UNICEF Innocenti – Global Office
of Research and Foresight

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POLICY BRIEF

# Improving Education in Africa

## Insights from research across 33 countries

### RECOMMENDATIONS

Research and evidence on education from 33 countries in Africa reflects rich diversity and underscores the importance of tailoring solutions to the local context. Through this research, three key actions on education emerge as points of leverage for the continent:

**Inform**

**1. Use local education data to make informed decisions that address country-specific challenges.**

- Prioritize equity. Interventions to address gender, disability and rural inequities can improve outcomes for everyone.
- Maximize instruction time. Set clear expectations for instruction hours, manage absences and reduce reliance on double-shift systems.
- Improve pedagogical quality. Strengthen teacher training pathways and offer ongoing pedagogical support.

**Invest**

**2. Direct education investments towards areas of high impact.**

- Focus on early learning. Improve long-term learning outcomes and the efficiency of the education system.
- Support vulnerable students. Through remedial, bridging and accelerated learning programmes, tailor instruction to the level of students ability.
- Capitalize on digital technology. It can improve teachers' day-to-day work. Focus on the technology options that are available and have the furthest reach.

**Implement**

**3. Design implementation plans that respond to local contexts and embed implementation research for continuous learning improvements.**

- Tailor implementation. Incorporate an equity-focus and adjust resourcing levels to account for diverse local contexts.
- Embed data and research. Include data during planning and implementation for learning, continuous improvement and timely course corrections.

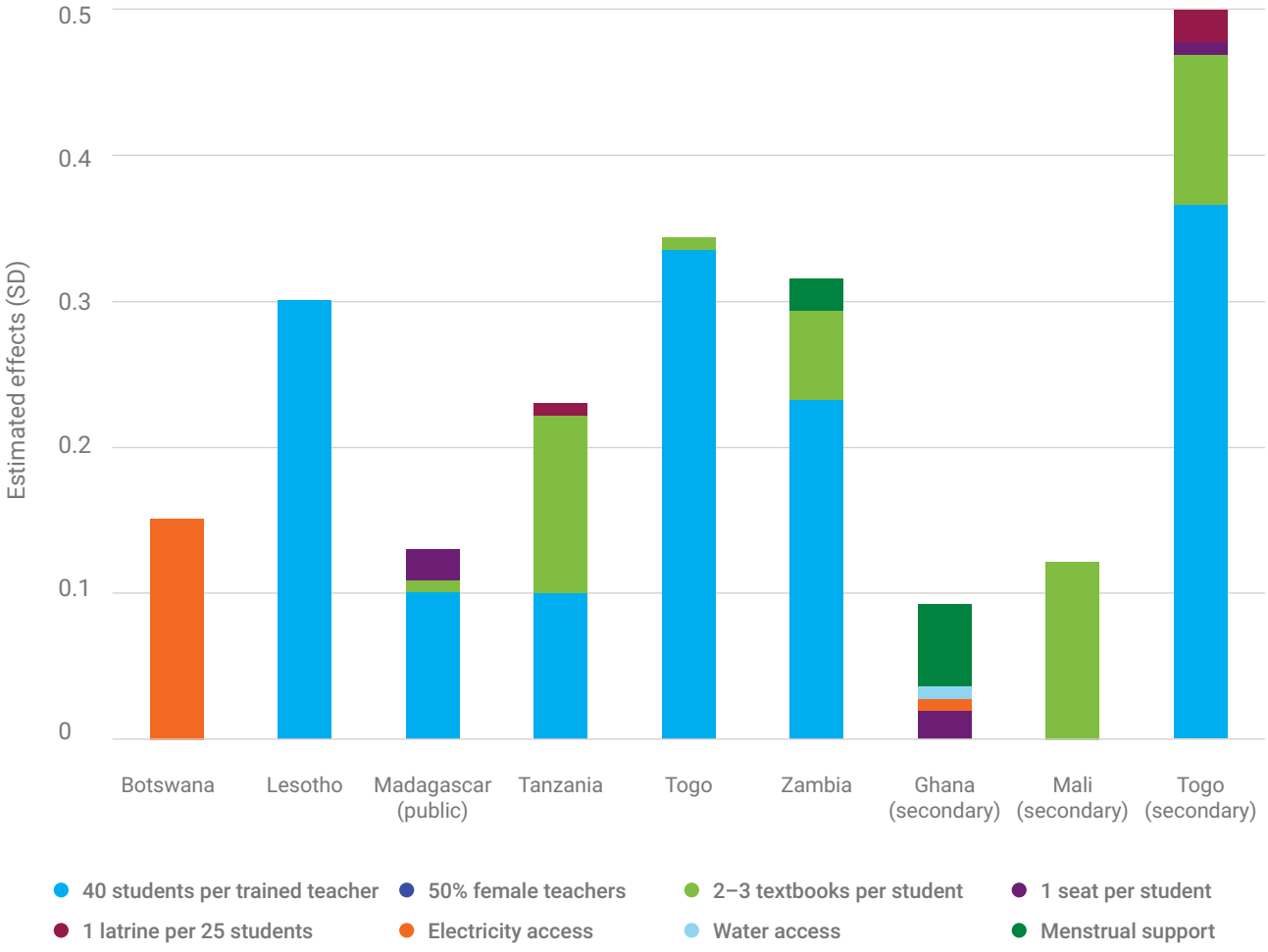
African education leaders are invited to use this evidence-based framework to inform education policy decisions, invest in untapped learning potential and implement context-appropriate school improvements. By focusing on these three actions, African nations can create more equitable, efficient and resilient education systems that serve all learners.

## 1. **Inform:** Use existing data to drive education policy

UNICEF research across 33 African countries reveals that effective reforms must be rooted in local realities. Policy directions with the greatest impact will vary by country. They are informed by local contexts, what is already in place and where gaps exist, among other factors (*see Figure 1*).

For example, in Togo, where the overall student-teacher ratio is higher than 40:1, improving this ratio can significantly advance learning outcomes. However, in Botswana, where the student-teacher ratio is 25:1, focusing on electrifying schools is more strongly associated with better learning. Meanwhile, in Malian secondary schools, the number of textbooks per student was found to be a key factor associated with learning.

**Figure 1: Simulated effects of improving select school characteristics to meet policy benchmarks show that strategies with the greatest potential to lift learning outcomes vary by country**



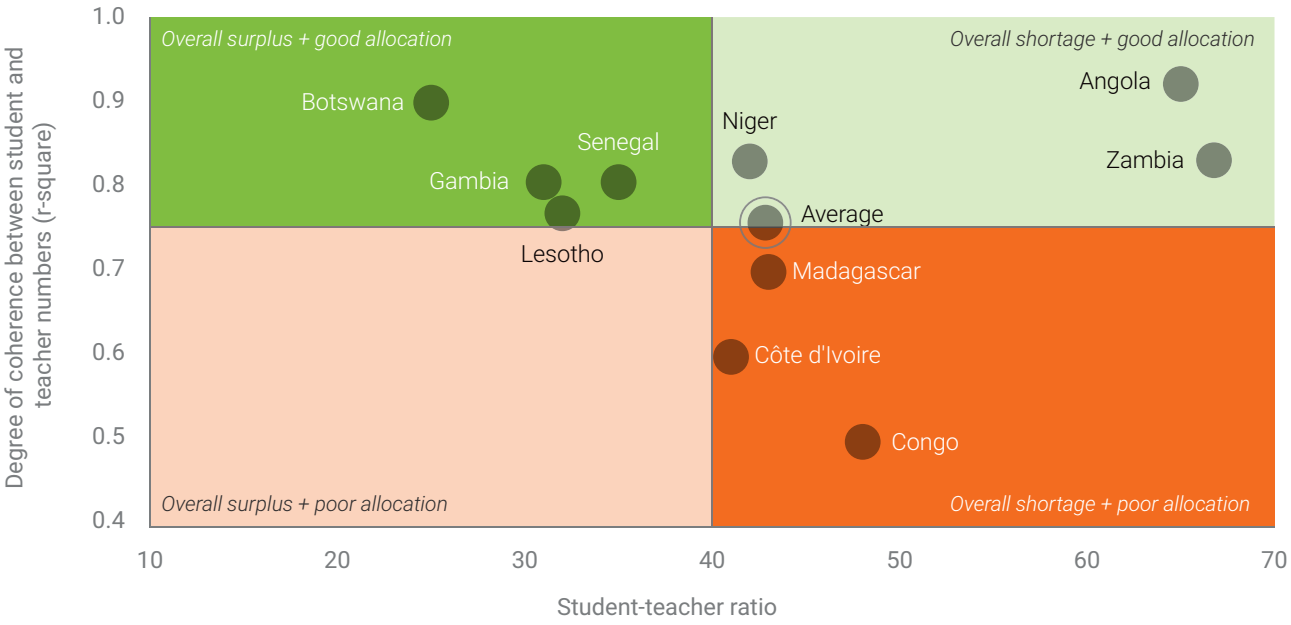

*Source:* Data Must Speak and Teachers for All Stage 1 reports; see Paper 1 of this series for details.[1]

How can governments and partners leverage existing education data to make informed decisions? While each country faces specific challenges, three lessons emerge from research across multiple African countries: prioritize equity; maximize instruction time; and improve pedagogical quality.

## Prioritize equity

**Prioritizing equitable outcomes for all students is crucial to transforming both the quality and resilience of education systems overall.** For example, UNICEF's Teachers for All research found that national student-teacher ratios often mask inequitable distribution of teachers between and within districts, and between and within schools.[2] Teacher deployment in some countries has a low degree of coherence, meaning that the number of teachers in a school is not strongly related to how many students are in that school (*see Figure 2*). **Reducing such imbalances by redeploying teachers more equitably can improve teacher allocation and the overall student-teacher ratio.**

**Figure 2: Some countries that have high student-teacher ratios are also not deploying teachers equitably**




*Source:* EMIS data analysed in Teachers for All Stage 1 reports. Reference lines are based on Global Partnership for Education benchmarks. The degree of coherence (measured by R2 value) indicates the strengths of the relationship between teacher numbers and student enrolment across schools; a higher value (closer to 1) suggests more equitable teacher allocation based on student numbers.

In an equitable education system, characteristics such as gender or where a student lives should not influence what they are able to achieve. However, in nearly all 33 countries, student outcomes differ significantly depending on these factors. Policy options that have been shown to help reduce these disparities include the following:

- **Targeted instruction** for the most vulnerable students through remedial, bridging, catch-up and accelerated programmes to reduce repetition and dropout rates and strengthen the links between formal and non-formal education systems. They have shown positive impact in a variety of country contexts in Africa, including in conflict settings.

- Policies to support teachers' use of **mother tongue instruction** are associated with overall improved outcomes in Chad and Mali, particularly among students who do not fluently speak the official language(s) of instruction.

- Establishing a **safe school environment** is particularly important for girls, including minimal distance or safe commute between home and school; the presence of school canteens, which reduces the need for students to leave school at lunchtime; and the availability of water, sanitation and hygiene facilities, including menstrual support.

Evidence suggests that these policies can address inequities without bringing a negative effect on those outside the target groups. In some cases, these equity-focused approaches improve their outcomes as well.

## Maximize instruction time

**Increased instructional time correlates strongly with improved student outcomes** (see Paper 1 of this series).[3] Strategies to maximize and safeguard instructional time are therefore crucial to building effective education systems. Several policy components significantly influence the amount of students' lessons at school.

- Curricular standards and guidelines **should set clear and high expectations on the minimum effective instruction hours** needed by students.

- Both student and teacher absences reduce instructional time. Data from 24 African countries for the Time to Teach research,[4] as well as analysis of government data from 9 countries in the Data Must Speak research programme,[5] concluded that **strong monitoring and follow-up systems by headteachers, parents or the broader school community are one of the most powerful ways to manage and reduce absenteeism.**

- Double-shift systems can also significantly reduce available instruction time and are associated with lower promotion rates, including in Côte d'Ivoire and Mali. The effect can be managed through **alternative programme designs, to make up for lost learning time, and by providing support for out-of-school learning.**

- **Sufficient infrastructure and facilities can help to reduce overcrowding and the need for double shifts, and can influence the amount of time that students and teachers spend in school.** For example, the presence of school canteens and libraries is linked to more time spent in school, and the provision of safe transport to school (such as bicycles) is found to reduce student absences.

## Improve pedagogical quality

**Interventions that address classroom instruction have the greatest impact on student learning.** Investments in workforce, curriculum and the learning environment are important enablers of quality pedagogy. Policies and spending in these areas should be designed to support the quality of interaction between teachers and students.

- **Not all forms of qualification and training are associated with better student outcomes.** They need to be of **sufficient duration** (in Chad, holding a two-year qualification makes a difference, while a 45-day path to career progression does not), **intensity** (in Togo, holding a qualification from a dedicated teacher training institution makes a difference, but diplomas awarded only through examination do not) and **ongoing support** (in Côte d'Ivoire and Mali, teacher trainees can have a positive effect but only if they are placed in schools with more qualified teachers who can provide guidance).

- **Teacher accountability and incentives are greatly influenced by the administrative and management practices of headteachers and local supervisors.** These include centralized policies to facilitate receiving salary payments and requirements for career progression. In Ghana, Mali and Tanzania, positive deviant schools (those that outperformed other schools with similar resources in similar contexts) also had stronger pedagogical support by headteachers in the classroom, including by encouraging collaborative and supportive practices between teachers.[6,7,8]

- **Teaching and learning materials are essential to guide and support classroom instruction as well as out-of-school learning** (for example, homework assignments). Provision of student textbooks and teacher guides can improve outcomes, but the resources must be accessible to students – both being in a language they understand and being physically accessible, ideally to be used at school and at home.

- **Classroom learning spaces and school facilities can enable effective pedagogical practices**, such as cooperative group activities among students, the use of digital learning tools (a high priority for most African governments) and access to reading materials. The availability of seat and desk spaces for students is associated with improved outcomes, as are – to a lesser extent – school access to electricity and the availability of a library.

Investments in infrastructure can be costly relative to the returns in pedagogical quality, so a clear cost–benefit analysis should be conducted.

## 2. **Invest:** Expand high-impact learning interventions

Research shows that investments in three high-impact – yet untapped – areas have the potential to create new pathways for transforming education across the continent, addressing both immediate challenges and long-term goals for better learning outcomes.

To support the reinforcing goals of improving outcomes, equity and resilience in African education systems, governments and partners should direct investments towards early learning, support for vulnerable students and context-appropriate education technology.

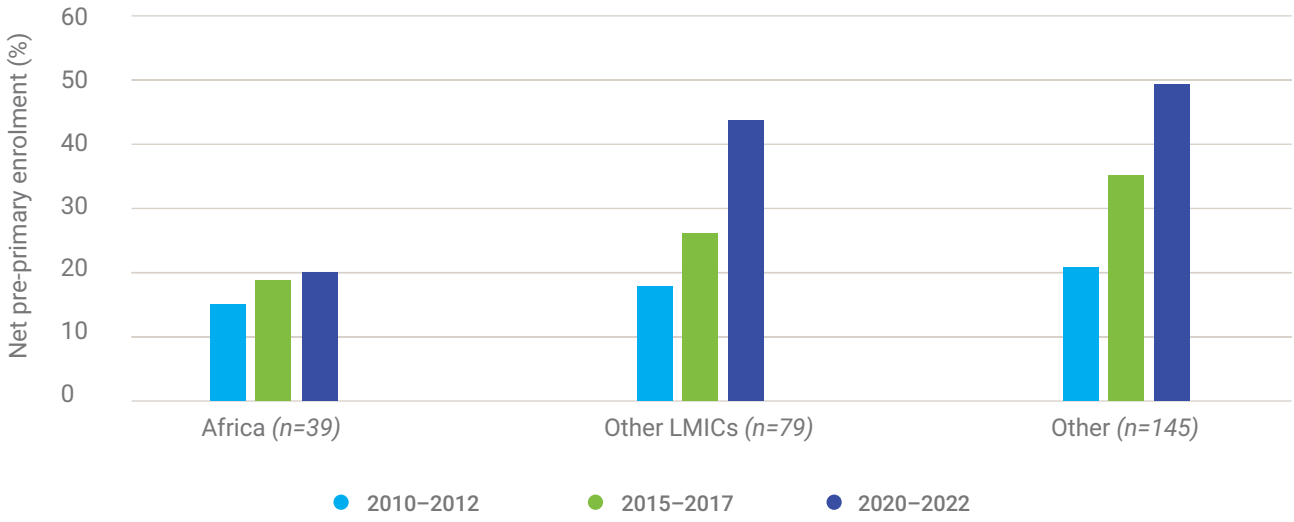
### Focus on early learning

By 2035, one in three of the world's children under 5 years of age will be in Africa.[9] With more than 85 per cent of brain development taking place by the time a child is 6 years old, **the early years are a key window of opportunity** to build the foundations of learning and develop skills to help children succeed in school.[10]

**Early childhood education can also contribute to resilience against future crises.** Evidence from Ethiopia and Ghana demonstrates that children who experienced quality pre-primary education suffered smaller degrees of learning loss during the COVID-19 pandemic and showed greater engagement in remote learning during school closures.[11,12]

**Despite the overwhelming evidence supporting investment in early childhood education, the subsector remains under-resourced in many African countries.** In the context of limited domestic resources, many governments in the continent are not prioritizing early childhood education, and pre-primary enrolment rates for children in Africa have largely stagnated in recent years (*see Figure 3*).

**Figure 3: Enrolment in pre-primary education is stagnant in most of the region, compared with the rest of the world**




*Source:* Adapted from UNESCO Institute for Statistics, SDG indicators 4 February 2024 Release, <http://sdg4-data.uis.unesco.org/>, extracted 15 May 2024. Enrolment rates are weighted by pre-primary school-age population of the respective group. Country designations based on African Union membership and World Bank income classification.

Expanding access to quality early childhood education requires a multifaceted approach. Governments and partners can:

- **leverage existing infrastructure**, such as primary school buildings and community facilities, to rapidly scale up provision;
- **design and implement clear quality standards and monitoring mechanisms** that can be adapted across diverse programme approaches and providers; and
- **invest in context-appropriate learning materials** that support holistic child development, accompanied by robust teacher training and support.

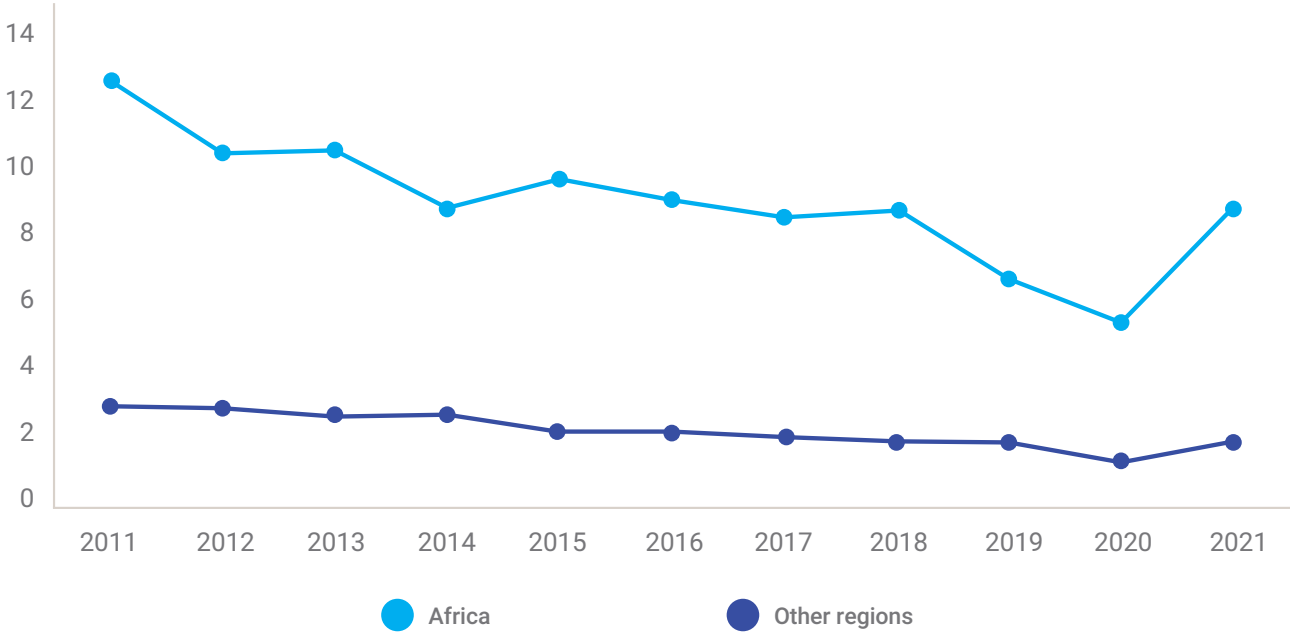
## Support students at risk of falling behind

Across Africa, nearly 100 million children of primary and secondary school age are out of school, with vulnerable groups disproportionately affected.[13] Even among children who are in school, many are at risk of dropping out or not progressing.

While the average rate of repetition among African countries has seen a decrease over the past decade, it still remains very high. In 2021, the average African country's primary school repetition rate across all grades was more than four times higher than the average repetition

rate across non-African countries (*see Figure 4*). This exerts a high cost on education systems and is a main driver of the lack of efficiency in the continent's education spending.[14] For example, repetition is estimated to take up over 15 per cent of the annual basic education budget in Burundi, the Comoros, Malawi and Namibia.[15] Students also bear the cost of repetition, with multiple studies linking repetition with subsequent dropout (see Paper 2 of this series for a summary).[16]

**Figure 4: Repetition rates among African countries remain higher than in other regions**




*Source:* UNESCO Institute for Statistics 2024, <https://data.uis.unesco.org/>.

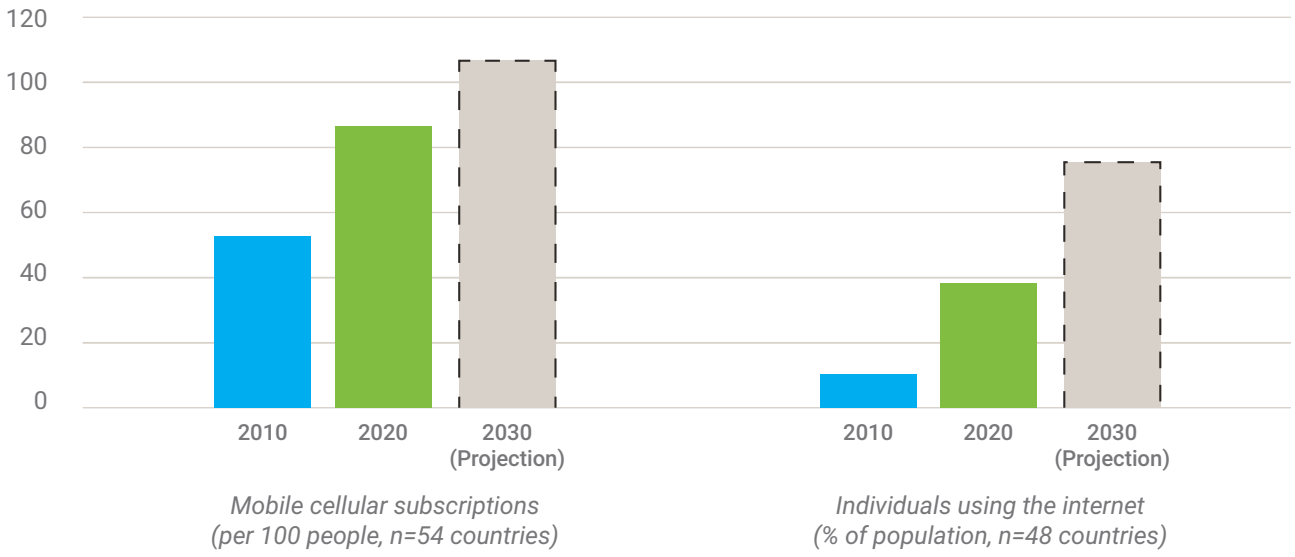
*Note:* Repetition rate is defined as the proportion of students from a cohort enrolled in a given grade at a given school year who study in the same grade in the following school year.

To address this challenge, many countries are implementing flexible programmes that provide dedicated instruction time to the most vulnerable students. **These interventions, ranging from in-school remedial programmes to accelerated learning for out-of-school youth, have shown promise in reducing repetition and dropout rates** while strengthening links between formal and non-formal education systems. Teaching at the Right Level, a remedial approach focused on tailoring instruction to students' ability levels, has been successfully adapted and scaled in several African countries.[17,18] For out-of-school children, accelerated learning programmes, such as Speed Schools, have proven effective, showing high transition rates to formal schooling and positive effects on learning outcomes in Burkina Faso, Mali and Niger.[19,20]

## Use widely available technology to reach and support teachers and learners, while investing in EdTech infrastructure

Education technologies (often referred to as 'EdTech') can enable flexible and personalized learning for students and support teachers. Governments and their partners should build on the continent's ongoing digital transformation, while taking concrete measures to ensure that it does not worsen existing inequalities. African governments have expressed a strong desire to **capitalize on digital learning, but continuing investments in this area should be accompanied by the use of readily available technology, including mobile phones** that are more widely available (*see Figure 5*).

**Figure 5: Rapid growth presents significant opportunities for the education sector to leverage mobile technology**

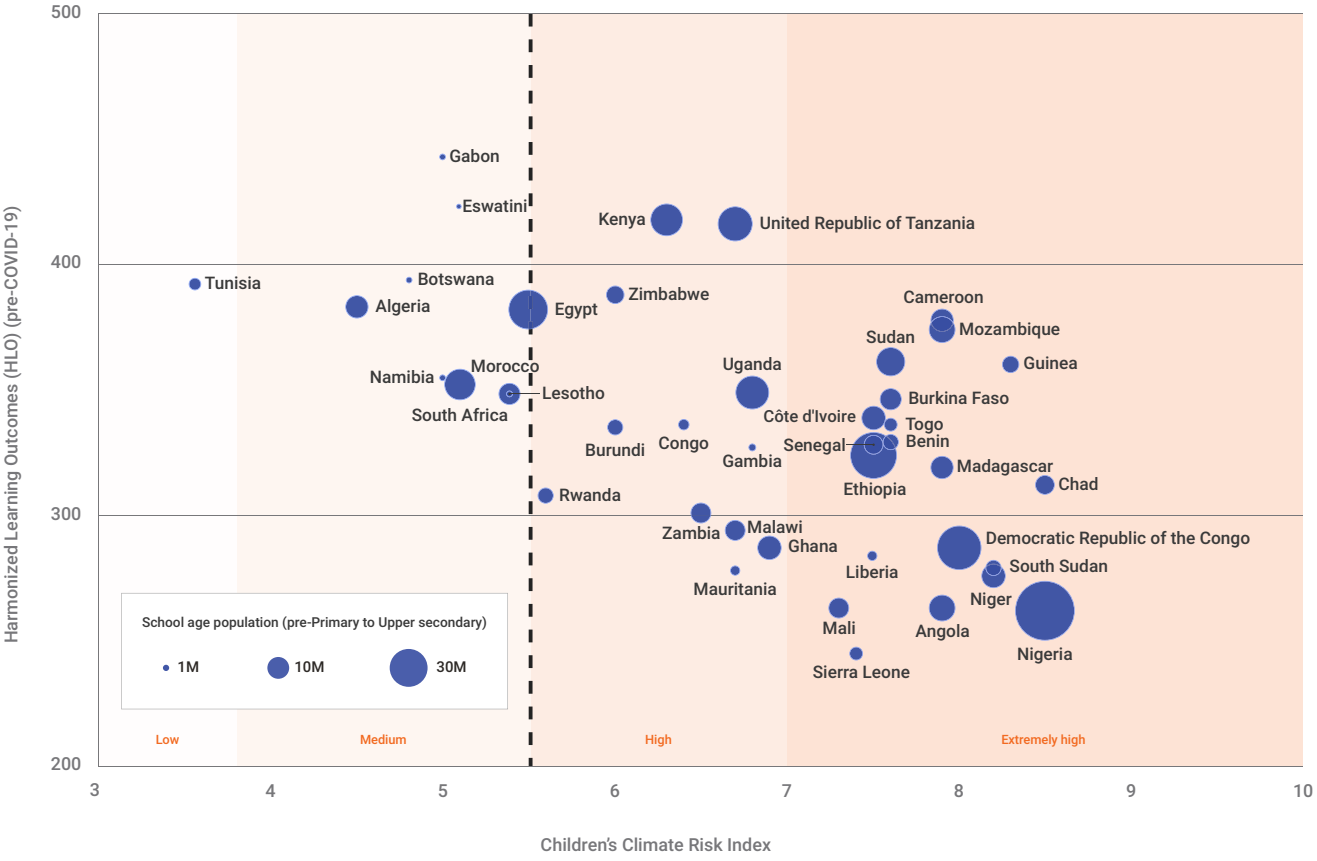



*Source:* World Development Indicators, 2024, <https://databank.worldbank.org/source/world-development-indicators>, using data from International Telecommunication Union (for mobile cellular subscriptions and internet use) and United Nations Population Division and other agencies (for population data), Brookings Africa Growth Initiative (for 2030 projections). African Union member countries, rates weighted by country population.

In emergency settings, even basic mobile phones can be a practical tool for educational continuity, sharing pedagogical content with learners and delivering remote teacher training.[21] **Utilizing available technology in the household along with other learning materials, such as workbooks, can enhance pedagogy, help track learning progress and gaps, and maintain an open dialogue with a student's family.** In Sierra Leone and Ghana, programmes used a mix of radio courses, individualized phone calls and printed student worksheets that were aligned with the radio content to introduce a two-way, personalized follow-up with learners and their families, which increased learning engagement.[22,23] The evidence base on the use of mobile phones to support learning is growing but still nascent, investments in this area need to be met with strong evidence generation.[24]

It is crucial to prioritize solutions that are accessible to most students, particularly those at greatest risk of educational disruptions. Countries facing the highest climate risks often struggle with the lowest learning outcomes (*see Figure 6*), highlighting the importance of adaptable approaches that can function in challenging environments.

**Figure 6: Relationship between children's climate risk and learning outcomes in Africa**




*Source:* UNICEF Innocenti, *Reopening with Resilience.*[25]

Teachers are and remain central to the education process. Digital devices are only tools and, like any tool, teachers will only use them when they see value in using them or if they help their students to achieve their learning goals. Research across multiple countries has shown that it takes time, practice and hands-on training for teachers to learn and integrate a new tool into their day-to-day teaching.[26] While artificial intelligence (AI) is set to disrupt education globally, the realization of its potential on the continent will be tempered by the capacity of systems in terms of infrastructure, as well as the skills of teachers and administrators. Investments in AI should follow the principles of investments in other digital programmes, focusing on how AI can be used to address a particular problem or learning need, and based on tools that are widely available now while investing in the future.[27]

## 3. **Implement:** Empower local actors to design clear implementation plans

No plan will be realized without effective implementation. How can governments empower local actors to design clear, equity-focused implementation plans that respond to local contexts? UNICEF research shows two approaches are key to the process: tailor implementation and resourcing levels to account for diverse local contexts; and embed data and implementation research for continuous improvement and timely course corrections.

### Tailor implementation plans for diverse contexts

Flaws in implementation remain a significant barrier to transforming education. The scale and complexity of education systems mean that, even when policies are well designed, they can be a challenge to operationalize. The success of interventions relies on how they are implemented, who implements them, and how implementers are supported and monitored. **Education interventions should be accompanied with clear implementation plans from the outset.**

UNICEF research into practices that are more likely to be found in high-performing schools underscores the critical role of local stakeholders in effective policy implementation (*see Table 1*). Schools benefit from a focus on teaching and learning from all local actors – including headteachers and local education officials – as well as strong communication between stakeholders. However, a lack of clarity around roles and capacity to hold each other accountable can act as significant barriers.

For example, local education officers often face challenges in implementing their supervisory roles effectively. Time to Teach research across African countries revealed that many local education officials were unclear about their duties and authority regarding teacher absenteeism.[28,29] Inspectors in the Gambia, Ghana and Guinea-Bissau reported that they lacked power in following up on issues around absences that they had identified. This illustrates a challenge associated with decentralizing education systems across Africa, where more actors – working with students or supporting the teachers who do – can play a bigger role in the implementation of education interventions but lack a clear mandate, including specific roles and responsibilities.

**Table 1: Practices more likely to be found among positive deviant schools highlight the importance of local involvement**

| Theme | Practices more likely to be found among positive deviant schools* | Barriers to implementing positive practices** |
|---|---|---|
| **Local education office** | Inspection visits more likely to be focused on teaching and learning, including direct classroom observations and checks of student work and outcomes. | Lack of clarity around the mandate and sanctioning powers of supervisors, and lack of resources (particularly for transportation). |
| **School-based management** | Committees more likely to be financially engaged in schools, including in solving infrastructure challenges and additional support for teachers. | Lack of capacity within the community to advocate for their children and hold schools accountable, with the capacity gap likely to be greater in more disadvantaged communities with lower literacy levels. More disadvantaged, often rural, communities may also report more conflict with schools, including due to the inability to contribute financially. |
| **Community engagement** | School committees more likely to engage with and involve the broader community in their decision-making, including conducting information sessions, and outreach. | |
| **Headteacher leadership** | Headteachers more likely to directly monitor and support classroom teaching and encourage teachers to work together and share lessons. | Lack of clarity and specificity around the requirements for headteachers to provide pedagogical leadership, including monitoring effective classroom time and practices. |
| **Collaboration between actors** | There is more direct communication between headteachers, committees, parents, the broader community and local education, including to collaborate on decision-making. | Imbalances in education level and other markers of socioeconomic status limit the ability of actors to hold each other accountable. |

*Sources:* *Data Must Speak; **Data Must Speak, Teachers for All, Time to Teach, and Women in Learning Leadership reports. Positive deviant schools are those found to be performing better than peer schools, despite operating in similar contexts and with equivalent resources.

**Implementation plans should therefore consider all actors and stakeholders involved: what their specific roles are and how they are expected to work with each other.** This can include collaborative engagement, such as how headteachers engage the school community in decision-making; how local education officials engage with the school committee and broader parent community; or how school committees engage with the broader school community, including local government structures such as village leaders. When some actors are found to be uncooperative, the plan should also include accountability measures.

Even with clear mandates, not all local actors are equally prepared to play their role in the education system. This can be due to low literacy levels, long travel distances and poor community infrastructure or lack of support from others. In many instances, however, this diversity of contexts is not accounted for in implementation planning, usually to the detriment

of more disadvantaged schools and communities. For example, transportation challenges were raised in almost all Time to Teach partner countries as a barrier to effective school supervision, with the challenge being greatest in rural areas and worsening during rainy seasons.[30,31]

Another example is around community capacity to advocate for children and hold schools accountable. Across Africa, data from the Multiple Indicator Cluster Surveys (MICS) found that households where the mother had not completed basic education were significantly less likely to contact a school official or governing body representative when their child missed school due to teacher absence or strike compared with households where the mother had obtained a higher education level (*see Figure 7*).

**Figure 7: A mother's level of education influences the likelihood of a household contacting school concerning strike or teacher absence.**

*Source:* UNICEF, MICS6 (2019–2022) <https://mics.unicef.org/surveys>.

**Implementation planning should account for the differences in local contexts from the outset, including resource allocation in response to such differences.** This may include allocating higher resources for areas facing greater travel distances or seasonal challenges, or more training support and guidance in disadvantaged communities. Specialized training can supplement gaps in capacity. In Ghana, for example, positive deviant schools were more likely to have a local supervisor who had received specific training on school supervision, even though they have lower formal qualification levels compared with those assigned to comparison schools.[32]

### Embed data and implementation research for continuous improvement

African countries have made significant efforts to establish and strengthen national Education Management Information Systems (EMIS), but most are still transitioning from aggregated school data to individual-level data systems. Only one in five sub-Saharan African countries uses unique student identification.[33] **Harmonizing datasets across different education subsystems can significantly enhance analytical power.** In Senegal, the Ministry of Education has developed a single platform linking EMIS teacher data with civil service management data, school inspection reports and learning assessment data.[34]

Data-driven approaches can significantly improve policy design and implementation. However, a review of the education sector plans of 19 African countries found only 2 used fully functioning EMIS in decision-making.[35]

Data can inform smarter spending decisions, which are crucial in the context of declining education expenditure following the COVID-19 pandemic.[36] Implementation planning also benefits from accurate and comprehensive data. Evidence is also needed to identify and expand successful community-led interventions. In Ghana, for example, the expansion of supports for differentiated learning and early childhood education quality were informed by smaller-scale pilots that were rigorously evaluated and continue to evolve with the incorporation of technology (see Paper 3 of this series).[37]

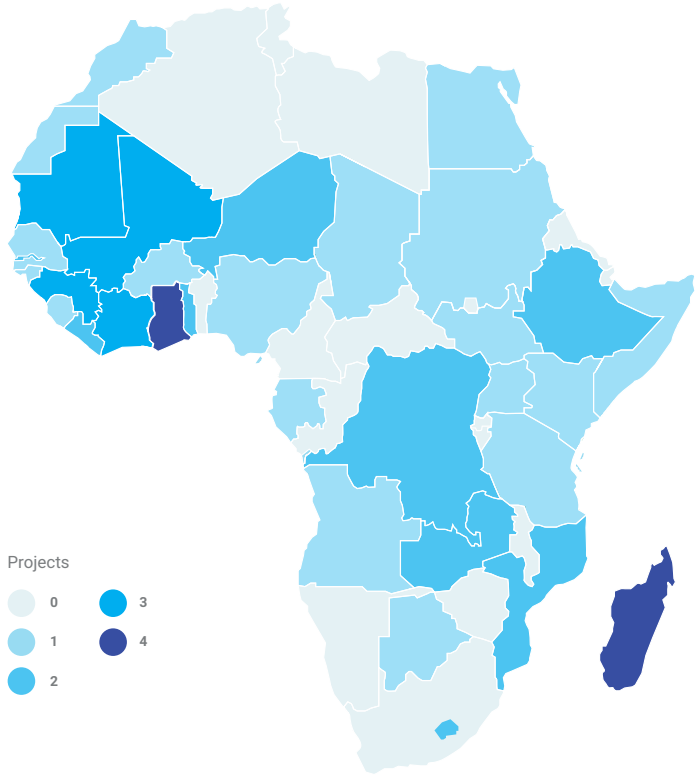
Creating a culture of evidence-based decision-making is crucial to improve outcomes. By harmonizing data sources, leveraging data for policy design and implementation, and creating feedback loops between research and practice, African education systems can become more agile, responsive and effective in meeting the diverse needs of learners across the continent.

## Background: Macro lessons from micro data

Across Africa, ministries of education have made significant achievements in broadening children's access to schooling. Education continues to be a high priority for governments

across the continent: 93 per cent of African countries committed to increasing domestic financing for education as part of the Transforming Education Summit in 2023.[38] To support governments in achieving this goal, UNICEF has partnered with the continent's ministries of education to conduct research in 33 African countries since 2019 (*see Figure 8*).

**Figure 8: UNICEF Innocenti education research projects in Africa, 2019–2024, by number of projects**




*Note:* This map does not reflect a position by UNICEF on the legal status of any country or territory or the delimitation of any frontiers.

This brief synthesizes insights shared by millions of African students, teachers and education officials through their ministries of education. Altogether, the research relied on government-owned data from over 167,000 schools across 33 countries (*see Figure 8*); primary research with over 16,000 students, 5,700 parents or caregivers, and 7,700 teachers and headteachers across over 900 schools; and information from well over 2,000 government officials and community representatives across the continent. These rich datasets form the basis of the policy recommendations presented here.

The research syntheses underlying this brief consist of three working papers focused on the themes of: informing current spending; investing to harness untapped potential; and implementing to deliver on transformative intent. These working papers can be found here: <https://www.unicef.org/innocenti/projects/education-africa>.

## Conclusion

Transforming education in Africa requires a nuanced approach that informs policy with context-specific data, invests in high impact interventions, and implements solutions through local actors. This research synthesis underscores the importance of understanding and responding to local context, prioritizing equity as a catalyst for system-wide improvement, and using data and research to drive continuous progress.

However, significant research gaps remain. More evidence is needed on effective approaches to disability-inclusive education, the long-term benefits of early childhood education interventions, and the most effective ways to integrate technology in low-resource settings. Research should be embedded in existing and future policy and programme efforts to ensure that these are designed for success, from outset to implementation.

By combining rigorous evidence, local innovation and a steadfast commitment to equity, we can create education systems that not only improve learning outcomes but also contribute to more resilient and equitable societies. The path forward involves continuous learning, adaptation and a shared commitment to ensuring that every child in Africa has the opportunity to reach their full potential through quality education.

## ENDNOTES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