By tailoring its methods to be culturally relevant and context-sensitive, E4S demonstrates how active, engaging pedagogy can cultivate the holistic skills needed for global citizenship.

6.3 A Call for Coordinated Action: Strengthening International Cooperation and Policy Coherence

The challenges confronting global education are too large, complex, and interconnected for any single nation or organization to solve alone. As underscored by UNESCO, the World Bank, and the OECD, the only viable path forward is through enhanced and sustained international cooperation. Global problems demand collective action. This includes international efforts to pool scientific expertise and financial resources to respond to crises, as well as the establishment of global norms and standards on critical cross-border issues like the ethical use of AI in education and the protection of student data privacy.

Meaningful progress requires a coherent, multi-stakeholder approach that aligns the efforts of national governments, international aid organizations, civil society, and the private sector. Governments must prioritize education in policy and practice, stakeholders - especially youth - must be meaningfully engaged in the transformation process, and all partners must hold themselves accountable for their commitments. This coordinated action is essential to build education systems that are not only effective in delivering learning but are also resilient enough to withstand the shocks of an increasingly uncertain world.

Conclusion: A Call for Urgent and Systemic Transformation

The evidence presented in this report paints a stark and unequivocal picture: global education is in a state of deep and compounding crisis. The convergence of a massive funding gap, a catastrophic deficit in foundational learning, a strained and shrinking teaching workforce, the disruptive and inequitable integration of technology, and the amplification of systemic inequalities by conflict and climate change constitutes a polycrisis that threatens to reverse decades of progress and undermine the future prospects of an entire generation. The promise of education as a great equalizer and a driver of human progress is at risk of becoming a privilege for the few rather than a right for all.

Incremental adjustments and siloed interventions are no longer sufficient. The sheer scale and interconnected nature of these challenges demand a response that is equally systemic, coordinated, and transformative. What is required is not a series of minor repairs to the existing machinery of education, but a fundamental rethinking of its purpose, structure, and financing - a new social contract for education fit for the complexities of the 21st century.

This transformation must be built on a foundation of renewed political will and financial commitment. It requires a society-wide consensus to invest more, and more effectively, in people. It demands that we empower and professionalize the teaching profession, recognizing that educators are the indispensable agents of any educational change. It necessitates a critical and discerning approach to technology, harnessing its potential to serve pedagogy and equity while rigorously governing its risks. Above all, it calls for an unwavering commitment to inclusion, actively dismantling the intersecting barriers that exclude the most vulnerable learners.

The path forward is fraught with difficulty, but it is not without hope. Promising innovations in policy, pedagogy, and technology demonstrate that progress is possible. However, scaling these solutions and achieving systemic change will require unprecedented levels of international cooperation and shared resolve. The cost of inaction—measured in lost potential, entrenched poverty, and diminished social cohesion—is unconscionable. The global community stands at a crossroads, and the choices made in the coming years will determine whether the promise of quality education for all remains a distant aspiration or becomes a lived reality.

Cited Works

1. UN News. (2023). *New UNESCO report reveals \$97 billion barrier to reaching education targets.* <https://news.un.org/en/story/2023/09/1141102>
2. The World Bank. (2022). *The State of Global Learning Poverty: 2022 Update.* <https://www.worldbank.org/en/topic/education/publication/state-of-global-learning-poverty>
3. The World Bank, UNESCO, UNICEF. (2021). *The State of the Global Education Crisis: A Path to Recovery.*(<https://documents1.worldbank.org/curated/en/416181638734837933/pdf/The-State-of-the-Global-Education-Crisis-A-Path-to-Recovery.pdf>)
4. UNESCO. (2023). *Global education monitoring report, 2023: technology in education: a tool on whose terms?.* https://www.inclusive-education-initiative.org/sites/inclusive-education-initiative.org/files/2023-07/10.54676_ZJFQ2033.pdf
5. United Nations. (n.d.). *Goal 4: Quality Education.* <https://www.un.org/sustainabledevelopment/education/>
6. World Economic Forum. (2023). *The barriers blocking global education targets: UNESCO.* <https://www.weforum.org/agenda/2023/09/barriers-global-education-targets-unesco/>
7. OECD. (2024). *Education Policy Outlook 2024.* <https://www.oecd.org/education/education-policy-outlook-2024-0b827313-en.htm>
8. OECD. (2022). *Education at a Glance 2022.* <https://www.oecd.org/education/education-at-a-glance/educationataglance2022.htm>
9. K4D. (2018). *21st Century Skills: Evidence of issues in definition, demand and delivery for development contexts.*(https://assets.publishing.service.gov.uk/media/5b6c2896e5274a3a13337b24/21st_Century_Skills_Evidence_of_issues_in_definition_demand_and_delivery_for_development_contexts.pdf)
10. Teacher Task Force. (n.d.). *Working conditions of teachers in low- and middle-income countries.* <https://teachertaskforce.org/blog/working-conditions-teachers-low-and-middle-income-countries>
11. Public Policy Institute of California. (2022). *The Digital Divide in Education.* <https://www.ppic.org/publication/the-digital-divide-in-education/>
12. National Center for Biotechnology Information. (2024). *The persistent educational digital divide and its impact on societal inequality.* <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10830499/>
13. Cybersecurity and Infrastructure Security Agency. (n.d.). *K-12 Cybersecurity.* <https://www.cisa.gov/topics/cybersecurity-best-practices/k-12-cybersecurity>
14. Center for Internet Security. (2025). *2025 CIS MS-ISAC K-12 Cybersecurity Report.* <https://www.cisecurity.org/insights/reports/2025-cis-ms-isac-k-12-cybersecurity-report>
15. Women Enabled International. (2021). *The Right to Education for Women and Girls with Disabilities.* <https://womenenabled.org/wei-facts-the-right-to-education-for-women-and-girls-with-disabilities/>
16. UNGEI. (2021). *Leave No Girls With Disabilities Behind.* <https://www.ungei.org/publication/leave-no-girls-disabilities-behind>

17. Brookings Institution. (2025). *Climate change is an urgent but often overlooked education policy issue*.
<https://www.brookings.edu/articles/climate-change-is-an-urgent-but-often-overlooked-education-policy-issue/>
18. World Economic Forum. (2025). *The Future of Jobs Report 2025: Digest*.
<https://www.weforum.org/publications/the-future-of-jobs-report-2025/digest/>
19. The World Bank Blogs. (2024). *People-centered AI in education: Five lessons from the Global South*.
<https://blogs.worldbank.org/en/education/people-centered-ai-education-five-lessons-global-south>
20. Brookings Institution. (2024). *Active, playful learning in the Global South*.
<https://www.brookings.edu/articles/active-playful-learning-in-the-global-south/>