SPOTLIGHT ON BASIC EDUCATION COMPLETION AND FOUNDATIONAL LEARNING IN AFRICA

2024

Learning counts

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African Union

2024

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AND FOUNDATIONAL LEARNING IN AFRICA

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The Education 2030 Incheon Declaration and Framework for Action specifies that the mandate of the Global Education Monitoring Report is to be 'the mechanism for monitoring and reporting on SDG 4 and on education in the other SDGs' with the responsibility to 'report on the implementation of national and international strategies to help hold all relevant partners to account for their commitments as part of the overall SDG follow-up and review'. It is prepared by an independent team hosted by UNESCO.

The *Global Education Monitoring Report* team is responsible for the choice and the presentation of the facts contained in this book and for the opinions expressed therein, which are not necessarily those of UNESCO and do not commit the Organization. Overall responsibility for the views and opinions expressed in the report is taken by its Director.

About the African Union

The African Union is a continental body consisting of the 55 Member States that make up the countries of the African continent. It was officially launched in 2002 as a successor to the Organisation of African Unity (1963–1999). Agenda 2063 is the AU's vision for an "integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in the global arena,' by 2063. It consists of seven aspirations that cover various aspects of African development, such as growth, unity, security, education and culture, people, and global partnership.

About the Association for the Development of Education in Africa

The Association for the Development of Education in Africa (ADEA) is first and foremost a forum for policy dialogue. Established in 1988, at the instigation of the World Bank, as a framework for better coordination among development agencies, it has evolved into a pan-African institution, based at the African Development Bank and built on a genuine partnership between African ministries of education and training and their technical and external partners.

It is a network of policymakers, educators and researchers, and, with its capacity to foster policy dialogue and pool ideas, experience, lessons learned and knowledge, serves as a catalyst for education reform and promising policies and practices. One of its major objectives is to encourage exchanges among ministries of education and between them and development agencies. It is recognized as a major actor in the processes of dialogue, sharing and learning for qualitative change in education aimed at promoting Africa's development.

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SHORT SUMMARY

The African Union's designation of 2024 as the Year of Education highlights the critical importance of education for equipping young Africans with the skills essential for their own and for the continent's development. It is also a recognition of the multiple challenges ahead before every child can complete primary school having acquire the foundational skills that open the door for lifelong learning. Currently the out-of-school population is rising, one in five children do not complete primary school and, of those who do, only about one in five achieve minimum proficiency in reading and mathematics.

African countries have set targets on primary completion and foundational learning but to effectively translate their ambitions into results, the 2024 Spotlight continental report emphasizes the importance of coherence between their curricula, textbooks, teacher guides and assessments. It evaluates the alignment of these policy documents with each other but also with a global standard of what students are expected to know and by when. It also assesses how these key documents are used in classrooms and what the implications are for children's opportunities to learn.

This report is the second in a series of three envisaged between 2022 and 2025, each covering some 12 countries of which a selection is examined in depth, in dialogue with education ministries and national stakeholders. The focus countries for this second Spotlight report cycle were Mauritania, Niger, South Africa, Uganda, and Zambia.

The statistics and analysis presented in this publication aim to feed into the policy dialogue mechanism under the auspices of the African Union and its Continental Education Strategy for Africa. In particular, the Spotlight series aims to spark debate on foundational learning among African countries and encourage them to identify areas for joined action, given that they share a lot of policy challenges.

In 2023, **one** in **five** African children did not get to complete primary school

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"Since wars begin in the minds of men and women, it is in the minds of men and women that the defenses of peace must be constructed"

Foreword

The African Union's focus on education in 2024 is a crucial moment and UNESCO is dedicated to support it by advancing Sustainable Development Goal 4 in Africa. The success of our efforts will be tested by our resolve to improve foundational learning, which is a cornerstone for broader educational development.

The Spotlight series, a collaborative effort of the *Global Education Monitoring Report*, the African Union, and the Association for the Development of Education in Africa, tracks progress and presents good practices on basic education completion and foundational learning in Africa. It is a significant contribution to the efforts of the Global Coalition for Foundational Learning, which was launched at the UN Transforming Education Summit, with UNESCO as a founding member.

Learning Counts, the second Spotlight continental report, offers invaluable guidance for policy-makers and education practitioners on pathways towards improving learning outcomes in primary school. It examines the acquisition of foundational numeracy skills, a building block towards mathematical mastery, and underscores the necessity of aligning education resources -- curriculum, textbooks, teacher guides and assessments -- to maximize children's learning experiences and enhance teaching practices. Importantly, it advocates for the availability of textbooks in the languages of instruction, in particular mother tongues, to improve learning outcomes.

The report recognizes the indispensable role of data in education decision-making. It leverages the work of the UNESCO Institute for Statistics, including the Assessment for Minimum Proficiency Level, a tool that helps countries report on the SDG 4 global indicator, while strengthening their national assessment system. The report also demonstrates countries' commitment to set national benchmarks for primary completion and minimum proficiency in reading and mathematics, which need regular data of good quality so that these targets can be robust planning mechanisms.

However, translating these commitments into tangible progress requires strong political will. The financing analysis in the 2024 Spotlight continental report reminds us of countries' persistent shortfall in the funds they need to achieve their education targets. The report urges donors to be efficient in their spending, and to ensure that their funds help build robust institutions at sustainable cost. In the face of complex challenges, we are committed to support countries to equip every child with essential foundational skills to realize their full potential.

Stefania Giannini
Assistant Director-General for Education, UNESCO

Foreword

According to United Nations estimates, 25% of the world's population will be African by 2050. This youth cohort will make Africa the largest potential source of global growth. This potential will be realized only if it is supported by education of good quality. Education is the most vital instrument to promote human and sustainable development. Indeed, on the social front, it is the fundamental tool to, *inter alia*, reduce poverty, achieve gender equality, improve health outcomes. On the economic front, education is a main driver for long-term economic growth and innovation.

Designating 2024 as the AU Year of Education aims to mark the commitment of Member States to make education the centre of their investment. Building on the momentum of the Transforming Education Summit convened by the UN Secretary-General, it calls on African countries to further strengthen their sharing of experiences on how to achieve their national targets on the fourth Sustainable Development Goal (SDG 4) and make a final push towards the Continental Education Strategy for Africa (CESA), as we enter discussions on the new strategy beyond 2025.

The African Union is committed to using data and evidence to learn and to better support Member states, as they advance their implementation of CESA and SDG 4. The Spotlight series, a partnership between the African Union, the Association for the Development of Education in Africa and the *Global Education Monitoring Report*, strengthens the evidence base for policy dialogue. It supports our mission to 'contribute towards revitalized, quality, relevant, and harmonized education systems responsive to the needs of Africa' and our mandate to support the Specialized Technical Committee and other political and professional bodies to collectively articulate priorities.

It offers a thematic, in-depth perspective that complements the AU/UNESCO Continental Monitoring Report on CESA and SDG 4. Focusing on mathematics, the 2024 Spotlight shows how countries align their national visions with their curriculum, textbooks, teacher guides, and learning assessments. Evidence from this report guides Members States towards effective strategies to improve learning. Drawing from detailed country reports on Mauritania, Niger, South Africa, Uganda, and Zambia, the report also demonstrates positive practices in policy implementation.

As with its first edition, this second edition of the Spotlight supports the African Union's ambition to find new solutions to our collective challenges in primary education. The analysis in the following pages underscores the urgency. Universal primary education completion remains elusive in the continent. At most, one in five children who reach the end of primary school achieve minimum proficiency levels in reading and mathematics. Addressing these twin challenges is critical for education transformation in Africa and is a crucial pillar for the AU Year of Education.

Every year, around 38 million children are expected to start primary school in Africa, all of whom are born to learn. Fulfilling their potential could transform the future of our continent. We are delighted to be a partner to the Spotlight initiative, which is one of the activities scheduled to feed into the AU Year of Education, and to work with Member States to build system-wide transformational education strategies based on its evidence.

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- Matthew Jukes and Julianne Norman: Social and emotional learning
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- PAL Network: Assessment for Advocacy

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Executive summary

Over a decade has passed since it first became evident that the swift increase in educational access across Africa in the 2000s was not resulting in children learning as expected. While the evidence remains patchy, one child in five at most achieves a minimum proficiency level in reading and mathematics by the end of primary school. Studies of precursor skills suggest that, in many countries, most children appear to be learning almost nothing in the first three grades, undermining their own potential as well as that of the continent.

This phenomenon has been labelled a 'learning crisis', even though historic data suggest that the problem of low learning levels is far from new. Moreover, recent evidence documented in this report suggests that learning levels in African countries may even have been improving faster than in the rest of the world. Yet the fact remains that children do not benefit from their time in school as much as they should. As 2024 has been declared the African Union Year of Education, it is the right moment to reflect on how the issue of low learning levels in primary education can be prioritized higher on the political agenda.

The objective of the Spotlight series is to inspire national and continental dialogue on foundational learning and feed into a peer learning mechanism at African Union level. It is informed by an analytical framework which, while recognizing wider social, economic, political and cultural contexts, identifies seven education-specific factors that affect foundational learning outcomes: government vision; teaching and learning; teachers; school management; school support and monitoring; community and parental engagement; and learning assessment. Three cycles of the series are envisaged, each cycle covering some 12 countries, of which 5 are in-depth studies.

The first cycle, which was completed in October 2022, looked at all seven factors. This second cycle looks in more depth at four of these factors – vision, teaching and learning, teachers, and assessment – and provides an update on progress in school attendance, completion and learning. In particular, the core analysis examines the extent to which countries align mathematics curricula, textbooks, teacher guides and assessments to advance foundational numeracy. Emphasizing the need for coherence, it evaluates the alignment of these policy documents with each other as well as with a global standard of what students are expected to know and by when. It also assesses how these key education system resources are used in classrooms and what are the implications for children's opportunities to learn.

The second cycle draws on research in five focus countries: Mauritania, Niger, South Africa, Uganda and Zambia. Case studies were also prepared on Burkina Faso (professional learning communities), Chad (remedial education), Ethiopia (school feeding), the Gambia (language of instruction), Mauritius (diagnostic assessments) and the United Republic of Tanzania (teacher support).

School attendance and completion

The out-of-school rate for children of primary school age in Africa fell from 35% in 2000 to 23% in 2010 but only to 19% in 2020. It is estimated that 18.5% of children of primary school age were out of school in 2023, which is twice the global average. The drive to universal enrolment in the 2000s had successes but also caused bottlenecks, which manifested in high repetition rates that have since declined. Part of the apparent slowdown in enrolment is, therefore, due to the fact that since then, fewer students are repeating grades.

Combined with rapid demographic growth, the consequence is that the number of out-of-school children has increased from 37 million in 2012 to 41 million in 2023. Moreover, this out-of-school population may be underestimated, as data collection in conflict-affected areas is severely hampered. 2023 evidence from Sudan and South Sudan, the two largest emergencies in the continent, suggests that the out-of-school population may be underestimated by 2.7 million. Data collection has also been disrupted in countries such as the Democratic Republic of the Congo and Ethiopia.

Completion rates appear to have continued growing throughout the past 20 years at a steady pace of almost one percentage point per year. All regions have progressed except Southern Africa. It is estimated that, in 2023, 71% of children completed primary school on time and 80% ultimately completed with several years' delay. To put this in context, a universal primary completion target was first set to be achieved by 1980. While girls have a five-percentage-point advantage in timely completion, boys maintain a two-percentage-point advantage in ultimate completion. Some populous countries have struggled to improve completion rates in recent years. Nigeria and the United Republic of Tanzania have seen their primary completion rate improve by only seven percentage points in 20 years. In the Central African Republic and Chad, fewer than half of children complete primary school; in Somalia, it is estimated that only one in five do.

Foundational learning outcomes

There is a dearth of comparable data on learning achievement to track progress on SDG global indicator 4.1.1 in Africa. Most knowledge on learning in Africa comes from the PASEC study in francophone countries, whose last round took place in 2019. The results of the upcoming PASEC round in 2024/25 are not expected to be made public before 2026. The average annual change in learning outcomes in reading in the median African country was strongly positive at 1.26 percentage points per year, much faster than in the rest of the world. However, in all but one of the African countries in this sample, less than 25% of students achieved minimum proficiency at the end of primary school. The evidence that was gathered for the first Spotlight continental report suggested that, at most, one in five children can read with understanding and have acquired mathematical literacy.

Among African countries that took part in the latest round of the Progress in International Reading Literacy Study (PIRLS), the share of students who achieved the minimum proficiency level in reading increased by five percentage points in Morocco but fell by three percentage points in South Africa between 2016 and 2021. Evidence from the International Common Assessment of Numeracy (ICAN), a citizen-led assessment, suggests that COVID-19 did not have a major negative impact on learning in Kenya and Nigeria between 2019 and 2022 but it did in Mozambique, where schools stayed closed a long time.

Among six countries that took part in the Assessment for Minimum Proficiency Level (AMPL) survey in 2021 and 2023 (Burkina Faso, Côte d'Ivoire, Kenya, Lesotho, Senegal and Zambia), students from urban schools were at least three times as likely to read with comprehension by the end of primary school; in Burkina Faso and Lesotho, they were six times as likely. Data from 18 African countries that conducted the Multiple Indicator Cluster Surveys (MICS) household survey module on foundational learning between 2017 and 2022 show that only 11% of children had precursor reading skills by grade 3. Analysis of data from Eswatini shows that children from

the poorest families are more likely to have precursor skills in siSwati than in English. Early Grade Reading Assessments are used in many project evaluations and show learning levels in disadvantaged communities, for instance in Chad, Guinea-Bissau and Liberia.

Teaching and learning

Implementing a national vision for education requires translating the curriculum into classroom practice and ensuring that learning happens at scale. The implemented curriculum – the actual instructional practices delivered in the classroom and the resulting learning experiences – depends on the alignment of the intended, written and assessed curriculum.

Analysis of mathematics curricula, textbooks, teacher guides and assessments in the five Spotlight focus countries shows that the components of the written curriculum (textbooks and teacher guides, which are a prerequisite for learning in low-resource environments) are coherent with each other but could be further aligned with the intended curriculum in terms of scope and cognitive difficulty. Textbooks and teacher guides may not be fully aligned with the curriculum. In Mauritania, algebra is missing from the lower primary curriculum but is covered in textbooks and teacher guides. In Niger, textbooks and teacher guides include statistics and probability but the curriculum does not. These documents were also assessed in terms of their alignment with global standards and were found to depart from what students are expected to know and by when. Of the five countries analysed, only South Africa and Zambia contain guidance for teaching students who are falling behind. Assessments often cover a different set of competencies from those outlined in the curriculum, particularly at the end of primary, where an examination culture prevails, and the level of cognitive difficulty increases.

Home language instruction is critical. Almost one third of children in 14 countries are taught in a language they speak at home. Over half of countries in the continent have adopted bilingual or multilingual education policies, of which 23 call for a shift to the second language before

grade 5. A case study from the Gambia gives an account of one of the most recent policies in that direction. But implementation is hampered by various factors. There is a lack of textbooks and teacher guides in the local languages recognized as mediums of instruction, notably in countries such as Nigeria and Senegal. Yet the provision of written material in home languages is important and not only for literacy but also for numeracy skills, especially as so many mathematic textbooks continue to be text heavy. Namibia and South Africa have produced textbooks in all languages of instruction.

Teacher preparation and support

In 2021, pupil/qualified teacher ratios were very high at 56:1; they have been stagnant since 2010. African countries need to hire and train millions of teachers to reach minimum quality standards in education service delivery. But many countries need to contend with a teacher workforce whose academic qualifications and subject knowledge levels are well below what would be required to sufficiently support education systems. Only 17% of African countries require a bachelor's degree as the minimum requirement for teaching in primary school compared to 62% of countries in the rest of the world.

Many governments, such as of Eritrea and Mauritania, have been progressively raising the minimum required academic qualifications for becoming a teacher and introducing innovations to their pre- and in-service teacher education programmes. But raising the capacity of incumbent teachers should be a priority. Locally hired teachers, who are often the only ones who accept work in hard-to-staff schools, have often not received any training. The task is very difficult considering the low levels of learning which previous generations of teacher candidates have achieved. Among primary school teachers in the 14 francophone countries assessed for their subject knowledge, only 35% had mastered basic procedures in mathematics. Differences in teacher subject knowledge accounted for more than one third of the cross-country variation in student achievement.

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High expectations are placed on formal teacher professional development programmes. A training programme in Chad trained teachers how to deliver remedial education. But there are implementation difficulties, as a case study from the United Republic of Tanzania describes. Informal activities, increasingly supported by technology, can be helpful, for example teacher professional communities, as a case study from Burkina Faso showcases. These may be more sustainable that formal programmes as they engage teachers directly. But they need to be clearly steered. A shortage of qualified teachers and a lack of integrated strategies for continuous professional development hamper the implementation of curricula, which depends on teacher capacity. Resources, such as teacher guides and lesson plans, can help teachers follow curriculum objectives, but appear to be used inconsistently, which highlights the need to review their design. Field research in four Spotlight focus countries found that around three in five teachers in South Africa and Uganda and more than four in five in Mauritania and Zambia had teacher guides, although shortages or delays in provision were often noted.

Teachers impact students' learning by ensuring children feel cared for, appreciated and physically and emotionally safe. Social-emotional skills and a positive classroom environment can go a long way to support improved learning, but teachers need adequate preparation to implement activities that foster such a supportive learning climate.

Learning assessments

As of December 2023, 54% of African countries had submitted a 2025 national benchmark for the minimum proficiency level in reading by the end of primary. However, of those, only 69% had the latest data and some baseline data to support it. This means that the target may not be realistic. In African countries, the gap between national benchmarks and what would have been an ambitious but realistic target was 10 percentage points, much higher than in the rest of the world. In countries such as Senegal and Togo, the gap was more than 40 percentage points.

Among Spotlight focus countries, Niger, South Africa and Zambia have national assessment frameworks – and in the last two, these frameworks explicitly connect their education vision with learning assessments. Formative assessment is fundamental for teachers to understand the challenges students are facing and adjust their teaching approach. However, teachers lack training to use such tools and formative assessment is generally valued less than end-of-cycle, high-stakes examinations. A case study shows the diagnostic system created in Mauritius that supports teachers in monitoring students in the transition from pre-primary school and at grades 1 and 3.

There is a steady flow of assessments being carried out in Africa, often with donor support. But their frequency varies greatly by country. In a sample of 25 countries, Angola, the Central African Republic and South Sudan have each conducted no more than four assessments in reading and mathematics since 2000. In contrast, Burkina Faso, Senegal and Uganda have been implementing more than two per year. Yet only 6 in 10 assessments have made a report publicly available, 3 in 10 have made the data available, and fewer than 1 in 10 can be used to report on the SDG indicator on learning. There is limited capacity to use the results for policy and relate them to the global minimum proficiency level.

Recent methodological developments are promising, which could lead to more assessments being used for future reporting on foundational and precursor skills of reading and, in some cases, the minimum proficiency level. But more coordinated action will be needed to develop financing mechanisms that will lower the cost of assessment and empower countries to choose the type of assessment countries need to develop their educational systems. A background paper describes the experience of the Gambia, Kenya, Lesotho and Zambia in implementing the AMPL.

Finance

African countries are spending USD 46 billion per year on primary education to deliver services to 189 million children attending public primary schools. This is equivalent to an average of USD 244 per student – but can be as low as USD 50 for some of the continent's low-income countries. And yet African countries spend per primary student 13% of GDP per capita, which is only slightly below the global average of 15%. African countries are facing a USD 28 billion financing gap if they are to achieve their collective primary completion rate target of 85% by 2030. However, the median level of government spending as a share of total public expenditure has fallen from 16.4% in 2012 to 15.5% in 2021.

Total aid to education accounts for just under 5% of total education spending in Africa. Yet this number exaggerates the amount that goes directly to government budgets. The size of grants in government revenue in Africa has fallen by 53% since 2010 to just 1.2% of GDP in 2021. It was estimated that the volume of aid directed to projects related to foundational learning was USD 750 million in 2020. Globally, the United Kingdom, the United States and the World Bank accounted for 90% of total disbursements on such projects. A lack of clear definitions prevents a full understanding of how much aid is being allocated to support foundational learning. There is also insufficient emphasis on ensuring the costs per beneficiary are sustainable and can be absorbed by governments. A review of the implicit costs per beneficiary in the projects implemented in the Spotlight focus countries suggests that the costs may be too high for funding to be sustained. As some donors assign more priority to foundational learning programmes, a careful examination of approaches that lead to sustainability will be needed. A background paper describes the historical experience of primary mathematics education programmes supported by the Japan International Cooperation Agency.

Households account for 27% of total education spending. While the richest households spend a slightly higher share of their budget on education, the share of the poorest households is not negligible. In countries including Kenya and Zimbabwe, households whose children attend public schools spend more out of pocket. Many countries are investing in school meal programmes to lighten the burden of poor households and to improve children's learning opportunities. A case study reflects on the efforts of Ethiopia to introduce a national school feeding programme.

Recommendations

The first Spotlight continental report provided eight recommendations. This second Spotlight continental report builds on them and refines those that were informed by the research carried out as part of this cycle, notably in the five focus countries.

At the individual level

1. **Give all children a textbook – and all teachers a guide.** Ensure that all children and teachers have teaching and learning materials that are research based, aligned with the curriculum and locally developed.

2. **Teach all children in their home language – and train teachers accordingly.** Give all children the opportunity to first learn to read in a language they understand and all teachers the confidence to support them.

3. **Provide all children with a school meal.** Give all children the minimum conditions to learn at school.

At the system level

4. **Make a clear plan to improve learning.**
    a. Develop a common continental framework
    to monitoring learning outcomes.

    b. Establish explicit learning standards and
    ensure assessments measure student
    performance with respect to those standards.

    c. Ensure learning is not abstract; children need full
    understanding to move on to advanced concepts.

5. **Develop teacher capacity.**
    Ensure all teachers use classroom time
    effectively through cost-effective training.

6. **Prepare instructional leaders.**
    Restructure support mechanisms
    offered to teachers and schools.

At the continental level

7. **Learn from peers.**
    Reinvigorate mechanisms allowing countries to share
    experiences on foundational literacy and numeracy.

At the international level

8. **Focus aid on institution building.**
    Shift from projects to provision of public
    goods that support foundational learning.

1 Introduction

Godfred goes to primary school in Fosu, a small rural town located near Nkawkaw in the Eastern Region of Ghana.

(CREDIT: © UNESCO GEM Report/Rooftop)

Africa is pursuing two ambitious and complementary education agendas: Sustainable Development Goal 4 (SDG 4) of the global 2030 Agenda for Sustainable Development (2030 Agenda) and the 2016–25 Continental Education Strategy for Africa (CESA).

The 2030 Agenda aims to combine two development objectives: one focused on people and poverty reduction and the other on the planet and environmental protection. Its 10 targets include a clear shift of emphasis to education outcomes, with school preparedness, minimum proficiency in reading and mathematics, and skills for work being added to adult literacy, the only learning outcome monitored before 2015. The spirit is best captured in SDG target 4.1, which calls on countries to 'ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes' by 2030.

CESA declares that, to fulfil its destiny, 'the continent has to come to terms with its education and training systems that are yet to fully shed the weight of its colonial legacy and its own tribulations as a relatively new political and economic entity and player in the world arena' (African Union, 2016). The 4th of CESA's 12 strategic objectives highlights a growing emphasis on learning: 'Ensure acquisition of requisite knowledge and skills as well as improved completion rates at all levels and groups through harmonization processes across all levels for national and regional integration'. In 2024, which has been declared the African Union Year of Education, the review of CESA implementation is expected to occur and to be used in deliberations for the development of a new continental strategy.

As these discussions take place, it is important to recall that the first education target ever to have been set by African

governments has not yet been achieved. Africa has pursued the goal of universal primary education completion since most of its nations emerged from colonial rule in the 1960s. A target of achieving universal primary education in Africa by 1980 was set in 1961 at a UNESCO conference in Addis Ababa. However, rapid enrolment growth in the 1970s and early 1980s came to an abrupt halt. Structural adjustment policies and cuts to social spending to address mounting debt took their toll on education and other social development indicators. Enrolment growth resumed in the late 1990s as a global movement appealing for debt relief led to the resumption of social spending, supported by an increase in aid flows that helped finance the abolition of school fees, one of the policies adopted during structural adjustment. However, austerity had taken its toll. The gross intake rate into the last grade of primary school, a proxy indicator of the primary completion rate, for which data for sub-Saharan Africa go back to 1970, did not reach its 1984 levels until 2003, marking two lost decades in African education development.

In the meantime, the target had been upgraded to universal primary completion as part of global commitments and deferred to 2000 (at the 1990 World Declaration on Education for All in Jomtien), 2015 (at the 2000 World Education Forum in Dakar) and 2030 (as part of the SDGs, which also committed countries to achieve universal secondary completion). Rapid progress ensued in the 2000s, but expansion slowed again in the 2010s. As of 2020, one in three children were not completing primary school on time (i.e. within three to five years after the official graduation age) and one in four never completed primary school (i.e. not even up to eight years after the official graduation age). Thus, a goal first set to be achieved 40 years earlier was not reached; at current rates, it will not be achieved by 2030 (**Figure 1.1**).

FIGURE 1.1

Structural adjustment led to two lost decades in African education development

Selected primary completion rate indicators, sub-Saharan Africa, 1970–2020
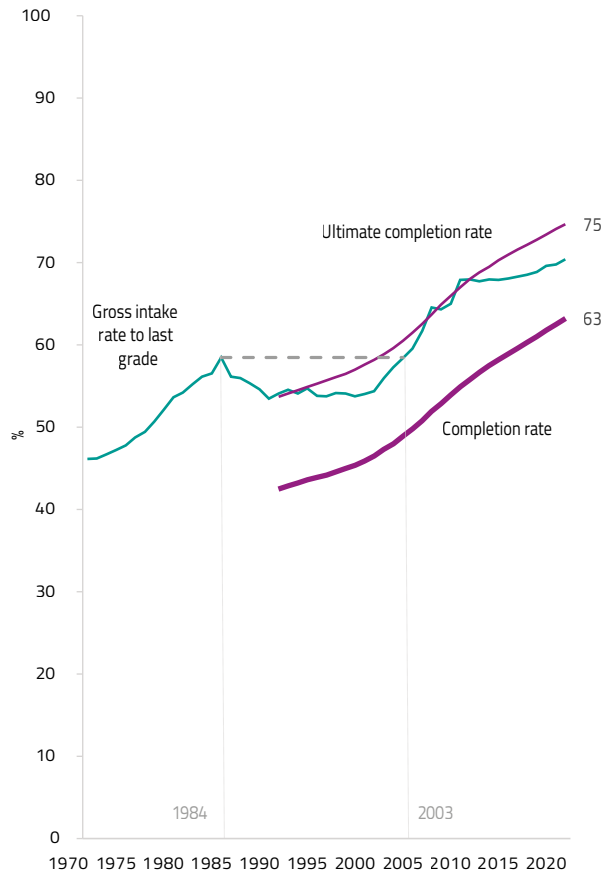
As part of the national SDG 4 benchmarking process, African countries have not committed to achieve universal primary completion by 2030. Not fully accounting for the potential impact of the COVID-19 pandemic or the risk of the return of debt distress, it is estimated that even if countries achieved their national SDG 4 benchmarks on primary completion, set by four in five countries in Africa, 91% of children at most will be completing primary school on time in 2030. Yet evidence shows hardly any progress in these countries since 2015 (**Figure 1.2**).

FIGURE 1.2

Even if African countries achieve their national targets, 1 in 10 children will not be completing primary school by 2030

Baseline, latest, and 2025 and 2030 target primary completion rate values, African countries
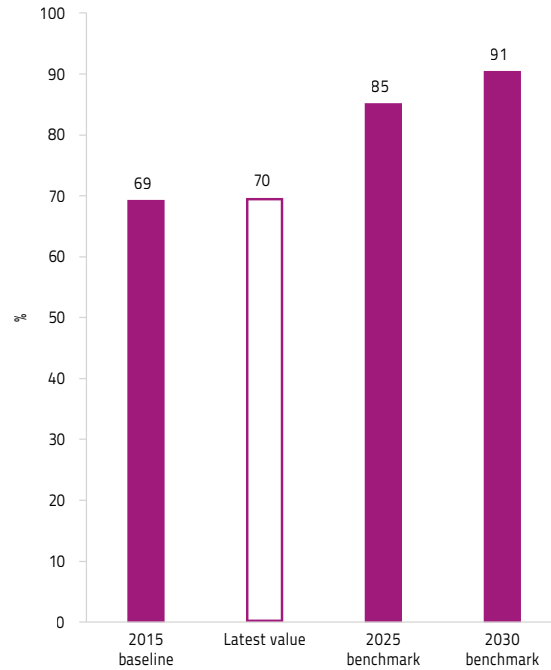
These decades of stop-and-go are at the heart of debates about African educational systems' historical expansion and their ability to ensure that children finish primary school having learned the basic skills they need to continue their education. Social spending cuts unravelled the foundations of quality in African education in the 1980s and 1990s. Abrupt system expansion stretched limited capacities in the 2000s. Both of these phenomena have been linked to findings that have emerged since, which suggest low learning outcome levels. Mapping comparable cross-national learning achievement surveys to a global standard showed that, at most, one in five children who reach the end of primary school achieve the minimum proficiency level in reading and mathematics.

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This estimate is imprecise, as data coverage is low and mostly covers one part of the continent. Yet regardless of the margin of error, the level of learning is so low as to undermine the continent's vast development potential. Universal basic education completion and foundational learning are preconditions for equitable learning in other domains and for developing secondary and post-secondary education, including providing good candidates to the teaching profession. Ensuring that all children have a solid education foundation in their first few years is the most solid proof of government commitment to the goal of inclusive and cohesive societies.

Revisiting the concept of the learning 'crisis'

Two questions frame African countries' quest to accelerate progress towards foundational learning. The first is whether Africa is facing a learning 'crisis' as international organizations routinely claim. Low learning levels are not necessarily declining learning levels. It is, therefore, worth clarifying: have learning outcomes deteriorated or have learning levels always been low? This raises the second question: what factors explain low learning outcomes and what is the relative weight of education and non-education factors? Both questions are difficult to answer because they require hard data on learning as well as the factors contributing to learning over time. These are scarce but critical to form a better understanding of where African countries are starting from; clarify the historical and current adverse context African children are facing; design appropriate responses to overcome these conditions; and set reasonable expectations about how fast they can progress.

On the first question, the only source that helps provide an historical perspective are household surveys, such as the Demographic and Health Surveys, that have included a question on direct literacy. Adults aged 15 and older are asked to read a simple sentence up to 10 words long. Until recently, the question had been addressed only to individuals who had not progressed past primary school, even though, in many countries, some adults who have

attended secondary school are unable to read the sentence. One proxy measure of quality is how many adults who have left school after completing five or six years could read the sentence fully. This rate can be disaggregated by age to indicate whether the measure has changed over time; in other words, whether schools have become more successful in ensuring that individuals who left school after completing primary school acquired rudimentary literacy skills. Although the assessed literacy level is low, the analysis enables a trend to be monitored of up to 40 years, from the mid-1970s to the mid-2010s.

Analysing 31 sub-Saharan African countries leads to 3 distinct groups. First, in 11 countries the literacy rates of people who completed their education after five or six years have been relatively high and stable: about two thirds of adults in these countries had achieved rudimentary literacy. These tend to have a dominant national language (e.g. Lesotho, Madagascar, Rwanda). Second, in six countries, mostly in anglophone western Africa (e.g. Ghana, Nigeria, Sierra Leone), the literacy rate of these graduates has been very low and stable: just over a tenth of adults in these countries had achieved rudimentary literacy. Third, in 14 countries the literacy rate of these graduates has appreciably declined by about one percentage point per year; in some countries, the literacy rate of this select population has halved in two decades (e.g. Benin, the Democratic Republic of the Congo, Niger). Overall, across the 31 sub-Saharan African countries analysed, the percentage of people who could read a simple sentence upon completing their education after five or six years fell from 46% in 1986 to 34% in 2010, or by about half a percentage point per year (**Figure 1.3**). Yet even this finding does not show a learning crisis overall.

While this measure of literacy is the only one that permits a long-term perspective, it has disadvantages. For instance, sample sizes for this population group of focus can be quite small, especially among men. The main disadvantage is that the group of people whose literacy skills are being assessed (i.e. those who complete their education after only five or six years of school) changes over time: gradually, African education systems have been absorbing children who are among the least ready for school in the world. Those who complete their education after only five or six years

FIGURE 1.3

In a quarter of a century, primary schools' ability to ensure even rudimentary literacy skills declined slightly in sub-Saharan Africa

Percentage of adults who could read a simple sentence upon completing their education after five or six years of school, selected African countries, 1986–2010
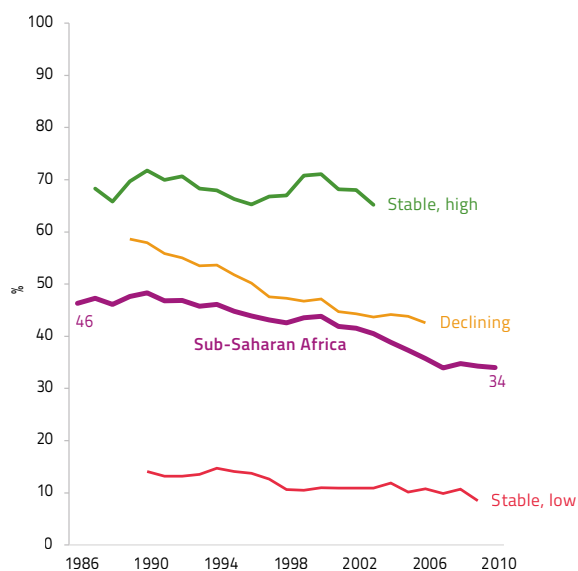
Notes: Calculations are based on 31 sub-Saharan African countries. Countries have been split into three groups according to their long-term literacy trend: stable with high literacy rates (Burkina Faso, Eswatini, Ethiopia, Gabon, Kenya, Lesotho, Madagascar, Rwanda, Sao Tome and Principe, Senegal, and Togo); declining (Angola, Benin, Cameroon, Côte d'Ivoire, Democratic Republic of the Congo, Malawi Mali, Mozambique,, Namibia, Niger, Uganda, Zambia and Zimbabwe); and stable with low literacy rates (Gambia, Ghana, Guinea, Liberia, Nigeria and Sierra Leone). Estimated averages are weighted by the respective populations. The literacy rates are estimated among the group of adults aged 20 to 49 years. Younger people are excluded from the sample to avoid potential biases from including those who might still be in school.
Source: GEM Report team estimates based on Demographic and Health Surveys.

today are more likely to belong to more disadvantaged households than those who did so 30 years ago.

This is reflected in analyses on disadvantage. For example, a recent analysis that examined this question found that school-going girls born in the 1960s enjoyed a larger height advantage relative to the average female population than school-going girls born in the 1990s (Le Nestour

et al., 2023). In addition to height, which reflects poverty, long-term health and nutrition, more recent cohorts who left school after five or six years are also more likely than earlier cohorts to come from rural areas and to be born in a less literate environment. Incorporating such underprepared children into the education system is, therefore, bound to show declining learning outcomes for a given level of education attainment. It is not surprising that such a decline has been observed in Africa, with its higher poverty and linguistic fragmentation, but not in Asia or Latin America (Le Nestour et al., 2023).

Importantly, the main longitudinal measures of reading (and mathematics) skills in Africa for students at the end of primary school, which are based on school-based cross-national learning assessments in francophone countries mostly in central and western Africa (in the 2010s) and in anglophone countries in eastern and southern Africa (in the 2000s), suggest that learning levels have been rising. These measures are of much higher quality than the rudimentary literacy assessment based on the Demographic and Health Surveys, even if there is less confidence in the findings because they are based on a comparison of just two points in time (e.g. between 2014 and 2019 in francophone Africa) and would require more survey rounds to identify a robust trend.

In brief, references to a learning 'crisis' in Africa should be challenged. The most striking finding about education in Africa is not that it is in decline, which is difficult both to confirm and to interpret, but the historically low levels of learning achieved after a full primary school cycle. It is, therefore, necessary to consider the second question: to what extent do contextual factors hamper foundational learning outcomes in a way that is unique to Africa and affects it more than other parts of the world?

This leads to further questions: Among factors that explain learning outcomes, to what extent and how rapidly can factors under the control of educators and education policymakers improve learning – and how do these compare to the impact of factors related to broader social and economic conditions? While these questions are too complex to be answered in full, they need to be asked to understand the rates of progress that can be

reasonably expected and to put into perspective the range of adverse conditions facing African children.

Piecing together sparse global trend data, the average annual progress observed in the percentage of children who achieve minimum proficiency in reading at the end of primary education in 2000–19 was just 0.4 percentage points (UIS, 2023b). Disaggregated by country income group, low- and lower-middle-income countries, which are the majority of countries in Africa, have improved by 0.71 percentage points per year, while upper-middle and high-income countries have deteriorated by 0.06 percentage points per year.

Among several factors not directly related to education, three stand out for their large potential impact on learning outcomes in Africa. Poverty and malnutrition levels in the continent exceed those in other parts of the world. About 35% of people in sub-Saharan Africa were estimated to fall below the USD 2.15 poverty line per day in 2019, four times the global average (Baah et al., 2023), while 30% of children under 5 in Africa are too short for their age, a key indicator of malnutrition (WHO et al., 2023). There is consensus on the impact of stunting on cognitive development (Perkins et al., 2017), which results in slower language development and a negative long-term impact on academic performance. A study in Burkina Faso showed that stunted children aged 6 to 8 performed significantly worse than other children in memory, conceptual thinking, general cognition and cognitive flexibility (Sanou et al., 2018). In Ethiopia, a systematic review of studies that used different measures of malnutrition found, for example, that good academic performance was 50% lower among iodine-deficient than iodine-sufficient children (Zerga et al., 2022).

Conflict and instability also affect children's learning conditions, from increasing anxiety and stress to making trips to school unsafe if not outright blocking access to education altogether. For instance, as of October 2023, it was estimated that more than half of 6.4 million children enrolled in 8 conflict-affected states in Sudan had their learning disrupted and suspended, as 54% or 10,400 schools were closed, with some destroyed and others occupied either by armed groups or internally displaced persons (OCHA, 2023). In north-eastern

Nigeria, an increase of 97 fatalities within a 5-kilometre radius of a child's village as a result of the Boko Haram insurgency reduced school enrolment by 3 percentage points and attainment by 0.6 years (Bertoni et al., 2019). In northern Uganda, an increase of 25 fatalities within a 3-kilometre radius of an individual's household as a result of the Lord's Resistance Army insurgency that lasted well until the mid-2000s led to a loss of 1.5 years of schooling and a decline by 11% relative to average literacy levels. This also resulted in school infrastructure degradation, increases in school size and pupil/teacher ratio due to displacement, and lower household expenditure on education (Kazibwe, 2023).

Africa is unique among world regions for its linguistic fragmentation, a legacy of its colonial history, which education policies have found difficult to tackle. No more than 20% of children are taught in their home language compared to at least 70% in South Asia, East Asia and the Pacific, and Latin America and the Caribbean (World Bank, 2022). It is not straightforward to obtain evidence on the impact of using home language as the language of instruction on learning outcomes. For instance, studies struggle to document how well language of instruction policies were implemented in classrooms (Nakamura et al., 2023). But the importance of a favourable home learning and language environment has been well established and it has often been corroborated by the effectiveness of interventions that try to bridge the gap between the school and home language environments (Nag et al., 2019).

Children who are poor and malnourished, live in unsafe environments, grow up in home environments that offer little stimulation, and speak a language at home that is not used in school face a unique set of challenges. Education policy and practices need to be developed at the classroom, school and system level to address these.

What education factors affect the development of foundational numeracy skills?

The context in which education transformation occurs is more adverse in Africa than in other parts of the world. Taking this into account, the Spotlight analytical framework identified seven factors in education systems that play a role in improving completion rates and foundational learning outcomes (**Figure 1.4**):

1. A country needs to have a clear vision to improve learning for all children, with full understanding and buy-in from all levels of education leadership, from the ministry to local authorities and school personnel. This is expressed through specific targets which are monitored and reported on.

2. This vision should be reflected and communicated via policy decisions on the 'what' (curriculum) and the 'how' (pedagogy) of teaching and learning in early grades, including language of instruction and the use of appropriate materials, especially textbooks.

3. The vision should also be reflected in policy decisions on teacher preparation and management. Practical solutions are needed to prepare teachers to address the extraordinary circumstances they encounter in classrooms.

FIGURE 1.4

Improving completion and foundational learning requires a system-wide approach

Spotlight report series analytical framework
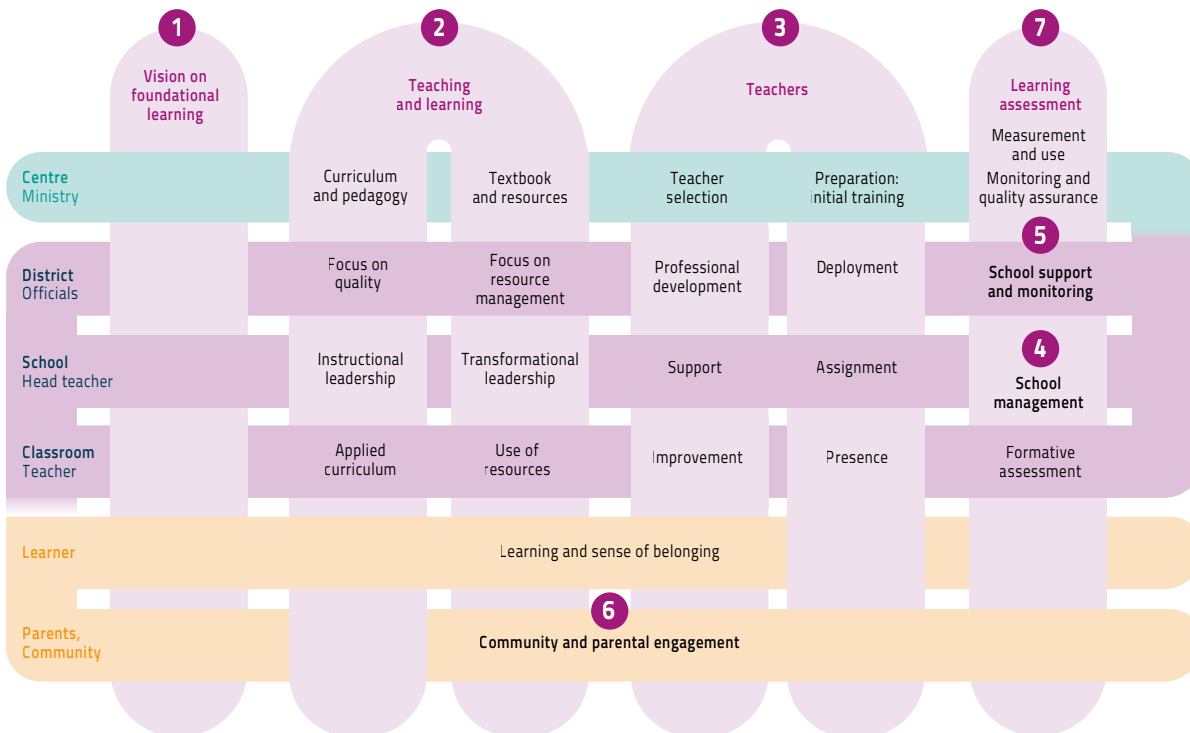
Source: GEM Report team.

4. Head teachers need to be prepared to focus on instructional leadership and thus need to be appointed to supervise and support teachers and communicate with parents and communities. Their management skills should be nurtured and developed accordingly.

5. Schools need to be supported by local education authorities who supervise, monitor, provide the latest information and communicate expectations for improvement.

6. Community and parental engagement can strengthen school responsiveness to external scrutiny and monitoring. Efforts are needed to overcome barriers to such participation due to a lack of confidence and resources.

7. Reliable data on completion and, especially, on learning are needed. An assessment system is needed that monitors progress on what students are expected to learn and is linked both to classroom processes and international standards.

This second Spotlight continental report focuses on four of these factors – vision on foundational leaning, teaching and learning, teachers, and learning assessment – as they apply to foundational numeracy. The Global Proficiency Framework, which shows the minimum knowledge and skills learners should be able to demonstrate by each grade in each of five mathematics domains, provides the basis for a shared understanding of foundational numeracy skills (UIS et al., 2020).

To achieve at least this minimum level of proficiency and maximize learners' opportunities, alignment is needed between:

- Effective **teaching and learning** practices, which require key building blocks – curricula, pedagogy, teaching and learning materials, and language of instruction – need to be carefully balanced:

  - **Curricula** need to be logically structured to follow a theory of learning progression, ensuring students understand concepts rather than using rote memory, and offering sufficient time for each content area, revisiting them during the year (Lutfeali et al., 2023).

  - Appropriate **pedagogy** involves teaching numeracy in the context of students' daily lives. Teachers need to emphasize discussions with students about how they reached solutions to problems, whether and how they can confirm solutions are correct, and whether they found alternative ways of solving the problems (Atweh et al., 2016). The time students spend copying from the blackboard, listening passively or repeating mechanically should be minimized.

  - **Teaching and learning materials** of good quality, accessible to every student, are required. Formal materials, especially textbooks, are routinely lacking. Teachers need to be prepared to use cheap local materials to create physical objects that learners can touch to better understand mathematical concepts (Sitabkhan et al., 2019). Lesson plans and teacher's guides that are aligned with the curriculum and impactful teaching strategies are an important teacher support mechanism, especially in poorly resourced contexts (Piper et al., 2018).

  - Without appropriate teaching strategies, **language** can become an obstacle to the acquisition of numeracy skills (Essien et al., 2023). Alongside language-based solutions, such as keeping the level of English, French and Portuguese used in classroom simple, and code switching between the local vernacular and the language of instruction (Essien, 2018), other approaches include the use of games and teaching and learning materials that children can handle to support their conceptual understanding.

- **Teachers** need to be adequately prepared to teach in early primary grades and for challenges such as large class sizes. But often they have not had the opportunity to develop an adequate conceptual understanding as students – nor have they had the opportunity to develop pedagogically appropriate instructional strategies as student teachers (Akyeampong et al., 2013). Improving initial teacher education is a necessary precondition in the medium to long term. In the short term, and in the absence of sufficient resources for continuous professional

development opportunities, the potential of good teachers to coach others needs to be nurtured, although this approach requires good management capacity to identify and utilize teaching talent. Another cost-effective route is professional communities with which teachers are encouraged to exchange experiences with their peers.

■ **Assessment** for student learning is underemphasized in teacher preparation. As a result, teachers lack understanding of formative assessment at the classroom level that could help them improve their teaching and support learners (Sayed and Kanjee, 2013). At the system level, national capacity is limited. This prevents the development and maintenance of summative assessment mechanisms that meet quality criteria, are sustainable, and are used to improve the curriculum and teacher education. Moreover, it is often not clear whether national assessments, where they exist, are aligned with the curriculum and a national commitment to achieve minimum proficiency.

This second Spotlight cycle explores these factors of the analytical framework and analyses in detail the following key national documents:

■ The national curriculum framework (or the syllabus), which represents the intended curriculum.

■ Textbooks and teacher's guides, which represent the potentially implemented curriculum.

■ The national assessment framework and assessment items, which represent the assessed curriculum.

The analysis focuses on how these documents are aligned, in particular whether they are aligned with (**Figure 1.5**):

■ Each other, with reference to the Global Proficiency Framework minimum proficiency (content alignment)

■ Their application in the classroom (pedagogical and cognitive alignment)

■ The country's national policy and international commitments (political alignment).

FIGURE 1.5

Content, pedagogical and political alignment are preconditions to achieve universal foundational learning

Second Spotlight cycle research approach
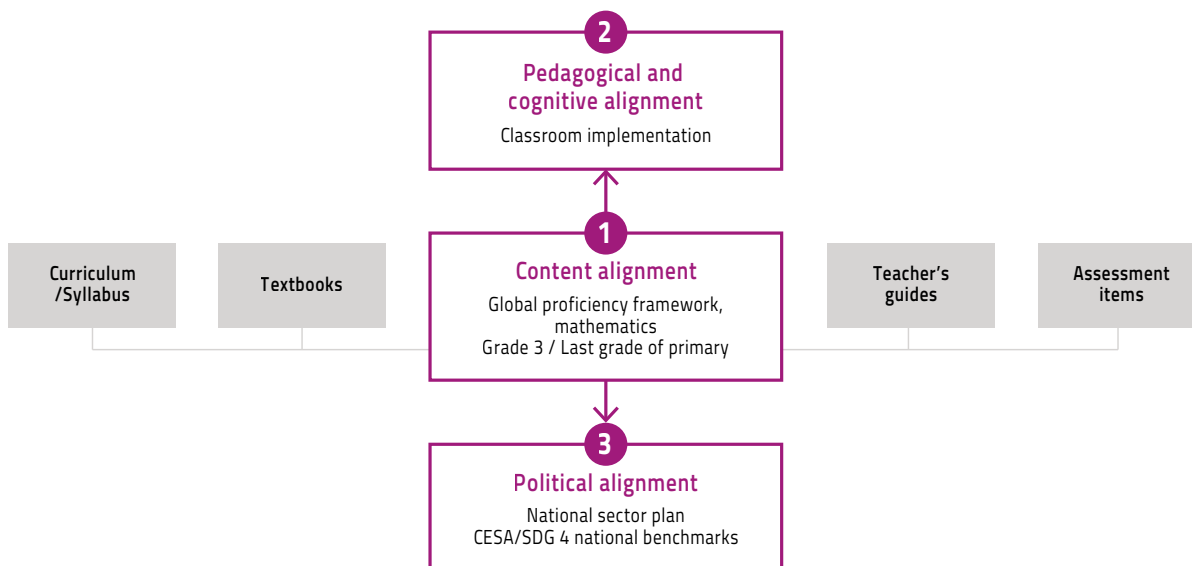
Note: CESA = Continental Education Strategy for Africa.
Source: GEM Report team.

Promoting national and continental dialogue is at the heart of the Spotlight series

The Spotlight report series focuses on the twin challenges of universal basic education completion and foundational learning in Africa. It is an initiative of the African Union, the Association for the Development of Education in Africa and the Global Education Monitoring (GEM) Report, which collects and synthesizes evidence with two objectives:

- To develop recommendations in selected countries in dialogue with government to influence policy change in support of the achievement of national targets on education outcomes.

- To mobilize the continental peer dialogue mechanisms, under the auspices of African institutions, to raise attention to issues related to primary education.

Gathering and promoting evidence is also necessary to sensitize public opinion, an additional factor for policy change at the national level (**Box 1.1**), and to engage multiple actors at the continental level.

BOX 1.1

How does African public opinion view the state of education?

Policy changes in education are intentional. They respond to identified problems and are supported by favourable political dynamics and expert technical solutions. Public opinion can play a critical role in the political economy of education policy by identifying and highlighting problems and influencing politicians. Public demand for change might be a necessary condition for action. But the extent to which it spurs education reform varies around the world and in Africa. The influence of the public depends on the type of education policy in discussion, the nature of the political process and the information available.

Personal experiences and subjective criteria are the main source leading the public to perceive an education problem, but hard evidence and objective standards can put that problem in context. Research in high-income countries has used cross-national comparative surveys of public opinion on education policy to assess how the growing availability of data from cross-national learning assessments has influenced both public perceptions of the state of education and policymaker responses (West and Woessmann, 2021). The conclusion is that public opinion on the quality of education is shaped by multiple interests. Differences of opinion can cloud what actions are needed to respond to problems, and can put a brake on education reforms (Busemeyer et al., 2018).

In Africa, some studies argue that public opinion matters. In Kenya, voters supported observable commitments, such as fee abolition, but not those that are difficult to verify and do not exclusively depend on leader action, such as quality improvements (Harding and Stasavage, 2014). Other research has argued that education policy has responded to voter preferences, but public opinion has not influenced equity issues. For example, resources for education have been historically inequitably distributed in Ghana as a result of political balancing acts among ruling coalitions (Abdulai and Hinkey, 2016). Yet other studies have dismissed the role of public opinion as a determinant of policy. For instance, despite the potential for political gains, governments in the United Republic of Tanzania did not take steps to increase the provision of public education services (Opalo, 2022). Data on learning outcomes are scarce and not widely communicated, so they do not yet influence public debate, despite vibrant civil society action in some countries. Moreover, perceptions of quality are distorted in many countries. A growing role for private schools in urban areas has created a two-tiered system where public schools mainly serve poor and rural populations whose voice for demanding and effecting change is weaker (MacLean, 2011).

The Afrobarometer is a key source of information on African public opinion since 1999 and more recently through two education-relevant questions (Amakoh, 2022). The first question asks respondents to identify the most important problem government should address. In 2023, 5% of adults in 39 countries considered education to be the most important problem, from a low of 1% in Botswana, Ethiopia and Seychelles to three outliers: Gabon (13%), Mauritania (14%) and Liberia (15%). For reference, the top four problems were economic management (14% on average but 47% in Tunisia), unemployment (13% on average but 38% in Botswana), water (9% on average but 22% in Benin) and security (8% on average but 41% in Burkina Faso). Analysis for this report shows, as expected, that the lower the primary completion rate, the higher the share of adults who considered education to be the biggest problem; but there was no correlation with the percentage of students who reached the minimum level of proficiency in reading at the end of primary education. The percentage of respondents who considered education as the most important problem has remained stable over the past 10 years.

The second question is to assess how governments are handling education. The trend shows approval rates of government performance decreasing steadily: the share of adults who said that the government handled education needs 'fairly well' or 'very well' fell from 54% in 2013 to 46% in 2023. The worse trends (a decrease by some 40 to 50 percentage points) were recorded in Eswatini, Liberia and Zimbabwe, while the best trends (an increase by some 20 to 30 percentage points) were recorded in Sierra Leone, the United Republic of Tanzania and Zambia (**Figure 1.6**). Views on government performance in education vary little by gender and location but there were some notable differences by respondents' education attainment. In countries including Angola, Cameroon and Morocco, respondents with primary education are less likely to think that the government handles education well. Conversely, in Mozambique, Nigeria and Tunisia, respondents with higher education are more likely to be critical about government performance on education (**Figure 1.7**).

FIGURE 1.6

More people are critical of government performance in education in Africa

Percentage of adults who consider that the government is addressing educational needs 'fairly well' or 'very well', 2013 and 2023
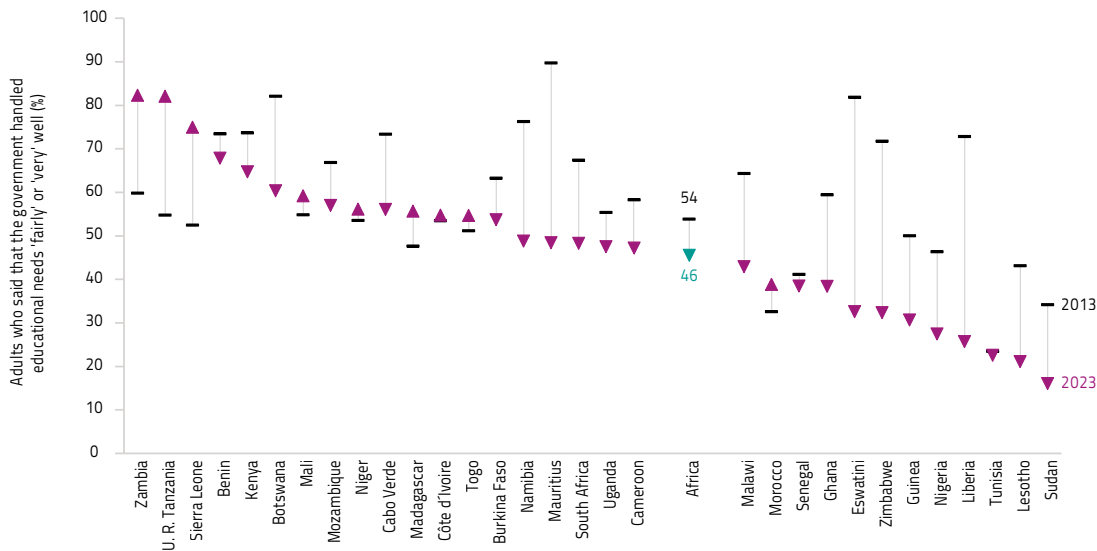
Note: The continental average is weighted by population.
Source: GEM Report team analysis of Afrobarometer data.

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FIGURE 1.7

Adults with lower education attainment tend to be more likely to give a positive assessment of government performance in education

Percentage of adults who consider that the government is addressing educational needs 'fairly well' or 'very well', by education attainment, 2013 and 2023
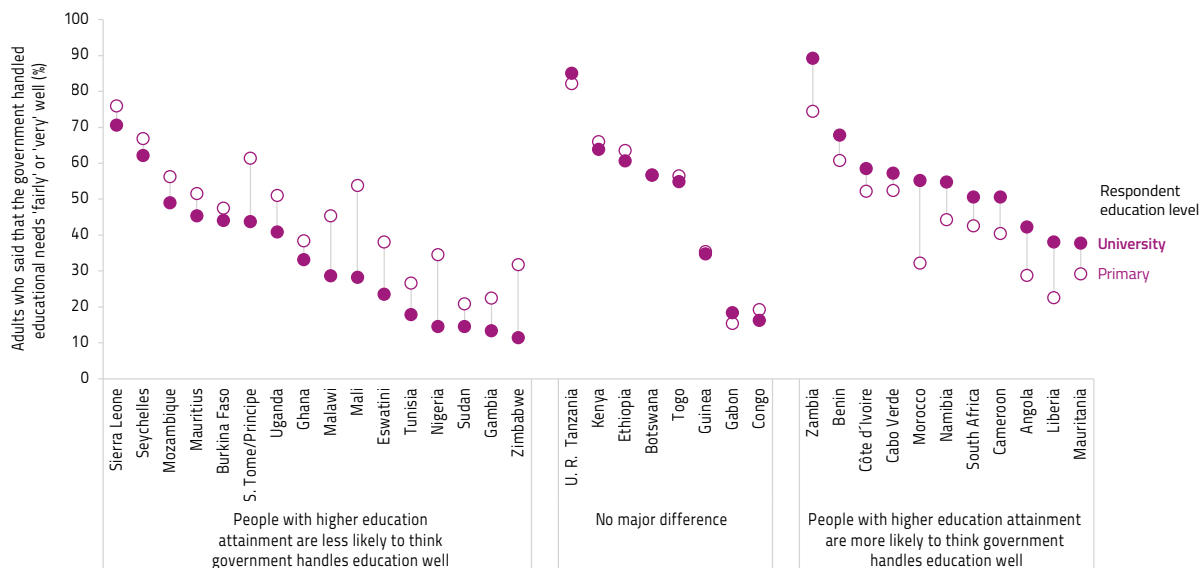
Source: GEM Report team analysis of Afrobarometer data.

It is not clear whether this evidence reflects a perceived deterioration of education service delivery or growing confidence in expressing a critical opinion. Neither is it clear what aspect of education this criticism is directed at. Popular grievances may be directed at different levels of education and a range of issues, from the conduct of examinations to the incidence of out-of-pocket costs. They may not relate to the focus of this report on access to, completion and quality of primary education. But the evidence overall suggests that education is a growing concern for African citizens.

The Spotlight series supports the African Union's mission to 'contribute towards revitalized, quality, relevant, and harmonized education systems responsive to the needs of Africa' and its mandate to support meetings of the Specialized Technical Committee and other political and professional bodies to facilitate the collective articulation of priorities, ownership and accountability. The Spotlight report also complements the African Union/UNESCO CESA/SDG 4 Continental Monitoring Report, scheduled to be published three times by 2030, by offering a thematic, in-depth perspective. It also supports African Union member states as they

pursue their national SDG 4 benchmarks on attendance, completion and learning for 2025 and 2030.

The Spotlight report is also part of the Association for the Development of Education in Africa's efforts to serve its members' needs, using its strengths as a high-level convener of African education policymakers. It also complements the GEM Report's efforts to develop regional outputs that link global perspectives with national challenges, combining its comparative advantage in high-quality cross-national research with its editorial independence.

The Spotlight series envisages 3 cycles between 2022 and 2025, each covering some 12 countries. Of these:

- Five are focus countries, ideally one per region (Western, Central, Southern, Eastern and Northern Africa), for which a concise subsector analysis is carried out, leading to a country report that documents challenges and good system-wide practices. These reports are prepared in dialogue with national stakeholders, who determine priorities, and with education ministries, which steer discussions and validate content.

- One or two additional countries per region are covered through short case studies focusing on a particular factor considered important for improving education outcomes.

The country reports and case studies, other background papers, and data analysis are the main inputs synthesized by this Spotlight continental report. During this second cycle, no focus countries were included from central Africa. Instead, there were two focus countries from southern Africa (**Figure 1.8**). The focus countries were Mauritania, Niger, South Africa, Uganda and Zambia. Evidence

FIGURE 1.8

The Spotlight series aims to cover a representative group of countries

Countries included in the 2023/24 Spotlight cycle

Legend:
- ☐ Nothern
- ☐ Western
- ☐ Central
- ☐ Eastern
- ☐ Southern
- ■ Focus country
- ▨ Case study country
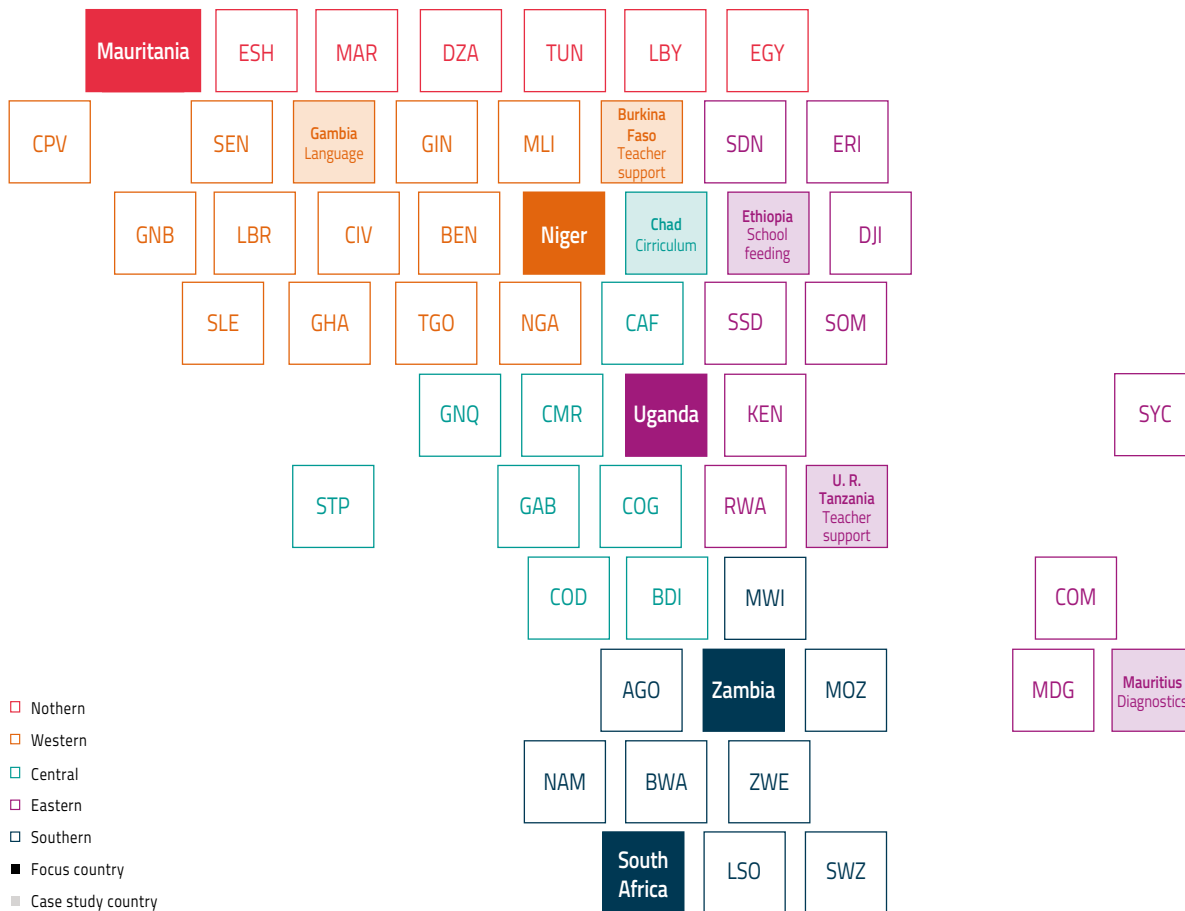
Source: GEM Report team.

presented on the five focus countries in this report mostly draws from the country reports, unless otherwise specified.

Case studies were prepared on Burkina Faso (professional learning communities), Chad (curriculum), Ethiopia (school feeding), Gambia (language of instruction), Mauritius (diagnostic assessments) and the United Republic of Tanzania (teacher support).

Additional research was commissioned on the role of social and emotional learning in the acquisition of foundational literacy and numeracy skills; language of instruction policies across Africa; the role of citizen-led assessments; and the evolution of the Japan International Cooperation Agency's technical assistance programmes on mathematics in primary education.

This second iteration of the Spotlight continental report introduces key policy issues pertaining to the improvement of foundational numeracy skills across Africa. Chapters 2 and 3 describe where the region stands with respect to out-of-school, completion and minimum learning proficiency rates. In Chapter 4, a focus on teaching and learning in the classroom introduces the importance of connecting curriculum, textbooks, teacher guides and assessments, as well as pedagogy. Chapter 5 addresses teacher issues and, in particular, how best to support teachers as key actors in policy reforms that seek to improve levels of foundational learning. Chapter 6 reviews the extent to which countries have established national visions on foundational learning and the role learning assessments have played. Chapter 7 reviews the financing of education policies across the continent. Chapter 8 concludes by providing recommendations.

2 School attendance and completion

Happy children in a primary school in Niamey, the capital of Niger. In Niger fewer than 8 percent of children at the end of primary school have acquired acceptable literacy and numeracy skills. For every child, education. (CREDIT: © UNICEF/UN0318701/Dejongh)

- Out-of-school numbers are rising because enrolment increases are slower than demographic growth. However, another reason is that repetition rates have decreased in recent years; in the past, many children who were in school were simply repeating grades.

- Primary completion rates have continued to improve at rates faster than the rates at which out-of-school rates have been improving, which suggests education systems are becoming more efficient.

- Late entry and grade repetition mean that many primary school students are too old for their grade. In five countries, the share of children who complete primary school 3 to 5 years late is 20 percentage points lower than the share of those who complete as many as 8 years late. Girls are more likely than boys to complete primary school 'on time'.

KEY INSIGHTS

- The out-of-school rate for children of primary school age in Africa fell from 35% in 2000 to 23% in 2010 but only to 19% in 2020. It is estimated that 18.5% of children of primary school age were not in school in 2023.

- The slowing down of progress in reducing out-of-school rates, combined with rapid demographic growth, has resulted in an increase in the number of out-of-school children, from 37 million in 2012 to 41 million in 2023.

- Even this number ignores emergencies. Using 2023 evidence from Sudan and South Sudan suggests that the out-of-school population may be underestimated by 2.7 million.

- Unlike the out-of-school rate, progress in the primary completion rate has not slowed down. It is estimated that in 2023, 71% of children completed primary school on time and 80% ultimately completed with several years' delay.

- While girls have a five percentage point advantage in timely completion, boys maintain a two percentage point advantage in ultimate completion.

<blockquote>" Learning is not like a switch that works instantly. "

Commissioner, Teacher Education and Training Department,
Ministry of Education and Sports, Uganda</blockquote>

An overview of primary school attendance and completion data is essential for analysing progress on learning outcomes in Africa. Despite a series of government commitments, as well as international commitments of support, Africa is the only region where out-of-school rates are twice the global average, and extremely high in many countries. It is also the only region where the number of out-of-school children is rising. This chapter relies on a methodology that makes efficient and effective use of multiple data sources for both out-of-school and completion rates. It also documents within-country disparity in these headline indicators.

Out-of-school rates have almost stagnated in recent years

The out-of-school rate for children of primary school age in Africa fell from 35% in 2000 to 23% in 2010 and 19% in 2020. It is estimated that 18.5% of children of primary school age were not in school in 2023 (**Figure 2.1a**). Out-of-school rates differ considerably by region. In 2020, the out-of-school rate was 3% in Northern Africa, 11.5% in Southern Africa, 20.7% in Eastern Africa, 21.5% in Central Africa and 26.4% in Western Africa (**Figure 2.1b**).

FIGURE 2.1

In Africa, 18 of every 100 primary school-age children are not in school

Out-of-school rate, primary school-age children, Africa

a. By sex, 2000–23

b. By region and sex, 2000, 2010 and 2020

Source: GEM Report and UIS estimates.

FIGURE 2.2

While there is gender parity in school attendance overall, different patterns of gender disparity in out-of-school rates can be observed in Africa

Out-of-school rate, primary school-age children, by sex, selected countries, 2020
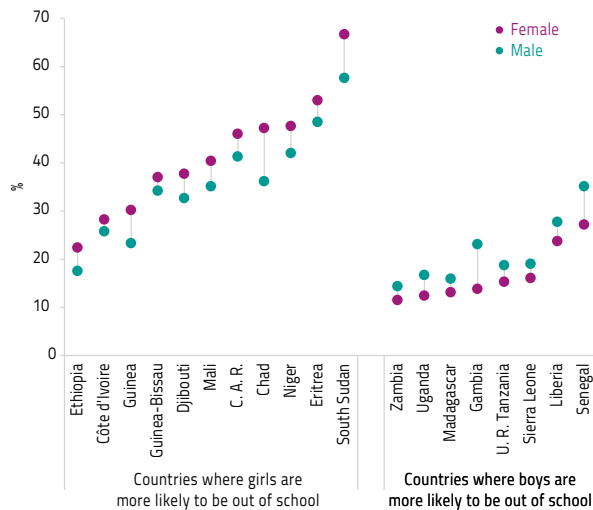
Source: GEM Report and UIS estimates.

Two facts stand out. First, the gender gap in enrolment has gradually ceased to exist. There was a 5.8 percentage point gap between girls and boys in 2000 (38.2% vs. 32.5%), which more than halved by 2010 to 2.5 percentage points (24.5% vs. 22%) and was eliminated by 2020. Although there is gender parity across the region, individual countries' profiles differ. In general, it is more likely that girls are at a disadvantage in countries with higher out-of-school rates. In Chad, 47% of girls were out of school compared to 36% of boys. In contrast, boys are more likely to have a disadvantage in countries with lower out-of-school rates. In the Gambia, 14% of girls were out of school, compared to 23% of boys (**Figure 2.2**).

Second, progress has slowed down. On average, the out-of-school rate fell by 1.4 percentage points per year between 2000 and 2010 but only by 0.4 percentage points per year between 2013 and 2023. Northern Africa is the only region where progress appears to have accelerated in the 2010s, for instance in counties including

Egypt and Morocco. Central and Eastern Africa achieved the fastest progress in the 2000s (by 1.8 percentage points per year) but appear to have made almost as much progress in the 2010s as they made every two years in the 2000s. Western Africa made the fastest progress in the 2010s (by 0.5 percentage points per year), although this was half the rate in the 2000s (**Figure 2.1b**).

The progress achieved in Africa in the 2000s had no historical precedent elsewhere in the world and would have been very difficult to repeat. At that time, funding increased rapidly for policies to ease barriers for families to access education. These resources were part of debt relief measures, aiming to help countries recover the lost ground in the delivery of education services, which had been adversely affected during 15 years of structural adjustment. In other words, the unprecedented progress in the 2000s can be explained to a large extent as catching up rather than a significant advance.

In Central Africa, the out-of-school rate in Burundi fell by 4.1 percentage points per year between 2000 and 2010 and by 0.5 percentage points per year between 2010 and 2020. Out-of-school rates also fell at a pace well above the average in Cameroon (by 2.2 percentage points) and the Central African Republic (by 2.4 percentage points) in the 2000s before grinding to a halt since 2010. In Western Africa, fast progress in countries such as Guinea-Bissau, Mali and Senegal in the 2000s also came to a halt in the 2010s (**Figure 2.3**).

The slowdown can also be attributed to various other reasons, some of which may weigh more heavily on particular countries. A common cause is conflict, for example the one unfolding in the Central African Republic since 2013 (Council for Foreign Relations, 2023; Associated Press, 2024). Mali has been badly affected by conflict and its crisis has spilled over into neighbouring Burkina Faso (UNICEF, 2019). There, the out-of-school rate had plummeted from 70% in 2000 to 41% in 2010. Progress continued at a faster rate than in other countries in the region but at a much slower rate overall, at 33% in 2020. Towards the end of the 2010s, widespread attacks on schools began in the five northern provinces of Burkina Faso (Dewast,

Dramatic improvement in access to school in the 2000s came to a halt in the 2010s

Out-of-school rate, primary school-age children, selected countries, 2000, 2010 and 2020
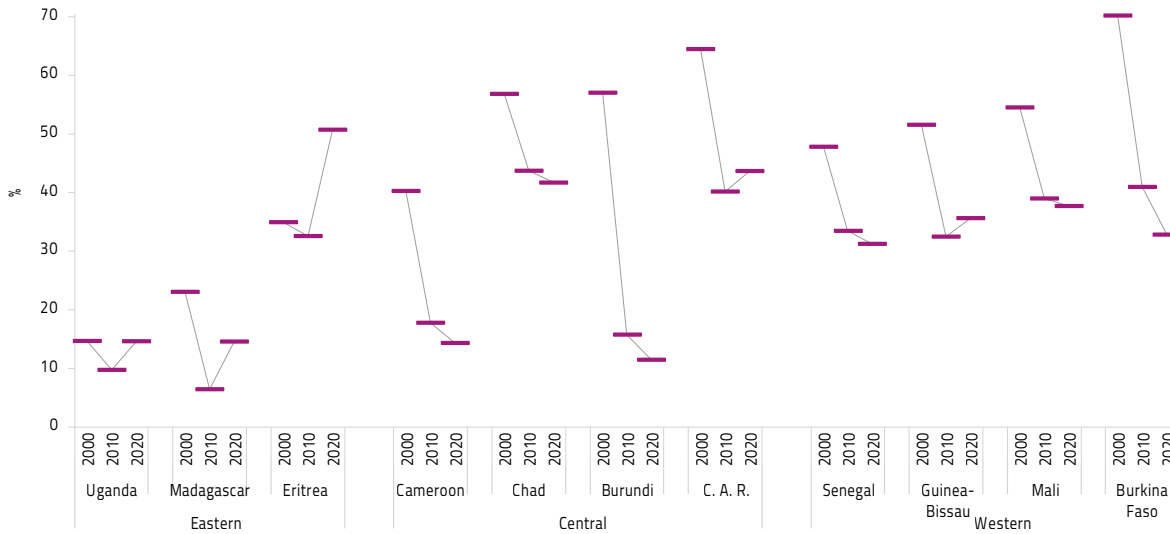
2019; NRC, 2021) and have since expanded, leading to school closures and internal displacement (**Box 2.1**).

Another reason for the slowdown is poverty. Sub-Saharan Africa witnessed an acceleration in poverty reduction in the 2000s, with the poverty headcount rate falling from 56% in 2000 to 42% in 2010. But it only fell to 37% by 2019. In Eastern and Southern Africa, it barely changed, from 44% in 2010 to 43% in 2018 (Castaneda Aguilar et al., 2024). The average regional out-of-school rates are three times higher in rural areas than in urban ones; in Niger, the rate is almost five times as high (**Figure 2.4**).

In some cases, education expansion may have reached a ceiling for cultural reasons. For instance, Islamic schools in Senegal are the preferred education modality of choice for many families in rural areas, as in many other Western African countries. Attempts to integrate these schools into the public education system, branded as 'modernization', have not been effective (André and Demonsant, 2014; d'Aiglepierre and Bauer, 2018).

Out-of-school rates are three times as high in rural areas as in urban areas

Out-of-school rate, primary school-age children, by location, selected countries, 2018–21
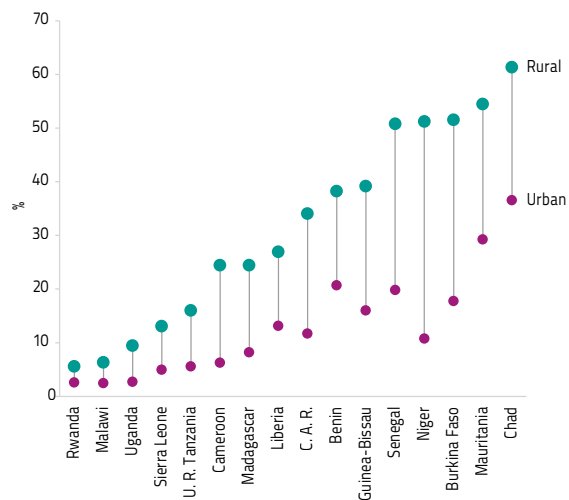
Source: World Inequality Database on Education..

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While these explanations affect other countries, there are also specific reasons behind some of the observed trends. For example, Eritrea is a country where the out-of-school rate appears to have increased rapidly from 33% in 2010 to 51% in 2020. However, in the absence of a population census, it is very difficult to assess whether this trend reflects a genuine decline in access to school or an overestimation of the school-age population due to the lack of reliable data. Reported high emigration rates may have driven this trend (Stevis and Parkinson, 2016; Wabwire, 2019).

This example brings up the issue of data quality. While it is possible to assess out-of-school rate levels for most African countries with a reasonable degree of confidence, the accuracy of out-of-school rate trends is challenging in many countries. The model that the UNESCO Institute for Statistics and the *Global Education Monitoring (GEM) Report* have developed to combine and make efficient use of administrative and survey data goes some way towards addressing some of these challenges and making reasonably reliable short-term projections. But there is little that can be done when

there are considerable gaps. One third of countries, which account for 38% of the primary school-age population in Africa, have no more than 3 administrative data points in the past 10 years; half of those do not have a recent survey either. In conflict-affected countries, the robustness of out-of-school estimates depends on the representativeness of data coverage. Unfortunately, in such contexts, the usual data sources often do not cover the entire territory (**Table 2.1**).

The slowing down of progress in reducing out-of-school rates, combined with rapid demographic growth, has resulted in an increase in the number of out-of-school children of primary school age in recent years in Africa. Their number fell from 46 million in 2000 to 37 million in 2012 but has been growing ever since, reaching 41 million in 2023. This trend is mirrored in Eastern Africa, while the out-of-school population has been growing almost continuously throughout the past 20 years in Western Africa. These two regions account for three quarters of the out-of-school population in Africa. There are 1 million more boys than girls out of school in Africa (**Figure 2.5**).

TABLE 2.1

Administrative data availability since 2013 and household survey data availability since 2018, by out-of-school rate estimate

Out-of-school rate	Administrative data points since 2013				
	No data	1–3 data points	4–5 data points	6–8 data points	9–11 data points
>40%	**Somalia**	C. A. R., **Equat. Guinea, South Sudan**		Chad, <u>Eritrea</u>, Sudan	Niger
25–40%	Guinea-Bissau, Nigeria		**Comoros**, Liberia	Guinea, <u>Mali</u>, Mauritania, Senegal	Burkina Faso, Côte d'Ivoire, Djibouti
15–25%	**Angola**, D. R. Congo	**Congo**, Sierra Leone	Ethiopia		Benin, Gambia, U. R. Tanzania
5–15%	Kenya, **Libya**, Malawi	**Botswana**, Zambia	Rwanda, S. Tome/Principe, Uganda	Eswatini, Ghana, Madagascar, South Africa	Burundi, Cabo Verde, Cameroon, Mozambique, Togo, Zimbabwe
0–5%		Gabon, **Namibia**		Egypt, Lesotho	Algeria, Mauritius, Morocco, Seychelles, Tunisia

Notes: Countries in bold have no more than five administrative data points since 2013 and no survey since 2018. Underlined countries have six to eight administrative data points since 2013 but no data since 2020 and no survey since 2018. Of those, the following surveys are upcoming: under the Multiple Indicators Cluster Surveys series – Comoros (2022), Libya (2024), Morocco (2024), Somalia (2024) and South Sudan (2024) – and under the Demographic and Health Surveys series – Angola (2023) and Mali (2023/24).

FIGURE 2.5

The out-of-school population has been growing since 2012

Out-of-school population, by sex, 2000–23

a. Africa   b. Eastern Africa   c. Western Africa

Source: GEM Report estimates.

In five countries, the out-of-school population increased by at least half a million children between 2012 and 2022: the Democratic Republic of the Congo (by 553,000), the United Republic of Tanzania (by 584,000), Niger (by 623,000), Uganda (by 689,000) and Nigeria (by 767,000). Of these, the fastest proportional increase was recorded in Uganda (by 84%), followed by the United Republic of Tanzania (43%) and Niger (43%). There are strong demographic pressures in these countries: the Democratic Republic of the Congo, Niger and the United Republic of Tanzania are among the five African countries projected to have the fastest change in their primary school-age populations in the 2020s, while populations in Uganda and Nigeria are also growing at above-average rates.

Crises mean that out-of-school children numbers are underestimated

In 2022, the UIS and the *Global Education Monitoring (GEM) Report* proposed a major improvement in the way out-of-school rates and populations are estimated, making efficient use of different sources of information (UNESCO, 2022). Yet the model has a weakness: when a crisis strikes, estimates cannot be updated without new information and, in most cases, monitoring efforts break down during a crisis. Lack of security and urgent humanitarian priorities do not allow the usual data collection processes to function, hampering the inclusion of these children in global reporting. Ideally, the annual UIS survey administered to governments should capture the impact of crises. Governments should be able to document whether their education data collection is comprehensive or excludes particular regions and populations. In practice, however, it is difficult for many governments of crisis-affected countries to admit the scale of the problem.

A top-down and ad hoc approach could focus on more systematic use of existing documentation collected by humanitarian agencies. These reports are not prepared with the objective to produce globally comparable estimates of out-of-school rates and populations but instead to draw attention to a crisis and carry out operational plans for immediate needs. Still, they contain valuable information that can be evaluated and provide some insights into the margin of error of official estimates. For example, the International Rescue Committee publishes a list of the gravest humanitarian crises. In its most recent watchlist, three of the top five crises were in Africa: Sudan, South Sudan and Burkina Faso (IRC, 2024).

The largest displacement crisis in the world is in Sudan since civil conflict erupted in April 2023. More than 8 million people, about 15% of the population, have either been internally displaced or have fled to neighbouring countries. According to the UIS/GEM Report model, there were 3.1 million, or 45%, of children out of school in 2022, prior to the conflict. The GEM Report has confirmed the accuracy of this estimate following a recent analysis of a 2022 nationally representative household survey. Civil conflict affected mostly the regions of Darfur, Kordofan and Khartoum (Sudan Education Cluster, 2023). Of their respective primary school-age populations, about 60% in Darfur and Kordofan and 10% in Khartoum were out of school in 2022. Assuming that no children went to school in the last two thirds of 2023 in these three regions, 2.3 million would need to be added to the out-of-school population, bringing the total to 5.3 million.

South Sudan has suffered from a seemingly endless spiral of conflict and vulnerability to natural disasters. There are no easily accessible data for triangulation. The UIS/GEM Report out-of-school model estimated that there were 1.1 million primary school-age children – and 2.1 million of all school-age children, adolescents and youth – out of school in 2022. The education cluster raised the latter estimate to 2.8 million (South Sudan Education Cluster, 2023). If verified, an additional 0.4 million primary school-age children would need to be added to the total estimate.

In Burkina Faso, a crisis of insecurity due to continued attacks has been spreading to almost the entire country. However, 5 of the 13 administrative regions are disproportionately affected: Boucle du Mouhoun, Centre-Nord, Est, Nord and Sahel. The UIS/GEM Report out-of-school model estimated that there were 1.3 million primary school-age children – and 2.9 million children, adolescents and youth – out of school in 2022, of which the five most heavily affected regions accounted for 1.5 million. Data from two recent surveys (2019 and 2022) were used so the estimate is up to date, although it is hard to know how representative enumeration was in the affected areas. An estimate by the education ministry in May 2023, with the support of the education cluster, found that more than 5,000 primary and secondary schools were forced to close in these regions, with almost 900,000 students losing access to education (Burkina Faso Ministry of National Education, Literacy and Promotion of National Languages, 2023). This estimate most likely overlaps with the existing higher estimates of the out-of-school population; it might, therefore, be safer to assume that no further upward adjustment is needed for Burkina Faso.

In brief, evidence from just these three major crises, for which reasonably reliable and comparable information is available, suggests that the out-of-school population, which this report estimated at 41 million children, may be

underestimated by 2.7 million. Several other crises, for instance in the eastern provinces of the Democratic Republic of the Congo or in the north of Ethiopia, may also lead to an underestimation of their out-of-school populations.

Each crisis is different in terms of characteristics such as intensity, spread and duration, as well as in terms of data availability. Education clusters, which are mandated to coordinate humanitarian responses in areas where the state may be absent, party to the conflict, or not have the resources to identify needs and provide education services, are tasked with estimating the number of people in need of humanitarian assistance in education. It is important to remember that this is a different definition from being 'out of school'. Clusters, after all, assess education needs for purposes other than global reporting. The result is that it is hard to combine and integrate their findings in official statistical reports. But more can be done to cross-check and take into account the data they provide when they can be triangulated with other sources. There will always be a margin of error when it comes to reporting on education in crisis-affected situations. But the more that is known, the less speculation there will be.

Completion rates improved faster than out-of-school rates

The completion rate is the latest global indicator that was added to the Sustainable Development Goal (SDG) 4 monitoring framework during the 2020 Comprehensive Review by the Inter-agency and Expert Group on SDG Indicators. It filled an important gap. SDG target 4.1 called on countries to 'ensure that all girls and boys complete … primary and secondary education' and yet there was no measure to monitor progress.

The completion rate is an attainment rate that measures the percentage of a cohort that has reached the last grade of primary school. The cohort consists of those aged 3 to 5 years older than the official graduation age. Considering that the official graduation age is, on average, 11 years, the indicator measures the attainment of children aged 14 to 16. The indicator was defined in this way to capture those children that finish school late, either because they started late or because they had to repeat a grade. In Africa, both problems are more acute than in the rest of the world.

According to the UIS, 10% of primary school students globally were at least two years too old for their grade in 2022. In sub-Saharan Africa, the share is 27%, or almost three times as high. Analysis of household survey data for a sample of 18 sub-Saharan African countries shows that the share may be even higher, with 4 in 10 children at least two years too old for their grade. Liberia is an

extreme case with two in three students – and 70% of boys – being over-age. But there is also a striking gender gap: girls are less likely than boys to be over-age in all but one country (Burkina Faso). In Malawi, 43% of boys were over-age compared to 34% of girls in 2020 (**Figure 2.6**).

FIGURE 2.6

Boys are more likely than girls to be over-age for their grade

Percentage of students enrolled in primary education who are at least two years over-age for their current grade, 2017–21
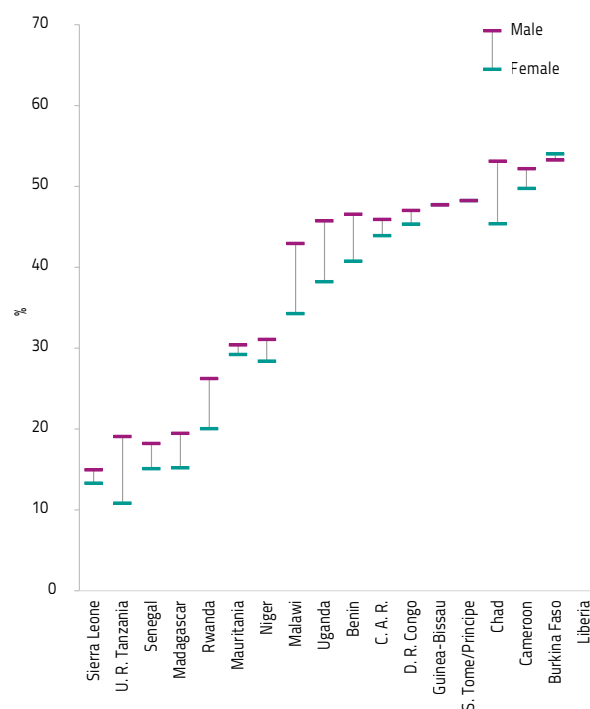
Source: GEM Report estimates.

This gender dimension of attendance by age is reflected in completion rates. While the 'timely' (i.e. official) primary completion rate focuses on those aged 14 to 16, it is also possible to observe those who 'ultimately' reach the last grade, even with up to eight years of delay. In 2023, it is estimated that 71% of 14- to 16-year-olds completed primary school. Taking late completers into account, 80% were estimated to eventually reach the last grade of primary school. While girls' primary completion rate surpassed that of boys as early as 2011 – and now is five percentage points higher (73% vs. 68%) – boys (81%) are still more likely than girls (79%) to ultimately complete primary school, even though the gender gap has fallen from 12 percentage points to less than 2 percentage points since 2000. Northern Africa has achieved parity in ultimate completion, while Eastern Africa is the only region where girls are more likely to complete primary school than boys, by four percentage points; in contrast, the largest gap in the opposite direction is in Western Africa, where boys have a seven percentage-point advantage over girls (**Figure 2.7**).

The nine percentage-point gap between ultimate and timely completion rates in 2023 is now slightly below its 2000 level. The gap had increased in the 2000s, reaching 11 percentage points in 2011. The large increase in school enrolment in those years brought not only many more children to school, but also children who were not of the right age, creating pressures on education systems, in many of which repetition rates were extremely high. For example, throughout that decade, repetition rates routinely exceeded 20% in countries including Burundi, Cameroon, Chad, Malawi and Togo. A comparison of 29 countries from the UIS database between 2005 and 2015 suggests that repetition rates fell by about one third in that period. An additional reason, therefore, for the slowdown in out-of-school rates is the lower number of repeaters.

While the completion rate has increased steadily throughout the past 20 years (by 0.9 percentage points per year from 2000 to 2010 and by 0.8 percentage points per year between 2010 and 2020), the increase in the ultimate completion rate slowed down (from 1.0 percentage points per year from 2000 to 2010 to 0.6 percentage points per year between 2010 and 2020). This suggests that education systems have become a little more efficient, as relatively fewer children complete primary school late (**Figure 2.8**).

There are wide differences in completion rates between the African Union regions. Northern Africa is the closest to universal primary completion but also has the smallest gap between timely (92%) and ultimate (93%) completion rates. Central, Southern and Western Africa have ultimate completion rates around 80%, i.e. close to the continental average. But the three regions differ in important respects. Central Africa has the largest gap between timely and ultimate completion rates: just 60% of children complete primary school on time, the lowest of all African Union regions, but 79% do so eventually. While girls have a seven percentage point advantage over boys in timely completion, boys have a five percentage point advantage over girls in ultimate completion. Western Africa has the second smallest gap between timely and ultimate completion rates while its completion rates have progressed constantly by one percentage point per year since 2000 without slowing down. Southern Africa, in contrast, saw its progress rate slow down by two thirds between 2000 and 2010 and 2010 to 2020: its completion rate has increased by 0.2 percentage points per year since 2010. Eastern Africa is the furthest behind with a completion rate of 62% and an ultimate completion rate of 73%.

Countries differ accordingly. In a sample of 30 countries, just 3 countries, Algeria, South Africa and Tunisia, have achieved universal primary completion. At the opposite end, in the Central African Republic and Chad, not even one in two children eventually complete primary school and fewer than one in three complete primary school on time. Although hard data are not available, it is estimated that countries such as Somalia (**Box 2.2**) and South Sudan have even lower completion rates. Countries such as the Democratic Republic of the Congo, Malawi and Uganda have a gap between the timely completion rate and the ultimate completion rate of more than 20 percentage points; the gap exceeds 30 percentage points in Guinea-Bissau and Liberia, which as described earlier, has the highest over-age attendance rates in the continent.

FIGURE 2.7

Four in five children ultimately complete primary school in Africa

Primary completion rate, Africa and African Union regions, 2000–23

a. Timely completion

b. Ultimate completion
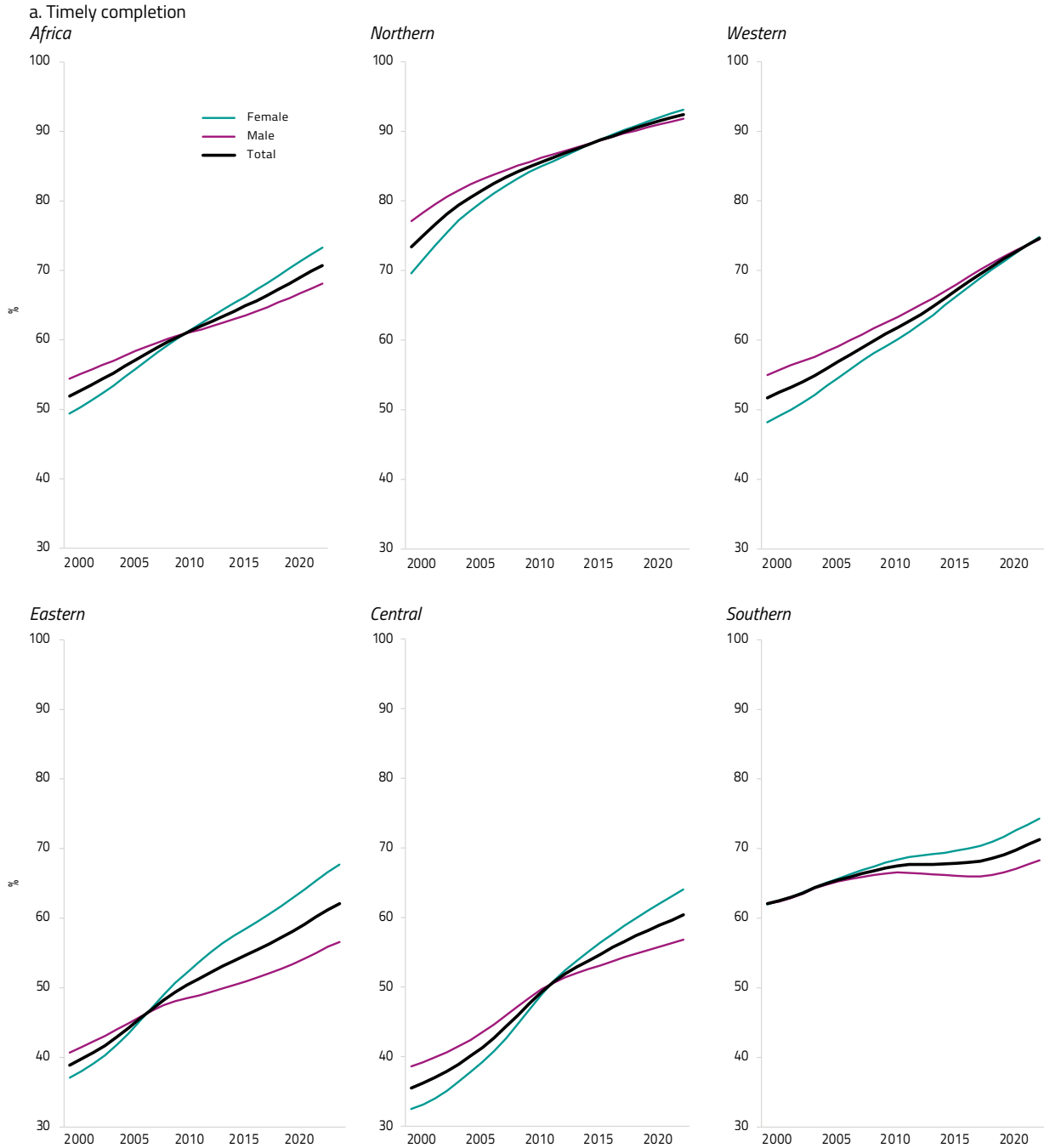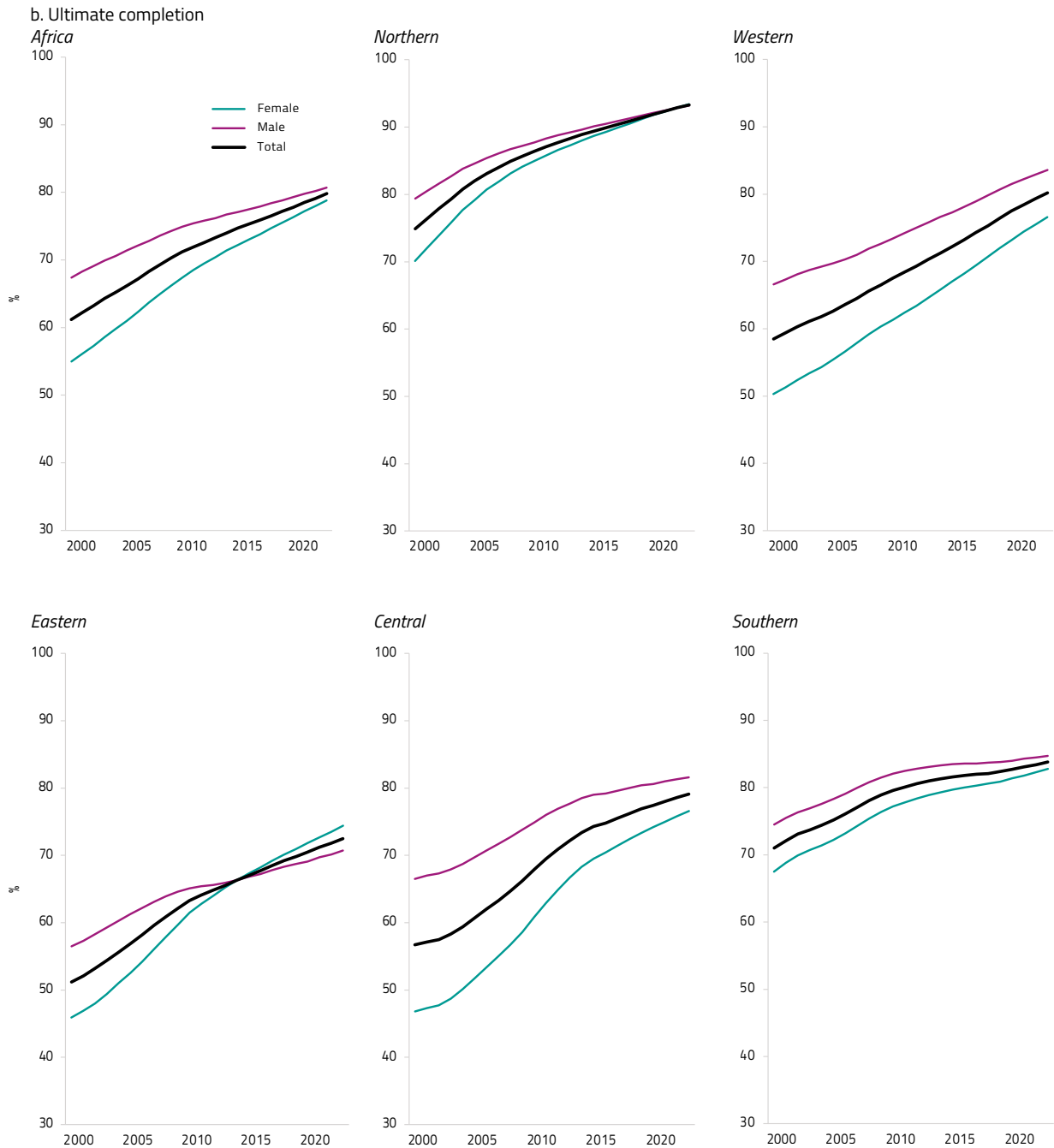
Source: GEM Report estimates.

Niger has recorded the fastest growth in 20 years, from 13% in 2000 to 63% in 2020, or 2.5 percentage points per year. Countries that have achieved an improvement of at least two percentage points per year include Burkina Faso, Sao Tome and Principe, Sierra Leone, and Togo. In contrast, countries such as Nigeria and the United Republic of Tanzania improved their completion rates by just seven percentage points in 20 years (**Figure 2.9**).

FIGURE 2.8

Completion rates have improved faster than out-of-school rates have fallen

Total net attendance and completion rates, Africa, 2000–23
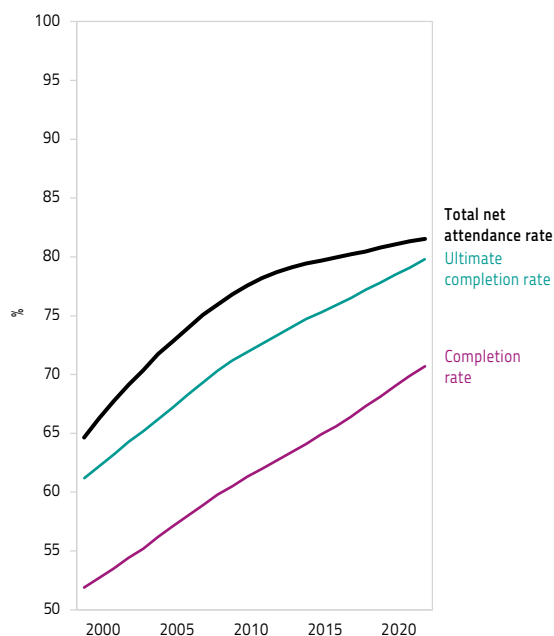
Note: The total net attendance rate is equal to 100 minus the out-of-school rate.
Source: GEM Report and UIS estimates.

FIGURE 2.9

Completion rates have improved faster than out-of-school rates have fallen

Timely and ultimate completion rates, selected countries, 2000, 2010 and 2020
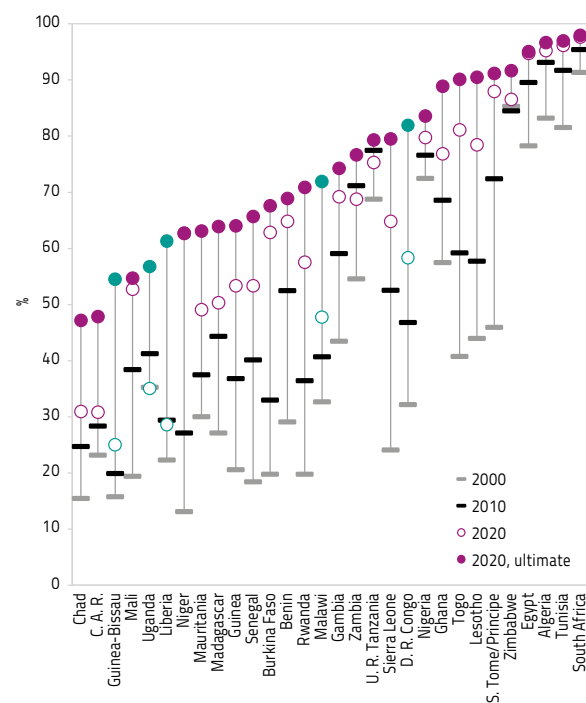
Note: Countries marked in teal have a gap of at least 20 percentage points between the ultimate and timely completion rates.
Source: GEM Report estimates.

BOX 2.2:

In Somalia, fewer than one in five children complete primary school

Somalia has suffered from three decades of state dissolution, conflict and instability, which has been compounded intermittently – and most recently – by drought and famine. Its public education system has likewise suffered a meltdown. In 2020, among primary schools, just 3% were public and 39% were private but publicly supported (Somalia Federal Government, 2022).

As the education system disintegrated, efforts to monitor education development in the country have struggled. To date, Somalia is the only African country since records began in 1970 that does not have a single data point on thematic Sustainable Development Goal (SDG) indicator 4.1.3, the gross intake rate to the last grade of primary education (which is a proxy of the primary completion rate).

The lack of a population census from which to sample a representative set of households hampers attempts to generalize findings from household surveys, especially in the context of the most extreme mix of demographic conditions: nomadic populations, rapid urbanization and some 1.1 million internally displaced people (World Bank, 2019) out of an estimated

population of 17 million. Extreme levels of insecurity make field research a high-risk activity and have resulted in some of the most vulnerable districts being excluded from many surveys. Survey questions on education have been asked in inconsistent ways, which has prevented comparisons.

Nevertheless, data from various household surveys from the last 20 years can be pieced together to draw tentative conclusions. The 2006 Multiple Indicator Cluster Survey, which was the second and last nationally representative of this family of surveys, provides a baseline. It estimated the primary net attendance rate at 23%, ranging from less than 5% among the poorest fifth and 53% among the richest fifth of households (and from 12% in rural to 41% in urban areas). The secondary net attendance rate was 7%, ranging from less than 1% among the poorest three fifths to 22% for the richest fifth of households (and from 1% in rural areas to 14% in urban areas) (UNICEF Somalia, 2006). Based on these data, the GEM Report team estimated that the primary completion rate was 24% (18% for girls) and the upper secondary completion rate was 6% (1.5% for girls) in 2006.

Two surveys, close to nationally representative, have been carried out in recent years with the somewhat improved security situation. But they provide contradictory estimates. In 2017, the second wave of the Somali High Frequency Survey suggested that the primary net attendance rate may have increased to 33%. It also estimated that the rate was lower for internally displaced people (25%) and for nomads (10%) (World Bank, 2019). But the 2018–19 Somali Health and Demographic Survey provided a more pessimistic account, suggesting that the primary net attendance rate was only 18% (20% for boys and 17% for girls). It also estimated an upper bound of the primary completion rate for girls aged 15 to 19, when it suggested that 19% had 'some levels of primary education', which suggests that there has been no education progress in the past 20 years (Somalia Directorate of National Statistics, 2020).

The latter account is also consistent with administrative data, which indicate that the net primary enrolment rate was 16% in 2020/21 (Somalia Ministry of Education Culture and Higher Education, 2021). It can, therefore, be concluded that education development has regressed since the 2006 baseline, with an estimated 13–17% of children reaching Grades 6 to 8. It is estimated that 45% of children aged 6 to 13 have never been to school (Somalia Federal Government, 2022). On the basis of this indicator, Somalia is one of the three educationally least developed countries in the world, alongside Chad and South Sudan.

A particular difficulty in assessing the education situation is that a sizeable share of children in school attend Qur'anic schools. In 2018–19, among the two in five children aged 9 in school, half were in secular and half in Qur'anic schools (Somalia Federal Government, 2022), with many children attending both systems. Despite rudimentary conditions, these Islamic schools have offered a fallback when formal schools collapse during periods of crisis, due in part to their community ownership (Mohamed-Abdi, 2003; Moyi, 2012; Somalia Federal Government, 2018). Nevertheless, they pose a challenge as they are not under the supervision of the education ministry (Somalia Ministry of Education Culture and Higher Education, 2017).

Countries also differ in terms of the typical trajectory that children follow and in terms of how their completion rates are realized in practice. In some countries, large numbers of children do not even cross the school gate. In some countries, students benefit from automatic progression. In others, many children leave school after each grade, and in yet others, they leave school in big numbers towards the end of the cycle.

For example, as described earlier, no more than 70% of children in Senegal start Grade 1, as most of the rest opt for some form of religious education outside the formal system. While only about 50% of children finish primary school on time, most of those who start Grade 1 finish primary school (about 70%). This is a considerably higher survival rate than in Burundi (about 50%) and the Central African Republic (about 30%), both of which record lower completion rates than Senegal. Children in the Central African Republic experience the steepest profile, with the dropout rate increasing at each grade, from 9% between Grades 1 and 2 to 16% between Grades 3 and 4, and 34% between Grades 5 and 6. A similar acceleration

in the dropout rate is observed in Ghana, albeit at a lower scale: the dropout rate doubles from the transition between Grades 4 and 5 to the transition between Grades 5 and 6, where it reaches 13% (**Figure 2.10**).

FIGURE 2.10

Children's probabilities of accessing school and progressing through grades vary by country

Student primary school trajectories, selected countries, 2017–19
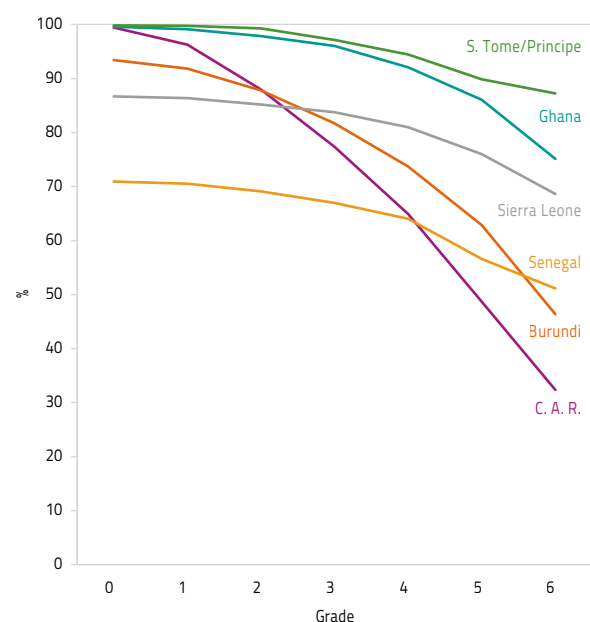
Note: The trajectories have been calculated among the cohort of 16- to 18-year-olds.
Source: GEM Report estimates.

Conclusion

Africa struggles more than the other world regions to ensure that all children go to school and complete a full primary education cycle. Out-of-school rates (18.5%) are twice the global average and the number of out-of-school children has increased from 37 million in 2012 to 41 million in 2023. After rapid progress in reducing the out-of-school rate in the 2000s, such progress almost ground to a halt in the 2010s. Moreover, the out-of-school population is underestimated, as conflict is not accounted for; for example, in countries such as Sudan and South Sudan but also in the Democratic Republic of the Congo and Ethiopia, where data collection is disrupted.

The drive to universal enrolment in the 2000s had successes but also caused bottlenecks, which manifested in high repetition rates. Part of the apparent slowdown in enrolment is, therefore, also due to the fact that fewer students repeat grades. In contrast, completion rates appear to have continued growing throughout the past 20 years at a steady pace in all regions except Southern Africa. A major challenge is that late entry to school and still high repetition rates mean that children only reach the end of the primary school cycle with considerable delay. While 71% of children complete primary within three to five years above the official graduation age, 80% eventually do so with even longer delay. This leaves one in five children who are not currently expected to finish primary school, although a universal completion target was first set to be achieved by 1980. Some countries have shown the way but there are also populous countries that have struggled to improve completion rates: Nigeria and the United Republic of Tanzania have only seen their primary completion rate improve by seven percentage points in 20 years. In the Central African Republic and Chad, fewer than half of children complete primary school; in Somalia, it is estimated that only one in five do.

3 Foundational learning outcomes

A mathematics class taking place in a primary school in Nyumba Yanga, Zambia. (CREDIT: © UNESCO GEM Report/Rooftop)

- All children are born to learn, yet only one in five achieve the minimum proficiency level expected by the end of primary school. Children learn very little in the first three years, a fact suggested by MICS, a household survey.

- There are very large data gaps on the global SDG 4 indicator on learning in the continent. Since 2021, nine countries have been able to measure the share of students meeting the global standard with a new tool, the Assessment for Minimum Proficiency Level.

- What data there is shows that, despite massive enrolment increases, learning outcomes had been rising up until COVID-19. The pandemic slowed down this trend and outcomes appear to have fallen in countries with long school closures. But traditional and non-traditional learning achievement surveys, such as citizen-led assessments, show that some countries have continued to progress.

KEY INSIGHTS

- There are trend data on learning for only one in four African students. Average annual change in learning outcomes in reading in the median African country was strongly positive at 1.26 percentage points per year, although in all but one of the African countries in this sample, less than 25% of students achieved minimum proficiency at the end of primary school.

- Among countries that took part in the latest round of the Progress in International Reading Literacy Study (PIRLS), the share of students who achieved the minimum proficiency level in reading increased in Morocco by five percentage points and fell in South Africa by three percentage points between 2016 and 2021.

- Among six countries that took part in the Assessment for Minimum Proficiency Level (AMPL) survey in 2021 and 2023, students from urban schools were at least three times as likely to read with comprehension by the end of primary school; in Burkina Faso and Lesotho, they are six times as likely.

- Evidence from the International Common Assessment of Numeracy (ICAN) citizen-led assessment of numeracy suggests that COVID-19 did not have a major negative impact on learning in Kenya and Nigeria between 2019 and 2022 but it did in Mozambique, where schools stayed closed a long time.

- Data from 18 African countries that took the Multiple Indicator Cluster Surveys (MICS) household survey module on foundational learning between 2017 and 2022 show that only 11% of children had precursor reading skills by Grade 3.

The first Spotlight report estimated that, at most, one in five children achieve the minimum proficiency level (**Box 3.1**) in reading and mathematics in Africa at the end of primary school. However, there is uncertainty due to the large data gaps on learning outcomes in Africa. Comparable information can be derived from the Program for the Analysis of Educational Systems of CONFEMEN (PASEC) survey in francophone countries, which has carried out two rounds of surveys (at Grades 2 and 6) that covered 10 countries in 2014 and 15 countries in 2019. It is currently planning a third round that is expected to

extend to 21 countries in 2024/25, including lusophone (Guinea-Bissau, Mozambique, and Sao Tome and Principe) and anglophone countries (Nigeria). But to date, there are data on learning outcome levels only for one third of students and data on learning outcome trends for only one quarter of students in Africa. While there has not been a major continent-wide update of learning data since 2019, new evidence has been generated for some countries and is reviewed in this chapter within the context of the first Spotlight report estimates (**Figure 3.1**).

FIGURE 3.1

At most, one in five students achieve minimum proficiency in reading and mathematics in Africa

Percentage of students who achieve minimum learning proficiency at the end of primary education, directly sourced and imputed values, 2013–22

a.Reading

b.Mathematics

Less than 20%
20–40%
40–60%
60–80%
Above 80%
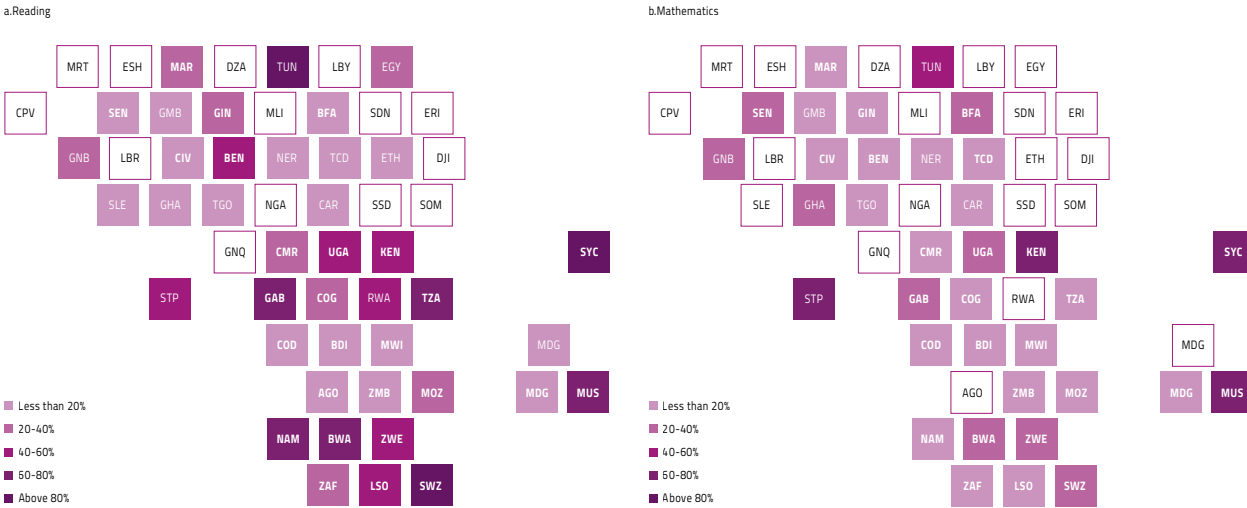
Notes: Countries are in **bold** if the data are sourced from a direct estimate and are not imputed.
Source: UIS database, complemented with data from the Monitoring Impact on Learning Outcomes (MILO), the Progress in International Reading Literacy Study and the Trends in International Mathematics and Science Study surveys and GEM Report estimates. Reproduced from the 2022 Spotlight continental report.

BOX 3.1:

What is the minimum proficiency level?

Sustainable Development Goal (SDG) global indicator 4.1.1 is meant to capture the proportion of children achieving at least a 'minimum proficiency level' (MPL) in reading and mathematics. MPLs provide important objective benchmarks for countries to measure their progress towards achieving the global education targets (**Table 3.1**).

As custodian agency of the indicator, the UNESCO Institute for Statistics (UIS) has been developing the standards that will enable countries to report on the indicator. International expert consensus defined the MPLs for each of the three points specified in the indicator: end of lower primary (4.1.1a), end of primary (4.1.1b) and end of lower secondary (4.1.1c) (Nitko, 2018). Since then, the MPLs have been the focus of a long consultative process to refine them (UIS, 2023). The Australian Council for Educational Research substantively refined the global MPLs with the concept of learning progression: a set of steps to understand what students know and can do at each level, and what they need to do to progress. It provided assessment items to illustrate these MPLs. This conceptualization provides education policymakers and practitioners with the information they need to better target student learning needs (ACER, 2019; Global Alliance to Monitor Learning, 2022).

TABLE 3.1

Expanded description of minimum proficiency levels for reading and mathematics in primary education according to SDG global indicator 4.1.1

	Reading	Mathematics
By Grade 3	In a short simple text of one or two sentences, students read aloud most words – including some unfamiliar ones – accurately but slowly and often word by word. They identify the meaning of familiar words, including when they have common morphological changes, and also some unfamiliar words. They retrieve explicit information from a single sentence. When listening to longer texts, and looking at the illustrations, students retrieve explicit information about main events, ideas or characters and use that information to draw simple inferences.	Students can read, write and compare whole numbers up to 100. They can add and subtract numbers within 20, double and halve whole numbers within 20, and solve application problems involving numbers within 20. Students can recognize simple shapes and their attributes and use these shapes to make other shapes. They can also measure and compare lengths of shapes and lines using non-standard units. They use calendars and recognize days in a week and months in a year. They can read simple data displays. They possess foundational knowledge of spatial orientation and can appraise the relative size of real-world objects.
By end of primary	In a short, simple narrative or expository text, students read aloud at a pace and a level of accuracy and expression (prosody) that demonstrate understanding. They use previously taught morphological (word-level) and contextual (sentence- or text-level) clues to understand the meaning of familiar and unfamiliar words and to distinguish between the meanings of closely related words. When reading silently or aloud, they locate explicit information in a paragraph. They use that information to make inferences about behaviours, events or feelings. They identify the main and some secondary ideas in a text if they are prominently stated and recognize common text types when the content and structure are obvious. They make basic connections between the text and their personal experience or knowledge.	Students can add and subtract whole numbers within 1,000 and demonstrate fluency with multiplication facts up to 10 x 10 and related division facts; solve simple application problems with whole numbers using the four operations; identify simple equivalent fractions; compare and order unit fractions and fractions with related denominators; identify and represent quantities using decimal notation up to the tenths place; select and use a variety of tools to measure and compare length, weight and capacity/volume; read time to the minute on an analogue clock and calculate elapsed time in minutes within and across the hour; construct data displays with data arranged into categories and single or multi-unit scales; retrieve multiple pieces of information from data displays to solve problems; recognize and name 2D shapes and familiar 3D objects by their simple attributes such as number of faces, edges and vertices for 3D shapes and number of sides and corners for 2D shapes; describe and continue number patterns that increase or decrease by a constant value from any starting point, or that increase or decrease by a constant multiplier; and apply the concept of equivalence by finding a missing value in a number sentence.

Source: Global Alliance to Monitor Learning (2022).

Further work has been required to define the MPL by the end of lower primary, beginning with reading. First, the rate of growth in learning is most rapid in the early years, with very substantial gaps between what children can be expected to have mastered at the end of Grades 2 and 3, respectively. Second, variation in practices and conditions between education systems is also most notable at this level, especially with respect to linguistic conditions. In many countries

in which the official language of instruction is not the child's first language, instruction takes place exclusively or largely in the child's home language for the first three years of school before they transition to the official language of instruction from Grade 4 onwards. Third, assessment modalities may also differ, as group assessments in the classroom, typical of higher grades, may not be ideal for younger children; individual assessments have also been administered. In reading, the objective is reading comprehension whose achievement requires foundational skills (e.g. letter naming) and two broad categories of precursor skills: aural language comprehension and decoding (**Figure 3.2**).

FIGURE 3.2

There are discrete building blocks for achieving minimum proficiency

A schematic approach to minimum proficiency in reading in Grade 3
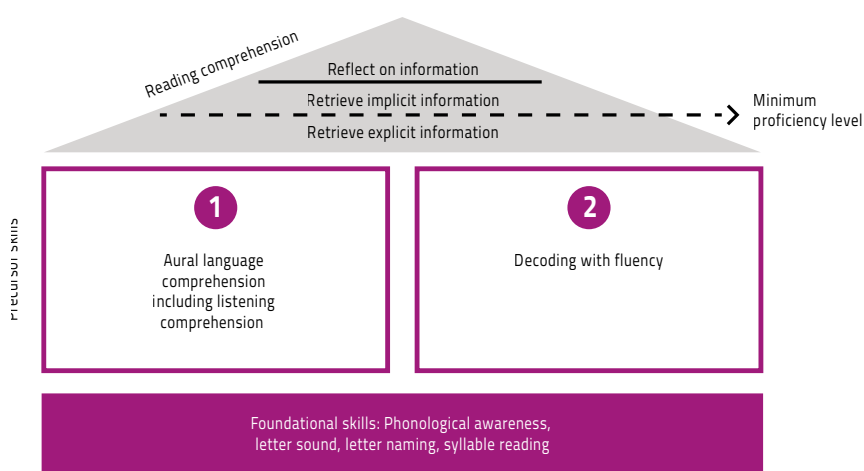
Source: Montoya (2024).

New evidence confirms previous estimates of learning levels

Learning outcome levels are very low in Africa. But contrary to what is popularly argued, there is little evidence that there is a crisis, as argued in Chapter 1 with reference to historic measures. The most recent figures, covering the period 2011–21, also suggest that there has been an increasing share of students in African countries who achieve minimum proficiency in reading at the end

of primary school, despite very high levels of enrolment growth, as shown in Chapter 2. That achievement in itself suggests that the common perception that education expansion tends to be associated with worsening learning outcomes does not necessarily hold. Although the number of countries with relevant data is limited, the average annual change in the share of students who achieve minimum proficiency in reading at the end of primary school in the median high-income country was slightly negative (-0.07 percentage point per year), while it was strongly positive in the median African country (1.26 percentage points per year), each one of which was low- and lower-middle-income in this sample. At the same time, at least 75% of students in the median

high-income country achieved minimum proficiency, while less than 25% of students did so in the median African country (and often much less than that) (**Figure 3.3**).

As the data confirm that low learning levels do not equate to negative learning trends, the term learning 'crisis' should be preferably avoided in describing Africa. First, it is factually incorrect. Second, it is insensitive to the unique mix of conditions that African countries inherited, which have left a legacy of conflict, poverty and borders that cut across its linguistic communities, raising barriers to teaching in children's home language. Third, it discounts cases of a real crisis like the one that hit not only Africa but almost every country: COVID-19. Three sources – PIRLS, AMPL and ICAN – yield some, albeit partial, insights into the potential impact of the pandemic in Africa.

FIGURE 3.3

Reading proficiency levels improved faster in Africa than in the rest of the world

Average annual change in percentage points in the share of students who achieved a minimum level of proficiency in reading at the end of primary education, by starting point, Africa and rest of the world by country income group, 2011–21
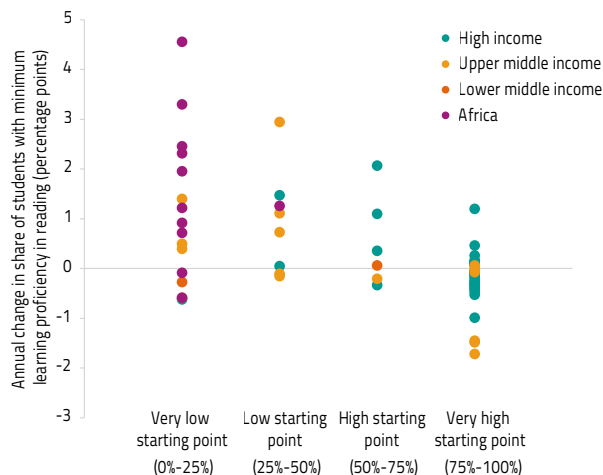
Source: GEM Report team analysis using cross-national assessment data.

PIRLS PROVIDES UPDATES ON LEARNING IN EGYPT, MOROCCO AND SOUTH AFRICA

The Progress in International Reading Literacy Study is one of the best established international assessment programmes, and has focused on Grade 4 students in five-year cycles since 2001. Although pitched at measuring learning in high-income countries and at levels of proficiency above the minimum, it has been taken up by some middle-income countries. In Africa, Egypt, Morocco and South Africa participated in the 2021 round, which was organized after the main wave of school closures. The backgrounds of students in these three countries differ from those of their peers in the average country participating in PIRLS in terms of their income but also of their reading cultures. For instance, across the survey, whereas parents of 42% of students in the survey reported they had 'often' engaged their children in 9 early literacy activities before primary school, the respective shares were 27% in Egypt, 13% in Morocco and 38% in South Africa. And while 30% of parents in the survey reported they liked reading 'very much', only 14% in Egypt, 20% in Morocco and 24% in South Africa reported the same (Mullis et al., 2021).

Egypt had also taken part in 2016. Morocco has participated in each of the five rounds since 2001, although it administered the 2021 PIRLS six months after the original assessment window to Grade 5 students at the beginning of the 2021/22 school year. South Africa had also taken part in the 2006 round, while it administered the 2021 PIRLS one year after the original assessment window to Grade 4 students at the end of the 2021/22 school year. The timing of the administration partially reflects what is known about the patterns of school closures. According to UNESCO, between March 2020 and October 2021, schools were fully open 59% of the time in Egypt, 49% in Morocco and 26% in South Africa. In principle, these variations in the administration pose some challenges to comparability (Mullis et al., 2021).

Yet some of the results are less predictable than expected, for reasons unrelated to the timing of

administration and the age of participants (**Figure 3.4a**). The administration of the 2021 PIRLS in Egypt was, in principle, not affected by the pandemic. The percentage of children reaching the MPL increased by 14 percentage points, from 31% in 2016 to 45% in 2021, a jump of about 2.7 percentage points per year. This is very large but within the range of past improvements observed. Yet disaggregating the results by population group reveals a progress rate for students in rural areas that is excessively high by any international standard (from 24% to 45%) and a near stagnation in urban areas (from 41% to 43%). This casts doubts on the results' validity.

In Morocco, comparability is somewhat hampered by the fact that the test was administered later than planned; therefore, students who took the test were six months older than their peers in 2016. This fact may partly explain why the share of students reaching the MPL increased by 5 percentage points, from 36% to 41%. However, it is also important to note that this progress immediately follows a faster progress rate between 2011 and 2016 (from 21% to 36%). The overall pattern of improvement also broadly follows international patterns. For example, the gender gap at the expense of boys increased from 7 percentage points in 2011, to 9 in 2016 and 13 in 2021 (47% for girls and 34% for boys). In contrast, the gap was halved in Egypt from nine percentage points in 2016 to five in 2021 (47% for girls and 42% for boys).

FIGURE 3.4

COVID-19 affected Grade 4 students' reading scores in South Africa but not in Egypt and Morocco

Percentage of students who achieve minimum learning proficiency in reading at Grade 4, Egypt, Morocco and South Africa, 2011–21

a. By sex and location

b. By socioeconomic background
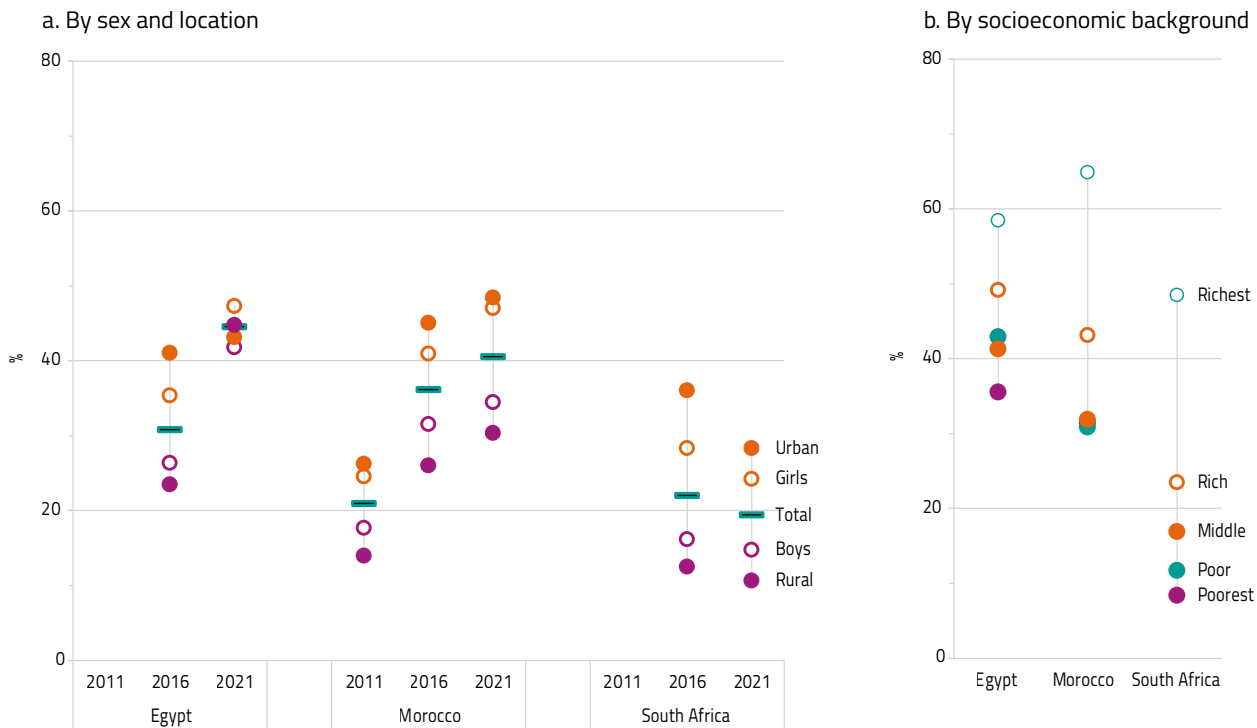
Notes: Morocco administered the 2021 Progress in International Reading Literacy Study (PIRLS) six months after the original assessment window to Grade 5 students at the beginning of the 2021/22 school year. South Africa administered the 2021 PIRLS one year after the original assessment window to Grade 4 students at the end of the 2021/22 school year.
Source: GEM Report team analysis using 2021 PIRLS data.

In South Africa, reading performance was the lowest among the 58 participating education systems. Even though the children assessed were already Grade 5 students, the share of those who achieved the MPL fell from 22% in 2016 to 19% in 2021. Unlike in most countries, it is possible to triangulate the results. An assessment in Western Cape in 2021 using the province's systemic test had found a decline in the percentage of students achieving the MPL (van der Berg et al., 2022). Projecting these results to the national level would have been equivalent to a decline from 22% to 18% (2030 Reading Panel, 2023), which means that the 2021 PIRLS results captured the situation in the country.

There are large urban-rural gaps in Morocco and South Africa. When the analysis shifts to socioeconomic status, the gap widens. In Morocco, just under one third of students from the poorest 60% of households achieve the MPL, compared to two thirds of their peers from the richest 20% of households. In South Africa the gap is even wider, with the richest 20% being six times as likely to achieve the MPL (49%) as the poorest 20% (8%) (**Figure 3.4b**).

The high quality of the 2021 PIRLS data allows a closer look at the causes of differences in student performance. The relationship between reading performance and school socioeconomic status is not only steeper than the relationship between reading performance and student socioeconomic status, but also stronger (**Figure 3.5**).

There is a positive relationship between school socioeconomic status and school performance, although the strength of this relationship varies by country: the share of variation in school performance explained by the variation in school socioeconomic status is around 10% in Egypt and Morocco, but up to 50% in South Africa, where children from privileged backgrounds tend to be concentrated in the same schools and perform better, possibly because they enjoy better learning conditions, such as smaller classes, better infrastructure and more qualified teachers. An increase of one standard deviation in the school socioeconomic status index is associated with 18 more points on the PIRLS scale in Egypt, 27 points in Morocco and 73 points in South Africa, which is equivalent to about two years of learning.

Comparatively, introducing the student socioeconomic status explains little of the variation in performance. In all three countries, the within-school gradient is relatively flat (green line) and the association is weak. An increase of one standard deviation in student socioeconomic status is associated with a higher score by 16 points in Egypt, 10 points in Morocco and 14 points in South Africa.

FIGURE 3.5

The school students go to matters a lot to their reading results in South Africa

Relationship between student performance in reading and students' and schools' socioeconomic status, 2021

Relationship between student performance and:
- - - Student socioeconomic status   - - - Student socioeconomic status within schools   —— Student socioeconomic status between schools
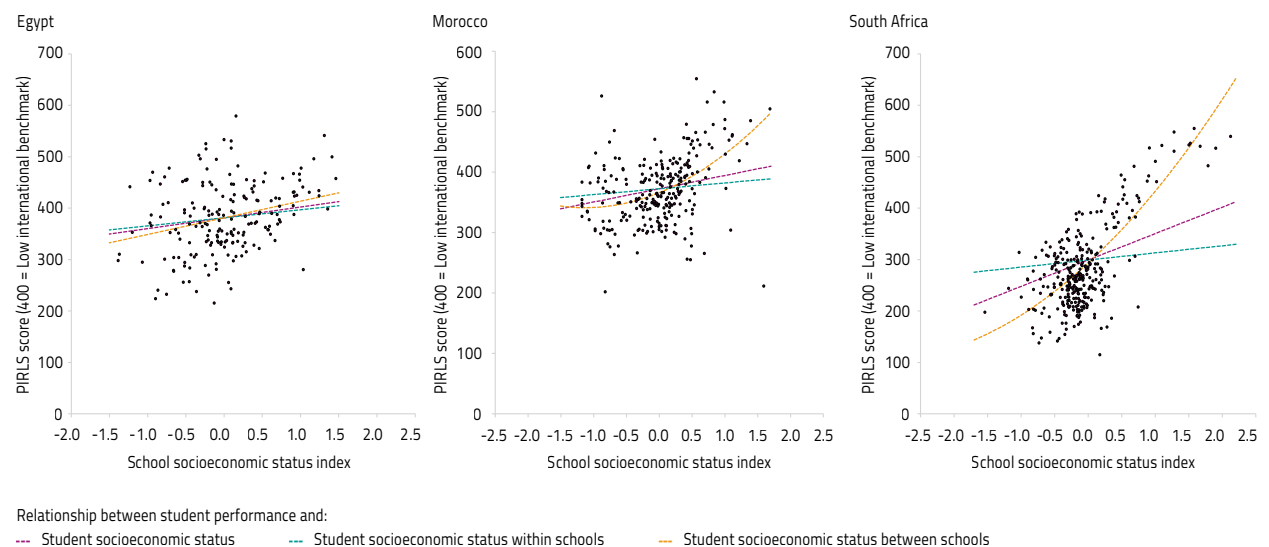
Source: GEM Report team analysis using 2021 PIRLS data.

An analysis of variance shows that in Egypt and South Africa, roughly 60% of the variance is within schools and 40% is between schools, while in Morocco almost 80% of the variance is within schools and 25% is between schools. This could mean that schools in Egypt and South Africa are less inclusive than in Morocco, in the sense that students who perform at a higher level are concentrated in the same schools, most likely because families of higher socioeconomic background are able to choose their children's school.

THE AMPL HAS BEEN A NEW SOURCE OF EVIDENCE ON LEARNING IN AFRICA

Well-established cross-national assessments, such as PIRLS, have been created in high-income countries that already have relevant capacity to measure learning and have developed their own national assessments. The countries sought tools to complement analyses with comparable information with which to design cross-national assessments at an appropriate cost. Some middle-income countries have invested in their participation in such assessments. But the cost is prohibitive for most countries. Moreover, even students in middle-income countries such as Egypt, Morocco and South Africa tend to score well below the countries that helped set up the assessment.

While there are some exceptions, middle-, and especially low-income countries, lack sufficient capacity to develop their own, robust national assessment mechanisms. To address this challenge, the UIS has developed the Assessment for Minimum Proficiency Level to help poorer countries preserve the integrity of their national assessment framework, if available; develop their national assessment development skills; and enable them to produce internationally comparable data to report on SDG global indicator 4.1.1, within their capacity and budget.

The AMPL has been developed in two stages. The first stage in 2021 was part of the MILO project, which aimed to evaluate the impact of COVID-19 on learning outcomes. It was administered in English and French at the end of primary education in six African countries (Burundi, Burkina Faso, Côte d'Ivoire, Kenya, Senegal and Zambia). The second stage has been ongoing since 2023 in various world regions. In Africa, Gambia and Zambia administered the AMPL to assess learning at the end of lower primary education while Kenya, Lesotho and Zambia administered it at the end of primary education. Each country sampled between 220 and 300 schools with between 4,000 and 6,500 students (**Table 3.2**).

Selected results from six of the countries that administered the AMPL at the end of primary education in 2021 and 2023 show that only about 1 in 10 students reached the MPL in reading, except in Kenya where 1 in 4 students did. In contrast, with the exception of Côte d'Ivoire, a larger proportion of students achieved the MPL in mathematics: 16% in Zambia, 20% in Lesotho, 24% in Burkina Faso, 34% in Senegal and 37% in Kenya.

Gender gaps differ by subject. In mathematics, there is parity in four of the six countries; in reading, girls have an advantage, although at the observed low levels of learning, the differences do not exceed three percentage points. Burkina Faso is the only of the six countries where girls lag behind boys in both subjects, although only in mathematics is the gap (four percentage points) noticeable.

In contrast, the urban-rural gaps are very large. In reading, no more than 5% of students from rural schools achieve the MPL in five of the six countries. In all countries, students from urban schools are at least three times as likely to read with comprehension; in Burkina Faso and Lesotho, they are six times as likely. In mathematics, the urban-rural gap is 7 percentage points in Côte d'Ivoire; 16 percentage points in Burkina Faso, Senegal and Zambia; and 22 percentage points in Kenya and Lesotho. In Kenya, students in urban schools are the only population group where the majority, 51%, have achieved minimum proficiency (**Figure 3.6**).

TABLE 3.2

Basic information on the administration of the AMPL, by country, 2021 and 2023

Country	Implementing agency	Grade	Sample	
			Schools	Students
2021				
Burkina Faso	Ministry of National Education, Literacy and Promotion of National Languages	6	289	5,684
Burundi	Ministry of National Education and Scientific Research	6	252	4,993
Côte d'Ivoire	Ministry of National Education and Literacy	6	250	4,867
Kenya	Kenya National Examinations Council	7	265	6,417
Senegal	Ministry of National Education	6	247	4,675
Zambia	Examinations Council of Zambia	5	252	4,954
2023				
Gambia	Ministry of Basic and Secondary Education	3	220	4,345
Kenya	Kenya National Examinations Council	6	250	5,566
Lesotho	Examinations Council of Lesotho	7	219	4,014
Zambia	Examinations Council of Zambia	4	250	4,953
		7	250	4,888

FIGURE 3.6

By the end of primary school, only about 1 in 10 children read with comprehension in poorer African countries

Percentage of students who achieve minimum learning proficiency in mathematics and reading at the end of primary school, by sex and location, selected African countries, 2021–23
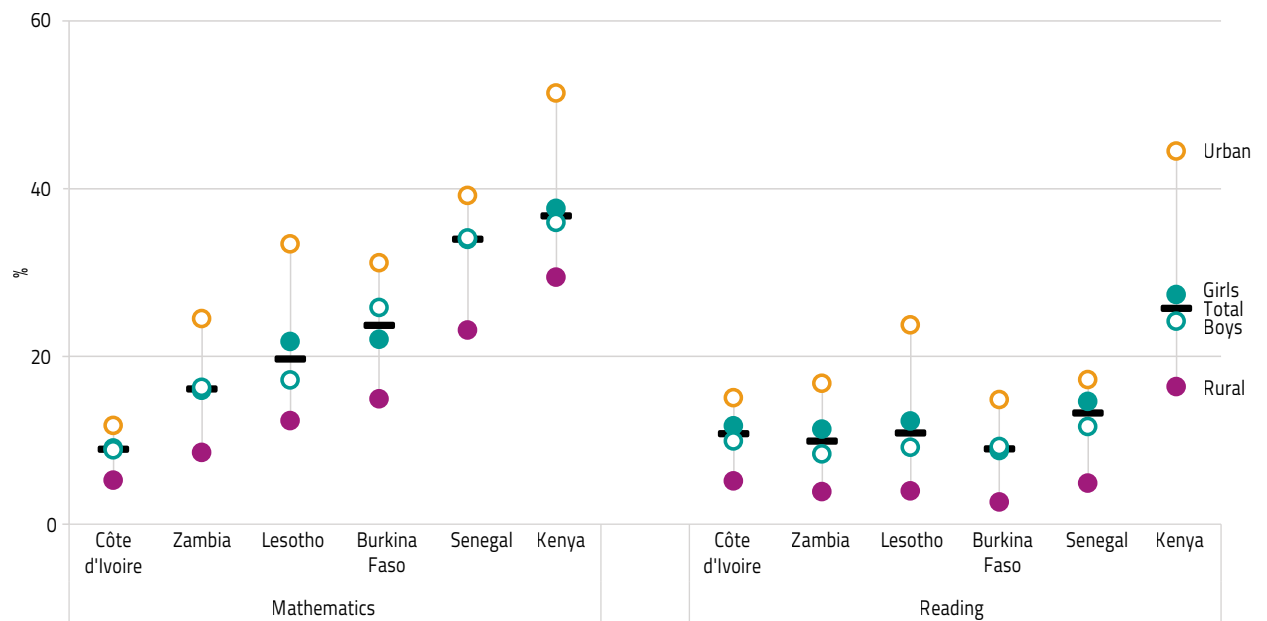
Source: GEM Report team analysis using data from the 2021 and 2023 Assessment for Minimum Proficiency Level.

Several household contextual factors influence student performance in addition to school location. A standard measure, the 'effect size' quantifies differences in learning outcomes between two groups and provides a common metric with which to compare the strength of these factors' association with learning. For instance, an effect size of 0.5 indicates that a student located at the 50th percentile of the score distribution among students with the privileged characteristic would be ranked at the 69th percentile of the score distribution among students without that characteristic.

When the language spoken at home is the same as the official language of instruction, in which the AMPL test was administered, students perform better. Students who have at least one literate parent score higher on average than students whose parents are both illiterate. In Kenya, fewer than 4% of students do not have at least one literate parent. This share is around 10% in Senegal and as high as 35% in Burkina Faso. An index of home support was derived from a student questionnaire indicating how often parents helped with reading and mathematics activities, asked questions about what the student is learning, and monitored schoolwork. In every country, students from the top 25% of this index scored higher than students from the bottom 25%. Wealth, computed based on a list of household possessions, was consistently and highly associated with higher proficiency levels. Effect sizes tend to be higher in reading than in mathematics, as the examples of in Kenya and Senegal show (**Figure 3.7**).

The AMPL data collected in six countries in 2021 were contrasted with comparable assessments that these countries had carried out in 2019 (and in 2016 in the case of Zambia) (UIS, 2022). Results were somewhat mixed by country and by subject but overall there was evidence of stability in Côte d'Ivoire and Senegal, uncertainty due to low scores in Burundi and Zambia, improvement in Burkina Faso, and decline in Kenya (in mathematics), which was the country with the longest school closures during the pandemic. However, evidence from a citizen-led assessment of numeracy in one Kenyan district casts some doubt even on this apparent decline (**Box 3.2**).

Overall, by combining the evidence from PIRLS, MILO and the citizen-led assessments, it is suggested, for the time being and until the third wave of PASEC is carried out, that any negative impact does not appear to have been at the level originally suggested. Nevertheless, as argued earlier in the chapter, Africa was likely experiencing a positive trend in learning outcomes prior to the pandemic. In light of that, stagnation can count as a negative impact.

FIGURE 3.7

Receiving support in a wealthy home where English or French is spoken makes a big difference for learning

Effect size of selected factors on learning outcomes, by subject, Kenya and Senegal, 2021–23
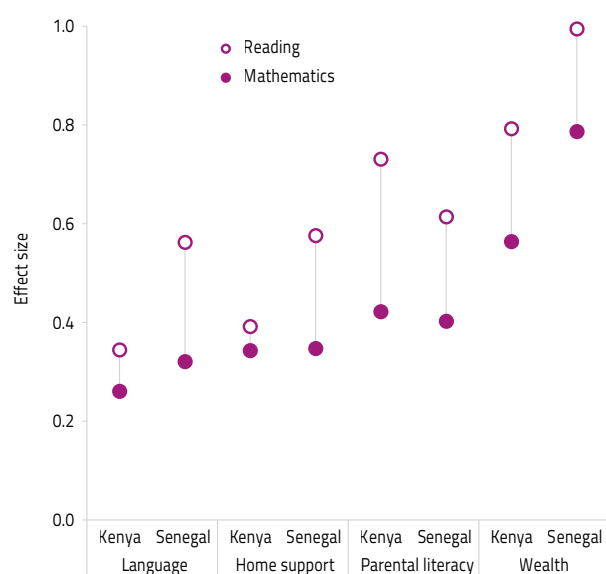
Notes: Language indicates that English (Kenya) or French (Senegal) is spoken at home. Parental literacy indicates that at least one parent can read and write. Home support and wealth are indices based on a series of questions – students from the top and the bottom quartile of each index are being compared.
Source: GEM Report team analysis using data from the 2021 and 2023 Assessment for Minimum Proficiency Level.

BOX 3.2:

Citizen-led assessments suggest that COVID-19 may not have lowered learning achievement

The People's Action for Learning Network originated in the mid-2000s when the first assessment of children's learning as part of a household survey was administered by a non-governmental organization in India. This citizen-led initiative was subsequently followed by similar ones in other parts of South Asia, eastern Africa, western Africa and Latin America. This led various organizations to realize they could amplify their advocacy and strengthen their capacity by collaborating.

The People's Action for Learning Network decided it would be strategic to develop comparable tools, the first of which was the International Common Assessment of Numeracy, launched in 2019. The ICAN tool expanded the content beyond what was being typically measured in citizen-led assessments. It contains 26 items. Half of them test the child's number knowledge, such as counting, number of objects comparisons, number recognition, operations (without and with carry-over, borrow and remainder) and solving real-world problems. The other half includes questions on geometry, measurement and data display domains.

The tool underwent a rigorous psychometric evaluation by the Australian Council for Educational Research, which analysed the underlying dimensionality of the assessment, differential item functioning across demographic characteristics and item combinations, item response theory information and difficulty parameters, and qualitative analyses. A common approach to developing the item bank and data processing and analysis is another advance. ICAN is conducted orally and one-on-one with 5- to 16-year-old children in households by trained citizen volunteers. The tool has been adapted to five languages used in Africa.

FIGURE 3.8

COVID-19 school closures appear to have affected Mozambique but not Kenya and Nigeria

Percentage of students who achieved minimum learning proficiency for Grade 3 in mathematics, by grade attended, selected districts in Kenya, Mozambique and Nigeria, 2019 and 2022
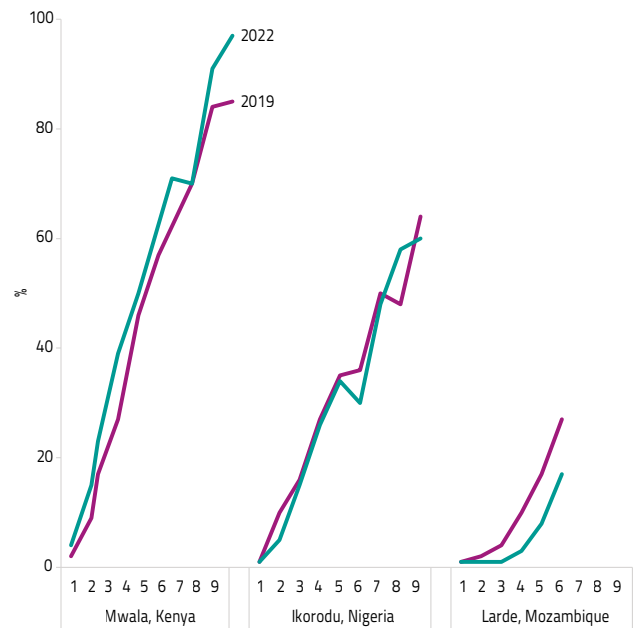
Source: PAL Network (2023).
Sources: The box is based on PAL Network (2023; 2024).

ICAN was piloted in one district in 13 countries globally in 2019, while a follow-up was carried out in 7 countries in 2022, including one district each in Kenya, Mozambique and Nigeria, covering 546 rural communities. While not necessarily representative, they contribute precious evidence to assess the impact of COVID-19. In Mozambique, where schools stayed closed the longest and children returned to school in shorter shifts, COVID-19 resulted in a negative impact, albeit on learning levels that were very low. In fact, late enrolment in the sampled district meant that there was not a large enough sample of children attending Grades 7 to 9. In Nigeria, where about two thirds of Grade 9 students had achieved the Grade 3 minimum proficiency level and in Kenya where almost all Grade 9 students had achieved that level, COVID-19 did not appear to have had any impact. If anything, in Kenya, students seemed to have significantly improved compared to the learning achievement of their peers three years earlier (**Figure 3.8**).

Household surveys show that children acquire foundational skills too slowly

Household surveys, an invaluable source of information for a wide range of development outcomes, are being challenged as a result of declining response rates. Their value has also been problematic: more and more questions are added leading to respondent fatigue, which risks contributing to lower data quality (Carletto et al., 2022).

An addition to household surveys has been the introduction by UNICEF of a foundational learning module in its Multiple Indicator Cluster Surveys programme. Questions are administered to a sample of 7- to 14-year-olds who may or may not be in school. Children with foundational reading skills are defined as those able to correctly read 90% of words in a short story and correctly answer three literal and two inferential questions. Children with foundational numeracy skills are defined as those able to correctly answer a number reading task, a number discrimination task, an addition task and a pattern recognition task. The definition of foundational learning does not correspond to the MPL, as a larger number of test items would need to be administered than is possible in the time enumerators can spend when visiting a household. But the MICS captures some of the skills mentioned in the first section of this chapter (see Figure 3.2). These offer valuable insights, for example on disparity by individual characteristics and on the evolution of the share of children who eventually demonstrate an ability to carry out these tasks as they move up grades.

The percentage of those who can achieve the tasks in the module by Grade 3 is very low in the 18 African countries where the module has been administered since 2017. In the median country, just 11% of Grade 3 students met the MICS definition of foundational reading skills. Only in Tunisia did half of the students achieve that level. Moreover, not even half of students have foundational reading skills by Grade 6. Even in Tunisia, one in five

students do not demonstrate such skills at the end of primary school (**Figure 3.9**). The same results were broadly found with respect to foundational numeracy skills.

One of the latest surveys whose results have been released is the 2021 MICS on Nigeria. The results show vast disparities. In 16 out of the 37 states, no more than 1 in 5 children aged 7 to 14 achieve foundational literacy and numeracy skills; in Jigawa state, practically no child does. In contrast, in Lagos state, more than four in five children in that age group demonstrate both these sets of foundational skills (**Figure 3.10a**). While 4% of children in the poorest quintile of households have foundational reading skills, 67% of children in the richest quintile do. Another dimension is ethnicity. Compared to Malawi, where all ethnic groups have the same level of reading skills, in Nigeria, just 6% of the Fulani and 10% of the Kanuri have foundational literacy skills, compared to 57% of the Edo and 58% of the Igbo (**Figure 3.10b**).

FIGURE 3.9

By Grade 3, the vast majority of African children do not have foundational skills, let alone a minimum proficiency level in reading

Percentage of students with foundational reading skills, Grades 3 and 6, MICS, 2017–22
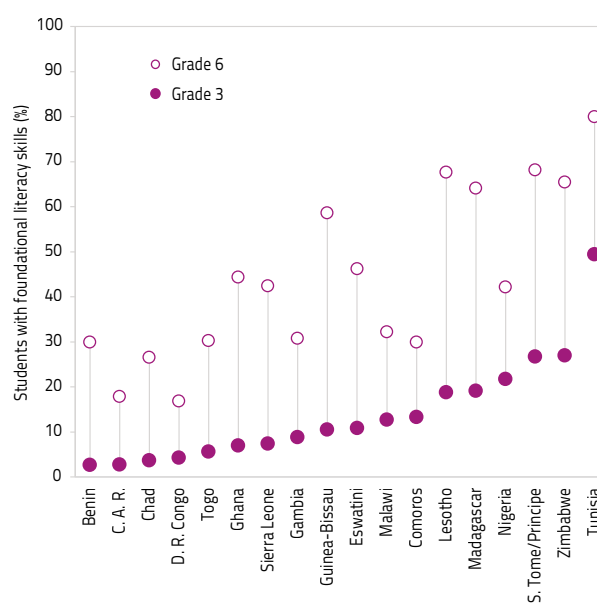
Source: Multiple Indicator Cluster Survey Findings reports.

FIGURE 3.10

Nigeria has large disparity in foundational learning skills

a. Percentage of 7- to 14-year-olds with foundational literacy and numeracy skills, Nigeria, by state, 2021
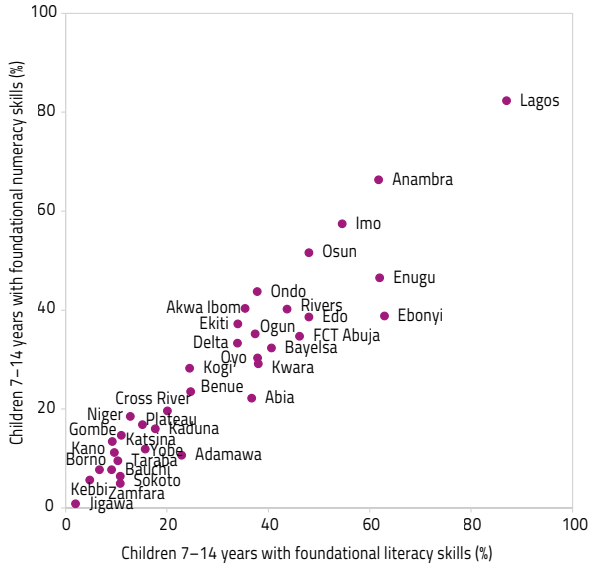
b. Percentage of 7- to 14-year-olds with foundational literacy skills, Malawi and Nigeria, by ethnicity, 2020–21
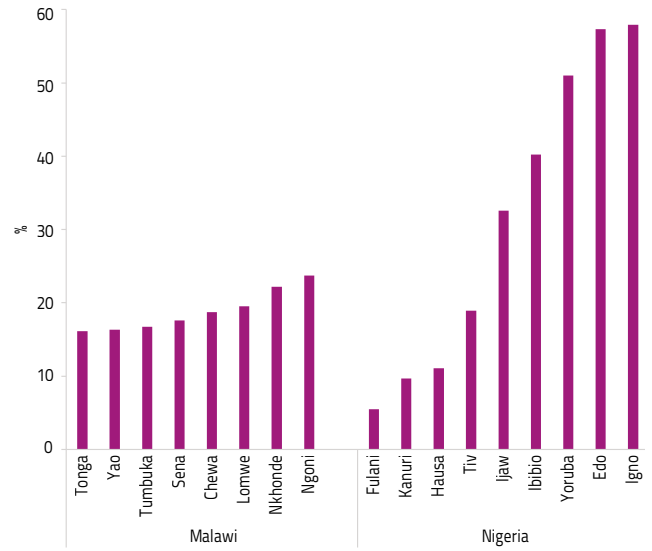
Source: Multiple Indicator Cluster Survey Findings reports.

FIGURE 3.11

In Eswatini, English is the language of urban and richer populations

Percentage of 7- to 14-year-olds with foundational reading skills in siSwati and English, Eswatini, 2021/22

a. By grade attended
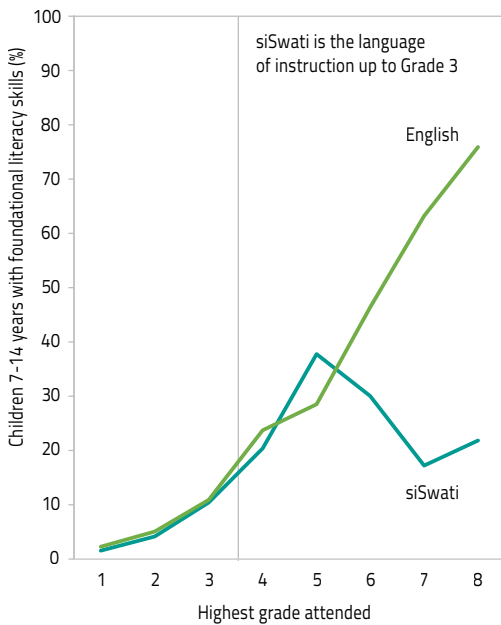
b. By location and wealth
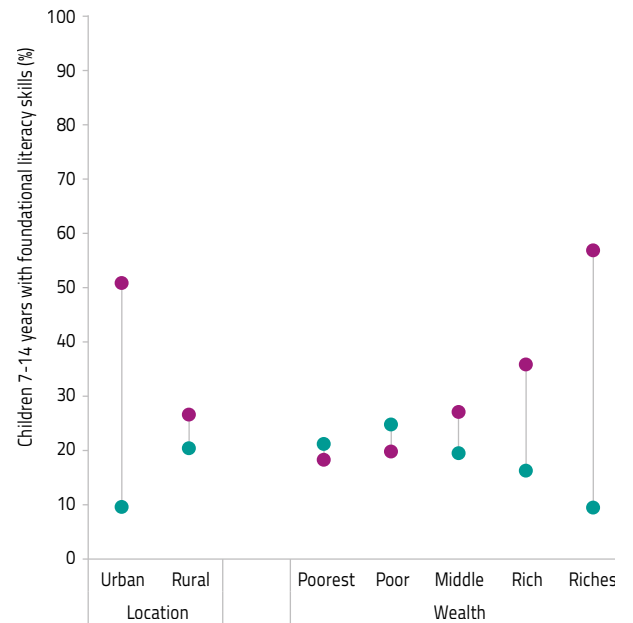
Source: 2021–2022 Eswatini Multiple Indicator Cluster Survey Findings report.

The administration of the foundational reading module in the 2021/22 MICS in Eswatini in both siSwati and English allows exploring the demographic dimensions of the language of instruction issue. Scholars have pointed out that language of instruction policies developed in the 2010s have not been implemented in practice, as social pressures associated with the use of English makes teachers reluctant to use siSwati (Dlamini and Ferreira-Meyers, 2023; Mordaunt and Williams, 2022). The data reveal that foundational reading skills in siSwati grow at the same rate up until the last grade of primary school but then decline for siSwati speakers (**Figure 3.11a**). There are also reverse urban-rural and wealth gaps: more rural than urban children – and more poor than rich children – have foundational reading skills in siSwati (**Figure 3.11b**).

Conclusion

There is a dearth of comparable data on learning achievement to track progress on SDG global indicator 4.1.1 in Africa. Most knowledge on learning in Africa comes from the PASEC study in francophone countries, whose last round took place in 2019. The results of the upcoming round in 2024/25 are not expected to be made public before 2026. The evidence that was gathered for the first Spotlight continental report suggested that at most one in five children can read with understanding and have acquired mathematical literacy.

Fragments of more recent evidence, for example from three countries that took part in the 2021 PIRLS assessment (Egypt, Morocco and South Africa) and the eight countries that took part in the 2021 and 2023 AMPL surveys (Burundi, Burkina Faso, Côte d'Ivoire, Gambia, Kenya, Lesotho, Senegal and Zambia) broadly confirm this conclusion. Various sources of information were compiled to examine the association of individual characteristics with learning achievement, including sex, location, wealth, ethnicity, home support and language of instruction.

With some exceptions, such as South Africa and possibly Kenya, one reading of the findings is that COVID-19 may not have had as negative an impact on learning as originally expected. This conclusion is also supplemented by partial evidence from the ICAN citizen-led assessment in selected districts of three countries (Kenya, Mozambique and Nigeria). However, evidence that learning levels have stagnated in some countries may be an indication that COVID-19 prevented learning outcomes from continuing an earlier increasing trend.

4 Teaching and learning

Akongo Agnes, 37, a primary school teacher at Morulem Girls' Primary School in Abim district engaging Primary One B (P.1 B) pupils in a singing and dancing period during her class - the lesson involved singing and dancing to songs in their local language. Agnes is one of those that received training on how to practice play-based learning with pupils between the ages of 4 and 5 as well as use child-centred methods of learning. (CREDIT: © UNICEF/UNI520922/Tibaweswa)

- The alignment between the mathematics curriculum, textbooks, teacher guides and assessments was examined in five countries. Misalignment was observed for several reasons, including lags in the production of teaching and learning materials after a new curriculum had been developed.

- These documents were also assessed in terms of their alignment with global standards and were found to depart from what students are globally expected to know and by when.

- Assessments often cover a different set of competencies from those outlined in the curriculum, particularly at the end of primary, where an examination culture prevails and the level of cognitive difficulty increases.

- Home language instruction is critical and many countries develop bilingual or multilingual policies for the first few years of primary, but their implementation is hampered by a lack of teacher training and materials in these relevant languages.

KEY INSIGHTS

- In lower primary, Mauritania devotes 150 hours and Uganda, 306 hours, to mathematics. At the end of primary, South Africa dedicates up to 90 more hours of mathematics instruction than the other four countries.

- Of the five countries analysed only South Africa and Zambia contain guidance for teaching students who are falling behind.

- Textbooks and teacher guides may not be fully aligned with the curriculum. In Mauritania, algebra is missing from the lower primary curriculum, while it is covered in textbooks and teacher guides. In Niger, textbooks and teacher guides include statistics and probability but the curriculum does not....

- Almost one third of children in 14 countries are taught in a language they do not speak at home. Yet over half of countries on the continent have adopted bilingual or multilingual education policies, of which 23 call for a shift to the second language before grade 5.

> " *Availability of textbooks is a concern in many schools. Students need access to up-to-date materials to support their learning* "
>
> Director of Primary Education, Zambia

The education literature distinguishes between different facets of the curriculum. First, the intended curriculum embodies a country's overarching educational vision. It states what students should learn and be able to do and is usually expressed in learning goals and objectives. Second, the written curriculum consists of official documents such as textbooks and teacher guides that outline what students are expected to learn. It serves as a blueprint for teachers to deliver instruction according to the intended curriculum and can therefore be considered as the potentially implemented curriculum. Third, the assessed curriculum refers to the knowledge, skills and competencies evaluated through formal assessments and examinations. Finally, the implemented, or enacted, curriculum corresponds to the actual instructional practices delivered in the classroom and the resulting learning experiences.

The various guiding documents and practices need to be aligned to ensure that there is a clear sense of purpose in delivering education. This chapter focuses on how these documents are aligned in three ways: with each other; with reference to the minimum proficiency descriptors of the Global Proficiency Framework (**Box 4.1**) (content alignment); and with their application in the classroom (pedagogical and cognitive alignment).

BOX 4.1:

The Global Proficiency Framework can be used as a reference for analysing how key education documents are aligned

The Global Proficiency Framework (GPF) for Reading (USAID and UIS, 2020a) and for Mathematics (USAID and UIS, 2020b) describe learners' performance at four proficiency levels (including minimum proficiency), by grade level for each skill. They were developed, initially, for Grades 2 to 6 and eventually for Grades 1 to 9. Draft versions were field tested in countries including Djibouti, Gambia, Ghana, Madagascar, Malawi, Nigeria and Senegal in 2019/20.

The GPF refers to learning areas, domains, constructs and descriptors. For example, there are three domains in the learning area of reading (aural language comprehension, aural language decoding and reading comprehension) while there are five in the mathematics learning area (number and operations, measurement, geometry, statistics and probability, and algebra). Each domain contains several constructs. For example, the algebra domain includes the constructs of patterns, expressions, and relations and functions (**Table 4.1**). The descriptors refer to the skills, knowledge and understanding that apply to each level of proficiency. In brief, the learning areas, domains and constructs apply across a continuum of learning, while the descriptors apply to a specific part of the continuum.

For reference, the descriptors of the minimum proficiency level for each knowledge and skill in mathematics at Grade 3 are presented at the end of the chapter (**Table 4.4**). Note that Grade 2 in the GPF has been determined as linking most closely to SDG indicator 4.1.1a (Watson, 2023). The GPF offers a lens to evaluate the alignment of national standards, curricula, assessments, teacher support, textbooks and pedagogical practices, an opportunity that is used in this chapter.

TABLE 4.1

Constructs by mathematics domain according to the Global Proficiency Framework

Domain	Construct
Number and operations	Whole numbers Fractions Decimals Integers Exponents and roots Operations across number
Measurement	Length, weight, capacity, volume, area and perimeter Time Money
Geometry	Properties of shapes and figures Spatial visualizations Position and direction
Statistics and probability	Data management Chance and probability
Algebra	Patterns Expressions Relations and functions

Source: USAID and UIS ([2020b](#)).

Domain coverage in mathematics curricula differs between countries

An official curriculum outlines what pupils are expected to know and do. It communicates a vision of what they are expected to learn, how they are supposed to learn it and the amount of time to be dedicated to learning activities (**Box 4.2**). Ideally, the curriculum sets measurable learning outcomes at each grade level, against which teachers and the wider system can measure progress.

As part of the research for this report, the national curriculum in each focus country was mapped against the competencies listed in the GPF for two grades: one grade at the end of lower primary (Grade 3 in Niger, South Africa, Uganda and Zambia and Grade 4 in Mauritania) and the last grade of primary (Grade 6 in Niger, Mauritania and South Africa and Grade 7 in Uganda and Zambia). The mapping generated a list of

competencies at the end of lower primary and the end of primary expected to be addressed in textbooks and teacher guides, as well as in national assessment frameworks and corresponding assessment items.

This mapping analysis explores the breadth and depth of mathematics instruction in the five focus countries. The breadth corresponds to the number of different domains which a curriculum (or textbook, teacher guide or national assessment) contains, and the depth corresponds to the number of different constructs (or subconstructs) included in each given domain. The more domains and constructs, the broader and deeper the curriculum.

Curricula from the three anglophone countries (South Africa, Uganda and Zambia) are broader in scope than those in the two francophone countries (Mauritania and Niger) (**Figure 4.1**). In both lower primary and at the end of primary, the anglophone countries address competencies for all five domains in the GPF, while the francophone countries do not tackle statistics and probability. Mauritania places no weight on algebra in Grade 3 while it dedicates just 3% of all competencies to it in Grade 6.

FIGURE 4.1

African countries differ in how they cover mathematics domains in their curricula

Distribution of curriculum competencies across learning domains

a. Lower primary
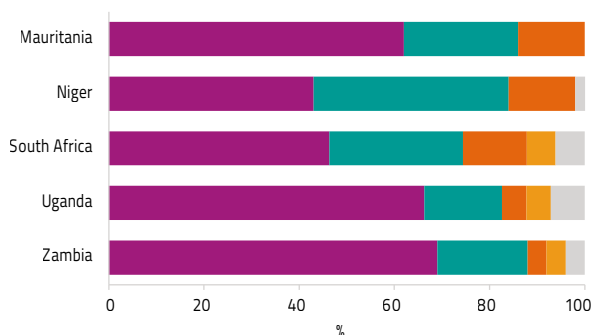
b. End of primary

■ Number and operations   ■ Statistics and probability   ■ Measurement   ■ Geometry   ■ Algebra
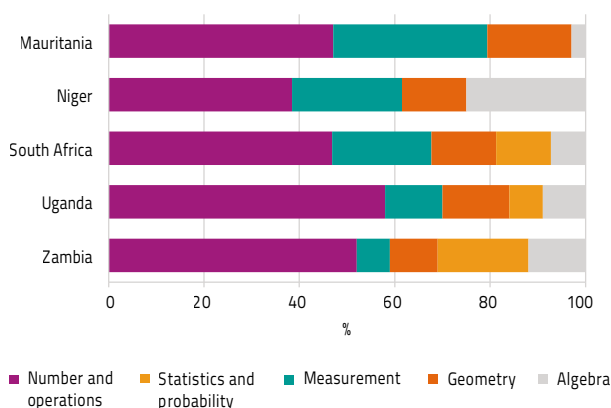
Source: GEM Report team analysis of the curriculum in Spotlight focus countries.

Niger also puts almost no emphasis on algebra in Grade 3 but dedicates one in four competencies to it in Grade 6, more than twice as much as in the other four countries.

Ideally, decisions to include certain domains in the mathematics curriculum are based on an assessment of the country's current and future needs, and the identification of the critical skills students must develop to support their learning. However, a curriculum remains a cultural and political instrument, since it determines what kind of knowledge and skills are worth passing on to learners (Amadio et al., 2016). For example, a decision to not include competencies related to algebra in the lower primary curriculum

may either reflect decision makers' perceptions that these are not critical skills or an evaluation of children's cognitive levels for setting an adequate learning pace.

How curricula state what learners should know and do at a given grade level varies greatly by country. On the one end, Niger and Uganda only provide a list of general topics teachers must cover, without going into much detail. For instance, in Grade 3, teachers in Niger are guided to cover the following: subtraction: usual method; multiplication: written method of multiplying by two- or three-digit numbers; and division (situations involving sharing, with and without remainders; the meaning of division; and division method). At the opposite end, Mauritania (**Table 4.2**), South Africa and Zambia provide a detailed list of the knowledge and skills students must develop to demonstrate each competency.

Despite countries' efforts to refine learning expectations, national curricula do not go as far as the GPF in providing details to inform the learning process. For example, for the competency 'being able to add numbers with and without regrouping', the GPF details not only the result of learning, but also how students should arrive at the result (by using objects, pictures or symbols). It is worth noting that many of the curricula examined stress the importance of using concrete objects to represent abstract concepts or of moving from concrete representations to pictorial and then abstract representations when exploring new mathematical concepts with learners. However, none of the learning outcomes explicitly incorporated those principles in the statements of what children must know and do at each grade level.

Identifying how children are to demonstrate their understanding or arrive at a result impacts classroom instruction. The more a curriculum describes learning expectations in detail and clear, measurable terms, the easier it is to develop aligned instructional materials and design assessments that measure student performance in relation to these expectations. It also increases the likelihood that teachers with access to the curriculum will integrate it into their daily instruction, and follow the same instruction programme, regardless of where they teach.

TABLE 4.2

Example of learning expectations for one competency, Grade 4, Mauritania

Domain	Construct
Competency	The pupil will be able to solve everyday problems requiring addition, subtraction with a single carry, multiplication and simple division on numbers below 1,000.
Knowledge	■ Addition with regrouping. ■ Subtraction with and without regrouping. ■ Multiplying a 2-digit number by a 1-digit and a 2-digit number. ■ Multiplication tables up to 6. ■ Dividing without remainder by a 1-digit number.
Skills	■ Practise adding with regrouping. ■ Practise subtracting with or without regrouping. ■ Practise multiplying a 2-digit number by a 1- or 2-digit number. ■ Divide without remainder by a 1-digit number. ■ Use the addition table for simple everyday problems. ■ Use the multiplication tables up to 6 to solve simple everyday problems. ■ Translate multiplicative situations into division form. ■ Solve problems based on everyday situations about the market or the family budget (simple practice of the 4 operations). ■ Multiply by 10. ■ Divide by 10 a number ending in 0. ■ Add a 1-digit number with a 2-digit number. ■ Add 11 and 12. ■ Add and subtract 9.

BOX 4.2:

There is not enough time to teach mathematics

One measure of the opportunity to learn mathematics is the number of hours or the percentage of hours dedicated to mathematics in the curriculum, which varies considerably between countries. In lower primary, Mauritania (150 hours) and Niger (170 hours) devote significantly less time to mathematics instruction than South Africa (280 hours) and Uganda (306 hours). At the end of primary, children in South Africa benefit from at least 45 and up to 90 more hours of mathematics instruction than children in the other 4 countries. While countries generally devote less than 20% of their instruction time to mathematics instruction, South Africa dedicates 25% of instructional time to mathematics both at the end of lower primary and at the end of primary.

Teachers across the Spotlight countries mentioned that the current mathematics instruction time is insufficient, potentially undermining both teaching and students' learning. Teachers are expected to deliver instruction, assess pupils and provide remediation during short 30- to 40-minute sessions. Given often-difficult conditions, such as overcrowded classrooms, poor infrastructure and a lack of teaching and learning materials, they seldom manage to meet all the objectives of the session within the allotted instruction time.

Teachers also express concerns about the workload associated with teaching mathematics. Even with structured lessons and assessments provided in textbooks (as in Uganda and Zambia), teachers require significant time for preparing lessons and assessing students. Alternative approaches which could alleviate their challenges include allotting separate time for teachers to prepare mathematics lessons each week or providing teacher learning circles that allow teachers to share knowledge outside of instructional time.

THE LEARNING PACE OF THE CURRICULUM OFTEN DOES NOT FOLLOW THE GLOBAL PROFICIENCY FRAMEWORK

The GPF outlines a progression of learning and identifies the grade level at which most students are expected to be able to demonstrate a given knowledge or skill. Across countries, the learning pace is generally aligned with the GPF. In other words, the curricula expect children to demonstrate mathematical knowledge and skills at the same grade level as the GPF.

More than two thirds of the competencies outlined in national curricula appear in the GPF: around 70% in Niger, 75% in Mauritania and South Africa, and 80% in Uganda and Zambia. The share of curriculum competencies that appear in the GPF increases between the end of lower primary and the end of primary in Mauritania and South Africa, but decreases in Niger, Uganda and Zambia. The competencies that do not appear in the GPF are likely to be important for a given country but do not appear in most curricula (e.g. set theory or logic and reasoning) or are difficult to assess and are seldom evaluated in national assessments and hence not eligible for an assessment framework such as the GPF (e.g. geometric constructions or specific strategies for mental computations).

A competency outlined in a country's curriculum at a specific grade may appear in the GPF at an earlier or later grade. When a competency appears in the GPF up to one grade above or below the specified grade in a country's curriculum, it does not represent a significant variation in the pace of learning between a country's curriculum and the GPF. At the end of lower primary, this is the case with one third of the competencies in Zambia; half in Uganda; and three quarters in Mauritania, Niger and South Africa. At the end of primary, it concerns half the competencies in Niger and three quarters of the competencies in Mauritania, South Africa, Uganda and Zambia.

In some cases, however, competencies appear in the GPF two grades before or after the specified grade in a country's curriculum. When the curriculum anticipates the development of competencies compared to the GPF, it is considered too ambitious. On the contrary, when the curriculum postpones the development of competencies compared to the GPF, it is considered not ambitious enough. In both occurrences, countries may want to examine whether the pace of learning is optimal for student learning. Furthermore, since the pace of learning is set for each competency, countries may at the same time be too ambitious for certain parts of the curriculum and not ambitious enough for others.

At the end of lower primary (Grades 3 or 4), a negligible share of countries' curricula is too ambitious relative to the GPF but a significant share is not ambitious enough. Around one fifth of the competencies in Mauritania, Niger and South Africa; half of the competencies in Uganda; and two thirds of the competencies in Zambia could be addressed in Grades 1 or 2 according to the GPF. At the end of primary (Grades 6 or 7), a negligible share of countries' curricula is not ambitious enough. But in Niger, around 40% of competencies could be addressed in Grade 4 according to the GPF. In contrast, a significant share of countries' curricula is too ambitious. Around one fifth of the competencies in the anglophone countries and one tenth in the francophone countries could be addressed later, in Grades 8 or 9 (**Figure 4.2**).

Overall, there is no major divergence in the learning pace between Mauritania's curriculum and the GPF. Niger's curriculum is not ambitious enough, both at the end of lower primary and at the end of primary. While the curricula of South Africa, Uganda and Zambia are not ambitious enough at the end of lower primary, they may be overambitious at the end of primary.

The fact that the learning pace set by the curriculum may differ from that of the GPF is not necessarily a cause for concern. Differences may simply reflect specific learning needs in a given context. Countries

may benefit from examining areas of divergence to determine whether they are justified by the international research base and by students' results on standardized assessments. In cases where students systematically underperform in assessments on specific items associated with competences developed at a different pace than the GPF, curriculum developers may want to review the curriculum learning pace. This implies examining whether students have the cognitive level to develop the required knowledge or skill at the grade level proposed in the curriculum and/or whether they can develop the required knowledge or skill at an earlier grade level, in order to set an adequate learning pace.

FIGURE 4.2

Half of the Grade 3 competencies in Uganda and two thirds in Zambia could have been addressed in Grades 1 or 2

Percentage of curriculum competencies that appear earlier, later or at the same grade level with respect to the Global Proficiency Framework, selected countries, 2023
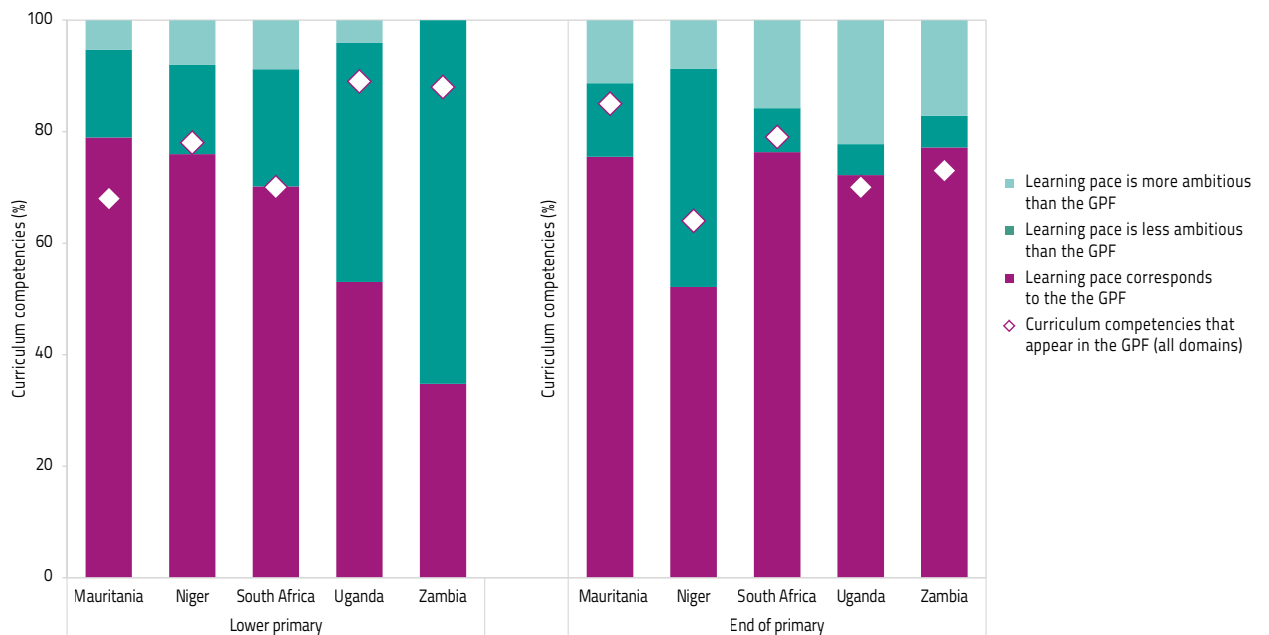
Notes: Curriculum competencies are described as being at a 'more ambitious' learning pace if they appear two grades or more below the corresponding grade level in the Global Proficiency Framework (GPF). Curriculum competencies are described as being at a 'less ambitious' learning pace if they appear two grades or more above the corresponding grade level in the GPF.
Source: GEM Report team analysis of the curriculum in Spotlight focus countries.

Mapping textbooks and teacher guides gives insights into curriculum implementation

Textbooks mediate between the intended and the implemented curriculum. They influence what teachers teach, how they teach it (and, by extension, how pupils experience it) and how much instructional time they devote to each topic (Schmidt et al., 2001). All teachers' decisions have a direct impact on pupils' learning outcomes, and researchers have established a correlation between the learning opportunities presented in mathematics instructional materials and pupils' learning outcomes (Schmidt et al., 2001; Törnroos, 2005). Understanding textbooks is thus essential to understand the quality of pupils' learning opportunities (Valverde et al., 2002).

Teacher guides are designed to assist teachers in using the textbooks as intended. Just as textbooks frame teachers' instructional decisions, teacher guides have the potential to influence the pedagogical choices teachers make in the classroom. At the very least, they identify the order in which teachers should address topics and how much time they should spend on each topic. Many provide guidance on how teachers should present topics to pupils and include summative evaluation tools to measure pupil performance on these topics. Teacher guides that are highly scripted go even further, providing teachers with daily lesson plans that outline each step in the learning process. Like textbooks, teacher guides serve to translate an abstract curriculum into concrete and operational steps for teachers to follow.

Teacher guides can also complete the content of the textbook. When they include additional activities, they generally aim to activate students' prior knowledge or to explore and develop an understanding of individual competencies. This usually requires taking students outside the textbook: students are expected to use objects or manipulatives to explore a concept or engage in classroom-based problem-solving activities. Sometimes, the additional activities in teacher guides target competencies that are not addressed in the textbook, which requires specific attention from the teacher to ensure the activity does not impede student learning.

In summary, textbooks and teacher guides are templates for action and represent the written curriculum. They embody the intentions of the curriculum by laying out the competencies to be mastered, the order in which they are to be mastered and expectations of what pupils should be able to do with that content. Textbooks and teacher guides represent a potentially implemented curriculum, not the enacted curriculum in the classroom, because of teachers' agency: teachers are free to select learning activities outside of the written curriculum, or to reframe activities from the written curriculum to better fit their beliefs about mathematics or effective mathematics instruction.

The type of activities included in the teaching and learning materials can significantly impact students' learning experiences. More specifically, it is important to incorporate various types of activities to enhance children's learning. In recent years, there has been a significant shift in educational approaches towards favouring active learning methods, which are recognized as crucial for improving students' understanding and engagement across all levels of education (Rahman et al., 2022). Active learning calls for student participation in their learning processes through classroom activities or discussions, rather than passive listening. This approach encompasses a range of techniques including group collaboration, cooperative learning, games, peer learning, and project-based and problem-based learning, among others. The value of proposing different types of activities is also supported by the fact that students may have different learning styles and needs (Tomlinson, 2017). For instance, visual learners may benefit from activities

that incorporate diagrams, charts and visual aids, while kinaesthetic learners may thrive on hands-on, experiential learning environments. Offering various types of activities can cater to these differences, allowing students to engage with the subject in ways that best suit their learning needs.

The curriculum analysis as part of this report also measured the relative weight of each learning activity in the written curriculum. This mapping provides insight into how children are expected to learn mathematics and the teacher's role in this process. Textbooks and teacher guides were coded according to three kinds of basic activities:

- Learning activities, which require students to move beyond the confines of the textbook. Such activities may be carried out at the beginning of the lesson (e.g. mental mathematics) or may be remedial and extension activities. They may include using manipulatives or objects to explore or represent concepts or conduct investigations in the classroom or beyond; for example, carrying out a survey, measuring the length of objects in the classroom or school grounds, or identifying two- or three-dimensional shapes in the environment.

- Exercises or problems, which confine students to the textbook and ask them to solve word problems or complete exercises.

- Explanations, which present information to students. Explanations can take the form of worked examples for students to analyse and then repeat, narratives (sentences or paragraphs), or graphic images or illustrations designed to explain something to students.

The mapping of the written curriculum took place in two stages. First, different types of activities in textbooks were mapped. Second, when the teacher guide was an official companion to the textbook, it was assumed that it included the same activities as the textbooks, and the mapping of the teacher guides only included its additional activities to avoid duplicating the mapping of the textbooks. This was the case in Mauritania,

South Africa, Uganda and Zambia. In Niger, the entire guide was mapped as the analysed teacher guide was not an established companion to the textbook.

ACTIVITIES IN WRITTEN CURRICULA CAN BE MAPPED BY TYPE

At the end of lower primary, textbook space is mostly taken up by exercises and problems (**Figure 4.3a**). This is most evident in Mauritania and South Africa, where this type of activity forms more than 90% of the textbook. Niger adopts a more balanced approach in lower primary, embedding learning activities in both the student textbook (17% of all activities) and in the teacher guide (30% of all activities). The relative lack of learning activities in the textbooks in Mauritania, South Africa, Uganda and Zambia means that for pupils of teachers who do not have access to the teacher guides, learning mathematics may be limited to only solving textbook-based problems or exercises.

There are significant differences in the share of activities dedicated to explaining mathematics concepts to students. In Zambia, almost 30% of textbook activities are dedicated to explanations compared to none in the teacher guide; the opposite is true in South Africa, with 75% of the activities in the teacher guide dedicated to explanations and none in the textbook. Niger and Uganda adopt a more balanced approach, with around 30% of activities dedicated to explanations in both the textbooks and the teacher guides. Mauritania, on the contrary, dedicates only 5% of the textbook and 13% of the teacher guide to explanations. Of the three types of explanations coded (narrative explanations, worked examples and graphic explanations), the worked examples and the graphic explanations are easier to understand for students with weak or limited reading skills. Except for Uganda, where 26% of activities in the student textbook were worked examples, textbooks from the end of lower primary in the four other countries did not make extensive use of less language-intense explanations.

At the end of lower primary, written curricula in Niger and Uganda appear to be the most balanced in terms of a diversity of learning activities. In Mauritania and Zambia, teachers who do not use the teacher guide may miss opportunities to develop learning activities and reach the full scope of the curriculum. In Mauritania, the written curriculum focuses almost exclusively on solving exercises, leaving little room to explain concepts and develop mathematical understanding. In South Africa, only the teacher guide includes explanation activities. Moreover, they are solely narrative explanations, which are the most demanding cognitively and could be ill-adapted to children in need of additional support.

At the end of primary, the share of exercises and problems is smaller and the share of explanations is larger compared to the end of lower primary (**Figure 4.3b**). Uganda's written curriculum at the end of primary appears to be the most balanced in terms of activity types. Niger and Zambia also present well-balanced written curricula, under the condition that teacher guides are used jointly with textbooks to provide additional learning activities. In contrast, Mauritania's and South Africa's written curricula is still heavily focused on exercises and problems, which could indicate that the learning experience of the children from these countries is somewhat narrow.

All teacher guides examined provided teachers with complete lesson plans except those from Uganda. The lesson plans covered each lesson in the school year and were structured, i.e. they outlined activities teachers were to conduct and the order in which they were to teach them. In South Africa, the teacher guide even provides fully scripted lessons in lower primary, while in Niger, the end of primary teacher guide contains samples of teacher-student dialogues for some concepts. The Uganda lower primary teacher guide provides suggested activities by day but not comprehensive lesson plans.

The unique structure of the teacher guide in Niger calls for additional attention. First, while it is not the established textbook companion, it is the primary tool teachers are expected to use in the classroom. The textbook plays a secondary role, keeping written track of the lesson, which could explain why there are so few learning activities in the textbook at the end of primary. Second,

and unlike the other four countries, the teacher guide in Niger has a radically different structure than that of the textbook. While the teacher guide is thematic, with chapters organized by domain (e.g. geometry, measurement, logic and reasoning), the textbook follows the learner's chronological progression, with weekly lessons. This disconnect between the teacher guide and the textbook may be more demanding for the teacher, who must continuously navigate between the two types of documents to ensure teaching consistency.

WRITTEN CURRICULA PLACE LITTLE EMPHASIS ON HIGHER LEVEL COGNITIVE SKILLS

The mapping of the written curriculum also involved coding textbooks and teacher guide activities according to the highest cognitive level required to complete them. The analysis summarized the percentage of activities that required students to go beyond the two lowest cognitive levels – knowing and understanding.

Zambia's textbooks are the least cognitively demanding, both at the end of lower primary and at the end of primary. In contrast, its teacher guides are the most cognitively demanding, with around one third of activities requiring students to exceed the two most basic cognitive levels. In other words, textbooks are not sufficient to develop higher level cognitive skills in Zambia, and teachers must use the teacher guide to complement instruction.

In Mauritania and Uganda, the difficulty of textbooks increases over the course of the primary cycle. The percentage of higher cognitive-demand activities in textbooks rises between the end of lower primary and the end of primary. The teacher guide in Uganda follows the same pattern and is the most cognitively demanding at the end of primary (along with Zambia's), with almost 40% of activities requiring higher cognitive skills. Although textbooks in Mauritania are the most cognitively demanding, its teacher guides are among the least cognitively demanding.

Exercises and problems are the main activity in lower primary mathematics textbooks in Africa

Percentage of times an activity appears in mathematics textbooks and teacher guides, 2023

a. Lower primary

b. End of primary
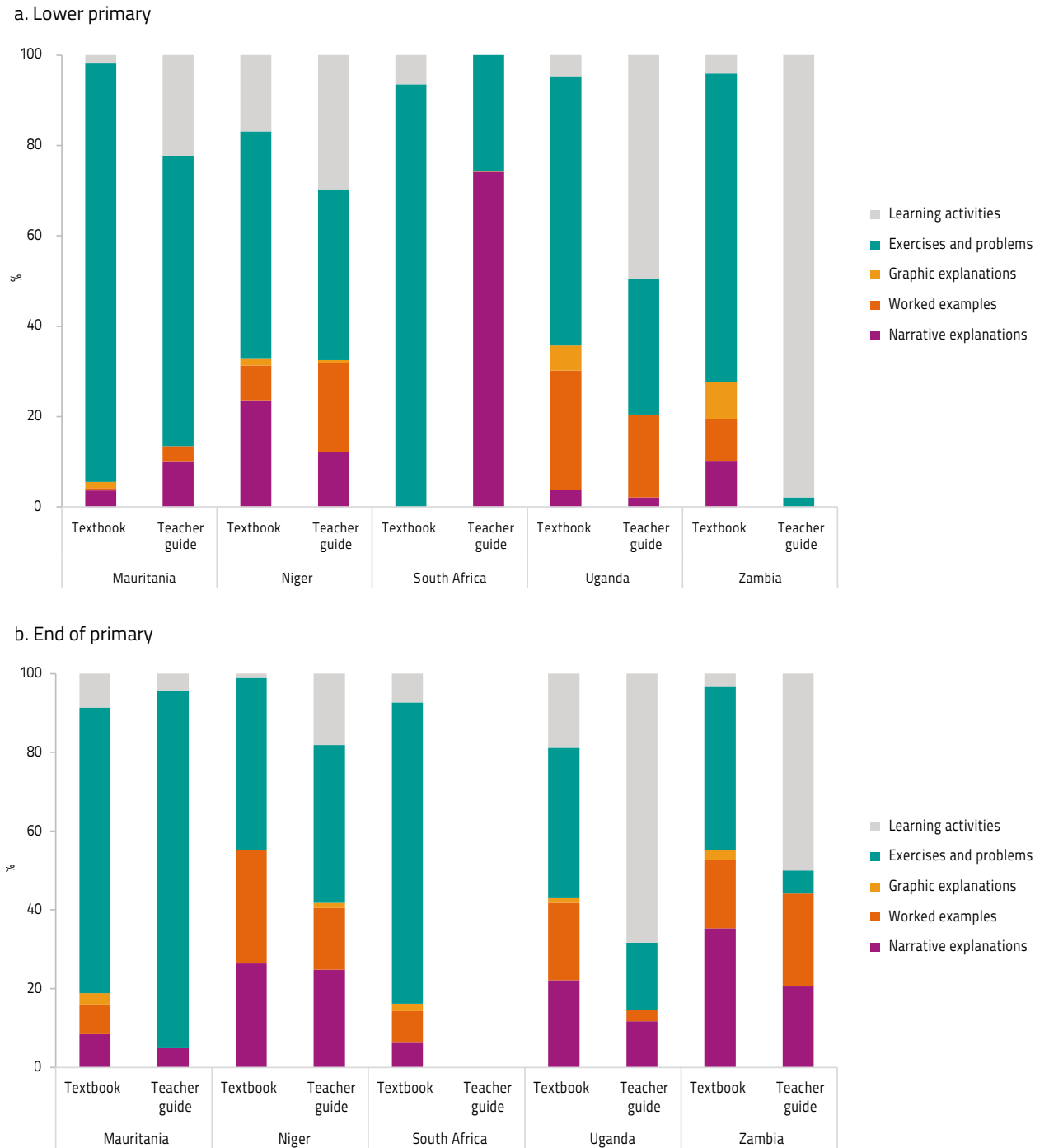
Note: The South Africa Grade 6 textbook did not have an accompanying teacher guide.
Source: GEM Report team analysis of the curriculum in Spotlight focus countries.

In Niger and South Africa, the cognitive demand is similar in textbooks and teacher guides at the end of lower primary. Around 20% of textbook and teacher guide activities require going beyond the lowest cognitive levels. At the end of primary, the textbook in Niger remains at that level but the teacher guide in Niger and the textbook in South Africa are less ambitious, with only 10% of activities requiring higher cognitive skills.

In South Africa and Zambia, teacher guides provide suggestions on differentiating instruction according to ability levels. In South Africa, at the end of lower primary, it proposes extension activities for high-performing students. The Zambia teacher guides both in lower primary and at the end of primary include suggestions for remedial or reinforcement activities for struggling students for each lesson and extension activities for high-performing students.

COGNITIVE DEMANDS INCREASE IN END-OF-CYCLE EXAMINATIONS

To complement the analysis of the written curriculum, the assessed curriculum was mapped against the intended curriculum. The assessed curriculum is defined as the competencies valued and assessed in large-scale, high-stakes assessments like the national learning assessment. It is normally a subset of the intended curriculum. Since assessments are limited by time, test developers are required to carefully select the competencies to assess, usually according to an assessment framework which assigns weight to different mathematics domains and constructs. However, the mapping can reveal important differences between the competencies valued in the curriculum and those assessed during large-scale assessments, which may be due to resource or technological limitations or simple tensions between the two curricula.

The focus countries do not have a national learning assessment policy that mandates regular collection and reporting of student performance with respect to key learning outcomes in the national curriculum. For each of them, a large-scale, recent assessment for the targeted grade levels was identified (**Table 4.3**).

At the end of lower primary, a negligible share of assessed items required a higher cognitive level (**Figure 4.5**). None of the assessed items in the Niger assessment, 6% of the assessed items in the South Africa assessment and 15% of the assessed items in the Mauritania assessment required students to exceed the two lowest cognitive levels. However, these results probably stem from the type of assessment mapped. In Mauritania and Niger, the assessment, which was financed by the World Bank, had a cross-country comparative focus, and was not curriculum specific. In South Africa, the assessment instrument mapped was not a national assessment but rather a formative and diagnostic assessment used at the classroom level.

Assessments are cognitively more demanding at the end of primary. Around one third of the assessed items in Niger, one half in Uganda and nine tenths in Mauritania focused on high-cognitive demands. In South Africa and Zambia, around one tenth only of the assessed items focus on high-level cognitive demands. National end-of-cycle examinations in Mauritania, Uganda and Zambia are designed to measure whether children have developed the minimal level of knowledge and skills outlined in the primary mathematics curriculum to sustain their further study. As such, the items may not be restricted to the end-of-primary year curriculum. It appears that the assessment in Zambia is much less ambitious than the ones in Mauritania and Uganda, probably assessing more items from previous grades. In South Africa, the small share of points allocated to higher cognitive levels could be, like at the end of lower primary, attributed to the fact that the assessment considered is formative, not a selection process (as in Mauritania) or summative end-of-cycle examination (as in Uganda).

FIGURE 4.4

Textbook's activities require a higher cognitive level in Mauritania than in the other Spotlight countries

Percentage of higher cognitive demand activities in mathematics textbooks and teacher guides, 2023

a. Lower primary

b. End of primary
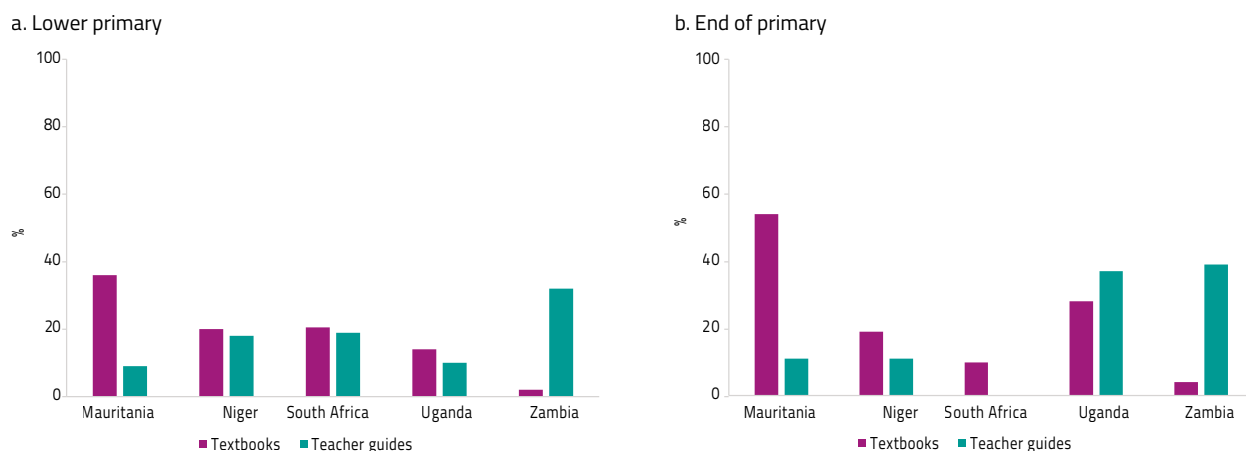
Source: GEM Report team analysis of the curriculum in Spotlight focus countries.

TABLE 4.3

Characteristics of sampled assessment by country

a. Lower Primary

	Year	Assessment type	Total number of items, all competencies assessed	Total number of score points, all competencies assessed
Mauritania	2022	Service Delivery Indicator study (World Bank)	27	27
Niger	2022	Service Delivery Indicator study (World Bank)	47	213
South Africa	2018	Formative and diagnostic	74	79
Uganda	-	-	-	-
Zambia	-	-	-	-

b. End of Primary

	Year	Assessment type	Total number of items, all competencies assessed	Total number of score points, all competencies assessed
Mauritania	2021	Secondary entrance examination	13	50
Niger	2022	Regional end of trimester examination	42	98
South Africa	2018	Formative and diagnostic	114	126
Uganda	2022	Primary leaving examination	43	100
Zambia	2022	Mathematics composite examination	60	60

Note: In the absence of a large-scale end-of-primary assessment in Niger, the Grade 6 end-of-trimester examination from the Niamey region was analysed.
Source: GEM Report team analysis of assessments in Spotlight focus countries.

FIGURE 4.5

Hardly any lower primary mathematics assessment items involve higher cognitive elements

Percentage of higher cognitive demand items in mathematics assessments, 2023
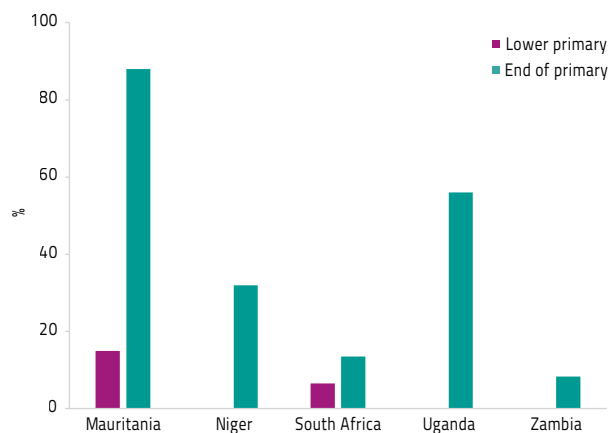
Notes: Any item from an assessment requiring students to go beyond the two lowest cognitive levels was coded as a higher cognitive-demand item. In Uganda and Zambia, there was no available assessment for the end of lower primary. In Niger, none of the assessment items require using a higher cognitive level.
Source: GEM Report team analysis of the curriculum in Spotlight focus countries.

ALIGNMENT BETWEEN THE INTENDED, WRITTEN AND ASSESSED CURRICULA NEEDS TO IMPROVE

Ideally, countries would follow an integrated approach when developing a new curriculum, establishing the new syllabus (or intended curriculum) and at the same time, or shortly after, the accompanying instructional materials (textbooks and teacher guides, the written curriculum). Zambia, for example, developed its curriculum in 2013, the textbooks for Grade 3 in 2014 and for Grade 6 in 2015, and the teacher guides in 2016.

In most of the focus countries, the written curriculum is only available long after the implementation of a new curriculum. In Uganda, the lower primary curriculum was

developed in 2008, and the textbooks eight years later. In South Africa, the textbooks were published 9–12 years after the publication of the curriculum. The teacher guide in Mauritania, and both the textbooks and the teacher guides in Niger, predate the publication of the latest curriculum by a decade or more. When the new written curriculum is not available to support teachers, there is a risk that they will keep teaching the former one, based on the former written curriculum at their disposal.

In Mauritania and Niger, the written curriculum is not fully aligned with the curriculum (**Figure 4.6**). In Niger, textbooks and teacher guides include statistics and probability at the end of lower primary and the end of primary, even though this learning domain is absent from the curriculum. In Mauritania, textbooks and teacher guides include algebra at the end of lower primary, and statistics and probability at the end of primary, despite the fact that these learning domains are absent from the curriculum at these grades. These apparent mismatches may suggest that the available written curricula in Mauritania and Niger are based on previous curricula, or that the developers of the written curricula did not follow the actual curriculum.

Teacher guides are well-aligned with textbooks in every focus country. The role of the teacher guides is to assist teachers in using the textbooks, and the distribution of learning domains in the teacher guides closely follows those in the textbooks. Even in Niger, where the teacher guide is not the established companion of the textbook and adopts a different structure, the textbook and teacher guide are well-aligned.

The cognitive difficulty of available assessments is not aligned with the written curricula. At the end of lower primary, only Mauritania and Niger conducted national assessments of pupils' learning. Although 36% of textbook activities in Mauritania and 20% in Niger developed higher level cognitive skills, none of the points on the national assessment were attributed to those skills in Niger and only 15% of the points were in Mauritania. At the end of primary, the opposite happens. All national assessments place a higher emphasis on higher level cognitive skills than the textbooks do. For instance, 19% of textbook activities in Niger, 28% in Uganda and

FIGURE 4.6

Countries differ in the extent to which mathematics content coverage is balanced across core policy documents

Mathematics domain coverage in curricula, textbooks, teacher guides and assessment, 2023

a. Lower primary
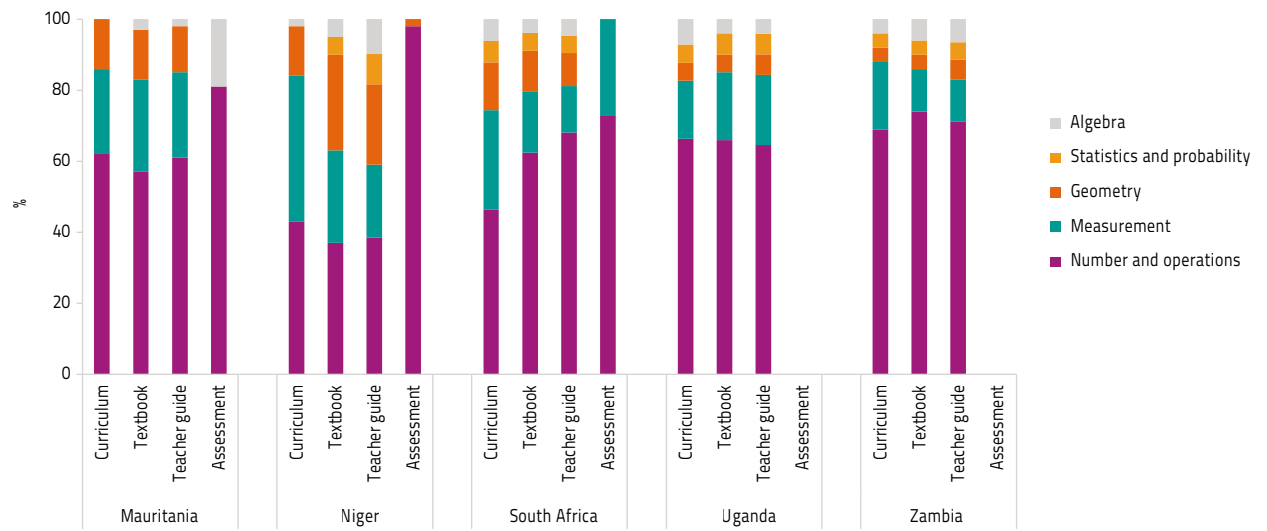
b. End of primary
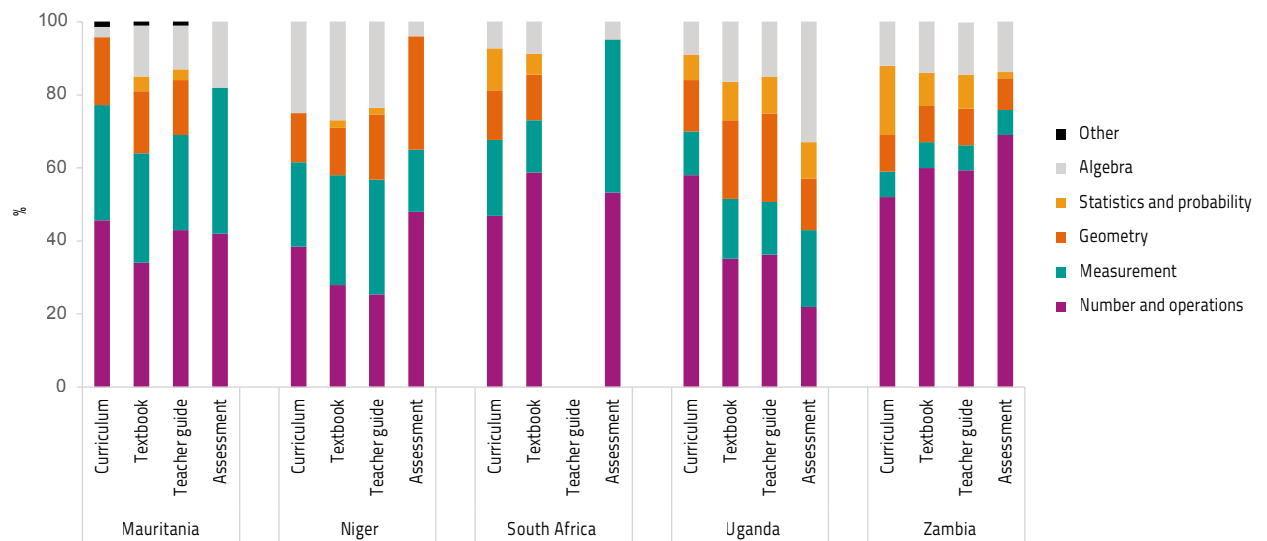
Source: GEM Report team analysis of the curriculum in Spotlight focus countries.

54% in Mauritania developed higher level cognitive skills, while up to 32% of the points on the national assessment in Niger, 56% in Uganda and 88% in Mauritania were attributed to those skills. These discrepancies suggest that countries do not control well for the cognitive difficulty when they develop a curriculum-referenced assessment framework, or that they do not develop such a framework prior to developing assessment items.

Available assessments at the end of lower primary are not aligned with the curricula, but they are not curriculum-based (**Figure 4.6b**). Mauritania and Niger implemented the World Bank Service Delivery Indicators survey, which only assessed two of the five learning domains. It even assessed algebra in Mauritania, although it is not part of the curriculum. South Africa implemented a formative and diagnostic instrument for use in classrooms, which only assessed two learning domains. In all three countries, the bulk of the assessment evaluated number and operations.

Assessments at the end of primary cover the breadth of the curricula relatively well but mostly measure competencies acquired earlier. Assessments in Niger, Uganda and Zambia included all the domains covered in the curricula, while Mauritania assessed three out of four curriculum domains and South Africa three out of five. Uganda's assessment puts more emphasis on algebra than number and operations, not matching the curriculum. Mauritania does not assess geometry, and South Africa assesses neither geometry nor statistics and probability. All the assessments examined evaluated competencies acquired prior to the targeted grade level, and therefore measure pupils' mathematics knowledge and skills with respect to the competencies outlined in the upper primary curriculum rather than their performance against the end of primary curriculum expectations.

Conclusion

Implementing a national vision for education requires translating the curriculum into classroom practice and ensuring that learning happens at scale. The implemented curriculum – the actual instructional practices delivered in the classroom and the resulting learning experiences – is conditioned by the alignment of the different facets of the curriculum: intended, written and assessed.
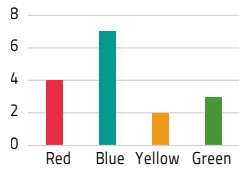
Curriculum analysis conducted in the focus countries reveals that the components of the written curriculum, here defined as textbooks and teacher guides, are coherent with each other, but could be further aligned with the intended curriculum in terms of scope and cognitive difficulty. In addition, learning assessments tend to be too difficult, and the overreliance on their summative role may prove detrimental to curriculum implementation as it narrows down learners' experience to what will be tested.

The quantity and quality of textbooks and teacher guides support curriculum implementation and are a prerequisite for learning in low-resource environments. However, in most of the focus countries, textbooks and teacher guides are only available long after the implementation of a new curriculum, and not necessarily in the official language of instruction and specifically in local languages. Yet the provision of written material in home languages is important not only to learn literacy skills but also to learn numeracy skills.

TABLE 4.4

Minimum proficiency descriptors at Grade 3, Global Proficiency Framework for Mathematics

DOMAIN Construct Subconstruct	Descriptors
NUMBER AND OPERATIONS	
N1. Whole numbers	
N1.1 Identify and count in whole numbers, and identify their relative magnitude	■ Count in whole numbers up to 1,000. ■ Read and write whole numbers up to 1,000 in words and in numerals. ■ Compare and order whole numbers up to 1,000. ■ Skip count backwards by tens.
N1.2 Represent whole numbers in equivalent ways	■ Use place-value concepts for hundreds, tens and ones, e.g. compose or decompose a three-digit whole number using a number sentence such as 254 = 2 hundreds, 5 tens and 4 ones; 254 = 200 + 50 + 4; determine the value of a digit in the hundreds place.
N1.3 Solve operations using whole numbers	■ Demonstrate fluency with addition and subtraction within 20; and add and subtract within 100 (i.e. where the sum or minuend does not surpass 100), with and without regrouping, and represent these operations with objects, pictures or symbols (e.g. 32 + 59; solve an addition or subtraction problem presented by images of bundles of tens and ones; use number lines or skips on hundreds grid to reason through or solve addition and subtraction problems). ■ Multiply and divide within 100 (i.e. up to 10 x 10 and 100 ÷ 10, without a remainder), and represent these operations with objects, pictures or symbols (e.g. 72 ÷ 8; 6 x 9; solve multiplication problems by using a rectangular array or by repeating groups of the same number of objects; solve division problems by dividing a group of objects into a given number of equal groupings). ■ Perform calculations involving two or more operations, when order of operations is not a factor (e.g. 6 x 7 + 19 = ...; 6 x 4 ÷ 8 = ...).
N1.4 Solve real-world problems involving whole numbers	■ Solve simple real-world problems involving addition and subtraction of whole numbers within 100 (i.e. where the sum or minuend does not surpass 100) without regrouping, including problems involving measurement and currency units (e.g. there are 33 sheep in a field; 25 more sheep come into the field. How many sheep are in the field now? There are 54 children in total in Grade 3; 13 are absent today. How many Grade 3 children are at school today?)
N2. Fractions	
N2.1 Identify and represent fractions using objects, pictures and symbols, and identify relative magnitude	■ Identify unit fractions with denominators up to 12 (e.g. 1/5; 1/7; 1/8; 1/10) represented as objects or pictures (as part of a whole or part of a set) in fractional notation (e.g. shade 1/5 of this shape; indicate 1/6 of these objects when arranged in a 3 by 6 array).
N2.2 Solve operations using fractions	From Grade 4 onwards.
N2.3 Solve real-world problems involving fractions	From Grade 4 onwards.
N3. Decimals	From Grade 5 onwards.
N4. Integers	From Grade 7 onwards.
N5. Exponents and roots	From Grade 7 onwards.
N6. Operations across number	From Grade 8 onwards.
MEASUREMENT	
M1. Length, weight, capacity, volume, area and perimeter	
M1.1 Use non-standard and standard units to measure, compare and order	■ Use standard units to compare length and weight when provided the unit of measurement (e.g. identify that the pencil is one centimetre longer than the crayon). ■ Use non-standard units to estimate or measure volume/capacity (e.g. identify which container would hold the most sand or which box would hold the most balls, given pictures of these items).
M1.2 Solve problems involving measurement	From Grade 4 onwards.
M2. Time	
M2.1 Tell time	■ Tell time using an analogue clock to the nearest half hour. ■ Recognize the number of hours in a day, minutes in an hour and seconds in a minute.

DOMAIN Construct Subconstruct	Descriptors
M2.2 Solve problems involving time	■ Solve problems, including real-world problems, involving elapsed time in minutes within an hour (e.g. calculate the difference between 3:42 and 3:56 or the difference between 16:35 and 16:52).
M3. Currency	
M3.1 Use different currency units to create amounts	■ Combine commonly used currency denominations to make a specified amount in a variety of ways.
GEOMETRY	
G1. Properties of shapes and figures	
G1.1 Recognize and describe shapes and figures	■ Recognize and name two-dimensional shapes and familiar three-dimensional figures in everyday life. ■ Identify a line of symmetry in two-dimensional shapes.
G2. Spatial visualizations	
G2.1 Compose and decompose shapes and figures	■ Use a small number of given shapes to compose multiple larger two-dimensional shapes (e.g. identify which of these larger shapes can be made from the smaller shapes?) and decompose a larger shape into a given number of smaller shapes (e.g. draw one line on the triangle to show how it can be cut into exactly two smaller triangles).
G3. Position and direction	
G3.1 Describe the position and direction of objects in space	■ Accurately use the terms 'left' and 'right' and use simple maps to describe locations using positional terms (e.g. 'Where is the teacher's desk?', answer: 'To the [left] of the chalkboard'.).
STATISTICS AND PROBABILITY	
S1. Data management	
S1.1 Retrieve and interpret data presented in displays	■ Solve a problem involving the sum of or difference between two specified categories of a tally chart, bar graph or pictograph with a single-unit scale (e.g. How many children like red and blue in this bar graph?).
S1.2 Calculate and interpret central tendency	From Grade 7 onwards.
S2. Chance and probability	From Grade 5 onwards.
ALGEBRA	
A1. Patterns	
A1.1 Recognize, describe, extend and generate patterns	■ Describe repeating patterns (e.g. explain that O□□ repeats three times in the following set O□□O□□O□□; explain that 1, 2, 3, 4 repeats three times in the following set: 1, 2, 3, 4, 1, 2, 3, 4, 1, 2, 3, 4).
A2. Expressions	■ From Grade 7 onwards.
A3. Relations and functions	
A3.1 Solve problems involving variation (ratio, proportion and percentage)	■ From Grade 6 onwards.
A3.2 Demonstrate an understanding of equivalency	■ Create a numerical expression using + or - to model a situation (e.g. represent the following in a number sentence: 3 people are on a bus, and 4 more get on). ■ Find a missing value in real-world addition and subtraction problems within 20 (e.g. 3 people are on a bus. More people get on. There are now 7 people on the bus. How many people got on the bus?).
A3.3 Solve equations and inequalities	■ From Grade 7 onwards.
A3.4 Interpret and evaluate functions	■ From Grade 9 onwards.

Source: UIS et al. (2020b).

Annex 4A.
Language of instruction

It is vital to use home languages as the medium of instruction for promoting inclusion and ensuring the quality of education. Instruction through home languages is particularly crucial in primary education, as it accelerates learning and helps prevent knowledge gaps. Incorporating children's first language into formal instruction supports self-esteem and confidence, reducing grade repetition and dropout rates (Ball et al., 2024). In Mozambique, for example, students were found to actively engage with and better understand content in bilingual classes (Chimbutane and Reinikka, 2023). Language issues are also critical for teaching mathematics (Essien et al., 2023). However, the benefits of bilingual education vary across contexts as a result of resource constraints, teacher shortages and parental perceptions of language value (Ball et al., 2024). In reality, implementation of home language instruction encounters several hurdles.

Africa contains some of the world's most linguistically diverse countries, yet most children are taught in a language they do not speak at home. Analysis of languages of instruction in this annex relies in part on an original data set created by combining information from the Ethnologue, the UNESCO Institute for Statistics, national policy data and additional research. For each country, the data set includes all languages which meet at least one of the following criteria: the language is spoken by at least 1.5 million people; the sum of speakers of languages in the same family (macrolanguage) is spoken by at least 5% of the population; and at least one of the sub-languages in the same family is recognized.

For each of the selected languages, the number of mother tongue (L1) speakers was extracted from the Ethnologue; otherwise, the estimated current speaking population in the country was used as a proxy. Research on national policy identified the official languages of

instruction, the grades in which such languages should be used, and whether the languages are taught as subjects. Finally, there was additional research on the existence of teaching and learning materials in these languages.

A summary of the analysis is presented at the end of the annex (**Table A4.1**). In some countries, only the macrolanguage was listed as an official language of instruction. This specifically concerns Ethiopia, Mali, Namibia, Nigeria, South Africa, South Sudan and Uganda. For example, in Mali, there are almost 20 Dogon varieties but the data set only records the broader Dogon family.

Moving from policy to practice, in 11 countries with Multiple Indicator Cluster Survey (MICS) data, only 30% of primary school students reported being taught in the language they spoke at home. It is expected that children may be more likely to be taught in their home language in linguistically homogeneous rural areas than in cities. This is indeed the case in Lesotho and Zimbabwe, where there is a rural–urban gap of at least 20 percentage points. Although most people speak Shona and Ndebele in Zimbabwe and Sesotho in Lesotho, instruction is more often in English in urban than in rural areas; hence, children in urban areas are less likely to be taught in their home language. But in Benin and Togo, there is a five percentage point gap in the opposite direction, probably reflecting the fact that children in urban areas are relatively more likely to speak French at home. In Benin, only 4% of children in rural areas speak French at home compared to 10% of children in urban areas; in Togo, only 1% of children in rural areas speak French at home compared 7% of children in urban areas (**Figure 4A.1**).

In Africa, 31 countries (57%) have adopted bilingual or multilingual education policies, by which L1 is used for initial literacy development before a transition is later

FIGURE 4A.1

In Lesotho, children in rural areas are twice as likely as those in urban areas to be taught in their home language

Percentage of children attending primary school whose home language is used at school, selected countries, 2017–22

Source: GEM Report team analysis of the curriculum in Spotlight focus countries.

FIGURE 4A.2

In most countries with a bilingual or multilingual language policy, children are expected to switch to the international language by grade 4

Grades in which the mother tongues are official languages of instruction, selected countries, 2023
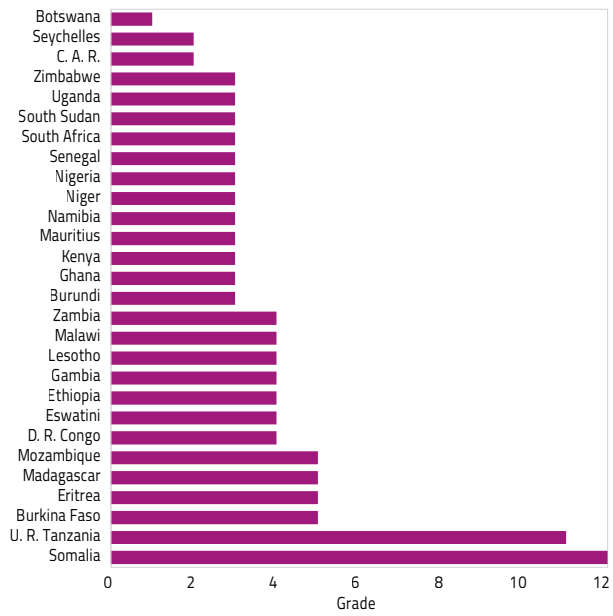
Note: In Ethiopia and South Africa, most local languages are used until grade 3, with the exception of Afrikaans in South Africa and Oromo, Somali and Tigrinya in Ethiopia.

Source: GEM Report team based on the LEARN language of instruction data set.

made to a second language of instruction (L2). Of these, 23 countries have established an early exit policy: L1 is to be used in the early grades of primary and a shift to the second language before grade 5 is mandatory (**Figure 4A.2**). Some 80% of all countries with bilingual or multilingual education have policies indicating that the local languages used as the medium of instruction in early grades should later be kept as subjects.

Early exit policies are the norm in the five Spotlight focus countries. In Niger and Uganda, local languages should be used in grades 1 to 3. By the end of this period, teaching transitions to French and English, respectively. In South Africa, 11 languages are used in grades 1 to 3,

but only Afrikaans and English are used until grade 12. In Zambia, the local languages are to be used until grade 4, then English becomes the medium of instruction, although this policy appears to have been recently reversed. Another recent development in language policies concerns the Gambia, where the government committed to developing all Gambian languages as mediums of instruction in lower primary through a new language of instruction policy in November 2023 (**Box 4A.1**).

In practice, the percentage of primary students taught in the language they speak at home decreases towards the end of primary in a few countries with a bilingual or multilingual language of instruction policy (**Figure 4A.3**).

FIGURE 4A.3

Many countries do not adhere strictly to their language of instruction policy

Percentage of children attending primary school whose home language is used at school, by grade, 2017–22
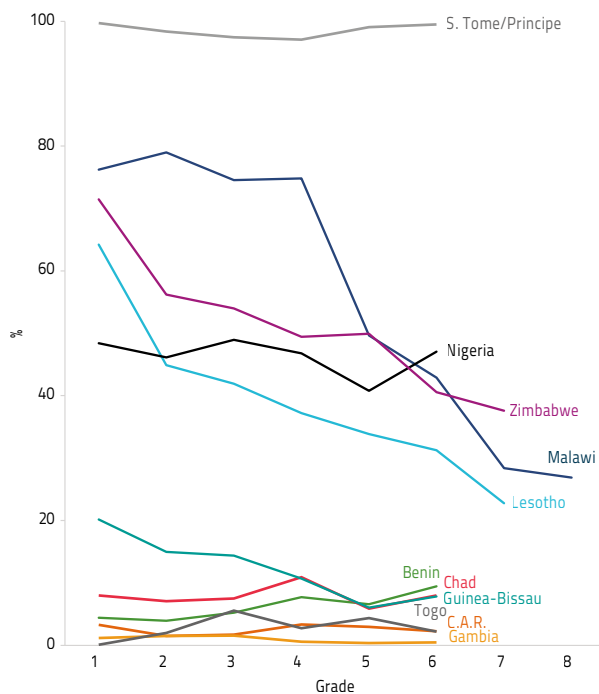
Source: GEM Report team analysis of data from the Multiple Indicator Cluster Survey.

In Malawi, where Chichewa is the official language of instruction until grade 4 before switching to English, the share of students speaking the language of instruction drops by 25 percentage points between grades 4 (75%) and 5 (50%). In Lesotho, the official language of instruction is Sotho in grades 1 to 4, before switching to English in grade 5, but the drop in the use of Sotho is continuous from grade 1 (64%) to grade 7 (23%) with no sudden transition observed. In Guinea-Bissau, where Portuguese is the only official language of instruction, the proportion of children learning in their home language decreases from 20% in grade 1 to 6% in grade 5. Despite clear language of instruction policies, teachers may use code-switching, alternating between languages, to adapt their instruction to student needs. In Guinea-Bissau, some teachers reported difficulties in teaching in Portuguese, leading them to use their mother tongue to facilitate student understanding (Dias and Rodrigues, 2023).

A transition to a different language of instruction requires specific guidance and adapted curriculum inputs. Although many countries have developed policies for mother tongue instruction, the implementation of these policies relies on teachers, who may not have received the necessary support, and on assessment material, which may be inadequate. In Uganda, there is a lack of specific guidance on how the transition from

BOX 4A.1

The Gambia has issued a new language of instruction policy

With a population of 2.7 million, the Gambia has linguistic diversity with 7 indigenous languages spoken (Mandinka, Pulaar, Olof, Sarahulle, Jola, Sereer and Manjaco), alongside 5 non-indigenous languages (Ethnologue, 2023; World Population Review, 2023). A school language mapping exercise showed that over 99% of Gambian primary school students speak one of the seven indigenous languages (Gibson et al., 2023). However, English is the official language of education, even though less than 1% of the population had English as their first language in 2014 (Alejaldre-Biel, 2014). Despite this, English has remained the primary language of instruction, posing significant learning challenges for students and contributing to low educational outcomes. According to the 2019 MICS, only 9% of Gambian children in grade 3 had foundational skills in literacy and 6% in numeracy. The percentage of children with foundational reading skills rises to 31% in grade 6 and 66% in grade 8.

The Ministry of Basic and Secondary Education recognizes that neglecting the country's multilingual identity has an impact on learning outcomes. The three most-spoken languages (Mandinka, Olof and Pulaar) would be adequate languages of instruction in 90% of schools (Gibson et al., 2023). Adding the next two languages (Jola and Sarahulleh) in terms of the

number of speakers would cover 98% of schools. However, the government has committed to developing all Gambian languages for instruction, to uphold the right of Gambian children to receive an education in their native language.

Between September 2022 and November 2023, a language in education policy was developed, overseen by the Curriculum Research, Evaluation and Development Directorate in collaboration with the World Bank. This policy mandates using national languages as the medium of instruction until grade 4, with a year-long transition period to English as the language of instruction in grade 5. At the same time, the policy requires English to be taught as a subject from grade 3 onwards.

The implementation plan for the policy is currently under development. Effective implementation involves aligning policy directives with curriculum, teaching and learning materials and with teacher capacity. Language transition must be backed by curriculum adjustments and supported by teaching and learning materials adapted for that grade, allowing the gradual move from the home language to English over the year. Teacher training should ensure proficiency in both home and second languages and teacher deployment must match the teacher's language fluency with the language of instruction of the target school. The success of policy implementation also depends on robust resourcing and support mechanisms. The active engagement of stakeholders at every level, from top government officials to teachers and parents, is indispensable. Overall, it is crucial for both local and national stakeholders to recognize that empowering young learners by teaching them in languages they understand will contribute to building a stronger and more unified nation.

Source: The box is based on Trudell (2024a).

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local languages to English as the medium of instruction should happen in grade 5. In Zambia, although English is introduced as a subject in grade 2, students are evaluated in both a local language and English at that level. According to the 2015 Early Grade Reading Assessment, the typical grade 2 student could only recognize a few words in English and struggled to assemble these words from a passage into a coherent sentence.

Teacher training is required to build teacher capacity in multiple languages of instruction. In Mauritania, a 1999 reform introduced a language policy advocating the use of Arabic for literary subjects and the use of French from grade 2 for scientific subjects. However, this policy has been hindered by insufficient teacher training, especially in French, which is the language of instruction for mathematics. Mauritania has recently undertaken a comprehensive education system reform, with the 2022 education law proposing teaching in Arabic, Pulaar, Soninke and Wolof at all levels from 2027 onwards. Despite the potential benefits, this reform poses significant challenges, including the need for substantial teacher training, effective management

and deployment of the teaching force, and production and distribution of teaching materials in these languages, a particular challenge in the case of Pulaar, which is not yet codified in writing. Experimental initiatives are planned from 2024 to address and overcome these challenges.

A lack of teaching and learning materials in the language of instruction undermines education. In countries with high linguistic diversity, such as Mozambique, Nigeria, Senegal and South Sudan, textbooks for primary grades have only been developed in a few of the official languages of instruction (**Figure 4A.4**).

Even when textbooks have been developed, they might not be available to children and teachers. In Zambia, results from the 2015 Early Grade Reading Assessment and Early Grade Mathematics Assessment showed that 80% of students did not have a textbook in the language of instruction. In Uganda, less than half of classrooms observed during the fieldwork had materials in the language of instruction, which means that teachers are required to translate learning

materials into local languages for early grades, adding an additional burden to their teaching duties.

The provision of materials in home languages is important not only for literacy but also for numeracy skills. In the Spotlight focus countries, all mathematics textbooks were in English or French. The research analysed the types of explanations included in mathematics textbooks in the five focus countries, providing some insight into the accessibility of those explanations to pupils with limited language skills. Graphic explanations, as well as worked examples, can be considered language-friendly and easy to understand for students with more limited reading skills, for whom textbooks whose explanations are delivered mainly though narrative text may be of limited value.

Lower primary textbooks in Niger place more emphasis on text-based explanations, while the few explanations provided in textbooks in Mauritania are also mostly text-based, which may compromise students' ability to access the information. At the end of primary, while the share of explanations in textbooks increases in all countries, the share of non-text-based explanations increases significantly in Mauritania and Niger. In contrast, Ugandan and Zambian lower primary textbooks used more non-text-based than text-based explanations, which can help reduce the language load for beginning readers.

This issue also extends to the curriculum. The degree to which the national curriculum is made available in local languages is not clear across countries. In Uganda, the curriculum is written in English without translations into local languages of instruction. Therefore, even though policy states that education should be delivered in the student's mother tongue in grades 1 to 3, the curriculum for lower primary grades is only provided in English.

FIGURE 4A.4

Many African countries with bilingual or multilingual language of instruction policies struggle to provide textbooks in these languages

Number of languages of instruction by primary textbook availability in those languages, selected countries, 2023
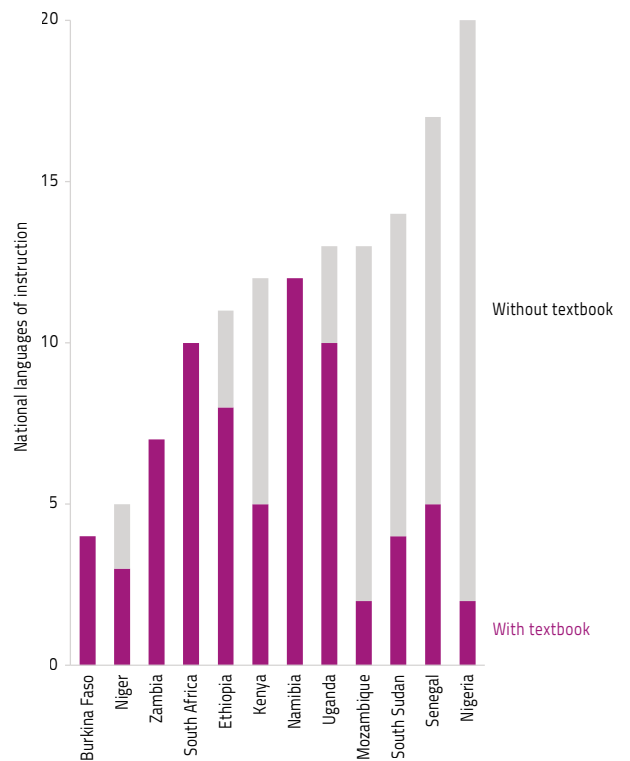
Source: GEM Report team analysis of data from the Multiple Indicator Cluster Survey.

TABLE 4A.1

Language of instruction policies, selected countries

	Main/target language of instruction (LOI)	Local languages that are official LOIs	Children who are L1 users of official LOIs	Languages use as LOI, as per policy	
				First grade	Last grade
Central Africa					
Burundi	French, English	Kirundi	32%	1	3
C. A. R.	French	Sango	9%	1	2
D. R. Congo	French	Lingala, Luba-Kasai (Chiluba), Swahili, Kongo	33%	1	4
Eastern Africa					
Eritrea	English	Tigrinya, Afar, Bedawiyet/Beja, Tigré, Saho, Kunama, Bilen, Nara	91%	1	5
Ethiopia	English, Amharic	Amharic, Afar, Oromo, Somali, Tigrinya, Gamo, Hadiyya, Kafa, Nuer, Sidamo, Sebat Bet Gurage	79%	1	4, 6 or 8 depending on language
Kenya	English	Swahili, Kamba, Kimĩĩru, Somali, Borana, Dholuo, Ekegusii, Gikuyu, Kipsigis, Konkani, Maasai, Ateso	46%	Pre-primary	3
Madagascar	French	Malagasy	26%	1	5
Mauritius	English, French	Morisyen, Urdu, Bhojpuri, Chinese, Punjabi, Tamil	84%	1	3
Seychelles	English, French	Seychelles French Creole	83%	1	2
Somalia	English, Arabic	Somali	66%	1	12
South Sudan	English	Arabic, Bari, Zande, Acholi, Baka, Beli, Didinga, DinkaGbaya, Luwo, Morokodo, Moru, Nuer, Shilluk, Fulfulde	87%	1	3
Uganda	English	Luganda, Swahili, Acholi, Alur, Ateso, Ruchiga, Lango, Lugbara, Lumasaaba, Runyankore, Lusoga, Rutooro, Fumbira (Kinyarwanda)	57%	1	3
U. R. Tanzania	English, Swahili	Swahili	24%	1	11
Northern Africa					
Algeria	Arabic	Kabyle, Tarifit	15%	–	–
Southern Africa					
Botswana	English	Setswana	69%	1	1
Eswatini	English	Swati	81%	1	4
Lesotho	English	Sotho	77%	1	4
Malawi	English	Chichewa	53%	1	4
Mozambique	Portuguese	Nyungwe, Swahili, Nyanja, Swati, Tsonga, Zulu, Lomwe, Makhuwa, Makhuwa-Meetto, Makonde, Ndau, Sena, Yao	54%	1	5
Namibia	English	Afrikaans, Lozi, Gciriku (Ru-manyo), German, Herero, Jul'hoansi, Khoekhoe, Kwangali, Kwanyama/Oshiwambo, Mbukushu, Ndonga, Setswana	74%	ECE	3
South Africa	English	Afrikaans, Ndebele, Setswana, Sepedi, Sesotho, Swati, Tsonga, Venda, Xhosa, Zulu	76%	1	3 (12 for Afrikaans)
Zambia	English	Bemba, Chewa (Nyanja), Kaonde, Lozi, Lunda, Luvale, Tonga	44%	1	4
Zimbabwe	English	Ndebele, Shona	55%	1	3
Western Africa					
Burkina Faso	French	Jula, Moore, Fulfulde, Gourmanchéma	62%	1	5

	Early/late exit	Languages that transition to/are kept as subjects	Existence of textbooks (mathematics/reading)	Existence of supplementary reading materials online (digital libraries)
	Early	All	–	Kirundi
	Early	All	Sango	–
	Early	–	–	Lingala, Luba-Kasai (Chiluba)
	Late	All	–	Tigrinya
	Early (except Oromo, Somali, Tigrinya)	All	Amharic, Afar, Oromo, Soma-li, Tigrinya, Hadiyya, Sidamo, Sebat Bet Gurage	Amharic, Oromo, Somali, Tigrinya, Hadiyya, Nuer, Sidamo
	Early	All	Swahili, Kamba (EGR), Dholuo (EGR), Ekegusii (EGR), Gikuyu (EGR)	Swahili, Kamba, Kimîîru, Somali, Dholuo, Ekegusii, Gikuyu, Kenyan Sign Language, Konkani, Ateso
	Late	All	Malagasy	–
	Early	All	–	Urdu, Bhojpuri, Punjabi, Tamil
	Early	All	–	–
	Late	–	Somali	Somali
	Early	All	Bari (EGR), Zande (EGR), Dinka (EGR), Nuer (EGR)	Zande, Acholi, Baka, Nuer, Fulfulde
	Early	All	Luganda, Acholi, Ateso, Ru-chiga, Lango, Lugbara, Luma-saaba, Runyankore, Lusoga, Rutooro	Luganda, Swahili, Acholi, Alur, Ateso, Ruchiga, Lango, Lugbara, Lumasaaba, Runyankore, Lusoga, Rutooro, Fumbira (Kinyarwanda)
	Late	All	Swahili	Swahili
	–	–	–	Kabyle
	Early	All	Setswana	Setswana
	Early	All	Swati	Swati
	Early	All	Sotho	Sotho
	Early	All	–	Chichewa
	Late	–	Lomwe, Makhuwa	Nyungwe, Swahili, Nyanja, Swati, Tsonga, Zulu, Lomwe, Makhuwa, Makhuwa-Meetto, Ndau, Sena, Yao
	Early	Some	Afrikaans, Lozi, Gciriku (Ru-manyo), German, Herero, Ju 'hoansi, Khoekhoe, Kwangali, Kwanya-ma/Oshiwambo, Mbukushu, Ndonga, Setswana	Afrikaans, Lozi, Gciriku (Rumanyo), German, Herero, Khoekhoe, Kwangali, Kwanyama/Oshiwambo, Mbukushu, Ndonga, Setswana
	Early (except Afrikaans)	Some	Afrikaans, Ndebele, Setswana, Sepedi, Sesotho, Swati, Tsonga, Venda, Xhosa, Zulu	Afrikaans, Ndebele, Setswana, Sepedi, Sesotho, Swati, Tsonga, Venda, Xhosa, Zulu
	Early	All	Bemba, Chewa (Nyanja), Kaonde, Lozi, Lunda, Luvale, Tonga	Bemba, Chewa (Nyanja), Kaonde, Lozi
	Early	All	–	Ndebele, Shona
	Late	All	Jula, Moore, Fulfulde, Gourmanchéma	Fulfulde, Gourmanchéma

	Main/target language of instruction (LOI)	Local languages that are official LOIs	Children who are L1 users of official LOIs	Languages use as LOI, as per policy	
				First grade	Last grade
Gambia	English	Mandinka, Wolof, Pulaar, Serahule (Soninke), Jola-Fonyi, Serer-Sine, Maninkakan, Mandjak (Manjaco)	83%	ECE	4
Ghana	English	Akan, Éwé, Dagaare, Dagbani, Dangme, Ga, Gonja, Kasem, Nzema	49%	ECE	3
Liberia	English	Liberian English, Mende, Bassa, Dan, Klao, Kpelle, Loma, Maan	57%	–	–
Mali	French	Bamanankan, Dogon, Fulfulde, Sénoufo, Bomu, Bozo, Songhay, Soninke, Tamasheq, Khassonké/Malinke	49%	–	–
Niger	French	Hausa, Zarma, Kanuri, Fulfulde, Tamajaq	85%	1	3
Nigeria	English	Hausa, Igbo, Yoruba, Arabic, Efik, Fulfulde, Ibibio, Kanuri, Nupe-Nupe-Tako, Pidgin, Tiv, Edo, Anaang, Ebira, Gun, Idoma, Igala, Izon, Urhobo, Zarma	61%	1	3
Senegal	French	Wolof, Hassaniyya (Arabic), Jola-Fonyi, Mandinka, Mandjak, Manin-kakan, Mankanya, Ménik, Noon, Oniyan, Pulaar, Saafi-Saafi, Serer-Sine, Paloor, Soninke, Balanta-Ganja, Bayot	0%	1	3

Note: EGR: early grade reading; LOI: language of instruction.
Source: LEARN language of instruction database based on Trudell (2024b).

	Early/late exit	Languages that transition to/are kept as subjects	Existence of textbooks (mathematics/reading)	Existence of supplementary reading materials online (digital libraries)
	Early	All	–	Pulaar, Serahule (Soninke), Serer-Sine
	Early	All	–	Akan, Éwé, Dagaare, Dagbani, Dangme, Ga, Gonja, Kasem, Nzema
	–	–	–	–
	Early	–	–	Bamanankan, Sénoufo, Bozo, Soninke
	Early	All	Hausa, Zarma, Fulfulde	Hausa, Zarma, Kanuri, Fulfulde
	Early	All	Hausa, Yoruba	Hausa, Igbo, Yoruba, Efik, Ibibio, Kanuri, Nupe-Nupe-Tako, Pidgin, Tiv, Fulfulde, Ebira, Gun, Igala, Urhobo, Zarma
	Early	All	Jola-Fonyi (EGR), Mandinka (EGR), Pulaar (EGR), Serer-Sine (EGR), Soninke (EGR)	Wolof, Pulaar, Serer-Sine, Soninke

5 Teacher preparation and support

A classroom where the Teaching Mathematics for Understanding programme is being piloted in South Africa, aiming to improve numeracy skills in learner-centred environments through the use of manipulatives. (CREDIT: © UNESCO GEM Report/Rooftop)

- A legacy of weak educational development means that many countries need to contend with a teacher workforce with academic qualifications and subject knowledge levels well below what would be required to sufficiently support education systems.

- While high expectations are placed on formal teacher professional development programmes, there are implementation difficulties. Informal – and increasingly technology-supported – activities that help form teacher professional communities may be more sustainable, as they engage teachers directly, but need to be clearly steered.

- Teachers' understanding of curricula determines how they implement them in their classroom and fulfil learning objectives. Teacher's guides are generally available but do not appear to be used sufficiently, either because of their design or because teachers find it easier to use textbooks as a basis for planning lessons.

- No child is expected to fulfil their learning potential if they do not feel a sense of belonging in a safe, friendly and interactive classroom climate. However, there is insufficient emphasis on the socio-emotional dimension of teaching and teacher preparation for it.

KEY INSIGHTS

- In sub-Saharan Africa, the ratio of pupils per primary teacher with the minimum required qualifications has remained constant (57:1 in 2010 and 56:1 in 2021).

- Only 17% of African countries require a bachelor's degree as the minimum requirement for teaching in primary school compared to 62% of countries in the rest of the world.

- Among primary school teachers in the 14 francophone countries assessed for their subject knowledge, 35% only mastered basic procedures in mathematics. Differences in teacher subject knowledge accounted for more than one third of the cross-country variation in student achievement.

- Field research in four Spotlight focus countries found that around three in five teachers in South Africa and Uganda and more than four in five in Mauritania and Zambia had a teacher guide, although shortages or delays in provision were often noted.

"

Subject advisors have ... been very supportive to us teachers ..., because they see the difficulty of not having materials and still being expected to implement "

Teacher, South Africa

Teachers, the most important implementers of the curriculum, directly shape the outcomes of this vision, as they mediate the transition between the 'intended' and the 'implemented' or 'enacted' curriculum (Gouëdard et al., 2020). Teacher preparation is instrumental in realizing the national vision for education, since the extent to which teachers know and understand the curriculum will determine how they implement it in classrooms to fulfil learning objectives.

Teachers are supported in their implementation of the curriculum through three complementary dimensions. First, basic working conditions are essential elements for teachers to carry out their tasks in a functional workspace. Second, teaching materials, such as teacher guides and textbooks, offer insights into the teaching methodology required to align with the intended curriculum. Finally, the pedagogical support and training teachers receive, either from the school principal and/or through continuous professional development, can ensure they are equipped with the right skills and knowledge to teach the curriculum.

This chapter discusses how teachers can effectively implement curricula to support the achievement of foundational learning in Africa. It shows that shortages of qualified teachers, limited teaching resources and a lack of integrated strategies for continuous professional development impair curriculum implementation, which critically hinges on teachers' capacity. This chapter also explores how teachers can further support children, by catering to their needs and shaping a school climate conducive to socio-emotional development and learning.

A lack of qualified teachers affects curriculum implementation

After the abrupt cuts in public service provision during the years of structural adjustment imposed by international financial institutions in the early 2000s, African countries expanded access to education to make up for lost ground while absorbing a rapidly increasing child population due to demographic growth. Constrained financially and by a tiny pool of qualified teacher candidates, governments devised flexible hiring strategies to broaden that pool to the teaching profession. They relied on alternative employment arrangements outside the standard civil service route, bringing in volunteer, community and contract teachers (International Task Force on Teachers for Education 2030, 2020). The proportion of teachers with the minimum required qualifications declined in sub-Saharan Africa from 84% in 2000 to 75% in 2010 and 69% in 2021, according to the official definition. In Madagascar, for example, the share of community teachers in primary education was 61% in 2021 (Gouëdard, 2023) and just 15% of teachers were officially reported as having the minimum required qualifications in 2019.

In the past decade, many countries have been trying to raise the number of teachers with the minimum required qualifications. In Senegal, this was one of the priorities during the last phase of the Ten-year Programme on Education and Training 2001–2011 (Senegal Government, 2013), with the result that the share of teachers with

the minimum required qualifications increased from 48% in 2010 to 72% in 2013. Mozambique has been undergoing a process of not only increasing the share of teachers with the minimum required qualifications (from 76% in 2010 to 97% in 2017) but also raising the level of those qualifications. The entry requirement rose from 10 to 12 years of education and the training duration from 1 to 3 years. This process is in transition. In 2024, the government announced it would hire 2,800 primary and secondary school teachers, of which 24% would be N1 teachers (with higher education), 46% would be N2 teachers (with 12 years of education and 3 years of training) and 30% would be N3 teachers (with 12 years of education and 1 year of training); all of the N3 teachers would be for primary schools (Club of Mozambique, 2024).

Still, countries often struggle to meet the competing demands of recruiting more teachers and ensuring they have the minimum required qualifications. In sub-Saharan Africa, the ratio of pupils per primary teacher with the minimum required qualifications has remained constant (57:1 in 2010 and 56:1 in 2021). In Rwanda, the number of primary teachers increased by an extraordinary 44% in 4 years, from 44,000 in 2019 to 63,000 in 2022, as a result of a government-led school and classroom construction drive. But as newly recruited teachers were not trained (VVOB, 2021), the share of all teachers with the minimum required qualifications fell from 95% in 2019 to 76% in 2022 (**Figure 5.1**).

However, the way these results are presented hides more than it shows. The definition of minimum required qualifications is national and therefore not comparable. Sustainable Development Goal (SDG) target 4.c aims to 'substantially increase the supply of qualified teachers'. SDG global indicator 4.c.1 was originally defined as the proportion of teachers 'who have received at least the minimum organized teacher training (e.g. pedagogical training) pre-service or in-service required for teaching at the relevant level' but was revised during the 2020 review of SDG indicators to reflect the proportion of teachers 'with the minimum required qualifications' by education level and by sex. This revision was made with the intention to align the indicator with the target language ('qualified teachers').

FIGURE 5.1

African countries are trying to raise teacher qualifications

Percentage of primary teachers with minimum required qualifications, selected countries, 2010–22
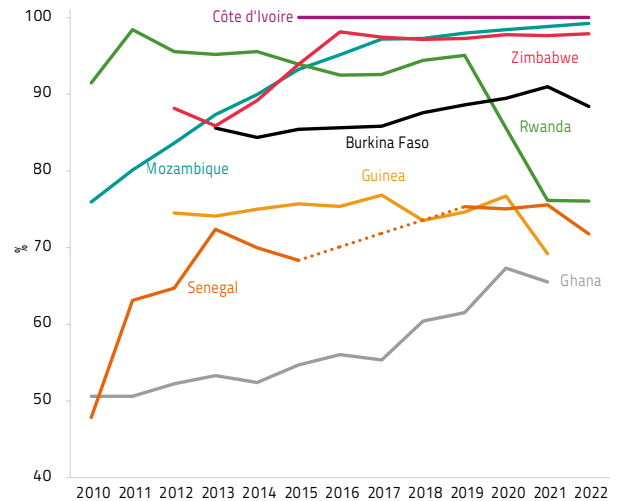
Source: UIS database.

Moreover, there remains a lack of clarity over what teacher characteristics are (or should be) captured in the definition. It remains a challenge to redefine the indicator using quantifiable teacher characteristics that effectively identify those who are 'trained' from those who are 'qualified' which all countries understand in the same way and for which they can roll out data collection processes that can be implemented consistently in a straightforward way.

The original intention of the indicator definitions was to capture whether the teacher workforce had received specific pedagogical training (and could therefore be considered to be 'trained') and the level of the highest academic qualification a teacher had received (e.g. whether they were a secondary school or a university graduate – which would describe the extent to which they were 'qualified').

Teacher training is acquired through two routes; first, through concurrent (teacher training from the outset through general and professional subjects) or consecutive (when holders of tertiary diplomas move to a teacher training programme) teacher training programmes that grant teacher diplomas; and second, through a short, professionally oriented

or employment-based training that combines work in schools with a tailored training programme. But countries in general do not distinguish between the two concepts in their language or administrative procedures. In other words, receiving teacher training is part of the definition of being a qualified teacher.

To reconcile and distinguish the two concepts, the UNESCO Institute for Statistics (UIS) has mapped teacher qualification requirements to assemble a new database documenting differences around the world. According to this new UIS database, the most common requirement globally to teach in primary education is a bachelor's degree, i.e. level 6 in the International Standard Classification of Education (ISCED). Around the world, 62% of countries have ISCED 6 as the minimum requirement. However, only 17% of countries set that level in Africa. Conversely, 48% of African countries accept secondary education as a minimum requirement (15% for lower and 33% for upper secondary), which is four times higher than in the rest of the world (12%) (**Figure 5.2**).

Identifying a bachelor's degree as the most common requirement and proposing it as a global minimum qualification opens the opportunity to collect data to compare teachers' backgrounds. The UIS is currently in the process of requesting that countries provide data accordingly and, where this is currently not possible, redesign their approach to teacher data collection. However, some existing older and, in a few cases, more recent data shed light on the challenge facing African countries. First, data from 19 countries in 2015 show that in 9 of those, at least 85% of primary teachers had no more than a secondary education. In four countries, the most common qualification was only lower secondary education: Burkina Faso (82%), Benin (76%), Madagascar (73%) and Togo (58%) (**Figure 5.3**). In contrast, short-cycle tertiary was the most common qualification in Kenya and Mauritania, while a bachelor's degree was the most common qualification in Egypt (41%) and Namibia (82%).

While the data are out of date, the pace of change is so slow that the situation does not change from one year to the next. The UIS database contains more recent data for six countries in eastern and southern Africa, which

FIGURE 5.2

In Africa, countries set a secondary school certificate as a minimum requirement to teach in a primary school four times more often than in the rest of the world

Level of minimum academic qualification requirement to teach in primary education, Africa and the rest of the world, 2023
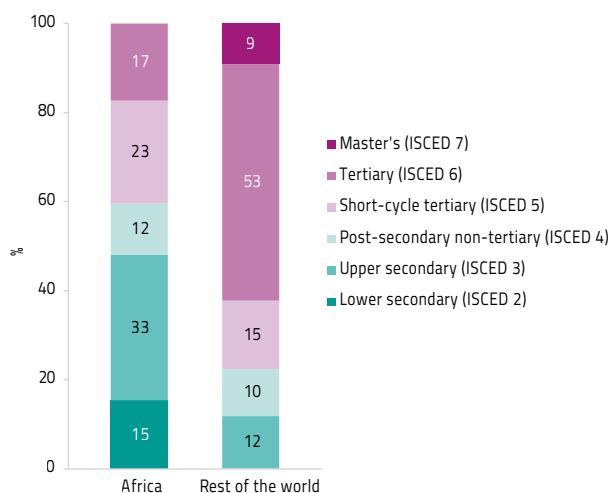
Source: UIS teacher requirements database.

emphasize this point (**Figure 5.4**). The annual increase in the share of primary teachers with a bachelor's degree was 1 percentage point in Namibia, 1.5 percentage points in Kenya and Seychelles, and 2 percentage points in the United Repulic of Tanzania. There was no increase at all in Eritrea and Zambia, although the data show Eritrean teachers upgraded their qualifications: the majority (63%) had a post-secondary non-tertiary qualification in 2014 and a short-cycle tertiary qualification in 2019 (54%). The government raised the student selection standards at grade 10 for getting into the Asmara Community College of Education teacher training programme, from which graduates can continue at diploma level or obtain a degree at the College of Eritrean Institute of Technology (Eritrea Ministry of Information, 2016).

While current reforms in Africa aim to raise qualification levels from a lower secondary school diploma to an upper secondary school diploma or even a bachelor's degree (Global Partnership for Education, 2022), in an extreme case, Niger raised the minimum requirement for teaching in primary schools from primary to lower

FIGURE 5.3

In 2015, four in five primary school teachers in Burkina Faso only had a lower secondary school certificate

Primary school teachers by academic qualification, selected countries, 2014–15
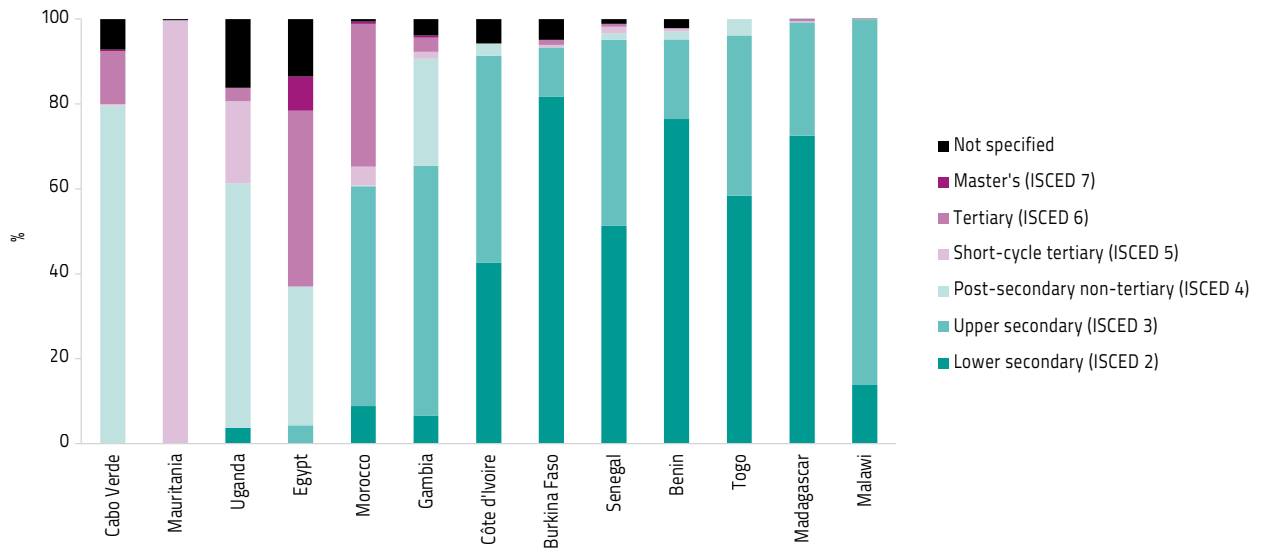
Note: Countries are ranked according to the share of teachers with no more than upper secondary education.
Source: UIS database.

FIGURE 5.4

It will take decades for the academic qualifications of African teachers to meet the global minimum requirement

Primary school teachers by academic qualification, selected countries, 2014–17 and 2019–21
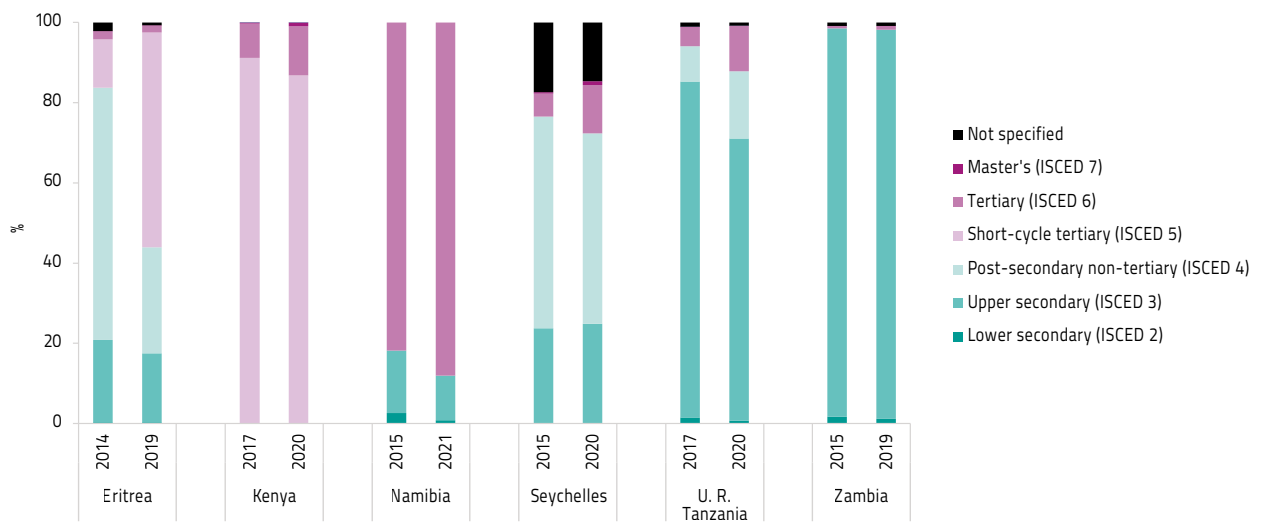
Source: UIS database.

secondary education as recently as 2017. The share of teachers whose highest diploma was a lower secondary degree increased from 27% in 2016 to 90% in 2021. But the proportion of upper secondary graduates among primary teachers only increased from 2% to 8% in this period (Játiva, 2021).

Minimum requirements may also be insufficient for raising the overall qualifications level if a significant share of teachers is still hired locally. While, in principle, countries have stopped recruiting teachers without initial training, when the supply of public education is limited or where there are many hard-to-staff schools in remote areas, parents and the community still hire community teachers, regardless of established recruitment criteria. For instance, in the Central African Republic (Global Partnership for Education, 2023), Chad (Gouëdard et al., 2023) and Madagascar (Gouëdard, 2023), more than 60% of teachers are locally hired and paid by the community or parent associations.

It is worth comparing the minimum qualification set by each country with the most common academic qualification among primary teachers in these 19 countries, even if that comparison may be imperfect as the data are, in many cases, out of date, as well as possibly out of synch with the time when the minimum required qualification was set. There are countries where the two are consistent with each other, such as in Malawi where upper secondary was both the minimum qualification required and the most common academic qualification in 2015. In contrast, the median teacher had a higher academic qualification (post-secondary, non-tertiary) than the minimum required (upper secondary) in Uganda; while in Zambia the opposite scenario was encountered, as the median teacher had an upper secondary certificate, when the minimum requirement was a short-cycle tertiary degree (**Table 5.1**).

TABLE 5.1:

Minimum required qualification and most common academic qualification of primary teachers, selected countries, 2014–21

Minimum requirement	Most common qualification				
	Lower secondary (ISCED 2)	Upper secondary (ISCED 3)	Post-secondary non-tertiary (ISCED 4)	Short-cycle tertiary (ISCED 5)	Tertiary (ISCED 6)
Lower secondary (ISCED 2)	Burkina Faso, 2015 Madagascar, 2015	Côte d'Ivoire, 2015	Seychelles, 2020	-	*More qualified than required* ↗
Upper secondary (ISCED 3)	Benin, 2015 Senegal, 2015 Togo, 2014	Malawi, 2015	Uganda, 2015	Mauritania, 2015	-
Post-secondary non-tertiary (ISCED 4)	-	Gambia, 2015 U. R. Tanzania, 2020	-	Eritrea, 2019	Egypt, 2014
Short-cycle tertiary (ISCED 5)	-	Zambia, 2019	-	Kenya, 2020	Namibia, 2021
Tertiary (ISCED 6)	*Less qualified than required* ↙	Morocco, 2015	Cabo Verde, 2015	-	-

This discussion serves as a reminder that the headline (and global SDG 4) indicator is not sufficiently informative and possibly misleading in many cases. For instance, 100% of teachers in Côte d'Ivoire but only 15% in Madagascar were considered to have the minimum qualification. Yet, in practice, the composition of the

primary teacher workforce was not substantively different in the two countries: 91% of teachers in Côte d'Ivoire and 99% in Madagascar had at most a secondary education certificate. A closer look at the distribution of academic qualifications is, therefore, more likely to provide insights into the major challenges facing many countries.

TEACHER KNOWLEDGE AFFECTS STUDENT OUTCOMES

The challenge of low academic qualifications is only the tip of a wider problem, especially considering that the vast majority of those who obtained a secondary school certificate had previously graduated from primary school not having achieved a minimum proficiency level. The results of two cross-national surveys in recent years demonstrate this problem.

First, among surveyed primary school teachers in the 14 countries that took part in the 2019 Program for the Analysis of Educational Systems of CONFEMEN (PASEC), 16% of them were not able to make simple inference or interpret and combine information after reading a text, and 35% of them only mastered basic procedures (such as writing decimals, comparing fractions or the notion of percentages) in mathematics (PASEC, 2020).

Second, analysis of Service Delivery Indicator surveys funded by the World Bank in 7 countries in 2010–14, which sampled grade 4 students and their teachers, suggested that students had the equivalent of 1.5 effective years of schooling in reading and mathematics, ranging from 0.4 years in Mozambique to 2.5 years in Kenya. Their teachers had the equivalent of 3.5 years of education in reading and 3.7 years in mathematics or, using an alternative metric, the percentage of teachers who had 80% of the knowledge equivalent to a grade 4 student was 66% in reading and 68% in mathematics. About 68% could multiply double digits, 35% could solve algebra problems and 11% could interpret data in a graph (Bold et al., 2017a; 2017b).

Individual studies carried out as part of system diagnostic reviews or project evaluations add to these findings. For example, 820 graduating Gambia College students had their literacy and numeracy content knowledge and professional skills assessed as part of the first Gambia College External Competency Exam in 2020. Graduate teachers were expected to master at least 80% of the grade 1–4 and at least 60% of the grade 4–7 English and mathematics curriculum content. They were also expected to demonstrate an ability to compose and assess primary

school-level writing, write a meaningful lesson plan and interpret teaching-related data. Only 3% were categorized as having the minimum professional knowledge required to teach English and mathematics in primary schools and 48% were categorized as 'on track to reach the desired level'. The remaining 49% were unlikely to teach both subjects effectively given their lack of understanding in content knowledge. Among assessed numeracy areas, some 70% of graduates could not demonstrate mastery of primary school-level number operations and struggled with fractions, decimals, percentages and rates, statistical information interpretation, and conversion and operation involving measurements (Hsieh, 2021).

In the United Republic of Tanzania, as part of the baseline study of the UK-funded EQUIP-T programme, the language and mathematics content knowledge of teachers in 200 primary schools was assessed. In mathematics, there were 36 questions, mostly focused on the grade 6 and 7 curricula, which covered whole numbers, fractions, decimals, percentages, measurement, geometry, statistics and algebra. The mathematics assessment was given to teachers of mathematics in lower primary (grades 1–3) and in upper primary (grades 4–7). The results were expressed as the number of questions answered correctly as a percentage of the total number of questions. Teachers scored 59% on average, ranging from 28% for the bottom 10% of teachers to 86% for the top 10% of teachers – and from 88% for grade 1–3 curriculum questions to 55% for grade 6–7 curriculum questions. Teacher performance was the weakest in geometry (43%) and algebra (45%). Teachers who taught in upper primary had stronger subject knowledge (66%) than their colleagues teaching in lower primary (52%) (Pettersson et al., 2015).

The biggest gap in overall teacher knowledge, which comprises curriculum, subject and pedagogic knowledge, was in curriculum knowledge. Due to the lack of teacher training, teachers were unaware of the content of the syllabus, did not know what subject matter should be taught to which grade level and were unclear how textbooks related to the curriculum they were required to teach. Even if teachers had sufficient subject knowledge, they would be unable to adequately prepare pupils without curriculum knowledge (Pettersson et al., 2015). Subsequent

interventions have tried but struggled to strengthen curriculum, subject and pedagogic knowledge (**Box 5.1**).

Various studies have shown that teacher knowledge is effective in improving student learning. Two studies were based on the two major cross-national learning assessments, which also assessed teacher knowledge. The first study was based on historic data from the 2000 and 2007 Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ) assessment in 13 Southern and Eastern African education systems, which also tested subject knowledge. Disparity in knowledge between systems was very large: the difference between the countries with the best- and worst-performing teachers was almost three times as large as the difference between teachers with tertiary and primary education. The overall impact of teacher subject knowledge was small, but this masked the absence of an impact in poorer countries with low learning levels and a stronger impact in richer countries with higher learning levels, which is attributed to the complementarity of teacher knowledge with higher school resources (Bietenbeck et al., 2018).

The second study is based on the 2019 PASEC assessment in 15 francophone African countries, which tested subject and pedagogic knowledge. The study exploited the differences in teachers' and students' reading and mathematics skills. It found a strong impact of teacher subject knowledge, which exceeded that of other studies, possibly because teachers and students were assessed on the same topics. Teacher subject knowledge is found to account for more than one third of the cross-country variation in student achievement. A smaller and weaker effect was also found for pedagogical knowledge, although this is inevitably captured less reliably as it is not observed in the classroom (Bietenbeck et al., 2023).

Pre-service teacher education is a natural focus of reforms. In Mauritania, a 2019 reform of the École Normale d'Instituteurs focused on harmonizing and tightening candidate selection criteria and on standardizing training content and certification, as part of a wider set of efforts to promote teacher professionalization. Emphasis was placed on mastery of both Arabic and French, while a professional or educational research project was also introduced. The first wave of trainees was deployed in 2021 and

evaluated by the National Evaluation Cell in 2022, yielding positive results compared to previous cohorts. In 2023, the first graduates were certified in collaboration with the regional directors and the Department Inspectorate of National Education (Mauritania Government, 2023).

In turn, continuous professional development strategies are also needed to strengthen teacher competences, including those hired by communities. Such strategies may include training that is formally (e.g. courses, conferences, workshops) or informally structured (e.g. networking, peer learning). However, formal approaches risk being disconnected from the school context or teachers' actual needs or being badly adapted, following a top-down approach to knowledge transmission rather than considering teachers as active learners. This raises the question of how to better support teachers and design effective professional development modalities.

In high- and upper-middle-income countries, teachers have reported that impactful training implied active learning and collaboration (OECD, 2014) and strong subject content (OECD, 2019). Designing content-driven professional development with curriculum-based components helped teachers master their subject, build their confidence and strengthen their self-efficacy (Fischer et al., 2018). Sustained participation is required for such impact to materialize (Darling-Hammond et al., 2017).

In the resource-constrained environment of African schools, participation in professional learning networks or communities is a flexible form of professional development, where interactive groups reduce time and distance constraints by offering spaces for exchange and discussion among educators sharing resources (Trust et al., 2016). Teachers set their own learning pace and develop strategies to contextualize teaching instruction to their local settings. In Burkina Faso, where formal modalities of professional development have also shown limitations, teachers have turned to online learning communities for timely and tailored support (**Box 5.2**). Professional development has proven to be one of the areas where the use of technology has been most seamlessly integrated into education practice, as shown in the 2023 *Global Education Monitoring Report* (**Box 5.3**).

BOX 5.1:

Two US-funded programmes supporting Tanzanian teachers demonstrate challenges

In 2020, the Ministry of Education, Science and Technology in the United Republic of Tanzania endorsed a National Framework for Teacher Continuous Professional Development to steer efforts to enhance teaching quality through continuous professional development.

Two USAID-funded projects, Tusome Pamoja and Jifunze Uelewe, were initiated in 2019 in four regions of the United Republic of Tanzania (Morogoro, Iringa, Ruvuma and Mtwara) and in Zanzibar, focusing on foundational learning. The projects piloted continuous professional development strategies aligned with the National Framework. These initiatives reached more than 3,000 schools, 25,000 teachers and 1.2 million students from pre-primary to grade 4 and informed the national Teacher Continuous Professional Development Implementation guide. They offer insights into the challenges of implementing effective teacher support interventions and underscore the difficulties in sustaining training uptake and ensuring teachers apply new teaching approaches in classroom settings.

The projects used four strategies: face-to-face training; pre-recorded training content; school-based communities of learning; and training local education officials in coaching and mentoring support to teachers. Training was initially delivered through large-scale, face-to-face sessions using a cascade model, followed by a shift to a cluster model covering three to five schools. In addition to detailed in-person training, teachers received concise, interactive voice-recorded lessons followed by quizzes. Moreover, peer learning opportunities for teachers were provided in collaboration with district staff leading to the establishment of communities of learning in schools for teachers to exchange insights on implementing the newly learned strategies in class. Mandated by an administrative circular, teachers met once every two weeks for an hour, guided by training materials and handouts combining theory and practice. For all types of training, however, teacher participation fell from the initial high levels.

Tusome Pamoja and Jifunze Uelewe also tried to increase the engagement of the local administrations, including ward education officers, in providing teacher support beyond their school administrative duties. According to the project's background research, less than 50% of these officers performed their classroom observation duties, despite almost all of them being aware of their duty, mostly due to time constraints. Initial training was provided to ward education officers in the final year of the Tusome Pamoja project. Jifunze Uelewe also helped develop draft guidelines to include coaching as a specific review item in the officers' performance evaluations with approval from local authorities.

A review of 10 schools per region purposefully selected among those performing at the two opposite extremes in grade 4 national examinations indicated limited changes in teaching behaviours. Classroom observations of grade 1 and grade 2 teachers showed that teachers did not apply the teaching approaches taught during their training. Moreover, they did not differentiate their teaching strategies by the type of foundational skills taught.

Source: The box is based on RTI (2024).

BOX 5.2:

Teachers in Burkina Faso are experimenting with informal online learning communities

In Burkina Faso, inadequate teacher preparation, irregular pedagogical support and imperfect subject knowledge have been identified as causes for low foundational learning and numeracy skill acquisition. A study of 154 schools in 3 provinces (Ganzourgou, Namentenga and Soum) showed that three quarters of school directors considered that their teachers had difficulties with mathematics lessons (Burkina Faso Ministry of Education et al., 2017).

The Burkinabe government has committed to providing continuous professional development in two recent policies: the integrated strategy of continuous training of teachers and educational supervisors and the integrated strategy for strengthening pedagogical management (IIEP, 2021). At the district level, annual pedagogical conferences and designated pedagogical days allow teachers to convene and discuss challenges and solutions. Recurring training sessions organized by local education administrators provide training in specific domains. At the school level, inspectors visit schools to provide pedagogical supervision. *ARC (Action Réflexion Culture)* is a pedagogical journal published bimonthly, while *Radio Scolaire* is a radio show that provides information on pedagogy, child psychology, reading and mathematics.

However, these training modalities also have limitations. Teachers question their relevance, as they do not always align with their specific needs. They struggle to participate in person in the absence of financial compensation, especially when schools are in remote areas seldom visited by inspectors. The journal and radio show do not allow for effective interactions. To address some of these concerns, the Francophone Initiative for Distance Education of Teachers (IFADEM) has developed fully remote or hybrid professional development modules that allow participants to engage with each other and their trainers using a dedicated platform. IFADEM offers professional development in French, mathematics and civic education.

Beyond these approaches, social media is helping create learning communities to foster peer learning among teachers. A 2018 survey of over 500 primary school teachers found that almost two thirds were using Facebook to support their teaching activities. An exploratory study of a large Facebook teaching learning community found that teachers were actively using the platform to discuss topics ranging from pedagogy to professional development. Content analysis of a large WhatsApp group showed that teachers actively used it for sharing mathematics exercises and solutions. These learning communities have helped increase access to training and support activities for teachers living in remote areas who may not be able to attend in-person pedagogical training or have regular visits from local school inspectors and/or pedagogical advisors. During the COVID-19 pandemic, online groups bridged the gap between schools and parents, allowing teachers to directly communicate with parents about learners' progress.

Although learning communities offer timely and tailored support, they still face the usual challenges of online platforms. Content regulation and data protection remain crucial to ensure a secure online environment for users and foster fruitful exchanges, as teachers may hesitate to seek advice in groups managed by education officials, fearing exposure of their weaknesses and inadvertently sharing sensitive information.

Source: The box is based on Tienin (2024).

Technology is helping change teacher training in Africa

The use of technology as a means of teacher training is increasing in countries, transforming the way teachers can learn in at least five ways (Hennessy et al., 2023). First, it is making training opportunities more accessible, helping overcome location and time barriers. Such flexibility also helps teachers choose the pace, location and modality of their learning and, in some cases, even the content and pedagogical approach. Distance education programmes have been found to promote teacher learning in mathematics in South Africa (Amevor et al., 2021) and to even equal the impact of in-person training in Ghana (Henaku and Pobbi, 2017), although more privileged learners tend to access them (Castillo et al., 2015).

Second, technology facilitates hands-on, personalized and collaborative training. Teachers can use technology to learn from each other, share best practices and work together on projects (Burns, 2023). Virtual communities of practice are one promising model for peer learning and resource sharing, especially in the absence of face-to-face communication or subject specialists. Virtual communities have emerged, primarily through social networks, for communication (via social networks like WhatsApp) and resource sharing (via video conferencing software like Zoom). In the United Republic of Tanzania, active teacher collaboration in Telegram-supported teacher groups emerged before the pandemic but strengthened during school closures, as membership expanded to 17,000 teachers. This virtual support mechanism reinforced in-person teacher collaboration and is embedded in teachers' lives (von Lautz-Cauzanet and Buchstab, 2023).

Third, technology can facilitate the involvement of experienced teachers in providing feedback, observing classes and encouraging teachers to follow certain practices. Coaching software has been used to provide structured observation tools to improve the quality of support. The Tangerine:Coach software has provided guided observation protocols to coaches in Kenya and Uganda, automatically generating feedback that coaches can share with teachers. Tablets and software have simplified coaches' work and increased their commitment to improving their work (Pouezevara et al., 2019).

Virtual coaching appears to have the same impact on teachers as in-person coaching (Evans, 2021). In South Africa, face-to-face coaching appears to be equally effective in the short term, although it produces better results in the long term (Kotze et al., 2019), which suggests virtual coaching needs to overcome the challenge of maintaining trusting relationships over time (Cilliers et al., 2022). Yet virtual coaching often has huge cost advantages. In Senegal, the Reading for All programme reached more than 14,000 teachers in 2020/21 using an ongoing professional development model that included in-person workshops and in-person and online coaching. Teachers receiving any type of coaching were 23% more likely to give constructive feedback, and students had better learning outcomes in reading when their teachers were being coached. Face-to-face coaching improved teaching practices and was considered more useful by teachers, but online coaching was 83% less costly than face-to-face coaching, and achieved a small but significant improvement in the way teachers guided their students' reading practice (Bagby et al., 2022; Hennessy et al., 2023).

Fourth, some technology resources can develop teachers' reflective practices, especially videos but also digital storytelling, e-portfolios and blogging. Videos allow teachers to observe exemplary teachers, to whom they often lack access, or to watch themselves or their peers teach. The OER4Schools programme in Zambia has integrated video lessons into a multimodal and blended approach to support teachers with an emphasis on inclusion. Learning was guided by built-in prompts for both teachers and facilitators, while materials linked theory to practice. Teachers were able to work together to try new pedagogical strategies. A professional learning resource was developed consisting of 25 two-hour sessions, organized into 5 units and covering interactive teaching principles, group work, questioning, dialogue, formative assessment and inquiry-based student learning. An evaluation found that teachers who completed the sessions became more responsive to disadvantaged students' needs (Hennessy et al., 2015; 2016).

Fifth, technology can improve teacher subject and pedagogical knowledge. In South Africa, under an intervention of the non-profit organization Funda Wande, teachers received a USB stick containing lesson plans, classroom videos and teaching materials. This initiative has increased literacy in isiXhosa, led to changes in teachers' pedagogical practices and had a significant impact on the reading proficiency of all learners regardless of their initial skill level, in particular grade 1 students (Ardington and Meiring, 2020).

REMEDIAL EDUCATION PROGRAMMES CAN HELP STRUGGLING LEARNERS

To reduce grade repetition and dropouts, many African countries are providing some type of remedial education, either in-school or through community-based activities, for teachers and teaching assistants. In Chad, a 2014 decree established automatic promotion for students transitioning and recommended remedial lessons for low-achieving learners. Since 2017, one of the components of a large-scale quality improvement project has been training teachers to provide remedial education (**Box 5.4**). In Uganda, data collected for this Spotlight cycle found that almost all schools in a representative sample of four districts were providing remedial classes to students falling behind. The classes ranged from 1 to 10 hours a week and focused on foundational literacy and numeracy.

BOX 5.4:

In Chad, a programme has trained teachers in supporting students through remedial education

In Chad, according to 2019 PASEC data, out of the 40% of students who reached the last grade of primary education, one in two had repeated at least one school year. A 2014 decree banned student retention in grades 1–4. Instead, students at the end of grade 2 and grade 4 with quarterly assessment scores below average would be provided remedial lessons. These lessons would be provided for 40 hours per year and per subject (mathematics and languages) to help students progress to the next cycle.

But implementing additional hours of remedial education is challenged by low levels of teacher capacity, high teacher absenteeism rates and a lack of incentives for teachers to take on additional responsibilities. According to the 2019 PASEC assessment of teacher subject knowledge, Chadian teachers scored the lowest among the 14 participating countries in mathematics. About 70% achieved no more than level 1, when the average among participating countries was 32% (CONFEMEN, 2020). Moreover, one in three teachers was absent in 2021 and actual time spent teaching was almost half the expected instruction time (World Bank, 2023).

A positive initiative was the introduction by the Ministry of National Education and Civic Promotion in 2017/18 of the Projet d'amélioration de la qualité de l'éducation de base et de promotion d'une gestion de proximité (Basic Education Quality Improvement and Local Management Promotion project). Supported by civil society implementing partners, the project aimed to reduce repetition by training teachers to provide tailored remedial support during school hours. In 2018, the project was rolled out in 50 public schools, evenly split between the N'Djamena and Moundou regions, reaching more than 55,000 students.

A key feature of the programme was improving teachers' pedagogical practices during regular school hours. Teachers were trained to adapt their teaching practices to students performing poorly by observing their learning patterns, being supportive when they made mistakes and stimulating student engagement by changing the traditional frontal classroom set-up, which results in students passively listening to teachers. To support teacher professional development, teacher guides and a teacher training kit with techniques and multimedia support were developed. All pedagogical supervisors from 50 schools were also trained on using the guide and the training kit.

An impact evaluation in 2022/23 with the participation of about 130 teachers highlighted that almost all had adopted strategies such as rearranging the classroom layout, more than three quarters had changed their attitudes towards students' mistakes and almost all tried not to punish students facing difficulties. However, only one third of teachers had implemented differentiated teaching methods to cater to varying student needs, even though the majority expressed the intent to do so. Teachers reported requiring more time and support to implement such practices consistently.

Preliminary data on the impact of the intervention indicate a reduction in grade repetition decisions made by teachers. In N'Djamena, the average class repetition rate fell from 24% in 2021/22 to 21% in the 2022/23 school year. The teacher guide and training programme are currently being considered for country-wide implementation.

Source: The box is based on Ripoche (2024).

To be effective and sustainable, remedial learning needs to be regular, target specific skills in small groups, and include teacher or volunteer guidance to ensure a high quality of instruction (Louge et al., 2022). In Senegal, a pilot remediation initiative, Keppaaru Jàngandoo, targeted low levels of foundational literacy and numeracy by providing teacher and community volunteers with regular training. Remediation activities were provided through community-based activities and in-school training for primary school students up to four hours per week. Following improvements in learning in endline assessments carried out internally by Jàngandoo, a civil society organization, the government supported the expansion of the intervention (Alcott et al., 2018). In 2018, the Ministry of National Education, through the Mainstreaming Continuous Assessment and Remediation in the Education System of Senegal programme, expanded its remedial education programme to 3 academies (Kaffrine, Kolda and Matam), targeting 42,000 students in 76 public schools. An analysis of 20,000 beneficiary students found that students with difficulties in reading and mathematics during the placement test improved basic reading skills by 25% and mathematics proficiency by 40% in endline assessments as a result of remediation (Moussa et al., 2021).

However, few studies can clearly distinguish the effects of remediation from those of additional instructional time. In Ghana, a randomized experiment compared four types of government-supported remedial interventions in grades 1–3 in a nationally representative sample of 500 schools in 42 districts. Trained assistants provided remedial lessons for two hours to students during school hours, after school or by pulling students out of class to review lessons during school. After two years, all remedial methods improved test scores in English, national languages and mathematics for grade 3 students, suggesting that the extra time in the after-school version might not be the main driver of impact (Ganimian and Sharnic, 2023).

Providing targeted instruction grouping students by their skill level, instead of their age or grade, is another way to help those lagging behind to catch up. In Zambia, the Ministry of Education, with international development partner support, has been implementing targeted

instruction for an hour a day in primary schools in language or mathematics. It began as a pilot project in 2016 in 80 schools across 4 districts in the Eastern and Southern provinces. By 2021, the programme covered about 2,000 schools and almost 250,000 students. Teachers were trained to carry out formative assessments to better understand learners' knowledge levels and provided with teaching plans focusing on issues such as phonemic awareness, phonics and fluency that learners might have missed in grades 1 and 2. An impact study in 2019 showed that between the start and the end of the school year, the number of students from grades 3–5 able to read a simple paragraph increased by 40% from 69,000 to 110,000, while those who could successfully do subtraction doubled from 53,000 to 100,000. However, the impact of the programme on early-grade literacy declined during school years affected by COVID-19 (UNICEF, 2022).

Many countries introduced remedial measures in their response and recovery plans to address learning losses due to COVID-19 school closures (Wawire et al., 2023). In Sierra Leone, the Ministry of Basic and Senior Secondary Education introduced remedial learning in small groups, called 'learning circles', based on the children's learning level, abilities and needs. About 1,000 learning circles were established, reaching 35,000 children in all 16 districts. An assessment found significant improvements in children's abilities to read a paragraph and perform basic arithmetic operations (Wurie et al., 2023).

Teacher guides are meant to support teachers' work but are not used consistently

Textbooks, teacher guides and lesson plans can support teachers to implement the curriculum. Teacher guides usually explain the teaching methodology and provide information on assessment. In the four Spotlight

countries where small-scale fieldwork was carried out, the majority of teachers reported having a teacher guide, from around three in five in South Africa and Uganda to more than four in five in Mauritania and Zambia. However, the interviewed teachers and head teachers often noted shortages or delays in provision. Moreover, teachers reported low usage of teacher guides, as they preferred a combination of textbooks and other materials to develop their lesson plans.

In Mauritania, teacher guides do not seem to be used at all. Instead, teachers believe textbooks are easy to use and cover the curriculum effectively. Most of them, therefore, reported relying on textbooks to choose learning topics, decide how to approach them, select problems and exercises, and assess students. During classroom observations, however, only 4% of teachers referred to the textbooks. Although one third of teachers reported having textbooks in their classes, classroom observers noted an absence of textbooks in all visited classes but one, where students had handouts provided in French, which was not the language of instruction.

In South Africa, teachers base their lessons on a learner activity book or a textbook, but in classroom observations, only 78% of observed teachers had a clear lesson plan and 34% referred to the textbook during the lesson. In Uganda, teachers reported using textbooks to make their lesson plans, without the support of the teacher guide. During fieldwork, 83% of teachers were seen to possess a textbook, whereas only 58% of teachers had a teacher guide. Most teachers and head teachers considered primary school teaching and learning materials to be relevant but insufficiently funded and distributed. In Zambia, most teachers were not using their guides and followed pre-determined lesson plans, building on textbooks for further examples, explanations and exercises.

In almost all Spotlight countries, some scripted lesson plans have been developed to support teachers. In Mauritania, the World Bank-funded Basic Education Sector Support Project works with the government on the provision and use of scripted materials in primary schools (World Bank, 2023). In Niger, the Global

Partnership for Education and the World Bank are working with the government to provide scripted materials to primary classes. In South Africa, the grade 3 Teaching Mathematics for Understanding and grade 6 Department of Basic Education materials are scripted for teachers but require a more balanced approach of basic activities and more diverse types of explanations (see **Chapter 4**). In Uganda, teacher guides are reportedly complex and require teachers to flip back and forth between pages. As a result, just above half the surveyed teachers from the field work reported using them (**Table 5.2**).

In summary, teacher guides are designed to assist teachers to use the textbooks as intended by the curriculum. Scripted materials, such as detailed lesson plans, can also help strengthen the alignment between teaching and the curriculum's objectives. However, teacher guides are seldom used to craft lesson plans or inform teaching practices, either because they are not available in the school or because they are inadequate. Improving the take-up of teacher guides may help teachers better understand curriculum objectives and improve children's learning outcomes.

TABLE 5.2:

Teacher guide availability and use, Spotlight focus countries

Teachers (%)			
Country (number of classroom observations)	With teacher guides	Refer to textbooks in class	With lesson plans
Mauritania	83	4	46
South Africa	65	34	78
Uganda	58	100	71
Zambia	88	53	58

Source: Spotlight focus country fieldwork.

Almost all teachers (94%) in the four Spotlight countries where fieldwork was carried out reported being aware of national policies and familiar with the national curriculum and supporting documents. In Mauritania, all teachers interviewed were familiar with the national curriculum document and 83% of head teachers confirmed that the official mathematics curriculum and instructions were

available in their schools. All teachers also stated that they set their class curriculum based on the national curriculum. However, almost half of teachers interviewed during fieldwork believe that some parts of the curriculum were too complex for them and expressed needing additional support to be able to teach more effectively, particularly in areas such as geometry and measurement units.

In South Africa, all teachers observed were familiar with the national curriculum and 91% based their lessons on it. The remaining teachers reported basing their lessons on the framework of the Teaching Mathematics with Understanding pilot programme of which they were part. One of the challenges of doing that is how to accommodate learners from other schools which do not follow the programme and where teaching methods may differ. In Uganda, teachers are further informed about what and how they should teach based on government circulars and updates. In Zambia, only 65% of teachers report being familiar with the national curriculum, but almost all (94%) had a copy of the corresponding national syllabus for the grade they taught.

Social and emotional skills matter for learning

A child's learning is affected by their social and emotional skills and by supportive classroom environments, yet this concept is often neglected (Jukes and Norman, 2024). Social-emotional skills such as self-concept (i.e. a measure of how a child understands their personality and whether they believe in their own ability to achieve a particular task immediately or in the future) can increase motivation for learning and expectations for success, ultimately determining academic performance. Just as intelligence is malleable rather than fixed, a student's view of their own intelligence or a teacher's view of their students' intelligence matters for learning. But teachers are often not prepared to create a positive classroom environment.

The learning climate of a classroom (i.e. the perception of what it feels like to be at school) is shaped by interactions among peers, school rules and procedures, resources, and pedagogical practices. In a positive learning environment, children with low self-confidence are encouraged to participate in class. When these children do speak up, they are applauded and not scolded, even if they give an incorrect answer (Schweig et al., 2019). A positive learning climate predicts strong academic achievement through encouraging children to be more active in class and more confident. It can improve school attachment and relationships with other students, which in turn increases the motivation to learn. It can also shape norms that influence children's self-beliefs, helping to battle stereotypes. As argued in the 2020 *Global Education Monitoring Report* on inclusion, children struggle to learn if they do not feel part of the education programme and lack a sense of belonging.

Two studies describe relationships between social-emotional skills and learning. The first is a nationally representative study of grade 1–3 students in Kenya, the Tusome National SEL and Early Grade Reading Assessment. It measured social-emotional skills such as confidence, rated by assessors (based on how the child engaged in conversation with the assessor and on whether the child appeared happy after completing a task) and by the students themselves (e.g. children were asked which one of two descriptions of children – one confident, one not – was most like them). Other measures included counting the number of friends the child could name and interpersonal negotiation strategies (based on responses and interpretations to scenarios of conflict with other children read out to them). Children also answered 10 questions about the emotional climate in their class. A child who was confident and effective at interpersonal negotiation, had many friends and benefited from a supportive learning environment in class scored 10–20 percentage points higher in all 4 literacy assessments. Moreover, up to 50% of inequality in learning achievement could be attributed to inequality in self-confidence.

The second study analysed data from Young Lives, a project collecting longitudinal data on children aged 8 to 22 in Ethiopia and three other non-African countries. The study measured agency, a variant of self-concept, which represents the ability to make purposeful choices. Young people indicated their agreement with the following statements: 'If I try hard, I can improve my situation in life'; 'I like to make plans for my future studies and work'; and 'If I study hard, I will be rewarded with a better job in the future'. The study examined the relationship between agency and mathematics, which was measured by one arithmetic question for young children and subsequently a 10-item test. The analysis found that children's mathematics ability in each round was a predictor of agency in later rounds (e.g. from age 12 to 15). But there was also a reciprocal relationship, with agency in earlier rounds also predicting mathematics performance in later rounds. Girls increasingly lagged behind boys in agency throughout adolescence.

A review classified effective programmes into three categories (Norman et al., 2022). First, some programmes integrate social-emotional skills into their pedagogy through teachers' everyday instruction and interactions with students. They provide professional development to teachers to engage students through play and shared work and pedagogy that connects content to children's lives and experiences to increase students' attachment to their learning environment and develop social cohesion. The International Rescue Committee's Healing Classrooms programme introduces teachers to five areas of well-being: fostering a sense of control, creating a sense of belonging, creating a sense of self-worth, promoting positive social relationships and promoting intellectually stimulating learning environments. Teachers also learn concrete strategies to incorporate these five well-being areas into their everyday classroom instruction. Implementing the programme in the Democratic Republic of the Congo had small but significant positive effects on students' reading and geometry scores (Aber et al., 2017).

Second, some programmes are designed around child-centred activities, which are delivered either during class or during extracurricular time, targeting specific skills such as executive function, emotional regulation, conflict resolution, and developing and managing relationships. Under the Eminyeeto Girls Empowerment Program in Uganda, girls attended after-school classes designed to develop self-management, self-awareness, social awareness, relationship skills and responsible decision-making, all of which improved (Malhotra et al., 2021). The programme Brain Games focuses on three executive function skills through games: focus power (flexibility of attention deployment); remember power (working memory); and stop-and-think power (inhibitory control). An application in Niger resulted in improvements in student literacy and numeracy scores (Dolan et al., 2022).

Third, some programmes focus on establishing safe, friendly and interactive classroom conditions, supportive of social-emotional development and responsive to the expression of social-emotional skills as they develop. For example, they encourage children with low self-confidence to participate in class to promote positive relationships and create a sense of belonging. The Journeys programme in Uganda engaged teachers, other school staff, students and community members in weekly activities that addressed gender norms, power and relational dynamics, and aspects of safety (including addressing corporal punishment) (Randolph et al., 2019). Measures of student safety improved and students repeated grades less frequently.

Conclusion

Given the very high and stagnant pupil/qualified teacher ratios, African countries need to hire and train millions of teachers to reach minimum quality standards in education service delivery. Many governments have been progressively raising the minimum required academic qualifications for becoming a teacher and introducing innovations to their pre- and in-service teacher education programmes. Raising the capacity of incumbent teachers is a particular priority. Locally hired teachers, who are often the only ones who accept work in hard-to-staff schools, have often not received training. The task is very difficult considering the low levels of learning which previous generations of teacher candidates have achieved.

A shortage of qualified teachers and a lack of integrated strategies for continuous professional development hamper the implementation of curricula, which depends on teacher capacity. Resources, such as teacher guides and lesson plans, can help teachers follow curriculum objectives, but appear to be used inconsistently, which calls for rethinking their design. Teachers impact student learning by ensuring children feel cared for, appreciated and physically and emotionally safe. Social-emotional skills and a positive classroom environment can go a long way to support improved learning but teachers need adequate preparation to implement activities that foster such a supportive learning climate.

6 Learning assessments

A Grade 11 student writes on a desk while the class waits for their maths teacher in a public school in Soweto, South Africa on 14 October 2021. (CREDIT: © UNESCO GEM Report/Rooftop)

- Many African countries have submitted benchmarks on learning outcomes in primary education without sufficient evidence on past levels and trends, which increases the risk that they are unrealistic.

- Among Spotlight focus countries, Niger, South Africa and Zambia have national assessment frameworks – and in the latter two, those frameworks explicitly connect the education vision with learning assessments.

- An emphasis on end-of-primary or matriculating examinations comes to the detriment of formative assessments that can support children in early grades.

- Although some countries carry out a large number of learning assessments in primary education, there is limited capacity to use the results for policy and to relate them to the global minimum proficiency level.

KEY INSIGHTS

- As of December 2023, 54% of African countries had submitted a 2025 national benchmark for the minimum proficiency level in reading by the end of primary. However, of those, only 69% had some baseline and latest data to support it.

- Angola, the Central African Republic and South Sudan, have each conducted no more than four assessments in reading and mathematics since 2000. In contrast, Burkina Faso, Senegal and Uganda have implemented more than two per year.

- Only 6 in 10 of the assessments caried out in 25 countries have made a report publicly available and only 3 in 10 have made the data available. Less than 1 in 10 can be used to reporting on the SDG indicator on learning.

" *...normally it's the dog that wags the tail but when it comes to the education system in Uganda it's the tail that wags the dog! It's examinations that inform the teaching, yet it should be the opposite.* "

Former Commissioner, Ministry of Education and Sports, Uganda.

While many African governments declare in principle their commitment to improve foundational literacy and numeracy levels, in practice there is less emphasis in operationalizing their targets and communicating concrete objectives. One sign of this lack of connection between aspirations and plans is that many countries in the continent have yet to put in place a comprehensive strategy for carrying out and properly leveraging learning assessments, both as a monitoring tool and as a formative tool to guide teaching and learning. This chapter reflects on various aspects of this challenge and reviews recent initiatives to solve the assessment and data gap.

Is foundational literacy and numeracy part of the national education vision?

A national vision for education should state the desired results of the educational system, including the skills students should acquire and how many students are expected to achieve a defined level of proficiency in these skills. These expectations are formulated in the national strategy or sector plan and pinned down with more specificity in official documents such as a national assessment framework.

Foundational learning is an explicit feature of the national visions for education in Mauritania, South Africa and Zambia, but is less explicit in the national policy objectives of Niger and Uganda. In 2022,

Mauritania passed orientation law 2022-023 on the national education system, which includes measures to improve foundational literacy and numeracy through improving access to preschool and providing instruction in local languages. In South Africa, the vision for improved teaching and learning is contained in the National Development Plan, Vision for 2030.

A recent coordinated approach to encourage countries to think through their aims has been the national SDG 4 benchmarking process, which has been supported by the UNESCO Institute for Statistics (UIS) and the Global Education Monitoring (GEM) Report. In 2015, in the Education 2030 Framework for Action, all countries committed to establish 'appropriate intermediate benchmarks ... for addressing the accountability deficit associated with longer-term targets'. Two of the eight SDG 4 benchmark indicators, for which countries would set targets for 2025 and 2030, are highly relevant for the Spotlight report series: the completion rate and the minimum proficiency rate in reading and mathematics. As of December 2023, 85% of African countries had submitted a 2025 national benchmark for primary completion, compared to 61% in the rest of the world, many of which may have already achieved universal primary completion. In contrast, 54% of African countries had submitted a 2025 national benchmark for the minimum proficiency level in reading by the end of primary, compared with 50% in the rest of the world (**Figure 6.1**).

However, the quality of these national targets varies in terms of how well informed they are. For instance, among African countries that have set a national benchmark, the share of those that had baseline and latest data to support it was 83% in the primary

FIGURE 6.1

One in two African countries have set a national target for minimum proficiency in reading at the end of primary

Countries by 2025 SDG 4 benchmark submission and data availability status, African countries and the rest of the world

a. Primary completion rate

b. Minimum proficiency level in reading at the end of primary school

Legend:
- No benchmark
- Benchmark without baseline and latest value
- Benchmark with baseline or latest value
- Benchmark with baseline and latest value
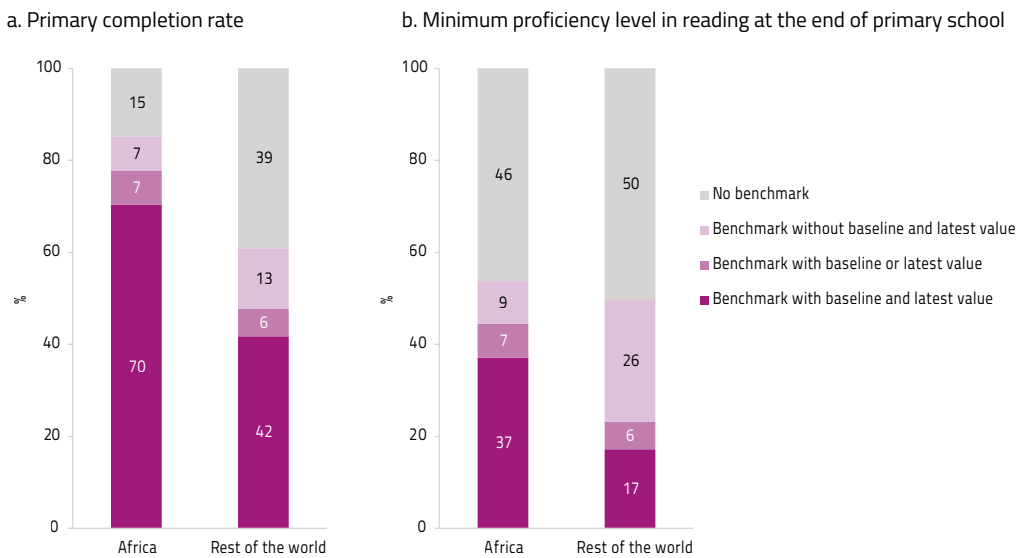
Source: SDG 4 benchmark database.

completion rate and 69% in the case of the minimum proficiency level in reading at the end of primary. This suggests that many countries submitted benchmarks without sufficient evidence on past levels and trends, which increase the risk that they are unrealistic.

Countries may still set unrealistic targets even when such data are available if they have not yet developed a good understanding of the indicator and its trends. To support countries in the benchmark setting process, the UIS and the GEM Report had provided a reference point showing where each country would be by 2025 and 2030, given their starting points, if they continued improving at rates achieved by the fastest growing 25% of countries ('feasible benchmark'). Countries vary in the extent to which their actual differ from their feasible benchmarks, a gap which suggests a measure of whether their benchmarks are achievable, under- or overambitious.

In general, in the rest of the world, the discrepancy between actual and feasible benchmarks is wider in the minimum proficiency level indicator than in the primary completion rate. The median absolute gap between

actual and feasible benchmarks was 1 percentage point in the completion rate and 7 percentage points in the minimum proficiency level. In African countries, the gap between actual and feasible benchmarks was equal for both indicators but, at 10 percentage points, it was much higher than in the rest of the world (**Figure 6.2**). This means that some African policy makers are too optimistic, which suggests that they may be less familiar with the indicator and its plausible trends. For example, by 2025, Senegal aims to have 91% and Togo 74% of their students achieving minimum proficiency in reading at the end of primary. However, the feasible benchmarks for that year are 51% and 30% respectively.

In order for countries to be able to set realistic, even if ambitious, targets, which they can link to policies, they need a steady supply of good quality data from learning achievement surveys. In that respect, further efforts are required to leverage assessments to set and achieve foundational learning goals. Among Spotlight focus countries, Mauritania and Uganda do not have a national evaluation framework, while the link between the country policies and learning assessments is not

FIGURE 6.2

African countries have set more ambitious national benchmarks than the rest of the world

Actual and feasible benchmarks, African countries and rest of the world, 2025

a. Primary completion rate

b. Minimum proficiency level in reading at the end of primary school
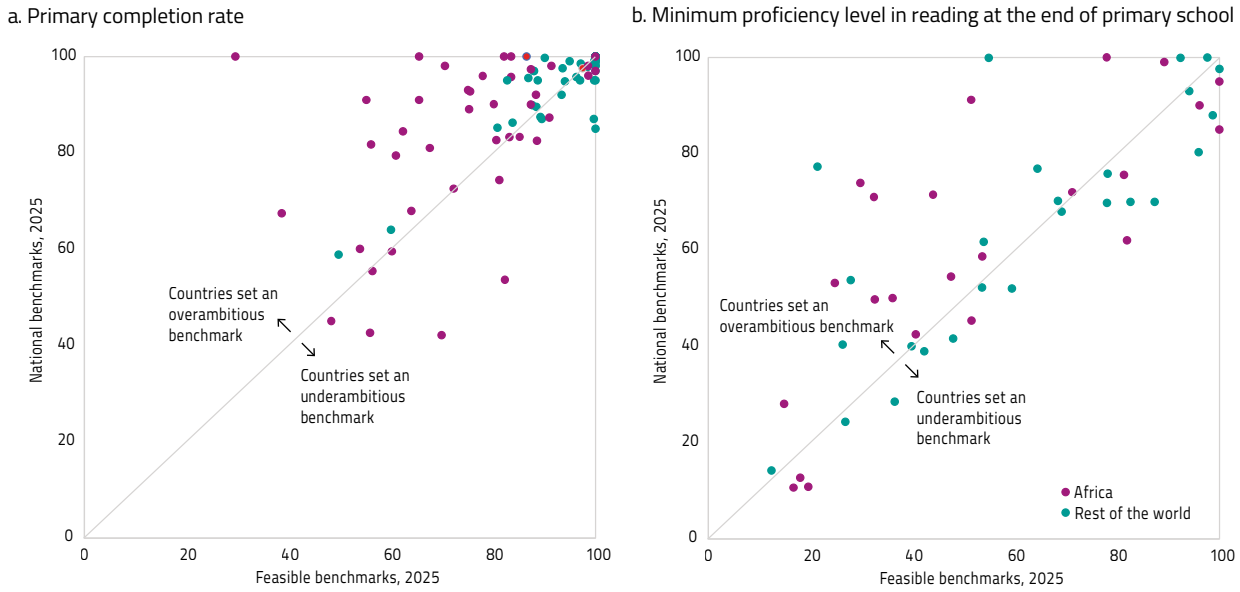
Source: SDG 4 benchmark database.

TABLE 6.1

Consistency between foundational learning objectives, national policies, and assessments. Spotlight focus countries. 2023

	National vision explicitly refers to foundational learning	Country has national evaluation framework	Policy stipulates link between foundational learning objectives and national assessments	Policy stipulates link between foundational learning objectives and school-based assessments
Mauritania	✔			✔
Niger		✔		
South Africa	✔	✔	✔	✔
Uganda				
Zambia	✔	✔	✔	✔

Source: Spotlight focus county reports and national policy documents.

clearly stated in Mauritania, Niger and Uganda (**Table 6.1**). Setting a comprehensive evaluation and assessment framework is an integral part of an effective education system, as it signals the key competencies to develop, guides teaching practices (formative assessment), provides feedback on student learning at different milestones (summative assessment), and informs on how well the education system is performing.

Low capacity prevents learning assessments from being used to inform policy

Learning assessments help focus on what matters in education. They are a critical part of an evidence-based approach to developing strategies for the further improvement of teaching and learning. However, they are yet to become ingrained in education statistical systems as a trusted and legitimate source of information. Despite a global upward trend in the number of learning assessments being carried out in primary education in Africa, the collected data could be leveraged more effectively to inform policymaking and spur change.

To describe the learning assessment landscape in Africa, an original database was created, gathering information from 25 African countries with available data, focusing on the focus and case study countries of the first and second Spotlight cycles. Any assessment conducted in primary education has been included, including comparable cross-national assessments (e.g. PIRLS, TIMSS, PASEC, SACMEQ), non-comparable cross-national assessments (e.g. Early Grade Reading Assessment) and national assessments (e.g., Annual National Assessment in South Africa, National Assessment of Progress in Education in Uganda, National Assessment Survey in Zambia etc.).

The number of learning assessments conducted in primary education increased from 5 in 2001 to 53 in 2014; there were on average 31 assessments per year in either reading or mathematics in these 25 countries between 2005 and 2019. Almost no assessments were carried in 2020, during the COVID-19 school closures (**Figure 6.3**). There is significant variation in the frequency of learning assessments between countries (**Figure 6.4**). Burkina Faso, Senegal and Uganda have implemented at least one assessment per subject per year since 2000. In contrast, Angola, the Central African Republic, Mauritania and South Sudan conducted between two and six assessments in total over the same period.

For each country, one assessment per year has been carried out in the past 20 years

Total number of nationally representative learning assessments in reading and mathematics, primary education, selected countries, 2000–21
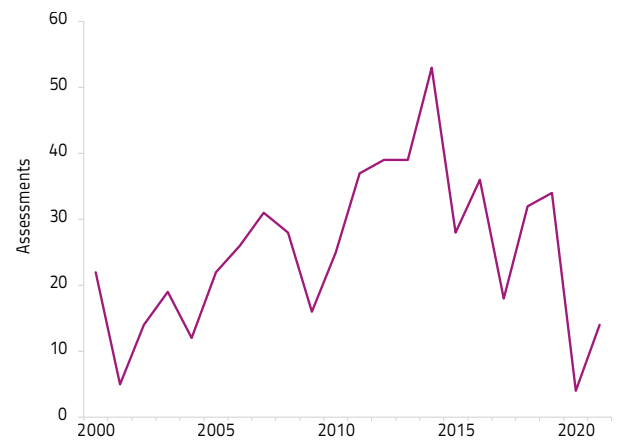
Note: The 25 countries included in the analysis are listed in Table 6.2.
Source: GEM Report team analysis for the Spotlight report.

FIGURE 6.4

In Uganda, there have been two assessments per year; in South Sudan two assessments in 20 years

Geographic distribution of learning assessments, by country, 2000–21
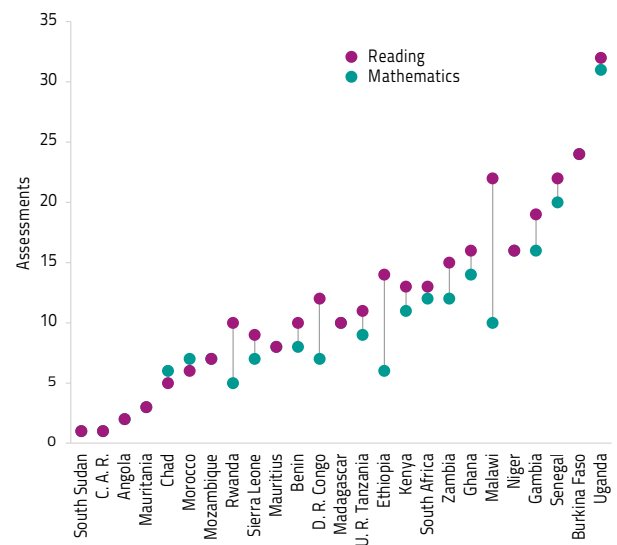
Source: GEM Report team analysis for the Spotlight report.

However, implementing learning assessments does not guarantee that results are reported and that data are available. Only 6 in 10 of the assessments have made a report publicly available and only 3 in 10 have made the data available. In Malawi, just 1 out of 32 assessments and 1 out of 63 assessments in Uganda have made their data publicly available; in Gambia not one of the 35 assessments carried out between 2000 and 2021 made their datasets available.

TABLE 6.2

Reporting on learning assessment, selected countries, 2000–21

	MATHEMATICS			READING		
	Assessments	With report	With data	Assessments	With report	With data
South Sudan	1	1	0	1	1	0
C. A. R.	1	1	1	1	1	1
Angola	2	0	0	2	0	0
Mauritania	3	2	2	3	2	2
Chad	6	6	6	5	5	5
Morocco	7	0	6	6	0	5
Mozambique	7	4	1	7	4	1
Rwanda	5	1	0	10	6	0
Sierra Leone	7	3	1	9	3	1
Mauritius	8	4	4	8	4	4
Benin	8	6	6	10	6	6
D. R. Congo	7	6	5	12	7	5
Madagascar	10	9	7	10	9	7
U. R. Tanzania	9	7	2	11	8	2
Ethiopia	6	5	0	14	8	0
Kenya	11	10	1	13	9	1
South Africa	12	12	2	13	12	3
Zambia	12	3	0	15	5	0
Ghana	14	9	1	16	10	1
Malawi	10	6	1	22	13	1
Niger	16	15	14	16	15	14
Gambia	16	0	0	19	0	0
Senegal	20	9	6	22	11	6
Burkina Faso	24	24	24	24	24	24
Uganda	31	9	1	32	9	1
Total	253	152	91	301	172	90

Dissemination is often limited to education stakeholders at central level, not adequately targeting actors at provincial, district and school level. Qualitative research conducted in Ghana, Gambia, Namibia, Senegal and Zambia on the access and use of learning assessment data in policy making found that stakeholders at local level were less likely to receive assessment results and analyses (Raudonyte and Foimapafisi, 2022).

Limited capacity to explore and make sense of the available data undermines the value of learning assessments (Begue-Aguado, 2021). Even when data and associated reports are accessible, national capacity to analyse and institutionalise their use differs greatly (Varly, 2022). Despite a range of ongoing projects in the region, capacity to use and analyse data remains limited. As a result, the analytical potential of learning assessment data is not explored and its presentation in education sector analyses remain descriptive. Critical associations between learning performance and potential explaining factors are not drawn, which is the missing link to design evidence-based policies (Raudonyte and Foimapafisi, 2022). In Zambia, the National Assessment Survey in Grades 5 and 9 provides detailed analysis of student learning outcomes but does not analyse the different factors that influence student performance (Raudonyte, 2021).

Learning assessments should serve national education stakeholders and not the other way around. Education stakeholders may lack ownership over the data generated if they are not included in the process. They may develop a view that learning assessments only serve a culture of results-based management encouraged by donors who are supporting many of these assessments in the region (Begue-Aguado, 2021; Raudonyte and Foimapafisi, 2022). On the contrary, learning assessments should offer feedback at every level to improve education systems: at central level to inform policy making, at local level to support effective planning, and at school level to signal education priorities and guide teaching and learning.

ASSESSMENT PRACTICE IN SPOTLIGHT FOCUS COUNTRIES IS EXAM-FOCUSED

A national evaluation framework corresponds to coordinated arrangements for evaluation that seek to improve student outcomes within a school system. Three out of the five Spotlight focus countries (Niger, South Africa and Zambia) have established national evaluation frameworks. In South Africa and Zambia, those frameworks provide explicit guidelines that connect foundational learning goals, national assessments and school-based assessments.

South Africa has created a multifaceted, holistic approach to assessments, linking them to desired educational outcomes using a three-pronged approach outlined in the Department of Basic Education's National Assessment Framework. First, formative classroom-based assessments are designed to serve diagnostic purposes and facilitate error analysis, thereby providing insights to inform teaching practices. Notable examples include the Diagnostic Assessments and the Mental Maths Starters. Second, a summative approach encompasses assessments conducted at critical points in the educational trajectory. Third, cross-national assessments (e.g. SAQMEC, PIRLS and TIMSS) are used to benchmark the national system.

The Examinations Council of Zambia, which has its mission to be an assessment body of international comparable standards, has an established framework for formative and summative assessments. It also monitors Zambia's participation in international assessments. In recent years, the government has invested in strengthening its capacity. While the main assessments remain high-stakes national assessments administered at the end of Grades 7, 9 and 12, the Council has also administered Early Grade Reading Assessments (EGRA) and Early Grade Mathematics Assessments (EGMA) to Grade 2 pupils to assess foundational learning skills. More recently, Zambia, alongside a handful of other African countries, has participated in the Assessment for Minimum Proficiency Level (AMPL), where it has gathered valuable experience to develop its national assessment capacity (**Box 6.1**).

Countries have evaluated the experience of implementing the AMPL positively

Many countries do not participate in cross-national learning assessments and their national assessments do not meet quality standards in terms of setting clear curriculum objectives, covering constructs evenly and carefully selecting assessment items. A lack of such data does not only prevent monitoring and reporting on the global indicator: it is first and foremost an obstacle preventing countries from developing appropriate learning strategies to improve teaching in specific curriculum areas.

Four African countries – Gambia, Kenya, Lesotho and Zambia – implemented the Assessment for Minimum Proficiency Level (AMPL) in 2023, a tool developed to measure the proportion of students who achieve the minimum proficiency level, as defined by SDG global indicator 4.1.1, through a flexible administration mechanism corresponding to low- and middle-income country capacity levels. Focal points in each country were asked to provide feedback about their experience with AMPL implementation. In Gambia, the AMPL built on the National Assessment Test and the Early Grade Reading Assessment (EGRA)/Early Grade Mathematics Assessment (EGMA) (IIEP, 2021) and addressed the need to establish baseline measures, set targets and track progress. In Kenya, the decision to implement the AMPL was driven by the country's demand for an additional fit-for-purpose monitoring tool that would allow the government to evaluate the impact of recent policy reforms. In Lesotho, the AMPL fed into a review of the basic education curriculum and an analysis of pandemic-related learning losses. The Examinations Council of Zambia used the AMPL to review and align its national assessment system with the global proficiency framework, including on lower primary, as the national assessment currently focuses on grade 7, with the potential exception of the occasional EGRA and EGMA.

In each country, a national centre – led by an assessment expert and hosted by an existing government institution – implemented the AMPL according to technical standards endorsed by the UIS and provided in a manual. These centres, in close collaboration with the Australian Council for Educational Research, which was the AMPL technical partner, adapted test items into the national context, selected the sample, printed manuals, administered the test, monitored data collection, set quality control criteria and ensured high-quality data entry, following the procedures described in the manual. For example, the Examinations Council of Zambia discovered that 5 of the 35 items in the reading assessment did not match the local context and had to revise them.

With the support of the technical partner, samples were stratified to ensure diversity by school type, ownership, location and size. A few schools were excluded when they were too hard to reach, too small or followed a non-standard curriculum. A two-stage clustered sample design was followed, whereby an entire class of students from sampled schools was selected. Where the class size was too high, a subsample of students from that class was selected, following technical standards. Countries developed capacity on sampling through this experience. Kenya experienced higher-than-expected operational costs because some sampled schools were in remote areas. In Zambia, student lists were submitted late by schools, which delayed field operations.

Before the survey was administered, school coordinators, administrators, supervisors and quality control teams underwent a five-day training. Country teams were able to follow the standard procedure described in the manual. They completed data collection in no more than two weeks; in Kenya, the work was completed in three days. All countries covered 5% of the sampled schools for quality assurance. The quality monitors reported positively on the performance of test administrators. The process went smoothly, although test administrators and school coordinators resorted to phone inquiries for their questions instead of referring to their manuals in Lesotho.

The aural listening comprehension element of the test posed a challenge due to foreign accents and had to be redeveloped using local speakers. In Zambia, the team used audio voiceovers to translate the test into the local accent. In Gambia and

Kenya, classroom environments and school infrastructure were not conducive to administering the listening comprehension test. Moreover, aural listening comprehension is not taught in Gambia and Lesotho.

Custom-made data entry software was reported to be user-friendly. Data entry went smoothly in Kenya but other countries faced delays due to internet connectivity (Gambia) or staffing challenges (Lesotho and Zambia). Staffing limitations were among the most common challenges reported across countries. The availability of qualified staff was a challenge and ministry staff had to balance this work with their other tasks (**Table 6.3**).

Participating countries recognized that the AMPL generated rich data for the first time on the minimum proficiency level at the end of lower primary and the end of primary school. It also developed skills and competencies within countries, for instance on sampling and administering a listening comprehension assessment.

TABLE 6.3

Common challenges reported during AMPL implementation, by country, 2023

	Adaptation of AMPL terminology to local context	Assessment of aural comprehension component	Staffing shortages	Data entry delays	Insufficient hardware
Gambia	✔	✔		✔	✔
Kenya	✔	✔	✔		
Lesotho		✔	✔	✔	
Zambia			✔	✔	✔

Source: AMPL country focal points.

The experience of implementing the AMPL offered several lessons. First, country adaptation and institutionalization is a key element of the process, which therefore requires recognizing the country context to drive the data collection focus and timing, ensuring its fit with the national evaluation framework. Second, the project enhanced capacity for sample design, test administration, standard setting and other issues on learning assessment. The AMPL process delivered two courses of large-scale assessment analysis, covering item response theory, plausible values, complex survey design and estimation of population characteristics. But country teams indicated the need to develop their capacity further on data cleaning, quantitative data analysis, psychometric methods, data presentation and visualization, report writing, and data archiving and maintenance. Third, in terms of operational efficiency, lessons were learned on setting aside sufficient time for hiring data entry staff, sampling schools, requesting schools to submit learner lists, and training test administrators and school coordinators on the survey manual. Countries also recognized the need to think through the incentive structure for data collection.

Source: The box is based on Nkoya et al. (2024).

In Niger, the national evaluation framework is insufficiently developed. From Grade 1 to Grade 6, assessments are organized at the regional level. Regional authorities develop the tests and organize quarterly assessments. After the Grade 6, assessments are organized at the national level based on a circular. This arrangement makes it challenging to map assessments at primary level and connect them to the national curriculum and a broader national vision.

While Mauritania and Uganda were at the opposite extreme in terms of assessment frequency, neither has clear national evaluation frameworks stipulating how assessments are to be used. Both countries are characterized by a lack of formative assessment in teacher

practices. In Uganda, historically, education has focused almost entirely on large-scale, national high-stakes examinations that have important implications for student careers. In fact, a strong 'examination culture' characterizes Spotlight countries as exemplified in end-of-primary or matriculating examination from primary to secondary education. As resources and support are concentrated on these examinations, this comes to the detriment of assessments supporting children in early grades. Moving in the opposite direction, Mauritius has developed early years' diagnostics (**Box 6.2**).

BOX 6.2

Mauritius has developed a multi-layer, formative assessment system for young children

In Mauritius, foundational learning is considered a key building block for successful future learning and significant investment has been directed towards early years to provide high quality learning resources, recruit support teachers to assist class teachers, and build teacher capacity. To measure progress, three national formative assessments have enriched the national assessment framework and been embedded in the system. Built on the foundation of the National Curriculum Framework for pre-primary and primary education, these instruments are meant to improve learning by helping teachers make appropriate instructional decisions about how best to adapt their teaching to suit children's needs during the foundational years.

The developmental learning profile (**DLP**) keeps track of children's progress and development at pre-primary level, following a two-step process. The first step documents children's progress on skills and concepts for each theme of the different learning domains. The second step summarizes, at the end of the two years of pre-primary, progress in each learning domain. This is recorded in a transit DLP, which provides a measure of readiness using 55 competencies in the areas of personal, social and emotional development (13), physical development (18), communication, language and literacy (9), and cognitive development (15). The transit DLP is distributed free of charge to every child in public and private schools and handed over to their Grade 1 teacher when they enter primary school. Teachers can take stock of children achievements, attitudes and dispositions towards learning and better support their transition to primary education.

The primary school readiness (**PSR**) assessment is an annual one for Grade 1 children that takes place in the middle of the year (January-February) and supports a smooth transition from pre-primary to primary education. At the beginning of every year, the Ministry of Education provides every Grade 1 child of public and aided primary schools a PSR workbook and every Grade 1 teacher a PSR teacher manual. The PSR is designed around a series of activities that are conducted in a play-based manner either outdoor (physical activities) or indoor (as semi-guided activities or in small groups). All tasks involve some of the 59 competencies to be attained in the different domains of learning by the end of primary education. The teachers attend working sessions to ensure uniformity in administering the PSR, and the teacher manual provides guidelines on how to take children through the activities, record observations, and decide whether children have been successful or not at attaining each of the listed competencies.

The diagnostic assessment (**DA**) charts children progress in literacy and numeracy at the end of Grade 2. The literacy assessment covers the domains of reading and writing, and the numeracy assessment covers the domains of number and number sense, space and shapes, and measures. Every child of public and aided schools receives a DA workbook. The assessment is administered and marked by the class teacher according to a procedure manual provided by the Ministry of Education. Results are fed into a dedicated software that generates a grid for every child on every item in the assessment. The grid enables the teacher to identify the struggling children and the most challenging topics/learning areas for the class and devise appropriate strategies to attend to children's learning difficulties.

Data generated by these assessments are not made public, they only help teachers plan teaching activities for remediation purposes and improve their practices. Grade 1 teachers receive the DLP of each child at the beginning of the year, which helps them assess their strengths and weaknesses. Then, after 6 months, the PSR provides additional information to further tailor

the teaching strategies to the specific needs of the children/class. For instance, since 2017, the Early Support Programme aims at improving foundational learning by hiring and training support teachers. The findings of the DLP and the PSR guide this process and help the class and support teachers jointly develop lesson plans for children with learning difficulties. In some cases, the support teacher may take up to 8 children who are particularly struggling and provide individualised instruction, while the class teacher attends to the remaining group.

However, further efforts are required to ensure these early years' assessments significantly influence children's outcomes. First, the DLP is not yet digitalised, which would allow reporting and further analysis at central level. Second, the PSR needs to be validated according to psychometric standards. Since the PSR assesses pre-primary education learning achievement, the results should be disseminated among pre-primary education stakeholders and support early childhood education quality assurance processes. Third, the DA should expand beyond literacy and numeracy to encompass other dimensions of children's development. In addition, by aligning the DA conducted in Grade 3 to the PSR conducted in Grade 1, it would be possible to produce longitudinal data and better gauge progress in foundational learning. Finally, little is known about the impact, and teacher's capacity to design remedial actions and specific teaching strategies following the PSR and the DA. The development of professional learning communities may be an avenue worth exploring, as it provides a powerful platform for teachers to reflect on their practices, plan collaboratively detailed actions and strategies, and support each other when they implement the jointly developed solutions.

Source: The box is based on Soonarane (2024).

The original purposes of student assessment are to measure learning and progress, and to improve teaching and learning. To ensure assessments fulfill these goals, efforts to better connect learning assessments to national education visions are needed. It requires not only to develop an evaluation framework (Uganda, Mauritania) or to refine an existing one (Niger), and align examinations to the national vision for education, but to also build the capacity of teachers in conducting meaningful formative assessments. For instance, In Uganda, while the Ministry of Education and Sports has issued an assessment guide for teachers at the lower secondary level, it has not done so for the primary level. The Examinations Council of Zambia does not provide training to teachers on how to conduct school-based assessments and classroom assessment practices remain weak, since teachers do not have a standardized grading format and do not provide parents with explanations of how their children perform at school (UNESCO, 2016b).

It is a challenge to measure indicator 4.1.1a in Africa

While formative assessment is key, summative assessment also needs to be designed properly to be informative. Important developments have taken place in recent years to develop a global framework and develop eligibility criteria for what constitutes an assessment that can report on the SDG global indicator 4.1.1. However, few countries have yet been able to report on the indicator.

Following the approval of the SDG monitoring framework in 2017, two comprehensive reviews were scheduled by the Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs), the UN-coordinated group of countries that is charged with indicator development. The first review in 2019/20 focused on indicator methodology. The second upcoming review in 2024/25 will focus on indicator coverage. In October 2023, the IAEG-SDGs issued the review criteria: 'data must be available for at least 40 per cent of countries and of the population across the different

regions where the indicator is relevant; and a plan for how data coverage will be expanded must be included if current data coverage is below 50 per cent' (United Nations Statistical Commission, p. 7).

Global coverage of indicator 4.1.1 is sufficient at the end of primary (4.1.1b) and the end of lower-secondary education (4.1.1c): 46% of the population and 60% of countries. But it is low at grades 2/3 (4.1.1a): 16% of the population and 20% of countries. The only countries reporting are those that take part in PASEC (Grade 2) and a cross-national assessment in Latin America (Grade 3). As a result, the IAEG-SDGs reclassified the indicator, suggesting that it might be deleted. There is concern that this reclassification could signal that early grade learning matters less, even though it is an issue of global significance. A few blogs asked why three other assessments – the EGRA (**Box 6.3**), MICS and the citizen-led assessments of the PAL Network – are not being used to report on indicator 4.1.1a (Global Coalition for Foundational Learning, 2023; the Crawfurd et al., 2023; Fiszbein and Bhattacharjea, 2023; Akyeampong et al., 2024). Their argument was that the perfect should not be the enemy of the good.

But a good indicator must convey reliable, comparable information on learning outcome levels and trends to help guide policy and planning. It needs to be clear in terms of the content included to make one assessment comparable to others (domains); the minimum standards for each domain; the aggregation of performance in each domain to allow estimation of the share of students achieving the MPL; and the data collection procedures that ensure quality.

Measurement in lower primary (compared to end of primary and end of lower secondary) has at least two additional types of technical complexity. First, the young age of the children means that in addition to the traditional in-classroom group assessment, individual child assessment has also emerged as a test administration modality. Group-administered tests are more cost-effective if most children are around or above the minimum proficiency level. But in countries where most of the children lack even precursor skills, group assessments may be less useful for policy. Second,

as teaching and learning is more likely to take place in a larger number of home languages, parameters in these languages need to be developed to ensure comparability.

The proposed assessment tools have been designed to serve different objectives in various education contexts. However, global comparability was not necessarily one of these objectives. The EGRA and PAL Network assessments were originally created in the mid-2000s to generate policy awareness, on a country-by-country basis, by measuring easy-to-communicate skills that are precursors to reading with understanding. The EGRA was used to evaluate the effectiveness of US-funded projects, often in selected regions of a country. The PAL Network assessments were citizen-led initiatives intended to put pressure on governments to pay attention to low levels of learning. MICS developed a module to measure learning when the idea of an SDG indicator on learning outcomes was floated in the mid-2010s.

There are two broad sets of issues. First, there are technical issues. These assessments are not yet backed by evidence on how the transparency of each language's orthography affects reading accuracy and, therefore, how results would need to be adjusted to make reporting comparable. They tend to assess a level of learning below minimum proficiency. They vary in how they are administered, and these processes are also not always centrally documented, for example whether different assessors in one-on-one assessments reach the same conclusions on children's learning. Finally, clear, accessible and centralized documentation of their sampling (e.g. who was excluded, which children can replace those that were sampled but could not take part, whether children that could not be assessed the first time could be approached again) is lacking, even though such differences in survey design affect the results.

Second, there are also development considerations. The end does not justify the means. The purpose of monitoring the SDGs is not just to produce data for the sake of global reporting but to do so in a way that serves countries' education development needs. None of the three assessments currently is, or possibly could ever be, part of what would be considered good practice for a national

BOX 6.3

EGRA and EGMA studies in Africa have had strengths and weaknesses

Much of the interest in early grade learning was sparked, globally and in Africa, by a major school-based, one-on-one assessment programme funded by the United States Agency for International Development (USAID): the Early Grade Reading Assessment (EGRA) and the Early Grade Mathematics Assessment (EGMA). These assessments have been administered in many countries in Africa since as early as the late 2000s. While the programme was not designed to produce comparable results, it raised awareness of low learning levels in poor countries and contributed to a better understanding of the minimum proficiency level components.

One weakness is that EGRA studies have been largely limited to project evaluation instead of institution building. They have been administered through international service providers who account to funders rather than to the beneficiary government. Documentation and transparency have been limited and uncoordinated. With very few exceptions, the EGRA has not become part of national assessment systems.

Another weakness has been the absence of a clear plan for making data available. Data sets have largely been the property of the service providers funded to carry out the assessment. Despite repeated requests over the years, for example, the *Global Education Monitoring Report* has not been able to access a single EGRA data set. UIS, which is the custodian agency for monitoring education targets, has not had success either. While there was an initiative to publicize selected results on a USAID website, the Early Grade Reading Barometer, the last published data from an EGRA in Africa date from 2016.

On the positive side, EGRA tools have been shared and used by several organizations. These organizations tend to focus on the effectiveness of their programmes. But the baseline reports are of general interest as they provide information on the precursor skills of their target populations. Having said that, these studies often focus on particularly disadvantaged areas of countries, sometimes affected by emergencies. Typically, samples are not nationally representative. It is often difficult to understand which population group is being assessed.

Concern, a non-governmental organization, has publicized results of its work in disadvantaged communities in two countries. In the Sila region, Chad, the mean oral fluency of grade 3 students in Arabic was one correct word per minute in 2022, with 76% of boys and 92% of girls not being able to read a single word. In French, students scored an average of two correct words per minute (Concern, 2023). In Tahoua region, Niger, the mean oral fluency in French in 2019 was five correct words per minute for grade 2 students and seven correct words per minute for grade 3 students. These students could only read three words per minute in Hausa (Concern, 2022).

The Luminos Fund, for instance, used an EGRA and an EGMA for a programme in Liberia. It compared some 1,500 out-of-school children in 50 communities where the programme was offered in 2022/23 and in 50 other communities. It also assessed 350 children attending grades 1 to 3 in public schools. It was found that children were only able to read three words per minute at baseline, a measure of oral fluency. Of five reading comprehension questions, they were only able to answer 0.2 correctly. Children were also asked to solve 15 addition and 15 subtraction problems with one-digit and two-digit numbers within one minute. At baseline, they were on average only able to do two additions and one subtraction correctly in the assigned time (ID Insight, 2023).

Effective Intervention, a think tank, administered an EGRA and an EGMA in 200 villages in the Quinara and Tombali regions of Guinea-Bissau, as part of a pedagogical intervention. Among children in the control group, 11% could carry out single-digit addition tasks correctly (and 53% had zero score) and 5% could do single-digit subtraction tasks correctly (and 73% had zero score). However, the study is unclear about the grade these children were attending (Fazzio et al., 2021).

assessment system. They tend not to involve national education authorities and their results have not been used to improve the curriculum and teacher education.

Cost and capacity are significant obstacles to learning assessment in Africa. Costs are far from negligible: the government of Liberia spent USD 21 million for primary education in 2021; allocating USD 300,000 for a learning assessment would be exorbitant for its budget. External support is therefore a precondition. Capacity is also very limited. The set of skills needed to carry out a learning assessment and analyse its results are scarce and in high demand for other uses. However, such capacity needs to be built and, if the international community values such capacity, external resources are needed to build it. Much of donor resources are spent on assessment, but they tend to be misallocated, focusing mainly on evaluating their own projects. A case study on Sierra Leone in the first Spotlight cycle showed that, between 2014 and 2022, as much as USD 15 million may have been disbursed on assessment by five donors. Yet the country lacked an assessment unit and was not reporting on indicator 4.1.1.

The ideal scenario would be external support focusing on how to develop national assessment systems and to lower assessment costs. This does not mean that existing assessments should not be used if they meet standards and if governments decide that such assessments serve their needs. For that reason, the UIS has proposed a reporting scheme on the reading indicator that will disaggregate the MPL by skill to allow partial reporting (**Table 6.4**). This solution accommodates existing tools, as long as they meet procedural quality criteria. It allows measuring the MPL using assessments that have different test compositions and even different types of administration. It facilitates the development of the desirable standards; currently, multiple standards for each skill and language need to be defined. The minimum acceptable technical parameters to combine different skills to report for the minimum proficiency level is also pending, as is a scoring method to report to the MPL and each skill (e.g. precursor skills) or subskill (e.g. decoding) if desired. This work is being supported by a Technical Advisory Group established under the auspices of the Global Alliance to Monitor Learning. Once these inputs

have been completed, countries could have a wider choice of assessment programmes to report from.

More coordination will be needed to improve countries' financing opportunities. First, cross-national assessment programmes, such as PASEC, need long-term, stable and predictable financing that also considers the cost of long-term national professional development. Second, the assessment market is neither efficient nor equitable (Montoya and Crouch, 2019a). Countries are not well informed about the respective strengths and weaknesses of different learning assessments. Not all countries pay the same price or receive equal support. Often, countries are not even involved in decisions negotiated between assessment providers and donors. Even donors do not know how much money they disburse on assessments and do not have clear policies in relation to them.

The solution is to reshape the market, shifting from a donor-driven to a country-driven approach (Montoya and Crouch, 2019b). Each country should be eligible for funds, which cover the full cost in the poorest countries and part of the cost in wealthier countries. Setting the amount of financial support to countries at the right level would increase competition among providers and

TABLE 6.4

Disaggregation of reporting by skills for SDG indicator 4.1.1a on reading

Skill	Percentage of students
1. Foundational	
Phonological awareness	Above standard
Alphabetic principles	Above standard
Foundational skills composite score	Above standard
2. Precursor	
Decoding	Above standard
Listening comprehension	Above standard
Precursor skills composite score	Above standard
3. Reading comprehension	
Retrieve explicit information	Above standard
SDG indicator 4.1.1a	**Above the MPL**

Source: Montoya (2024).

would help lower the cost of procuring services. It should ultimately be each country's decision and responsibility to choose which eligible assessment it wants to use to report on the indicator – and for organizations associated with particular assessments to support country decisions by providing them with the best information possible for them to make these decisions.

Conclusion

Formative assessment is fundamental for teachers to understand the challenges their students are facing and adjust their teaching approach. However, teachers lack training to use such tools - and there is a general tendency to downplay its importance in favour of end-of-cycle, high-stakes examinations.

At the system level, there is a steady flow of assessment being carried out in Africa, often with donor support. Unfortunately, the results of these studies are not reported, and the data are not made publicly available, which prevents their use for analytical purposes. The vast majority of these summative assessments are not designed to be comparable, which presents their use for benchmarking and target-setting.

Recent methodological developments hold some promise that more assessments could be used in the future to report on foundational and precursor skills of reading and, in some cases, on the minimum proficiency level. But more coordinated action will be needed to develop technical standards and financing mechanisms that will lower the cost of the type of assessment countries need to develop their educational systems.

7 Finance
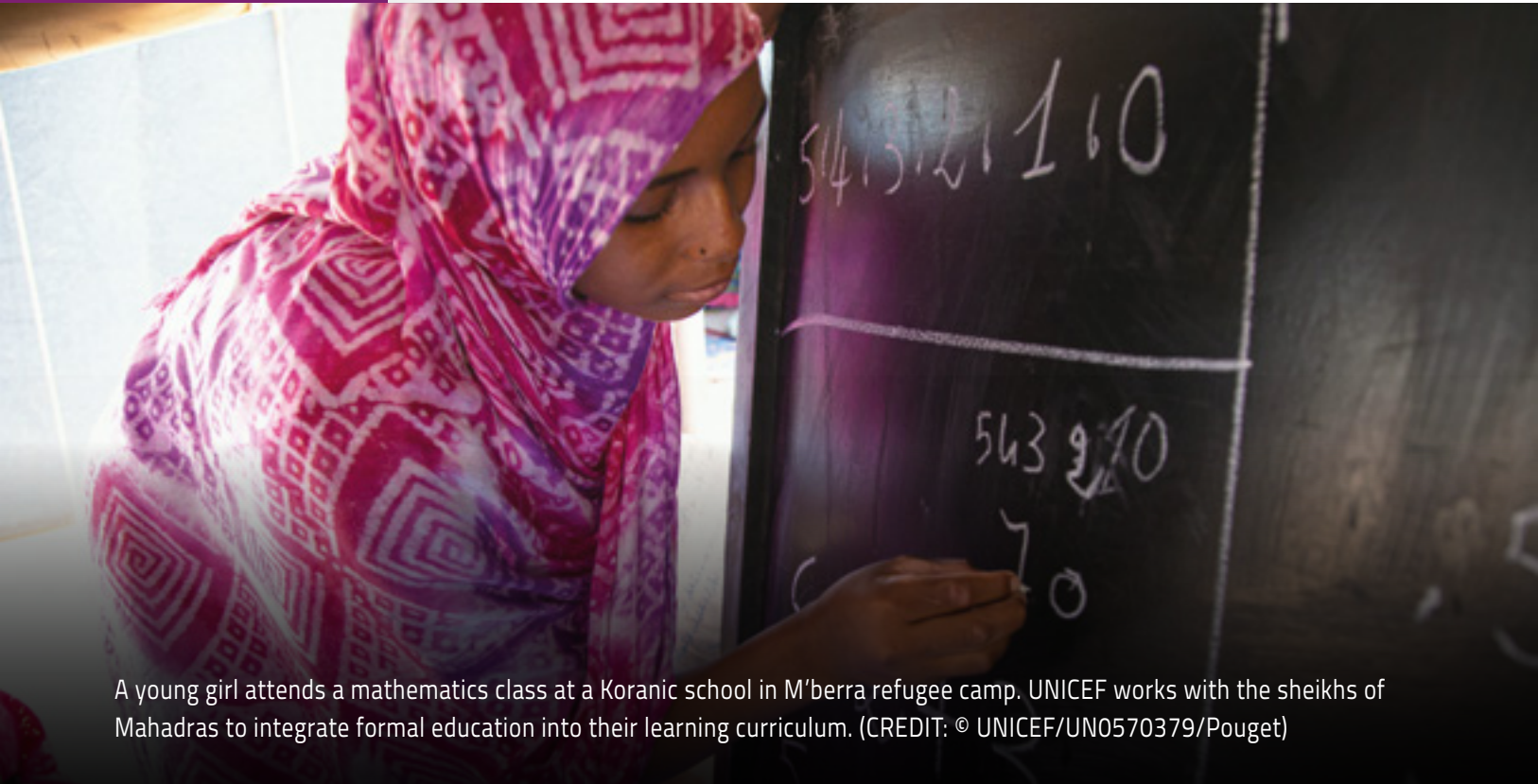
A young girl attends a mathematics class at a Koranic school in M'berra refugee camp. UNICEF works with the sheikhs of Mahadras to integrate formal education into their learning curriculum. (CREDIT: © UNICEF/UN0570379/Pouget)

- Education has been dropping down the list of government priorities, even though African countries spend a little less than the global average in relative terms – and much less in absolute terms.

- External financing that goes directly to support government education programmes is declining as a source of revenue.

- A lack of clear definitions prevents a full understanding of how much aid is being allocated to support foundational learning. There is also insufficient emphasis on ensuring costs per beneficiary are sustainable and can be absorbed by governments.

- Many countries are investing in school meal programmes to lighten the burden of poor households and to improve children's learning opportunities.

KEY INSIGHTS

■ Total spending on primary education is estimated at USD 46 billion in 2021 in Africa, which is equivalent to an average of USD 244 per student. While this amount appears very low, primary education spending per capita is about 13% of gross domestic product (GDP) per capita, which is just a little below the global average of 15%.

■ The median level of government spending as a share of total public expenditure was 15.5% in 2021 and has fallen by 0.9 percentage points since 2012. Low- and lower-middle-income African countries are facing a USD 28 billion financing gap to achieve their national target of a primary completion rate of 85%.

■ Aid to education accounts for 4.6% of total education spending. However, a lot of aid is not channelled through government systems: grants accounted for only 1.2% of GDP in African governments' budgets in 2021, down by 53% since 2010.

■ Projects focusing on foundational learning totalled USD 750 million in 2020 – their volume was constant in 2016–20. Globally, the United Kingdom, the United States and the World Bank accounted for 90% of total disbursements on such projects.

■ Households account for 27% of total education spending. While the richest households spend a slightly higher share of their budget on education, the share of the poorest households is not negligible. In countries including Kenya and Zimbabwe, households whose children attend public schools spend more out of pocket.

The first Spotlight report drew attention to three issues related to financing primary education in Africa. First, while it is possible to estimate the cost of achieving universal basic completion (based mainly on student/teacher and student/classroom ratio norms and assumptions on teacher salaries and essential infrastructure) (**Box 7.1**), there is less consensus on what other cost items will improve learning. Second, the share of external financing tends to be overestimated, partly because it is more visible and partly because a large part does not directly support government budgets. Related to this, third, there is little discussion of the sustainability of aid-funded projects. While in principle they constitute investment, the per capita cost is often equal to, if not higher than, the recurrent cost for delivering education. Yet debates on efficiency tend to focus on governments rather than on donors.

This chapter provides an update on total education spending in Africa by source – government, official development assistance (ODA) and households – to revisit these key issues. It estimates how much governments spend on primary education and whether their prioritization of education has changed; how much they will have to spend to achieve their national targets by 2030; the volume of aid, including whether donors are targeting foundational learning and what approaches they have been taking; and household burden.

Public expenditure on primary education is very low in some countries

Total real expenditure on education in Africa, combining spending by governments, donors and households, rose by 30% in 10 years, from USD 122 billion in 2012 to USD 159 billion in 2021, according to the Education Finance Watch database, a collaboration between the Global Education Monitoring (GEM) Report, the UNESCO Institute for Statistics (UIS) and the World Bank (UNESCO and World Bank, 2024).

In 2021, it is estimated that governments spent USD 109 billion (or 69% of total spending), ranging among African Union regions from a low of 51% in the Central Africa region to a high of 81% in the Southern Africa region.

Among 42 of 54 African countries with data in 2020–23, 12 countries, or 29%, met both minimum international benchmarks of at least 15% of total public expenditure and at least 4% of GDP dedicated to education. In contrast, 16 countries, or 38%, did not meet either of the two minimum international benchmarks (**Figure 7.1**).

> "*Donors are not here to do the work of the government but to supplement. Most of the donor-supported interventions die away when the project intervention period ends. The system is not supportive enough.*"
>
> Education development partner, Uganda

Almost 4 in 10 countries spend below both minimum benchmarks on education

Public education expenditure as a share of total public expenditure and as a share of GDP, 2022 or most recent year
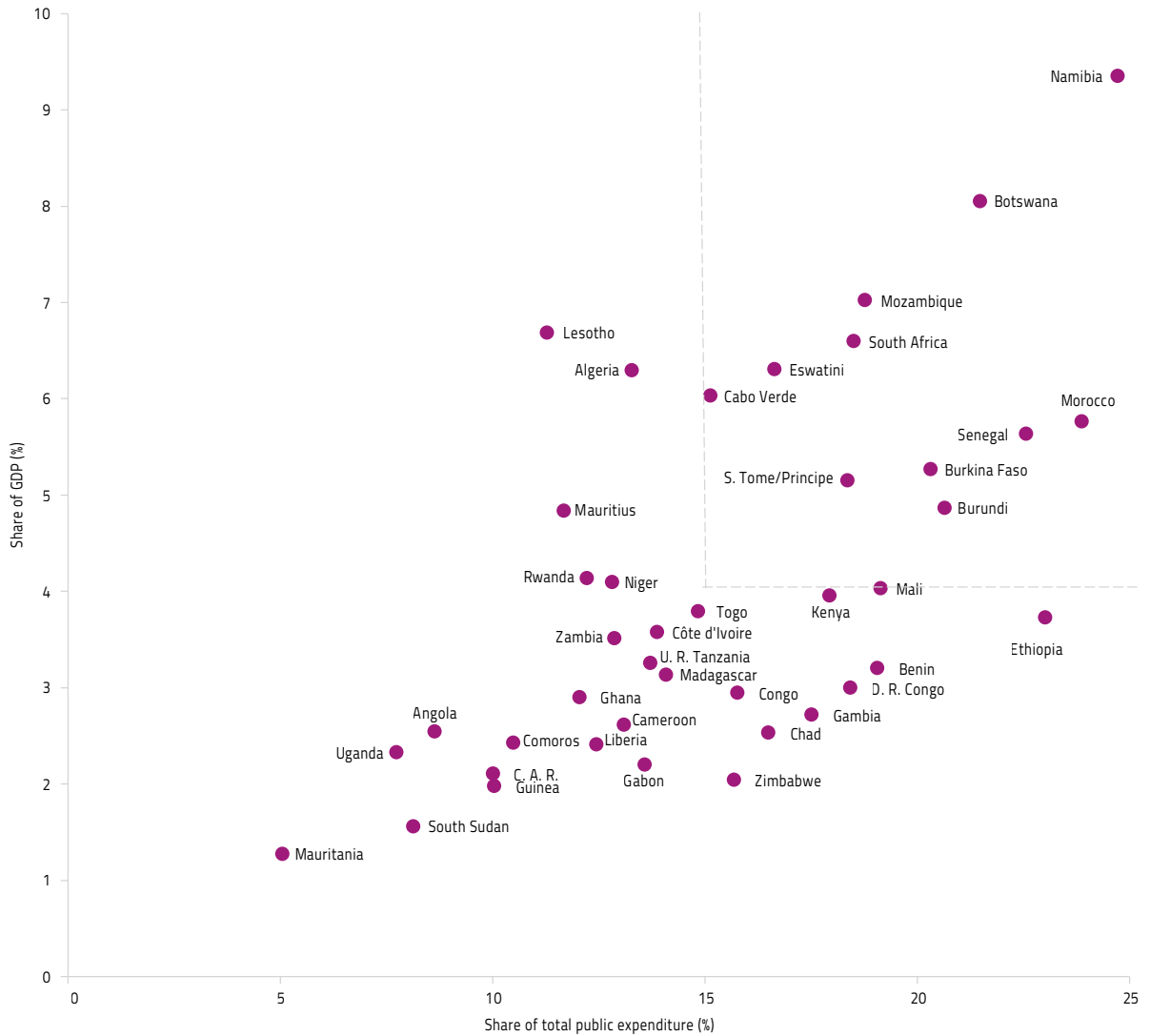
Source: UIS database.

The median level of government spending as a share of GDP was 3.7% in 2021 and has not changed since 2012. Across African Union regions, Southern Africa spent the highest share (a median of 6.6%) and Central Africa the lowest (2.9%).

The median level of government spending as a share of total public expenditure was 15.5% in 2021 and has fallen by 0.9 percentage points since 2012. Across African Union regions, Southern Africa spent the highest share (a median of 16.9%) and Eastern Africa the lowest (12.6%). Namibia spent the highest share (25.1%) and Angola the lowest (6.9%) (**Figure 7.2**).

FIGURE 7.2

Most African governments have reduced the priority they assign to education

Public education expenditure as a share of total public expenditure, 2012 and 2021
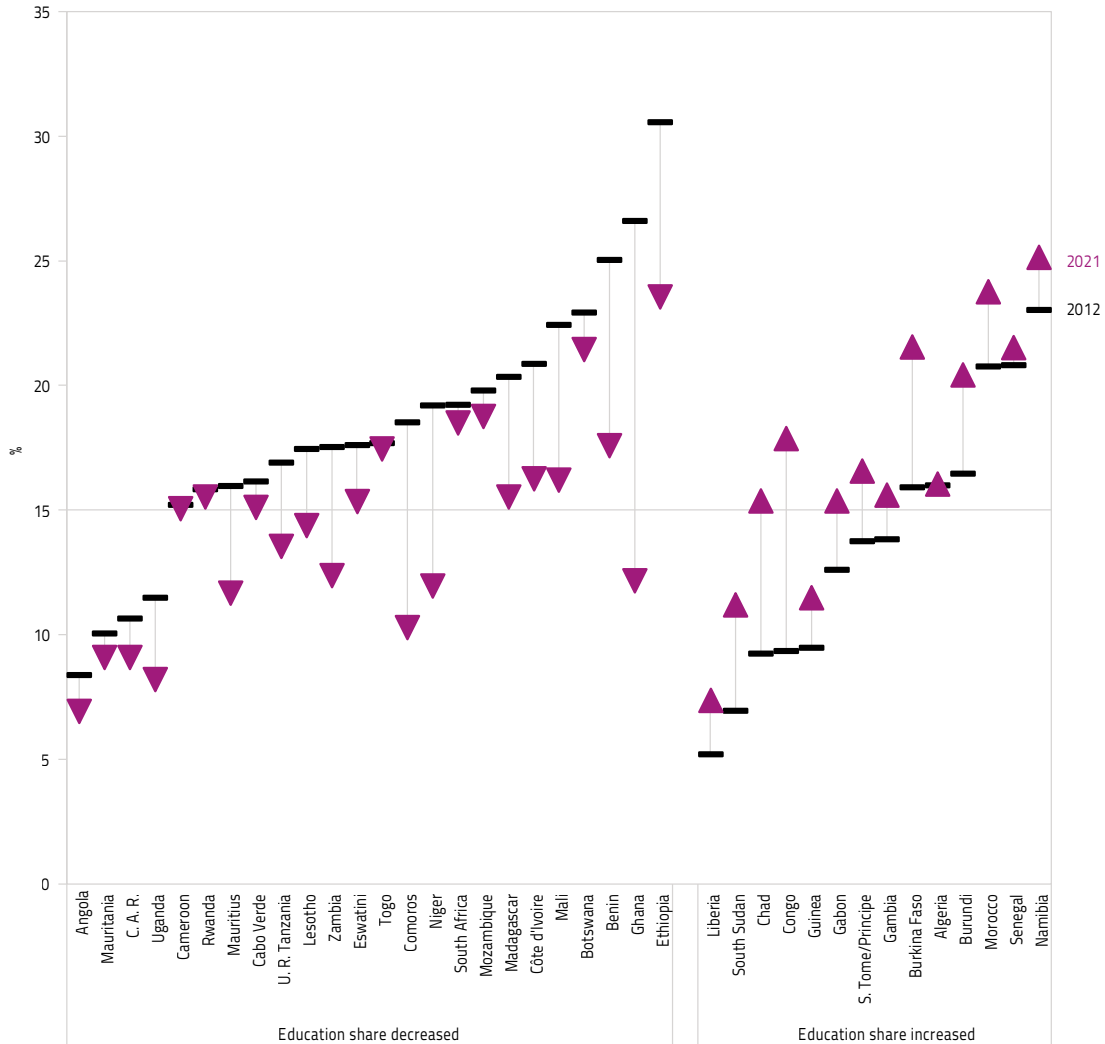
Overall, public education expenditure as a share of GDP has remained stable in the past 10 years, as the lower priority assigned to education has been counterbalanced by an increase in the average tax-to-GDP ratio, which increased from 14.1% in 2010 to 15.6% in 2021 (OECD, 2023).

Disaggregated data by education level are scarce. Based on the UIS database, an estimated 42% of government spending in Africa is allocated to primary education, which is equivalent to 1.6% of GDP. For 16 countries for which there are observations in 4 consecutive 4-year periods (2008–11, 2012–15, 2016–19 and 2020–23), this share has remained constant. But it is also somewhat higher in low-income (47%) than in lower-middle-income countries (39%).

In absolute terms, total spending on primary education was about USD 46 billion in 2021, which is slightly less

than what the United Kingdom spent for a primary school population of 4.9 million. With a total student population of 189 million in public primary schools in Africa, average spending per student was USD 244 in 2021. At one extreme, countries such as Chad and Niger spent some USD 50, while Guinea, Rwanda and Sierra Leone spent about USD 100 per student. At the other extreme, Cabo Verde spent some USD 800, South Africa USD 1,200 and Mauritius USD 2,500 per capita. These comparisons can be somewhat misleading. More comparable is expressing spending per capita relative to GDP per capita. On average, primary education spending per capita is about 13% of GDP per capita, which is just a little below the global average of 15%.

African countries' public education expenditure falls below the global average in terms of the share of GDP (3.7% vs 4.2%) but is above it in terms of the share of total public expenditure (15.5% vs 14.2%). This is the result of low resource mobilization rates but high and rising child population cohorts. Even though countries still prioritize education in their budgets, absolute spending levels are very low, which limits the resources that can be allocated to improve learning. The relationship between spending per child and a summary measure of learning levels, the learning-adjusted years of education developed by the World Bank, shows a strong association (**Figure 7.3**).

FIGURE 7.3

Learning outcomes are low in countries that spend the least per school-age child

Mean per capita education expenditure and learning-adjusted years of schooling, Africa, 2020
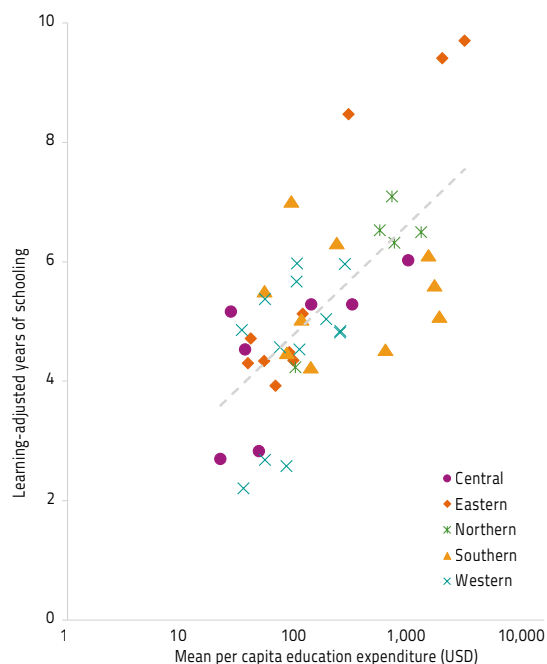
Notes: The horizontal axis is set to a logarithmic scale. Spending per capita is computed as the total public education expenditure divided by the school-age population. Estimates on spending per capita include interpolated values. Data are available in 45 out of 54 African countries.
Source: UNESCO and World Bank (2024).

BOX 7.1

African countries face an annual financing gap of USD 28 billion to achieve an 85% primary completion rate by 2030

The *Global Education Monitoring Report* has estimated that it will cost low- and lower-middle-income African countries a cumulative USD 1.5 trillion between 2023 and 2030, or USD 183 billion per year on average, to achieve their national targets on pre-primary, primary and secondary education. Even under optimistic budget projections, many countries will not manage to increase their budgets sufficiently.

In the case of primary education, where the aggregate national targets amount to an increase in the completion rate from 65% in 2015 to 85% by 2030, the annual average financing gap between 2023 and 2030 would be USD 28 billion, or 33% of the total cost of achieving the national targets. The average gap is USD 9 billion (45% of the total cost) in low-income countries and USD 18 billion (28% of the total cost) in lower-middle-income countries (**Table 7.1**). This annual financing gap adds up to 1.2% of GDP in this period and would be almost three times as high if pre-primary and secondary education targets were included – and even wider if post-secondary education aspirations were incorporated.

TABLE 7.1

Average annual total budget, cost and financing gap for achieving national benchmarks in primary education by 2030, Africa, 2023–30, USD billion

Low income			Lower middle income			Total		
Budget	Cost	Gap	Budget	Cost	Gap	Budget	Cost	Gap
11	20	9	45	64	18	56	83	28

Source: UNESCO (2024).

The costing model focuses on essential needs for low- and lower-middle-income African countries to accelerate their progress and set them on course to achieving their national Sustainable Development Goal 4 targets on school completion. The model does not attempt to cost the implications of improving learning outcomes. It also does not incorporate additional costs required by other needs, for instance to bring in a digital transformation. The 2023 *Global Education Monitoring Report* estimated that even modest investments, such as offline solutions to low-income countries and school connectivity–based solutions for lower-middle-income countries, would increase their estimated financing gap by 50%.

Aid has been growing in absolute terms but falling in relative terms

In 2021, it is estimated that donors accounted for USD 7.4 billion, or 4.6%, of total education spending in Africa (UNESCO and World Bank, 2024). The definition includes ODA grants and loans for education but not other official flows, such as non-concessional loans or private development finance. Total aid to education includes two components. The first (accounting for over 85% of the total) is direct aid that is specifically earmarked by donors for education. The second is general budget support, unearmarked aid provided to governments, 20% of which is assumed to be allocated to education.

Total aid to education in Africa grew by 42% between 2014, a low point, and 2021. Direct aid to education grew by 38%, while direct aid to basic education (which refers to 'primary education, basic life skills for youth and adults, and early childhood education' according to the OECD) grew by 48%, or from USD 850 million to USD 1.25 billion. However, this increase was achieved between 2014 and 2017 and levels have remained stagnant

since. In contrast, direct aid to secondary education has grown by 87%, and the growth has been constant.

The five largest donors – the World Bank, France, the United States, Germany and the European Union – account for over two thirds of total aid. The World Bank has been the largest donor to education in Africa for most of the past two decades and disbursed an average of USD 1 billion annually between 2019 and 2021. France, Germany and the United States followed with some USD 400 million each. However, 60% of French and German education aid goes to the post-secondary level, as they include scholarships and waived fees to international students in their aid budget. In contrast, the United States stands out as the bilateral donor that assigns top priority (80%) to basic education globally (**Figure 7.4**), a fact also underlined by the strong presence of US-funded projects in the table at the end of this chapter (**Table 7.4**). Disbursements by the Global Partnership for Education (GPE) are attributed to its bilateral funders and do not appear separately in the OECD database. If GPE were treated as separate donor, it would be among those who almost explicitly focus on basic education (with USD 521 million disbursed in 2021). A recent study has tried to estimate how much aid goes to directly support foundational learning (**Box 7.2**).

FIGURE 7.4

The United States is the large donor that prioritizes basic education the most

Total aid to education and share of basic education, by donor, 2021
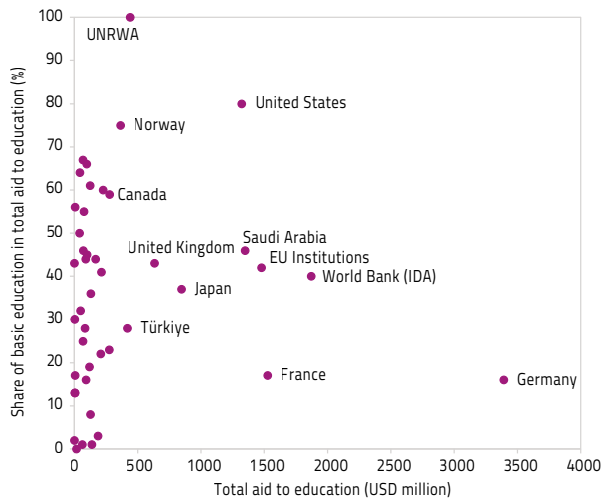
Notes: IDA = International Development Association; UNRWA = United Nations Relief and Works Agency for Palestine Refugees in the Near East. Labels have been added to donors who disbursed more than USD 250 million in 2021.
Source: GEM Report team estimates based on the OECD CRS database.

But much aid does not go straight to governments. While World Bank funds are received by governments, no more than 20% of aid to Africa disbursed by the European Union, Germany, the United Kingdom and the United States does. For example, donors disbursed one third of their aid to education in 2021 through non-governmental organizations and universities.

Overall, aid is rapidly declining as a source of revenue for African governments. Grants as a source of non-tax revenue for 33 African governments fell from 2.7% of GDP to 1.2%, or by 53%, between 2010 and 2021. While grants increased by 166% in Niger (from 2.8% in 2011 to 7.3% in 2021), they fell by 59% in Rwanda (from 11.1% in 2010 to 4.6% in 2019) and by 90% in Uganda (from 6.3% in 2004 to 0.6% in 2018) (**Figure 7.5**).

FIGURE 7.5

The share of aid to GDP in Africa fell by more than half in 10 years

Grant revenues as a share of GDP, selected African countries, 2000–21
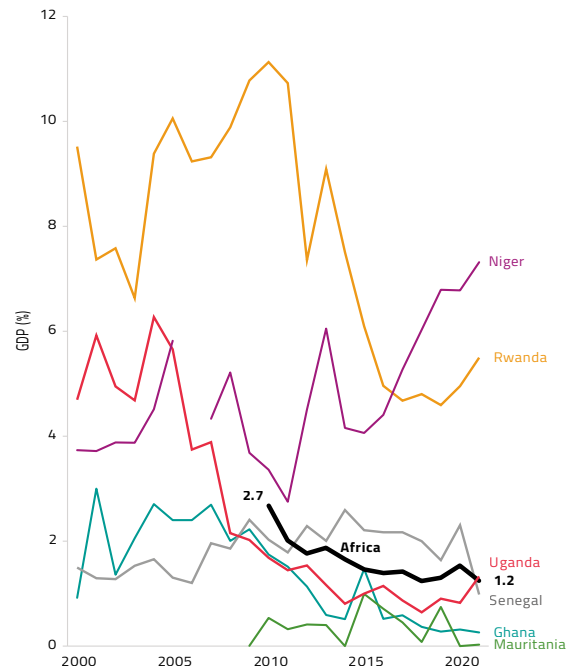
Source: OECD (2023).

While aid is becoming less important as a source of financing for African governments, education's share of it has been stable. As a share of sector-allocable aid, which is the part of direct aid that is explicitly assigned to individual sectors, donors assigned less priority to education and basic education in Africa than in the rest of the world throughout the 2010s. This changed for the first time in 2022. This is more the result of education becoming less of a priority in general in donor portfolios in the rest of the world (e.g. the share of education fell from 12.5% in 2019 to 8.9% in 2022) than as a result of a major increase in the priority assigned by donors to education in Africa (i.e. it only increased from 8.6% to 9.9% in this period) (**Figure 7.6**).

FIGURE 7.6

Donors have prioritized education less in Africa than in the rest of the world

Share of education and basic education in allocable aid, African and other developing countries, 2002–22
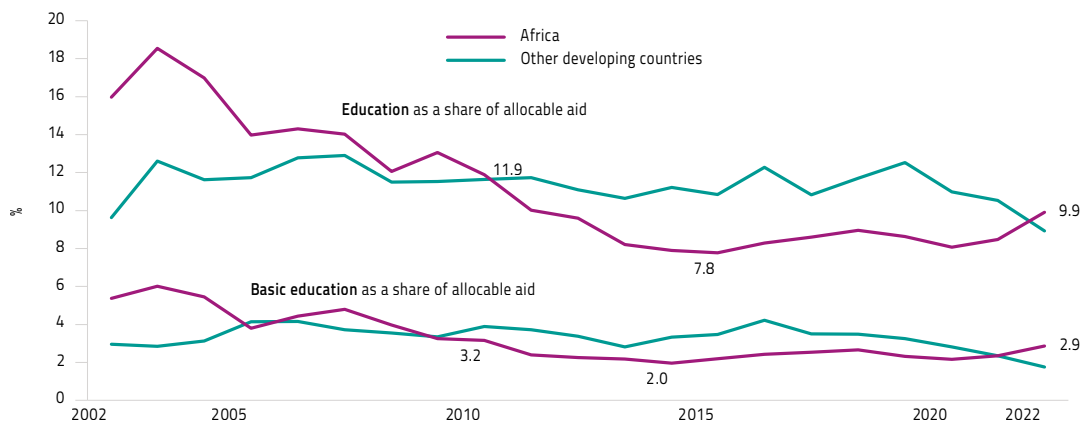
Source: GEM Report team estimates based on the OECD CRS database.

BOX 7.2

At least USD 750 million of aid projects target foundational learning every year

Information on aid expenditure shows the potential donor support influence on education systems. Much of the support goes to international student mobility. Most of the remaining support is not channelled through government budgets and systems. Both factors reduce the potential for sustainable improvements to learning opportunities. But even when aid is designed and channelled more effectively, how likely is it to be focused on early grade learning?

SEEK Development, a consulting firm, attempted to tackle this question with support from the Bill & Melinda Gates Foundation, relying on the same data sources used in this chapter. Its first task was to develop an operational definition of foundational learning, as there is no specific purpose code in the OECD Creditor Reporting System to track whether projects focus on foundational literacy and numeracy. A keyword search (e.g. for 'literacy', 'numeracy', 'reading' and 'mathematics') in project descriptions, mainly under the primary education purpose code targeting 3- to 10-year-olds, helped exclude other literacy-focused projects (e.g. adult, financial, entrepreneurship, digital). Random checks were used to validate the ability of this search to accurately detect interventions focused on foundational learning, resulting in the identification of some 1,800 such bilateral aid projects in 2016–20.

This methodology may lead to both an underestimation and overestimation of the aid focused on foundational learning. On the one hand, a narrow focus on explicit mentions of foundational literacy and numeracy in project descriptions downplays the impact of system-wide or other targeted interventions that may have large impact on foundational learning outcomes (e.g. school construction, textbook distribution, school feeding). On the other hand, counting the full value of projects identified with even one foundational learning component risks exaggerating the volume of aid that supports foundational learning.

A separate process was followed for multilateral aid, as information in their project descriptions is limited, hindering comparability. For instance, the World Bank project identification numbers in the OECD database were used to further analyse

project abstracts on the World Bank website. This was not possible for GPE and UNICEF projects, whose official documentation does not provide sufficient information on funding and focus, preventing their descriptions from being aligned with the operational definition of foundational learning used in this analysis. No overall estimates could, therefore, be provided for multilateral donors.

Based on this analysis, it is estimated that bilateral donors globally allocated USD 570 million per year to foundational literacy and numeracy in 2016–20. In 2020, the United States accounted for nearly two thirds and the United Kingdom nearly one quarter of disbursements – the two combined therefore accounting for almost 90% of the total. Foundational literacy and numeracy are key priorities in the US Reinforcing Education Accountability in Development Act, the US Government Strategy on International Basic Education (2019–23), and the United States Agency for International Development's (USAID) Education Policy and Learning Agenda. The United Kingdom declared a focus on foundational literacy and numeracy as a means to address the 'learning crisis' in its 2018 Education Policy. Canada is the third largest bilateral donor on foundational learning, despite not explicitly mentioning foundational literacy and numeracy as a priority. Among other donors, Japan (**Box 7.3**) and Norway explicitly mention foundational literacy and numeracy in their education strategies, although the volume of their funding is low in comparison. It is estimated that Africa is the recipient of at least 60% of this support and four African countries were among the top five recipients globally: Ethiopia, Nigeria, Senegal and the United Republic of Tanzania.

In comparison, it was estimated that the World Bank disbursed USD 175 million on foundational learning projects in 2020. The World Bank has made foundational learning a cornerstone of its lending operations; has developed a 'literacy package'; and has launched flagship initiatives, such as the Foundational Learning Compact and the Accelerator Program, to pool outside expertise and funding, an approach also supported by the Foundational Learning Coalition, one of the global initiatives to emerge out of the Transforming Education Summit.

In total, some USD 750 million is currently being allocated to foundational learning projects. Given the growing focus on foundational learning, this amount is likely to grow, although the lack of a clear operational definition will remain an obstacle for monitoring change in a robust way. Another obstacle is the lack of evaluations of aid effectiveness in this area. Donors systematically evaluate individual projects, but there is a dearth of synthetic evaluations for big picture questions. The last evaluation of the World Bank's primary education portfolio took place 20 years ago (World Bank, 2005). One synthetic evaluation of USAID basic education interventions looked at four projects, the last of which was completed in 2009 and the other three before 2004 (Podems, 2018).

Source: The box is based on SEEK Development (2023).

BOX 7.3

Japanese international cooperation has supported primary mathematics programmes in Africa for more than two decades

Japan's approach to international cooperation, as reflected in its ODA Charter introduced in 1992 and last updated in 2023, has been shaped by its own historical modernization experience. Emphasis is placed on helping partner countries help themselves. Cooperation has been directed at improving capacity using national systems to ensure independence and sustainability. There have been three policy documents in education in the past decade (Kayashima et al., 2022): the Basic Education for Growth Initiative in 2002; the 2011–15 Education Cooperation Policy in 2010; and the Learning Strategy for Peace and Growth – Quality Education through Learning Together in 2015, which added human security as a reason for investing in education in line with Japan's ODA Charter. Until the late 1990s, Japan's international cooperation programme did not focus on basic education to avoid interfering with countries' social and cultural context. Since then and to this day, the Japan

International Cooperation Agency (JICA) has implemented 52 technical cooperation projects in mathematics and science education, which can be grouped under 2 types (**Table 7.2**).

The first project type focuses on teacher education. In 1998, the Strengthening of Mathematics and Science in Secondary Education (SMASSE) project in Kenya was the first basic education cooperation project in sub-Saharan Africa. It was designed to minimize a cultural impact, for instance by focusing on establishing an in-service teacher training system to strengthen teacher capacity to conduct learner-centred lessons, instead of curriculum and textbook development. SMASSE initially used the cascade training approach but, as information was being diluted by the time it reached teachers, a new approach was piloted in 2005 in Zambia that established local resource centres to support professional development.

The second type of project, starting with Niger in 2004, focused on engaging school management committees (SMCs) and communities in identifying problems and implementing a plan to tackle them. In many countries, SMCs focused on improving children's basic mathematics skills and organized remedial classes using workbooks after school hours, a prominent example being Madagascar. SMCs have been supported to exchange experiences and learn from each other.

TABLE 7.2

Japan's primary and secondary education mathematics projects in Africa, by starting year and type

	1994–2000	2001–05	2006–10	2011–15	2016–20	2021–23	Total
a. Mathematics and science teacher education	3	6	15	9	5	1	39
b. School management committees and mathematics exercises	0	0	1	3	6	3	13
Total	3	6	16	12	11	4	52

Source: Baba and Matachi (2024).

Projects focused on mathematics teacher education. In **Kenya**, SMASSE aimed to shift from the traditional lectures to a new teaching approach (under the motto 'activity-based, student-centred, experiment and improvisation') and a management cycle emphasizing reflection and improvement (under the motto 'plan-do-see-improve'). In the first phase (1998–2003), the new training system was trialled in nine districts. In the second phase (2003–08), it was extended to all districts. The project has been evaluated as successful because the government sustained the in-service training system with its own resources (setting aside 1% of each secondary school's tuition fees and some funds at the national level), while training participants improved their lesson delivery. During the third phase (2009–13), SMASSE was extended to primary education – and renamed SMASE (dropping the specification of 'Secondary'). In 2003, the project established the Centre for Mathematics, Science and Technology Education in Africa (CEMASTEA) to spread the training system nationwide. Since 2013, it has trained teacher trainers from up to 35 sub-Saharan African countries. Moreover, a Regional Collaboration Network established in 2001 has developed into SMASE-Africa.

In **Zambia**, the project worked with the Zambia Association for Mathematics Education in the Central Province during the first phase (2005–07). Eventually, its activities were connected to the School Program of In-service Training for the Term (SPRINT), a system developed with the support of the United Kingdom. The programme focused on school- or cluster-based activities and the lesson study approach. In the second phase (2008–11), a master plan for the national rollout was developed to expand training to other subjects and provinces. In the third phase (2011–15), the system was further extended to the remaining provinces in both primary and secondary schools. The existing National Science Centre was designated as the focal point of the national rollout and expansion into primary education. Emphasis on continuous teacher capacity development led to the establishment of the Teaching Profession Act and the Zambia Teaching Profession Council in 2013, the Teacher Registration System in 2016, and the upgrading of the National Science Centre to a directorate in 2018. A fourth phase (2016–19) tried to

strengthen the links between pre-service and in-service training, notably changing the emphasis of three teacher colleges from content to pedagogical content knowledge.

The Kenya and Zambia projects were similar in many ways. Both began with secondary education in a small number of pilot districts and expanded to the entire country and to primary education. Both projects attached special importance to sustainability: partner country governments provided personnel and resources from their budget. Both projects also encountered similar challenges in the expansion to primary education. The core teams had been composed mainly of people with teaching experience in secondary schools and insufficient emphasis may have been assigned to primary school contexts. Neither project collected evidence on their impact on learning.

The two projects were also different from each other. Kenya's in-service cascade training system was centrally controlled for content development and implementation quality assurance. Training quality was monitored by national trainers and reported to CEMASTEA by training organizations. Zambia adopted a decentralized approach to ensure continuous professional development through school-based training combined with lesson study to improve practical skills. Subject-based teachers developed capacity for lesson study and better classroom activities as models for others to emulate.

Projects focused on school management committees. In **Madagascar**, the project has evolved in two phases. During the first phase (2016–20), a participatory and decentralized school management improvement model was established and used in schools in one target region. Schools generally decided to focus on remedial education. The remedial activities combine the 'minimum package for quality learning' (PMAQ) and the 'Teaching at the Right Level' (TaRL) approaches. Under the PMAQ, developed in Niger, a school initially assesses basic reading and mathematics, and shares the results with teachers, parents and the community at a general meeting to motivate action. Under the TaRL approach, developed in India, children are grouped based on these results, regardless of their grade. Remedial activities matched to the level of each group are undertaken after school hours on the school premises mostly by teachers but also by people selected by the local community; they cover fundamental operations in the number and calculation domain (e.g. addition and subtraction of three-digit numbers) and target Grades 2 to 4.

An evaluation in 140 schools that were split into a control group and a group that received PMAQ and TaRL interventions found a strong positive impact on basic calculation and reading skills (Maruyama and Igei, 2023a). It has, therefore, been estimated that these skills have improved for 1.2 million primary school students since 2017/18 (JICA, 2023). As a result, the project was included in the Numeracy at Scale study (RTI, 2023). As the model proved effective, scalable and replicable, the Ministry of Education has been expanding it to 11 regions during the second phase since 2020. Another evaluation indicates that providing training to SMCs and school leaders to support this expansion has proven equally effective in terms of learning outcomes (Maruyama and Igei, 2023b).

Recurrent costs are expected to be borne by national budgets and institutions – and sustained after the project period. It therefore becomes difficult to fully cost these projects and to identify which part of the recurrent costs borne by the country refer to project activities. One such attempt to single out Japan's contribution to project activities, which includes the cost of Japanese experts and their activities, capital equipment purchases, training centre facility support, and training costs in third countries, shows that projects have had a low and sustainable per student cost (**Table 7.3**).

TABLE 7.3

Costs of selected JICA-funded primary and secondary education mathematics projects in Africa

		Target grades	Target area	JICA cost (USD million)	Beneficiary students	Cost/student (USD)
Kenya	**Phase 1** 1998–2003	9–12	9 pilot districts	5.7	71,300	79.50
	Phase 2 2003–08	9–12	All 138 districts	8.6	825,550	10.40
	Phase 3 2009–13	6–8	All 138 districts	6.7	2,454,750	2.70
Zambia	**Phase 1** 2005–07	8–12	1 pilot province	0.4	99,450	4.10
	Phase 2 2007–10	8–12	4 provinces	0.9	613,650	1.50
	Phase 3 2011–15	8–12*	All 10 provinces	2.7	2,302,900	1.20
Madagascar	**Phase 1** 2016–20	1–5	2 pilot districts	4.4	272,959	16.00
	Phase 2 2020–24	1–5	11 regions			

Note: During Phase 3 in Zambia, interventions also extended to primary grades.
Source: Baba and Matachi (2024).

In recent years, the evaluation of mathematics and early learning projects has focused on demonstrating their short-term impact on learning outcomes. However, drawing conclusions only from such assessments can be misleading because short-term success may not trigger mechanisms for self-improvement that are sustainable in the long term. Endogenous curriculum development (Kusaka et al., 2021), teacher competence, knowledge and beliefs (Hill et al., 2008; Döhrmann et al., 2012), communities of practice (Wenger, 1998), and reflective professional learning have proven important factors in the development of mathematics education and should not be neglected. Future challenges include how to connect gains in basic skills with more advanced mathematics skills and how to develop teacher capacity beyond the practice of basic calculations.

Despite the universality of mathematics, mathematics education must respond to the social and cultural realities of each country. Japan's international cooperation programmes in basic education, reflecting its own historical development experience, have followed a step-by-step approach. They have emphasized the use of existing systems and resources as much as possible to help build institutions as well as collaborative implementation (Ishihara and Kawaguchi, 2022).

Source: The box is based on Baba and Matachi (2024).

Households contribute 27% of total education costs

It is estimated that households spent USD 42 billion (or 27% of the total) on education in Africa in 2021 (UNESCO and World Bank, 2024). A sample of six countries, which had carried out household surveys at least twice in the past 10 years, help provide further insights. First, in the most recent wave of these six countries' surveys (carried out in 2019–22), 39% of total household education spending was allocated to primary education. Second, multiple surveys give potential insights into trends. In the two countries where spending levels could be compared before and after COVID-19, the share of education in household budgets fell: in Ethiopia (from 1.7% in 2019 to 1.3% in 2022) and in the United Republic of Tanzania (from 3.1% in 2015 to 1.1% in 2021). In the other countries with observations during the 2010s, the share of education in total household spending remained constant in one case (Côte d'Ivoire at 2.1% from 2015 to 2019) and increased in the others: in Burkina Faso (from 1.9% in

2014 to 2.3% in 2019), Ghana (from 5.9% in 2013 to 8.2% in 2017) and Nigeria (from 4.8% in 2016 and 5.9% in 2019). In Uganda, according to the country's National Household Survey, the share of education in household consumption expenditure increased from 5% in 2012/13 to 7.8% in 2016/17 and 8.5% in 2019/20 (UBOS, 2023).

Not surprisingly, households tend to spend more money on private than on public schools – and the percentage of children enrolled in private primary schools in Africa increased from 9.5% in 2010 to 13.3% in 2022. But not all spending comes from households with children in private schools. About one third of household expenditure on education in low- and middle-income countries comes from households with children in public schools. But in Kenya, Zambia and Zimbabwe, about two thirds of total household education expenditure came from households with children in public schools. In Zambia, fees in public schools were the biggest

household education expense (UNESCO, 2021), which led the incumbent government to abolish all fees.

In a sample of 24 surveys from 18 countries between 2010 and 2022, the median share of education in total household consumption expenditure among the poorest quintile was 2.4% and among the richest quintile 2.7%. While the richest allocate a larger share of their income to education, the poorest still allocate a share which is non-negligible, especially if considering the precariousness of their livelihoods. Food prices have doubled globally between 2015 and 2024 but have tripled in Africa according to the Food and Agriculture Organization (FAO). Investment in school meals is important to lighten the burden of poor households and improve their children's learning opportunities. A number of countries are currently trying to build national school nutrition programmes, such as Ethiopia (**Box 7.4**). Their aims include alleviating household poverty and involving parents in both food production and distribution management.

BOX 7.4

Ethiopia is developing its national school meals programme

Ethiopia reduced child malnutrition by two thirds in the first two decades of this century. However, its malnutrition rates were still above the continental average even before the recent conflict exacerbated the situation. In 2019, the rate of stunting, i.e. being too short for their age, among children under 5 was almost twice as high for the poorest children (43%) as for the richest children (23%) (**Figure 7.7**). According to the 2016 Demographic and Health Survey, the rate of wasting, i.e. being too thin for their height, was 7.2% among children under 5 and 17.7% among children between the ages of 5 and 19. In terms of micronutrient deficiency, 24–26% of children aged 5 to 14 were found to be anaemic in 2016, and 11% had vitamin A deficiency.

It is estimated that nearly 7 million, or 39% of the total primary school-age population, live in food-insecure areas and often go to school hungry. The government launched a national nutrition programme in 2008 with school feeding as a key component, for which the Ministry of Education drafted a national school health and nutrition strategy in 2012. Among its objectives were to promote the provision of nutrition services delivered through schools and to ensure the ownership and sustainability of school feeding programmes. In 2021, the Ministry of Education developed the national school feeding policy, which it institutionalized through the establishment of a relevant directorate.

After initial piloting in the Southern Nations, Nationalities and Peoples (SNNP) Region and Oromia in 2012–14, the government's school feeding programme began in Addis Ababa in 2019 then was adopted by other regions and the Dire Dawa city administration. In 2022/23, more than 6 million students benefited from government-sponsored school feeding programmes. Of those, more than 5 million were in Oromia and over 700,000 in Addis Ababa. The target group is all children from pre-primary to Grade 8, with the aim to reach 21 million children by 2027 and universal coverage by 2030.

FIGURE 7.7

Despite progress, child malnutrition rates in Ethiopia remain high

Under 5 stunting rate, Africa and Ethiopia, by wealth, 2000–20
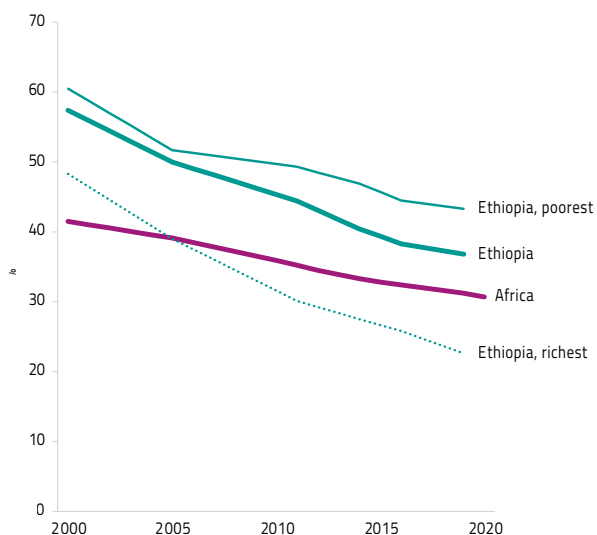
Source: Global Nutrition Report (2022).

The World Food Programme (WFP) first supported school feeding in chronically food-insecure areas in 1994. Alongside the FAO, UNICEF, Save the Children and, more recently, the GPE and the Education Cannot Wait Multi-Year Resilience Programme, development partners supported nearly 800,000 students from 9 regions in 2022/23. WFP is supporting the school feeding programme in Ethiopia. WFP and the FAO have helped the SNNP Region establish food procurement policies for the government-led home-grown school feeding initiatives and diversified diets.

The WFP school feeding programme was found to improve learning in rural areas (Poppe et al., 2021), while more recent evaluations of programmes in 2017/18 in the SNNP Region (Desalegn et al., 2021) and 2019/20 in Addis Ababa (Destaw et al., 2022) were found to lead to positive results in both attendance and learning.

Most regions provide fortified grain or cereal, oil, and salt, served as a cooked meal during the school's mid-morning break or before the start of classes. Children receive a meal 5 times per week over the 10-month school year, which provides at least one third of a child's daily energy requirements. In drought-affected and conflict areas, the ration mostly consisted of 120 grammes of corn-soya blend, 8 grammes of fortified vegetable oil and 3 grammes of iodized salt. The Addis Ababa programme provides two meals per day.

As part of home-grown school feeding initiatives, food is purchased locally to support smallholders, stimulate the community economy, and encourage increased and diversified agricultural production through reliable demand. Local procurement also allows fresh food items to be included. As part of the home-grown programme in the SNNP Region, each student receives a daily hot meal prepared with 150 grammes of dry cereals and beans, vegetable oil, and iodized salt. In 2022, a fresh food pilot, which reached 15,000 school children in 45 schools, added fresh fruits, vegetables and animal proteins such as eggs and meat to a rotating weekly menu.

The total cost of the school feeding programme ranges from USD 28 to USD 70 per child per year, with the highest cost in Addis Ababa, which is borne by the government. Based on an estimate of 176 feeding days, this equates to USD 0.16 to USD 0.40 per child per day. This is well within the bounds of the 0.3–0.5% of GDP suggested for countries including Benin and Senegal to be spent on such programmes, as part of an analysis for the School Meals Coalition (Watkins, 2022).

In the case of the home-grown school feeding programme in the SNNP Region, it has been estimated that 54% of the total cost goes to food purchases, 5% to storage and 8% to transport. Implementation challenges of the home-grown school feeding programme include food procurement and supply challenges, inflation, poor infrastructure, poor food quality, and lack of transparent and accountable management.

Source: The box is based on Memirie (2023) and Mideksa et al. (2024).

Conclusion

African countries are spending USD 46 billion per year on primary education to deliver services to 189 million children attending public primary schools. This is equivalent to an average of USD 244 per student – but can be as low as USD 50 for some of the continent's low-income countries. And yet African countries spend per primary student 13% of GDP per capita, which is only slightly below the global average of 15%. African countries are facing a USD 28 billion financing gap if they are to achieve their collective primary completion rate target of 85% by 2030. However, over the past 10 years, African countries have reduced the share of total public expenditure they allocate to education by almost one percentage point.

Total aid to education accounts for just under 5% of total education spending in the continent. Yet this number exaggerates the amount that goes through the government budget and systems. The size of grants in government revenue in Africa has fallen by 53% since 2010 to just 1.2% of GDP in 2021. One estimate raises the volume of aid directed to projects related to foundational learning at USD 750 million. A review of the implicit costs per beneficiary in the projects listed at the end of this chapter, which refer to the Spotlight focus countries, suggests that the costs may be too high for funding to be sustained. As some donors assign more priority to foundational learning programmes, a careful examination of approaches that lead to sustainability will be needed.

TABLE 7.4

Main ongoing and recently concluded donor-funded projects on foundational learning, by Spotlight focus country

Mauritania

Project	Time Scope	Goal ■ Selected components and results	Budget Funders
Projet d'Appui à la Réforme du Secteur de l'Education/Education Sector Support Project **(PARSE)**	*2008–14* National with targeted activities in 6 *wilayas*	*Improve the quality of primary teacher pre-service training and promote equitable access to lower secondary education.* ■ Proportion of École Normale des Instituteurs (ENI) graduates mastering the minimum required competencies increased from 0% to 36% ■ 1,019 additional bilingual teachers supported and certified ■ 11,000 additional girls enrolled in lower secondary education ■ 8% increase in transition rate from primary to lower secondary education for girls in the six targeted wilayas ■ 52 additional classrooms built, equipped with learning materials ■ Pedagogical kits for 18,879 girls in lower secondary schools.	*USD12.4 million* World Bank
Projet d'appui au secteur de l'éducation de base/ Basic Education Sector Support Project, Phase 2 **(PASEB 2)**	*2020–25* National with targeted activities in 6 regions (Assaba, Hodh Chargui, Hodh Garbi, Gorgol, Guidimagha and Nouakchott Sud)	*Improve primary education quality by transforming teacher man-agement using accountability and new technology, improving education service delivery in six regions, strengthening education sector management, supporting emergency response capacities.*	*USD 52 million* Global Partnership for Education World Bank
Quatrième contrat de désendettement/Fourth debt reduction contract **(C2D4)** + Programme Apprendre	*2018–25* National	*Improve primary and secondary education and professional training quality through the construction of new schools and teacher training activities.* Improve pre- and in-service teacher training, national monitoring and evaluation of teacher professional development through a local system to professionalize teacher training opportunities, and pedagogical training and self-training resources.	*USD 10.3 million* Agence Française de Développement
The Future is Ours!	*2019–27* 3 regions (Brakna, Gorgol and Tagant)	*Improve school attendance and literacy rates by providing school meals, improving infrastructure and capacity-building activities* ■ Distribute over 60 million meals to 139,078 students ■ Improve water and sanitation and stoves to 239 schools ■ Deworming medication to 129,085 students ■ Train 5,887 individuals in safe food preparation and storage ■ Train 4,297 individuals in child health and nutrition ■ Train 576 teachers, administrators and officials in management.	*USD 22.5 million* United States Department of Agriculture
Human Development Support Program in Mauritania + Institutional Support Project for Education Reform in Mauritania/Projet d'appui institutionnel à la réforme de l'éducation en Mauritanie **(PAIRE)**	*2022–27* National	*Support National Education System Development Program (PNDSE III) implementation and education system reform through strengthening the availability, use and quality of school textbooks. Improving teacher quality and teaching relevance, strengthening education system steering and management.*	*EUR 47.2 million* European Union

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
PASEB					■	■	■	■	■											
PASEB 2											■	■	■	■	■	■				
C2D4									■	■	■	■	■	■	■	■				
The Future is Ours!										■	■	■	■	■	■	■	■	■		
PAIRE													■	■	■	■	■	■		

TABLE 7.4
Continued

Niger

Project	Time Scope	Goal ■ Selected components and results	Budget Funders
Niger Education and Community Strengthening Project	*2012–19* National with targeted activities in 8 regions (183 primary schools)	*Improve early grade reading instruction and outcomes by strengthening community participation in education and improving access to quality education in primary schools.* ■ 20% of learners demonstrate reading fluency and comprehension at the end of Grade 2 according to the Early Grade Reading Assessment ■ 65,000 primary school level learners benefit from interventions ■ 500 primary school teachers complete professional development activities on evidence-based instructional strategies for reading ■ 65,000 primary school learners benefit from interventions ■ 169 community structures engaged in supporting education.	*USD 13 million* United States Agency for International Development
Support to Quality Education Project	*2014–19* National	*Improve access to quality teaching and learning environments and increase student retention at the basic education level.* ■ Primary school enrolment reaching 2.6 million ■ 5% increase in primary completion rate ■ Learning assessment system at the primary level established ■ 1,187 primary and 330 lower secondary school classrooms built ■ 100,000 students benefit from school feeding programmes ■ 20,000 Grade 1 to 3 teachers trained in early grade reading and classroom assessment ■ >6,000 teacher trainers, inspectors and advisors trained ■ 7,000 school management committees trained.	*USD 84.2 million* World Bank Global Partnership for Education Agence Française de Développement
Fonds commun sectoriel de l'éducation/Education Sector Basket Fund	*2020–23* National	*Support the implementation of Niger's Education and Training Transition Plan (PTSEF) by improving key implementation dimensions to ensure the achievement of short-term equity, learning outcomes and efficiency objectives.* ■ Enrolment will grow by 3% per year in the Tahoua and Zinder regions between 2020/21 and 2022/23 ■ In 2023, 50% of Grade 2 students will reach at least Level 2 in language on the PASEC assessment ■ The primary school teacher attrition rate will fall by one third between 2017/18 and 2022/23 ■ The Common Education Sector Fund budget execution rate (excluding salaries and allowances) will be 95% in 2021–23.	*EUR 77.3 million* Global Partnership for Education Agence Française de Développement
Learning Improvement for Results in Education **(LIRE)**	*2020–29* National with targeted activities in 5 regions (Diffa, Maradi, Tahoua, Tillaberi and Zinder)	*Improve the quality of teaching practices and learning and strengthen education planning and management.* ■ 600,000 students benefit from learning-enhancing interventions ■ 250,000 students benefit from remedial programmes ■ 12,000 teachers participating in coaching activities ■ 5,430 classrooms constructed designed to reduce vulnerability ■ Structured lessons developed and digitized ■ National large-scale standardized learning assessment completed.	*USD 370 million* World Bank

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Niger Education and Community Strengthening			██	██	██	██	██	██	██	██										
Support to Quality Education					██	██	██	██	██	██										
Fonds commun sectoriel de l'éducation											██	██	██	██						
LIRE											██	██	██	██	██	██	██	██	██	██

TABLE 7.4

Continued

South Africa

Project	Time Scope	Goal ■ Selected components and results	Budget Funders
Teacher Assessment Resources for Monitoring and Improving Instruction for Foundation Phase **(TARMII-FP)**	*2012–19* 2 provinces (North West and Gauteng)	*Improve primary teachers' assessment and instruction capacities.* ■ Provide teachers with a computer-based assessment tool and training to effectively use assessments for identifying individual student learning needs in literacy ■ Develop and integrate an assessment tool in government's assessment training for teachers.	*USD 6.4 million* United States Agency for International Development
Partnership for Accelerated Progress in Early Grade Learning	*2014–19* 2 provinces (Free State and Mpumalanga)	*Improve literacy outcomes in Grades 2 and 3.* ■ Engage district officials, principals, teachers and community members in supporting reading activities ■ Target 225,000 learners.	*USD 2.6 million* United States Agency for International Development
Early Grade Reading Study II	*2015–19* 1 province (Mpumalanga)	*Improve teaching and learning of Grade 1 and 2 of English as a first additional language.* ■ Schools provided with two types of interventions: traditional face-to-face teacher training; or a combination of face-to-face training and ICT component providing scripted lessons ■ Cost-effectiveness of two programmes measured relative to each other and relative to a control group of schools.	*USD 1.6 million* United States Agency for International Development
South Africa Story Powered School Program	*2016–19* 2 provinces (Eastern Cape and KwaZulu-Natal)	*Improve reading outcomes by developing a culture of reading for enjoyment in home language and English through reading clubs, teacher and community training, and reading materials.* ■ 177,000 Grade R to 4 learners supported ■ 15% of learners attended reading clubs and had higher fluency in oral reading and comprehension compared to control schools ■ 2,000 teachers trained but without a significant impact on their attitudes towards reading or in their pedagogic practices.	*USD 7.5 million* United States Agency for International Development
Reading Support Project	*2016–20* 3 districts in North West province	*Improve the reading skills of primary learners in African languages and English by improving teacher competencies, accessing learning materials and strengthening school leadership* ■ 121 schools with learning/teaching materials and teacher training ■ 140 schools with individualized onsite teachers coaching support; learning/teaching materials; and teacher training ■ 65 schools with individual teacher coaching, teaching/learning material; and School Management Team training ■ 2,000 teachers received teacher training.	*USD 10.9 million* United States Agency for International Development

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
TARMII-FP			■	■	■	■	■	■	■	■										
Early Grade Learning					■	■	■	■	■	■										
Early Grade Reading						■	■	■	■	■										
Story Powered School							■	■	■	■										
Reading Support Project							■	■	■	■										

TABLE 7.4

Continued

Uganda

Project	*Time Scope*	*Goal* ■ Selected components and results	*Budget Funders*
School Health and Reading Programme **(SHRP)** Literacy Achievement and Retention Activity **(LARA)**	*2012–19* National (targeted activities in 43 districts)	*Improve early grade reading and retention by targeting behavioural change at the community level.* ■ 4.4 million learners in more than 5,000 schools reached ■ 53,000 teachers trained ■ 6.5 million books provided ■ LARA schoolchildren taught in their local language twice as likely to be emergent readers after two years ■ SHRP schoolchildren more than twice as likely to be reading >60 words per minute in English at the end of Grade 4.	*USD 200 million* United States Agency for International Development
Uganda Teacher and School Effectiveness Project **(UTSEP)**	*2015–20* National	*Support Education Sector Strategic Plan implementation by improving public primary teacher/school effectiveness.* ■ 8,800,000 students receive English/mathematics textbooks ■ 23,500 primary school teachers trained in teaching early grade reading, early childhood education and school leadership ■ 1,445,000 students benefit from improved teacher effectiveness ■ New classrooms for 58,000 students ■ 5,500 school management committee members trained in school management and accountability.	*USD 100 million* World Bank Global Partnership for Education
Strengthening Education Systems for Improved Learning **(SESIL)**	*2018–23* 2 regions (West Nile and Eastern)	*Improve the equity, quality and management of primary education through community education.* ■ 340,000 learners directly supported through a complementary community-led learning initiative ■ Children attending community-led classes improved literacy and numeracy levels ■ Results-based management approach to drive active and effective management in 1,800 government primary schools.	*GBP 40 million* United Kingdom Foreign, Commonwealth and Development Office
Integrated Child and Youth Development Activity **(ICYD)**	*2020–24* National (targeted activities in 73 districts)	*Build on Early Grade Reading support to the Ministry of Education and Sports and target districts; and address primary school retention and transition through a combination of family, community and school-based interventions.* ■ Improved early grade reading outcomes for over 2.5 million schoolchildren through materials enhancement, teacher development and support, and community engagement.	*USD 19.7 million* United States Agency for International Development
Uganda Learning Acceleration Program **(ULEARN)**	*2024–* National	*Improve the equity, quality and management of primary education through community education.* ■ Support teacher policy priorities including universalization of early grade reading; teaching and learning materials; practice-based teacher training; in-classroom teacher support, with strong alignment across these elements and technology-enabled class-room support at teacher training institutions ■ Equip target schools with facilities that provide: water, including through rainwater tanks or boreholes; separate toilet facilities for girls, boys and children with disabilities; handwashing facilities; and incinerators.	*USD 150 million* World Bank

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
SHRP/LARA			█	█	█	█	█	█	█	█										
UTSEP						█	█	█	█	█	█									
SESIL									█	█	█	█	█	█						
ICYD											█	█	█	█	█					
ULEARN															█	█	█	█	█	█

TABLE 7.4
Continued

Zambia

Project	Time Scope	Goal ■ Selected components and results	Budget Funders
Project for Improvement of Pedagogical Content Knowledge: Linking Pre-Service and In-Service Education	2016–19 3 provinces (Central, Copperbelt and Southern)	*Improve the quality of teacher education in mathematics and science by linking colleges of education and collaborating schools.* ■ Conduct training for lecturers at three colleges of education and teachers at collaborating schools ■ Develop sample lesson plans and guides to be used for primary/secondary schools.	Japan International Cooperation Agency
Catch Up	2016– 7 provinces (Eastern, Luapula, Lusaka, Muchinga, Northern, Southern and Western)	*Improve early grade literacy and numeracy by providing a remedial programme based on the Teaching at the Right Level methodology.* ■ All 1,877 schools in Eastern and Southern provinces ■ In 2019, the number of Grade 3 to 5 students who could read at least a simple paragraph increased by 37% and those who could do subtraction doubled in the Eastern and Southern provinces ■ In 2020, 240,000 students increased literacy and numeracy skills	*USD 2.6 million* UNICEF
Zambia Education Enhancement Project **(ZEEP)**	2018–25 6 provinces (Central, Eastern, Luapula, Lusaka, Muchinga and Southern)	*Improve the quality of teaching and learning conditions in targeted primary and secondary schools by strengthening the teacher training system and improving textbook availability.* ■ 1,100,000 students benefit directly from learning interventions ■ 1:1 student:textbook ratio in mathematics/science in Grades 5/8 ■ 3,000 teachers recruited or trained as of 2023 ■ Teachers achieving increased competences in subject and pedagogical content knowledge by 8% in mathematics and 4% in science in 2023 ■ 395 classrooms constructed and equipped as of 2023.	*USD 180 million* World Bank
Let's Read	2019–25 5 provinces (Eastern, Muchinga, North-Western, Southern and Western)	*Improve reading outcomes from pre-primary through Grade 3 in seven official local languages of instruction.* ■ >24,700 administrators, and educators trained ■ Improved Grade 2 scores in Standardized Literacy Assessment ■ 5,000 schools report Standardized Literacy Assessment results ■ Teaching Council of Zambia accredits Let's Read training.	*USD 49 million* United States Agency for International Development
Transforming Teacher Education **(TTE)**	2020–25 National	*Strengthen the capacity of 12 pre-service teacher training institutions (universities and colleges of education) to improve learning.* ■ Train 60 teacher educators ■ Train 9,000 college and university students as primary teachers.	*USD 15 million* United States Agency for International Development
Zambia Enhancing Early Learning **(ZEEL)**	2021–25 National	*Improve equitable access to quality learning in early childhood education in targeted areas by developing standards, enhancing education delivery as well as overall system strengthening.* ■ Reach over 100,000 students and 2,000 teachers ■ Increase the enrolment of 3- to 6-year-olds in public centres ■ Increase the share of centres meeting quality learning conditions.	*USD 39 million* World Bank Global Partnership for Education
Foundational learning	2024–29 National	*Improve the delivery of foundational learning and learning outcomes in early grades.* ■ Scale the Primary Literacy Program ■ Support the Ministry of Education to institutionalize the Primary Literacy Program and early learning reforms, and provide technical assistance ■ Enhance the delivery of remedial and catch-up education.	*USD 25 million* United States Agency for International Development

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Pre-service and in-service							■	■	■	■										
Catch Up							■	■	■	■	■	■	■	■	■					
ZEEP									■	■	■	■	■	■	■	■				
Let's Read										■	■	■	■	■	■	■				
TTE											■	■	■	■	■	■				
ZEEL												■	■	■	■	■				
Foundational learning															■	■	■	■	■	■
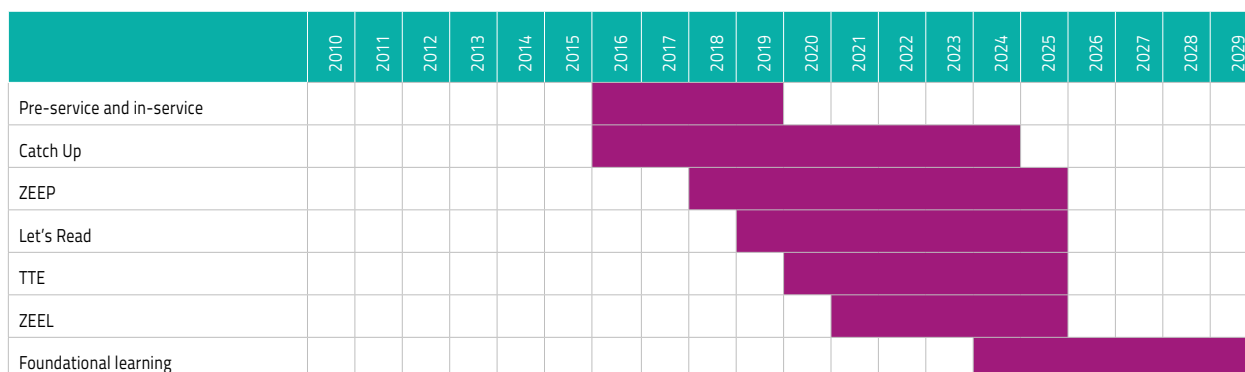
8 Conclusion and recommendations

At Weyra Lalo Primary School in the SNNP region, 5 and 6 year old children learn by having fun. Recreational activities help them to develop a taste for learning from an early age. (CREDIT: © UNICEF/UNI518303/Namusa)

Africa is burdened with serious challenges, which affect the speed with which social and economic development objectives can be realized. In the case of education, on top of poverty, malnutrition, epidemics and conflict, most parts of the continent face the unique legacy of colonial history, which means that the vast majority of children are not being taught in the language they speak at home. Despite these adverse starting conditions, African countries have achieved a rapid expansion of their education systems since 2000, overcoming the consequences of structural adjustment that set back an entire generation. The reduction of out-of-school rates slowed down in the 2010s, but this may partly reflect the fact that fewer enrolled children were repeating grades compared to the 2000s. In fact, primary completion rates have been growing by almost one percentage point per year since 2000 without any sign of slowing down.

It is now more than 10 years since the international community has turned its attention to the fact that the expansion of education systems may have had little impact. As results from learning assessments, trickling in from various countries, were being collated, it emerged that levels of basic literacy and numeracy were very low. Many children were and are still going through six years of primary education and learning nothing. This finding was labelled a 'learning crisis'. While the evidence remains patchy, it is safe to argue that at most one child in five achieves a minimum proficiency level in reading and mathematics by the end of primary school. Learning levels are particularly low in early grades.

This report series considers this situation a major obstacle to African and global development and a threat to children being able to fulfil their potential. It therefore needs to be addressed as a priority. Addressing low foundational learning levels will have benefits for individuals, families, communities, economies and societies. However, this report series argues that the discussion needs to be framed correctly. A crisis is a deterioration of a situation. The little evidence available does not suggest that education outcomes have been declining in Africa; they may even have been improving faster than elsewhere in the world.

The world is changing rapidly. While some transformations may have taken centuries to complete in other parts of the world, they are urgent for Africa, which has a particular demographic structure on which it must capitalize. As the continent marks 2024 as the African Union Year of Education and as discussions are about to take place for the new continental education strategy, this report takes the position that low learning levels is an African challenge that deserves policymakers' dedicated attention. It is the key to reach wider development ambitions, in the same way that education of high quality unlocked the potential of East Asia more than two generations ago. While each country is unique, countries also share several structural features. They should mobilize the policy dialogue mechanisms that the African Union places at their disposal to exchange experiences and seek home-grown solutions.

Socioeconomic, political and historical reasons go a long way towards explaining low learning levels. But the Spotlight report series focuses on what can be done in education. Its first edition set the stage by proposing eight recommendations that run through the report's proposed three cycles. The objective for this second, as well as the upcoming third, cycle is to use these recommendations as the basis for further elaboration in areas informed by the country-focused research. The second Spotlight cycle, which involved five focus countries – Mauritania, Niger, South Africa, Uganda and Zambia – took a closer look at mathematics and the alignment between key policy documents in lower and upper primary grades: curriculum, textbooks, teacher guides and assessments. It also considered how these documents align with global standards, not with a desire to standardize education systems but to offer a useful measurement, as these standards have been developed through work that examined the content of mathematics education in systems all around the world.

These recommendations also echo, to a large extent, the recommendations that emerged during the country-led process of the four national reports on which this continental report is based (**Table 8.1**). These national recommendations are related to factors in the Spotlight series' analytical framework, although some also cover broader resourcing issues.

At the individual level

RECOMMENDATION 1. GIVE ALL CHILDREN A TEXTBOOK – AND ALL TEACHERS A GUIDE

Ensure that all children and teachers have teaching and learning materials that are research-based and locally, aligned with the curriculum and locally developed

The first Spotlight report focused on the lack of textbooks, especially in lower primary, as a public policy failure that prevents countries from achieving progress in learning outcomes. It argued that ensuring all children have textbooks and supplementary materials of good quality for free is the best investment education systems can make. While no single input can 'buy' learning outcomes, the lack of such materials in the hands of children is a roadblock that undermines the chances of other reforms to succeed. But many textbooks, it was noted, need to be reviewed and revised, using teacher feedback and research findings, to align with efforts to improve, simplify and refocus the curriculum and teacher training.

This Spotlight report brings teacher guides into the picture. Their interrelationship with textbooks is underappreciated. Both are templates for action. They serve as a blueprint for teachers to deliver instruction according to the intended curriculum by laying out the competencies to be mastered, the order in which the competencies are to be mastered, and expectations of what pupils should be able to do with that content. Textbooks and teacher guides – and when the latter are not available, lesson plans – support curriculum implementation.

Countries need to produce textbooks and teacher guides aligned with the curriculum and deliver these documents on time. In fact, school principals from Spotlight focus countries often noted shortages or delays in the provision of teaching and learning materials, weakening instruction. It also emerged during the Spotlight fieldwork that not all teachers work with teacher guides, preferring to refer to textbooks instead. But textbooks do not serve the same purpose. Therefore teacher guides need to be reviewed, to understand the reasons why some teachers may choose not to rely on them.

Although textbook development is strictly a national prerogative, there are benefits from closer collaboration among countries in early grade textbook and teacher guide research and development. This Spotlight cycle has drawn attention to some uneven education reforms that have not included the timely development of aligned teaching and learning materials. It has also shed light on interesting pilots in mathematics education. Such examples, both positive and negative, deserve to be discussed in forums that bring together not only technical experts but also decision makers.

RECOMMENDATION 2. TEACH ALL CHILDREN IN THEIR HOME LANGUAGE – AND TRAIN TEACHERS ACCORDINGLY

Give all children the opportunity to first learn to read in a language they understand and all teachers the confidence to support them

Language issues are complex in every country, as language is intertwined with equity, inclusion, confidence, dignity and identity. In Africa, a colonial history has hampered education development, as the vast majority of children are taught in a language they do not speak at home, which slows early acquisition of reading and writing proficiency or can even prevent it outright. There are also negative links to the development of children's social-emotional skills, including their sense of self-worth and belonging.

This Spotlight cycle has also noted that language issues block the development of mathematics skills, especially, as is often the case, when teaching and learning materials

are only available in the second language and rely too much on text. The use of a child's first or home language for up to six or eight years, alongside the introduction of a second one initially as a subject and later as a parallel medium of instruction, is widely considered the most effective policy, improving outcomes not only in the home language but also in the second language and other subjects.

In practice, while a large number of countries have introduced such reforms, they do not go far enough, opting for an early exit to the second language, often without a clear transition strategy, as a new database put together for this report has shown. Moreover, considerable challenges have been encountered in implementation. The new database has shown that while countries such as Namibia and South Africa have developed textbooks in all the official languages, countries such as Nigeria and Senegal have textbooks for only a few of their languages of instruction. And this is only one step: the key is to prepare teachers to believe in the importance of bilingual instruction and be committed agents for change.

RECOMMENDATION 3. PROVIDE ALL CHILDREN WITH A SCHOOL MEAL

Give all children the minimum conditions to learn at school

Improved nutrition conditions have driven learning improvements in many parts of the world. School-level interventions are one of several policy levers governments have at their disposal, which has received widespread attention in recent years following the World Food Summit. This report has not dedicated much space to this policy but wishes to reiterate its importance. A review of Ethiopia, one of the countries that has domesticated and institutionalized a school meals policy in recent years and increasingly dedicating precious national resources to it, shows it is an example that other African countries should follow.

At the system level
RECOMMENDATION 4. MAKE A CLEAR PLAN TO IMPROVE LEARNING

The lack of regular data on learning outcomes, the absence of links with a clear standard of proficiency, and the weak capacity to use learning assessment results for system improvements: all of these have consequences on plans' effectiveness. This report has shown that although half of African countries have set national benchmarks for 2025 and 2030 on learning, which is on par with countries elsewhere in the world, African countries were more likely to not to have a solid basis upon which to set these targets and less likely to set a target that was realistic. It also means that countries are less likely to form reasonable expectations about the type of policy changes that might lead to measurable improvements by a particular date. Three components support creating a clear plan to improve learning:

a. Develop a common continental framework to monitoring learning outcomes.

The introduction of SDG global indicator 4.1.1 has led to a series of tools developed under the auspices of the UNESCO Institute for Statistics, the custodian agency of the indicator. These tools, including the definition and elaboration of the minimum proficiency level, the criteria of eligibility for reporting indicator 4.1.1 and the Global Proficiency Framework, can guide countries to define learning standards, set targets and monitor outcomes. African countries, where national assessment frameworks are often not sufficiently developed and where examinations are emphasized over system-level assessment, would benefit from reviewing and adapting these global tools through their continental, regional and national assessment institutions, to strengthen their national assessment programmes. The two regional assessment programmes, PASEC and SACMEQ, with their rich experience, need to be part of such an exercise.

b. Define explicit learning standards and ensure assessments measure student performance with respect to those standards.

The first Spotlight cycle recommended that curriculum expectations of the skills children should master by each grade needed to be defined more clearly. The review of mathematics curricula in five countries for this second Spotlight cycle confirmed this need. Moreover, it showed misalignment between those curriculum expectations set and those assessed. Countries often lack evaluation frameworks, do not place sufficient emphasis on formative assessment, and they focus on examinations, whose level of cognitive complexity is not aligned with the needs of students and the system. The more a curriculum describes learning expectations in detail and clear, measurable terms, the easier it is for teachers to integrate these objectives into their daily instruction, and to design assessments that measure student performance with respect to these expectations. Teachers need to reorient their assessment practices to support the all-round development of children. This will require adopting a more balanced approach, emphasizing formative and continuous assessment to ensure children develop competencies according to the full scope of the curriculum.

c. Ensure learning is not abstract; children need full understanding to move to advanced concepts.

The vast majority of children in Africa do not acquire foundational skills by the end of grade 3, which compromises the later acquisition of more complex skills. There is an important debate whether curricula are underambitious or overambitious. Many curricula in Africa are burdened with information that is not relevant. Moreover, as observed in classrooms, the pedagogical approaches are not suited to children's ideal path of cognitive development. The review of textbooks in the five Spotlight focus countries showed that only a small share of activities from textbooks and teacher guides in lower primary demanded higher cognitive levels. There should be more activities for understanding concepts and developing processes to solve higher order problems.

The provision of simple objects designed so that children can perceive some mathematical concept by manipulating them will allow early grade mathematics teachers to initiate hands-on activities for learners to build their understanding towards more advanced concepts.

RECOMMENDATION 5. DEVELOP TEACHER CAPACITY

Ensure all teachers use classroom time effectively through cost-effective training

This report has highlighted that many African countries start with a major disadvantage. They are four times more likely than countries in the rest of the world to recognize a secondary education certificate as a minimum requirement for teaching in primary schools. As the proficiency levels of primary school graduates are very low, it is clear that systems cannot move faster than the capacity of teachers. Some countries are tightening the selection criteria of teacher candidates and standardizing the provision of teacher education. But such measures can only go so far. It will take a long time for better prepared teachers to reach all students. And unfortunately, they cannot address the capacity of teachers already in the system. The number of students per qualified teacher has been stagnant.

The extent to which teachers know and understand the curriculum will determine how they teach it in their classrooms to reach the learning objectives. As school principals noted during the small-scale fieldwork in the course of the Spotlight research, most teachers receive no or very limited formal teacher professional development, which is needed to enhance teachers' content knowledge and build their confidence in teaching more difficult topics. Yet teachers in lower primary grades have even lower mastery levels than teachers at the end of primary. Formal professional development is expensive and difficult to organize. The report mentions the growing number of informal, spontaneous professional development opportunities, through professional communities, often facilitated by technology, which is changing the shape of teacher training. Governments need to review how teachers, pedagogical and subject advisors, and inspectors can use these opportunities more systematically.

RECOMMENDATION 6. PREPARE INSTRUCTIONAL LEADERS

Restructure support mechanisms offered to teachers and schools

School principals and district education officers have been interviewed in the course of the fieldwork for the second Spotlight cycle. But this report has not explored their role in exercising instructional leadership, which will be the focus of the third Spotlight cycle, in alignment with the 2024/5 *Global Education Monitoring Report* that will research this topic at global level. It is necessary to turn attention to the selection and development of education leaders at the school and local government levels. The challenge is to ensure these officials become the agents of change for improving foundational learning, the people who inspire and coach others, create a positive learning environment, improvise under severe resource constraints and communicate effectively.

At the continental level

RECOMMENDATION 7. LEARN FROM PEERS

Reinvigorate mechanisms allowing countries to share experiences on foundational literacy and numeracy

Foundational learning is an African challenge that requires African solutions. Countries need to take ownership of this challenge and define it in their own terms. A positive narrative is needed to create incentives for governments to share their experiences and learn from others. Actions to address foundational learning should ideally respond to citizen demand for better education services. As mentioned in the introduction, there is growing public discontent with the quality of education in Africa, even if public opinion is not always clearly aligned with objective measures of quality. Perceptions are affected by context and there are many communities, particularly the disadvantaged ones, whose views are heard less often.

But there is now enough public interest and concern about education for governments to place it much higher on their political agenda. The African Union Year of Education offers the perfect moment for experts, civil society and government officials to prioritize selected actions that would benefit from cross-national collaboration. The Spotlight series is working with clusters of the Continental Education Strategy for Africa to support this search for consensus. A decision by the Specialized Technical Committee on Education, Science, Technology and Innovation of the African Union to promote a common continental framework for monitoring learning outcomes is a step in that direction. Common actions to review mathematics curricula, implement language of instruction policies or develop school leadership frameworks are other examples to be considered.

At the international level

RECOMMENDATION 8. FOCUS AID ON INSTITUTION BUILDING

Shift from projects to provision of public goods that support foundational learning

The share of development assistance that directly funds African governments has fallen by more than 50% since 2010 and amounts to just 1.2% of GDP. But as governments lack resources, aid programmes continue to be influential. The big question is the extent to which these programmes are sustainable. Elaborate designs that rely on expensive foreign technical assistance may not help governments develop their capacity. The experience of Japanese technical cooperation in mathematics education has been highlighted for its emphasis on incurring low recurrent costs and using national institutions for implementation. In contrast, the lack of donors' long-term vision to help lower the cost of learning assessments and develop national capacity for assessment has been used as an example of an approach that needs an overhaul: resources for assessment need to be offered to countries for them to make the choices that best serve their needs.

TABLE 8.1

Recommendations from Spotlight country reports

Analytical framework factor	Mauritania	South Africa	Uganda	Zambia
1. Vision and focus on performance	■ Implement awareness-raising measures to familiarize teachers with the learning focus of the 2022 Orientation Law.	■ Support a foundational numeracy vision, through the Teaching Mathematics for Understanding pilot as a driver.	■ Articulate Uganda's national reading policy with guiding policy documents and plans.	■ Articulate a clearer vision of foundational literacy and numeracy
2. Teaching and learning	■ Prepare a careful plan to implement the language of instruction policy based on experiments and support for gradual scaling up. ■ Mobilize support for the production and distribution of educational materials to reach all schools.	■ Provide manipulatives for early grade mathematics classes with additional teacher training on how to use, sustain and maintain them. ■ Deliver instructional materials in time reach schools before term begins. ■ Strengthen accessibility of materials in all official languages across all years of primary school.	■ Rethink the curriculum for a coherent sequence of skill development in mathematics, local languages and English. ■ Introduce more problem-solving skills and application of foundational numeracy skills. ■ Make the curriculum and materials available in local languages. ■ Improve the provision of teaching and learning materials.	■ Incorporate problem-solving skills early. ■ Ensure that textbooks include higher cognitive level blocks. ■ Enhance accessibility of the curriculum, teacher guides, and student textbooks. ■ Ensure students can access materials in their language of instruction.
3. Teachers	■ Complement the reform of teacher training colleges with an ambitious continuing training program to support teachers	■ Plan targeted teacher support and ongoing professional development to enhance their content knowledge and pedagogical skills.	■ Provide simple, structured teacher guides. ■ Provide additional training to teachers to implement the curriculum effectively	■ Hire more teachers to reduce pupil: teacher ratios. ■ Provide teachers with additional training to implement the curriculum effectively
4. School management				
5. Supervision and monitoring	■ Strengthen supervision and educational support, especially inspector capacity and resources.	■ Making better use of learner responses in learning assessments to improve teaching practices via subject advisors.	■ Develop strategies to assist learners who have fallen behind. ■ Address learner and teacher absenteeism.	
6. Community and parental engagement				
7. Learning assessment	■ Introduce national policy for assessment to adjust pedagogy.		■ Promote formative assessment at school level supported with in-service teacher training.	■ Promote formative assessment at the school level supported with in-service teacher training.
Other: finance, governance, etc.		■ Improve infrastructure to accommodate increased enrolment	■ Provide access to early childhood education. ■ Address teacher and classroom shortages. ■ Consider implementing a school feeding programme	■ Improve infrastructure to accommodate increases enrolment.

References

Chapter 1

Abdulai, A.-G., and Hickey, S. (2016). The politics of development under competitive clientelism: Insights from Ghana's education sector. *African Affairs, 115*(458), 44–72. https://doi.org/10.1093/afraf/adv071

African Union. (2016). *Overview of the Continental Education Strategy for Africa 2016-2025 (CESA 16-25).* https://afripol.africa-union.org/old/index.php/cesa/about

Akyeampong, K., Lussier, K., Pryor, J., and Westbrook, J. (2013). Improving teaching and learning of basic maths and reading in Africa: Does teacher preparation count?. *International Journal of Educational Development, 33*(3), 272–282. https://doi.org/10.1016/j.ijedudev.2012.09.006

Amakoh, K. (2022). *Declining performance: Africans demand more government attention to educational needs* (Afrobarometer Dispatch No. 511.) https://www.afrobarometer.org/wp-content/uploads/2022/04/AD511-PAP8-Declining-performance-Africans-demand-greater-attention-to-educati on-Afrobarometer-16march22.pdf

Atweh, B., Bose, A., Graven, M., Subramaniam, J., and Venkat, H. (2014). *Teaching numeracy in pre-school a nd early grades in low-income countries.* GIZ. https://doi.org/10.13140/2.1.4190.3686

Baah, S.K.T., Castaneda Aguilar, R.A., Diaz-Bonilla, C., Fujs, T., Lakner, C., Nguyen, M.C., and Viveros, M. (29 March 2023). March 2023 global poverty update from the World Bank: The challenge of estimating poverty in the pandemic. *World Bank Data Blog*. https://blogs.worldbank.org/en/opendata/march-2023-global-poverty-update-world-bank-challenge-estimating-pover ty-pandemic#:~:text=At %246.85%2C the global poverty,Asia and Sub-Saharan Africa

Bertoni, E., Di Maio, M., Molini, V., and Nisticò, R. (2019). Education is forbidden: The effect of the Boko Haram conflict on education in North-East Nigeria. *Journal of Development Economics, 141.* https://doi.org/10.1016/j.jdeveco.2018.06.007

Busemeyer, M.R., Lergetporer, P., and Woessmann, L. (2018). Public opinion and the political economy of educational reforms: A survey. *European Journal of Political Economy, 53,* 161–185. https://doi.org/10.1016/j.ejpoleco.2017.08.002

Essien, A.A. (2018). The role of language in the teaching and learning of early grade mathematics: An 11-year account of research in Kenya, Malawi and South Africa. *African Journal of Research in Mathematics, Science and Technology Education, 22*(1), 48–59. https://doi.org/10.1080/18117295.2018.1434453

Essien, A.A., Sapire, I., and Taylor, N. (2023). *Landscape analysis of the role of language in early grades mathematics teaching and learning in South Africa.* [Report commissioned by Zenex Foundation.] https://www.zenexfoundation.org.za/wp-content/uploads/2023/10/Landscape-analysis-of-the-ro le-of-language-in-early-grade-mathematics.pdf

Harding, R., and Stasavage, D. (2014). What democracy does (and doesn't do) for basic services: School fees, school inputs, and African elections. *The Journal of Politics, 76*(1), 229–245. https://doi.org/10.1017/S0022381613001254

Kanjee, A., and Sayed, Y. (2013). Assessment policy in post-apartheid South Africa: Challenges for improving education quality and learning. *Assessment in Education: Principles, Policy & Practice, 20*(4), 442–469. https://doi.org/10.1080/0969594X.2013.838541

Kazibwe, D. (2023). *Violent conflicts and educational outcomes: The LRA insurgency in Northern Uganda revisited.* Households in Conflict Network. (HiCN Working Paper No. 401.) https://hicn.org/wp-content/uploads/2023/09/HiCN-WP-401.pdf

Le Nestour, A., Moscoviz, L., and Sandefur, J. (2023). *The long-run decline of education quality in the developing world.* Center for Global Development. (Working Paper No. 608.) https://www.cgdev.org/publication/long-run-decline-education-quality-developing-world

Lutfeali, S., Sitabkhan, Y., Ralaingita, W., and Piper, B. (2023). *Designing effective numeracy programs in low- and middle-income countries.* Science of Teaching. https://scienceofteaching.site/wp-content/uploads/2023/08/PROJ_12_SoT-Practical-Guide-for-Numeracy_15AUG23.pdf

MacLean, L.M. (2011). The paradox of state retrenchment in sub-Saharan Africa: The micro-level experience of public social service provision. *World Development, 39*(7), 1155–1165. https://doi.org/10.1016/j.worlddev.2010.10.005

Nag, S., Vagh, S.B., Dulay, K.M., and Snowling, M.J. (2019). Home language, school language and children's literacy attainments: A systematic review of evidence from low and middle income countries. *Review of Education, 7*(1), 91–150. https://doi.org/10.1002/rev3.3130

Nakamura, P., Molotsky, A., Zarzur, R.C., Ranjit, V., Haddad, Y., and De Hoop, T. (2023). Language of instruction in schools in low and middle income countries: A systematic review. *Campbell Systematic Reviews, 19*(4). https://doi.org/10.1002/cl2.1351

OCHA. (2023). *Sudan, cluster status: Education cluster response (April-15 October 2023).* United Nations Office for the Coordination of Humanitarian Affairs. https://reports.unocha.org/en/country/sudan/card/6LPjS9HUuD

Opalo, K.O. (2022). What is the point of schooling? The politics of education policy in Tanzania since 1961. Center for Global Development. (Working Paper No. 614.) https://www.cgdev.org/sites/default/files/what-point-schooling-politics-education-policy-tanzania-1961.pdf

Perkins, J.M., Kim, R., Krishna, A., McGovern, M., Aguayo, V.M., and Subramanian, S.V. (2017). Understanding the association between stunting and child development in low- and middle-income countries: Next steps for research and intervention. *Social Science & Medicine, 193,* 101–109. https://doi.org/10.1016/j.socscimed.2017.09.039

Piper, B., Simmons Zuilkowski, S., Dubeck, M., Jepkemei, E., and King, S.J. (2018). Identifying the essential ingredients to literacy and numeracy improvement: Teacher professional development and coaching, student textbooks, and structured teachers' guides. *World Development, 106,* 324–336. https://doi.org/10.1016/j.worlddev.2018.01.018

Sanou, A.S., Diallo, A.H., Holding, P., Nankabirwa, V., Engebretsen, I.M.S., Ndeezi, G., Tumwine, J.K., Meda, N., Tylleskär, T., and Kashala-Abotnes, E. (2018). Association between stunting and neuro-psychological outcomes among children in Burkina Faso, West Africa. *Child and Adolescent Psychiatry and Mental Health, 12*(1), 30. https://doi.org/10.1186/s13034-018-0236-1

Sitabkhan, Y., Davis, J., Earnest, D., Evans, N., Ketterlin-Geller, L., Lutfeali, S., Ngware, M., Perry, L., Pinto, C., Platas, L., Ralaingita, W., Smith, K., and Srikantaiah, D. (2019). *Instructional strategies for mathematics in the early grades.* https://ierc-publicfiles.s3.amazonaws.com/public/resources/Maths_Strategies_Final.pdf

UIS. (2023). *Trends in learning proficiency in the last twenty years: How close are we to reliable regional and global SDG 4.1.1 trend statistics?.* https://tcg.uis.unesco.org/wp-content/uploads/sites/4/2023/02/SDG-4.1.1-historical-trends-FINAL.pdf

UIS, USAID, World Bank, FCDO, DFID, ACER, and BMGF. (2020). *Global Proficiency Framework for Mathematics: Grades 1 to 9.* https://gaml.uis.unesco.org/wp-content/uploads/sites/2/2021/03/Global-Proficiency-Framework-Math.pdf

UNICEF, WHO, and World Bank. (2023). *Levels and trends in child malnutrition.* https://iris.who.int/bitstream/handle/10665/368038/9789240073791-eng.pdf?sequence=1

West, M.R., and Woessmann, L. (Eds.). (2021). *Public opinion and the political economy of education policy around the world.* The MIT Press. https://mitpress.mit.edu/9780262045681/public-opinion-and-the-political-economy-of-education-policy-around-the-world

World Bank. (2021). *Loud and clear: Effective language of instruction policies for learning.* The World Bank. https://documents1.worldbank.org/curated/en/517851626203470278/pdf/Effective-Language-of-Instruction-Policies-for-Learning.pdf

Zerga, A.A., Tadesse, S.E., Ayele, F.Y., and Ayele, S.Z. (2022). Impact of malnutrition on the academic performance of school children in Ethiopia: A systematic review and meta-analysis. *SAGE Open Medicine, 10*. https://doi.org/10.1177/20503121221122398

Chapter 2

André, P., and Demonsant, J.-L. (2014). Substitution between formal and Qur'anic schools in Senegal. *The Review of Faith & International Affairs, 12*(2), 61–65. https://doi.org/10.1080/15570274.2014.918746

Burkina Faso Ministry of National Education, Literacy and Promotion of National Languages. (2023). *Rapport statistique mensuel de données de l'éducation en situation d'urgence du 31 mai 2023.* https://reliefweb.int/report/burkina-faso/rapport-statistique-mensuel-de-donnees-de-leducation-en-situation-durgence-du-31-mai-2023?_gl=1*29xe13*_ga*MjcyMzMwMjg4LjE3MDc0Mjk4MDY.*_ga_E60ZNX2F68*MTcwOTA2OTQ5MS40LjEuMTcwOTA3MjIwNC40Ny4wLjA

Castaneda Aguilar, R.A., Diaz-Bonilla, C., Fujs, T., Lakner, C., Nguyen, M.C., Viveros, M., and Baah, S.K.T. (26 March 2024). March 2024 global poverty update from the World Bank: First estimates of global poverty until 2022 from survey data. *World Bank Data Blog.* https://blogs.worldbank.org/en/opendata/march-2024-global-poverty-update-from-the-world-bank--first-esti

Center for Preventive Action. (2023). *Conflict in the Central African Republic.* https://www.cfr.org/global-conflict-tracker/conflict/violence-central-african-republic

d'Aiglepierre, R., and Bauer, A. (2018). The choice of Arab-Islamic education in sub-Saharan Africa: Findings from a comparative study. *International Journal of Educational Development, 62,* 47–61. https://doi.org/10.1016/j.ijedudev.2018.01.004

Dewast, L. (2019). Burkina Faso – The country where it's too dangerous to go to school. *BBC News.* https://www.bbc.com/news/world-africa-47495038

GEM Report team and UIS. (2022). *New estimation confirms out-of-school population is growing in sub-Saharan Africa.* (Policy Paper No. 48.) https://unesdoc.unesco.org/ark:/48223/pf0000382577

IIEP-UNESCO Dakar and Global Partnership for Education. (2022). *Somalia federal government: Education sector analysis: Federal government of Somalia: Assessing opportunities for rebuilding the country through education.* https://unesdoc.unesco.org/ark:/48223/pf0000380838

International Rescue Committee. (2024). *2024 Emergency Watchlist: Charting a course through a new crisis landscape.* International Rescue Committee. https://www.rescue.org/sites/default/files/2024-01/CS2401_Report_Watchlist_Final_30MB.pdf

Koena, J.F. (2024). Central African Republic says 10,000 children are still fighting alongside armed groups there. *Associated Press.* https://apnews.com/article/central-african-republic-child-soldiers-d7b5907d3defe1b1b62f63d1613bfdc0

Mohamed-Abdi, M. (2003). Retour vers les dugsi, écoles coraniques en Somalie. *Cahiers d'études Africaines, 43*(169–170), 351–369. https://doi.org/10.4000/etudesafricaines.204

Moyi, P. (2012). Girl's schooling in war-torn Somalia. *International Journal of Educational Research, 53,* 201–212. https://doi.org/10.1016/j.ijer.2012.03.010

Olivesi, M. (2021). Burkina Faso: The children who fear school. Norwegian Refugee Council. https://www.nrc.no/shorthand/stories/burkina-faso---the-children-who-fear-school/index.html

Somalia Directorate of National Statistics. (2020). *The Somali Health and Demographic Survey 2020.* https://somalia.unfpa.org/sites/default/files/pub-pdf/FINAL%20SHDS%20Report%202020_V7_0.pdf

Somalia Ministry of Education, Culture and Higher Education. (2017). *Education sector analysis 2012–2016.* https://www.unicef.org/somalia/media/1201/file/Somalia-Education-sector-analysis-2012-16.pdf

Somalia Ministry of Education, Culture and Higher Education. (2018). *Education Sector Program Improvement Grant 2018–2020: Program document.* https://www.globalpartnership.org/sites/default/files/fgs-program_document.pdf

Somalia Ministry of Education, Culture and Higher Education. (2021). *Annual statistics yearbook 2020–2021.* https://moe.gov.so/wp-content/uploads/2022/06/Annual-Statisitics-Yearbook-2021-Final.pdf

South Sudan Education Cluster. (2023). *South Sudan Education Cluster HRP 2023 Performance Monitoring Dashboard.* https://reliefweb.int/report/south-sudan/south-sudan-education-cluster-hrp-2023-performance-monitoring-dashboard?_gl=1*1j5yflu*_ga*MjcyMzMwMjg4LjE3MDc0Mjk4MDY.*_ga_E60ZNX2F68*MTcwOTA3NjA4OC41LjEuMTcwOTA3NjA5NS41My4wLjA

Stevis, M., and Parkinson, J. (2016). Thousands flee isolated Eritrea to escape life of conscription and poverty. *The Wall Street Journal.* https://www.wsj.com/articles/eritreans-flee-conscription-and-poverty-adding-to-the-migrant-crisis-in-europe-1445391364

Sudan Education Cluster. (2023). *Education overview in the Sudan crisis – August 2023.* https://reliefweb.int/report/sudan/education-overview-sudan-crisis-august-2023

UNICEF. (2019). *Education under threat in West and Central Africa.* https://www.unicef.org/media/57801/file/Education under threat in wca 2019.pdf

UNICEF Somalia. (2006). *Multiple Indicator Cluster Survey.* https://mics-surveys-prod.s3.amazonaws.com/MICS3/Eastern%20and%20Southern%20Africa/Somalia/2006/Final/Somalia%202006%20MICS_English.pdf

Wabwire, A.K. (2019). *Interview: The mass exodus from Eritrea: Teachers and students flee forced conscription.* https://www.hrw.org/news/2019/08/09/interview-mass-exodus-eritrea

World Bank. (2019). *Somali poverty and vulnerability assessment.* The World Bank. https://openknowledge.worldbank.org/bitstream/handle/10986/32323/Findings-from-Wave-2-of-the-Somali-High-Frequency-Survey.pdf?sequence=1&

Chapter 3

ACER Centre for Global Education Monitoring. (2019). *Minimum proficiency levels: Described, unpacked and illustrated.* ACER Centre for Global Education Monitoring. https://gaml.uis.unesco.org/wp-content/uploads/sites/2/2019/05/GAML6-REF-2-MLP-recommendations-ACER.pdf

ACER Centre for Global Education Monitoring. (2022). *Minimum proficiency levels unpacked.* ACER Centre for Global Education Monitoring. https://tcg.uis.unesco.org/wp-content/uploads/sites/4/2022/11/WG_GAML_4_MPLs-Unpacked_ACER.pdf

Carletto, C., Kilic, T., Chen, H., Perucci, F., and Shuang Liu, C. (17 November 2022). 8 technical priorities to position household surveys for the next decade. *World Bank Data Blog.* https://blogs.worldbank.org/en/opendata/8-technical-priorities-position-household-surveys-next-decade

Dlamini, P.A., and Ferreira-Meyers, K. (2023). First language instruction? Eswatini teachers' insight of the Eswatini language-in-education policy. *Southern African Linguistics and Applied Language Studies, 41*(2), 143–157. https://doi.org/10.2989/16073614.2022.2106256

Mordaunt, O.G., and Williams, P.A. (2022). Language policy in Eswatini: Challenges in a globalised world. In *Handbook of language policy and education in countries of the Southern African Development Community (SADC).* BRILL. https://doi.org/10.1163/9789004516724

Mullis, I., Von Davier, M., Foy, P., Fishbein, B., Reynolds, K., and Wry, E. (2023). *PIRLS 2021 International results in reading.* TIMSS & PIRLS International Study Center. https://doi.org/10.6017/lse.tpisc.tr2103.kb5342

Nitko, A. (2018). *Final report of the results of the Consensus Building Meeting on Proficiency Levels.* https://gaml.uis.unesco.org/wp-content/uploads/sites/2/2018/10/Final-Report-of-September-2018-Paris-Consensus-Meeting.pdf

Spaull, N. (2023). 2*030 Reading Panel background report.* 2030 Reading Panel. https://groundup.org.za/media/uploads/documents/embargoed_2023_reading_panel_background_report_7_feb_2023.pdf

UIS. (2022). *COVID-19 in sub-Saharan Africa: Monitoring impacts on learning outcomes.*
https://ampl.uis.unesco.org/wp-content/uploads/sites/17/2022/01/MILO-Summary-Full-Report.pdf

UIS. (2023). *Aligning and reporting on indicator 4.1.1: UIS annotated workflow.* https://tcg.uis.unesco.org/
wp-content/uploads/sites/4/2020/03/4.1.1_Aligning-and-reporting_SDG-4.1.1_2023.03.28.pdf

van der Berg, S., Hoadley, U., Galant, J., van Wyk, C., and Böhmer, B. (2022). *Learning losses from COVID-19
in the Western Cape: Evidence from systemic tests.* RESEP. Steelenbosch University. https://resep.sun.
ac.za/wp-content/uploads/2022/05/RESEP-WCED-Systemic-Tests-–-Report_WEB.pdf

Chapter 4

Amadio, M., Opertti, R., Ji, L., and Brylinski, É. (2016). *What makes a quality curriculum?.* (Current and Critical
Issues in the Curriculum and Learning No. 2.) UNESCO-IBE.

Rahman, A., Sahid, S., and Nasri, N. (2022). *Literature review on the benefits and challenges of active learning on
students' achievement. 17.* https://doi.org/10.18844/cjes.v17i12.8133

Schmidt, W., Mcknight, C., Houang, R., Wang, H., Wiley, D., Cogan, L., and Wolfe, R. (2001). *Why schools matter:
A cross-national comparison of curriculum and learning. The Jossey-Bass Education Series.* Jossey-Bass.

Tomlinson, C.A. (2017). *How to differentiate instruction in academically diverse classrooms* Third edition.
https://files.ascd.org/staticfiles/ascd/pdf/siteASCD/publications/books/HowtoDifferentiateInstructio
ninAcademicallyDiverseClassrooms-3rdEd.pdf

Törnroos, J. (2005). Mathematics textbooks, opportunity to learn and student achievement. *Studies in
Educational Evaluation, 31*(4), 315–327. https://doi.org/10.1016/j.stueduc.2005.11.005

UIS, USAID, World Bank, FCDO, DFID, ACER, and BMGF. (2020a). *Global Proficiency Framework for Reading:
Grades 1 to 9.* https://gaml.uis.unesco.org/wp-content/uploads/sites/2/2021/03/Global-Proficiency-
Framework-Reading.pdf

UIS, USAID, World Bank, FCDO, DFID, ACER, and BMGF. (2020b). *Global Proficiency Framework for Mathematics:
Grades 1 to 9.* https://gaml.uis.unesco.org/wp-content/uploads/sites/2/2021/03/
Global-Proficiency-Framework-Math.pdf

Valverde, G., Bianchi, L., Wolfe, R., and Schmidt, W. (2002). *According to the book: Using TIMSS to investigate the
translation of policy into practice through the world of textbooks.* Springer Science & Business Media.
https://www.researchgate.net/publication/316691159_According_to_the_Book

Watson, C. (2023). *Eligibility criteria for reporting against SDG 4.1.1* [A discussion paper – GAML 2023].

Chapter 4 (Annex)

Alejaldre-Biel, L. (2014). Status of indigenous languages within Gambian education policy: English vs.
vernacular languages as the vehicular language in formal education contexts. *5th European
Conference on African Studies: African Dynamics in a Multipolar World.,* 171–188.

Ball, M.-C., Bhattacharya, J., Zhao, H., Akpé, H., Brogno, S., and Jasińska, K.K. (2024). Effective
bilingual education in francophone West Africa: Constraints and possibilities.
International Journal of Bilingual Education and Bilingualism, 1–15. https://doi.org/10.1080/13670050.2
023.2290482

Chimbutane, F., and Reinikka, R. (2023). *Language and student learning: Evidence from an ethnographic
study in Mozambique* (WIDER Working Paper No. 2023/62.) http://hdl.handle.net/10419/283758

Dias, F., and Rodrigues, M.J. (2023). The voice of teachers about school and the teaching profession in
Guinea-Bissau. *Education Sciences, 13*(8). https://doi.org/10.3390/educsci13080802

Essien, A.A., Sapire, I., and Taylor, N. (2023). *Landscape analysis of the role of language in early grades mathematics teaching and learning in South Africa*. [A report commissioned by Zenex Foundation.] https://www.zenexfoundation.org.za/wp-content/uploads/2023/10/Landscape-analysis-of-the-role-of-language-in-early-grade-mathematics.pdf

Ethnologue. (2023). *Ethnologue.* https://www.ethnologue.com

Gibson, M., Jeng, M., Wekundah, M., and Sanyang, A. (2023). *Gambia School Mapping Report.*

Trudell, B. (2024). *Language in education policy: Key issues and their enactment in the Republic of The Gambia.* [Background paper prepared for the *Global Education Monitoring Report Spotlight on Basic Education Completion and Foundational Learning in Africa.*] https://unesdoc.unesco.org/ark:/48223/pf0000389729.locale=en

World Population Review. (2023). *World Population Review.* https://worldpopulationreview.com

Chapter 5

Aber, J.L., Torrente, C., Starkey, L., Johnston, B., Seidman, E., Halpin, P., Shivshanker, A., Weisenhorn, N., Annan, J., and Wolf, S. (2017). Impacts after one year of "Healing Classroom" on children's reading and math skills in DRC: Results from a cluster randomized trial. *Journal of Research on Educational Effectiveness, 10*(3), 507–529. https://doi.org/10.1080/19345747.2016.1236160

Alcott, B., Rose, P., Sabates, R., Alonso, M.L., and Cherfils, M. (2018). Experience and lessons of learning intervention programmes across the PAL Network members. (Policy Paper No. 18/4.) REAL Centre, University of Cambridge. https://www.educ.cam.ac.uk/centres/real/publications/REAL%20Hewlett%20Policy%20Doc%20A4_FINAL.pdf

Amevor, G., Bayaga, A., and Bosse, M.J. (2021). Analysis of rural-based pre-service teachers spatial-visualisation skills in problem solving in vector calculus using MATLAB. *International Journal of Emerging Technologies in Learning (iJET), 16*(10), 125–149. https://doi.org/10.3991/ijet.v16i10.19269

Ardington, C., and Meiring, T. (2020). *Impact evaluation of Funda Wande coaching intervention midline findings.* https://fundawande.org/news/impact-evaluation-of-funda-wande-coaching-intervention-midlinefindings-23

Bagby, E., Swift-Morgan, J., Niang, A., and Upadhyay, A. (2022). *Achieving cost-effective instructional coaching at scale: Evidence from Senegal.* (Technical Brief Series: Learning from All Children Reading.) Chemonics International. https://chemonics.com/wp-content/uploads/2022/04/ACR_Tech_Brief_LPT_Coaching_CIES.pdf

Bietenbeck, J., Irmert, N., and Sepahvand, M.H. (2023). Teacher quality and cross-country differences in learning in francophone sub-Saharan Africa. *Economics of Education Review, 96,* 102437. https://doi.org/10.1016/j.econedurev.2023.102437

Bietenbeck, J., Piopiunik, M., and Wiederhold, S. (2018). Africa's skill tragedy: Does teachers' lack of knowledge lead to low student performance?. *Journal of Human Resources, 53*(3), 553–578. https://doi.org/10.3368/jhr.53.3.0616-8002R1

Bold, T., Filmer, D., Martin, G., Molina, E., Stacy, B., Rockmore, C., Svensson, J., and Wane, W. (2017). Enrollment without learning: Teacher effort, knowledge, and skill in primary schools in Africa. *Journal of Economic Perspectives, 31*(4), 185–204. https://doi.org/10.1257/jep.31.4.185

Boukary, H., and Sissoko Touré, M. (7 July 2022). West and Central Africa: The great challenge of access to quality education in the face of demographic growth. *Education for All Blog.* https://www.globalpartnership.org/blog/west-and-central-africa-great-challenge-access-quality-education-face-demographic-growth

Brown, L.E., Kim, H.Y., Tubbs Dolan, C., Brown, A., Sklar, J., and Aber, J.L. (2023). Remedial programming and skill-targeted SEL in low-income and crisis-affected contexts: Experimental evidence from Niger. *Journal of Research on Educational Effectiveness, 16*(4), 583–614. https://doi.org/10.1080/19345747.2 022.2139785

Burkina Faso Ministry of Education, UNICEF, and CERFODES. (2017). *Rapport sur les faibles performances des élèves en mathématiques: Cas du Namentenga, Ganzourgou et Soum.* https://www.unicef.org/burkinafaso/media/826/file/Etude%20Sur%20les%20Causes%20des%20 Faibles%20Performances%20des%20El%C3%A8ves%20du%20Primaire.pdf

Burns, M. (2023). *Teachers' perspectives on barriers and supports for technology integration.* [Background paper for *Global Education Monitoring Report 2023: Technology in education.*] https://unesdoc.unesco.org/ ark:/48223/pf0000386070.locale=en

Castillo, N.M., Lee, J., Zahra, F.T., and Wagner, D.A. (2015). MOOCS for development: Trends, challenges, and opportunities. *Information Technologies & International Development, 11*(2), 35–42. https://repository.upenn.edu/handle/20.500.14332/38633

Cilliers, J., Fleisch, B., Kotze, J., Mohohlwane, N., Taylor, S., and Thulare, T. (2022). Can virtual replace in-person coaching? Experimental evidence on teacher professional development and student learning. *Journal of Development Economics, 155,* 102815. https://doi.org/10.1016/j.jdeveco.2021.102815

Club of Mozambique. (2024). *Mozambique: Education Ministry needs over 12,000 new teachers.* https://clubofmozambique.com/news/mozambique-education-ministry-needs-over-12000- new-teachers-251827

Darling-Hammond, L., Hyler, M.E., and Gardner, M. (2017). *Effective teacher professional development.* Learning Policy Institute. https://learningpolicyinstitute.org/product/teacher-prof-dev

Eritrea Ministry of Information. (2016). *Teachers: The agents for change.* https://shabait.com/2016/03/16/ teachers-the-agents-for-change

Evans, D. (16 February 2021). How to use technology to help teachers be better and to make life better for teachers. *World Bank Education for Global Development Blog.* https://blogs.worldbank.org/en/ education/how-use-technology-help-teachers-be-better-and-make-life-better-teachers

Fischer, C., Fishman, B., Dede, C., Eisenkraft, A., Frumin, K., Foster, B., Lawrenz, F., Levy, A.J., and McCoy, A. (2018). *Investigating relationships between school context, teacher professional development, teaching practices, and student achievement in response to a nationwide science reform.* 72, 107–121. https://doi.org/10.1016/j.tate.2018.02.011

Ganimian, A.J. and Sharnic. (2023). *How can developing countries address heterogeneity in students' preparation for school? A review of the challenge and potential solutions.* https://jacobsfoundation org/wp-content/ uploads/2023/03/Learning-Variability-in-Developing-Countries.pdf

Gouëdard, P. (2023). *Teachers for all – Améliorer l'équité dans l'allocation des enseignants à Madagascar.* UNICEF Innocenti – Centre Mondial de la Recherche et de la Prospective. https://www.unicef-irc.org/publicati ons/1697-teachers-for-all-am%C3%A9liorer-l%C2%B4%C3%A9quit%C3%A9-dans-lallocation-des-ens eignants-madagascar.html

Gouëdard, P., Pont, B., Hyttinen, S., and Huang, P. (2020). Curriculum reform: A literature review to support effective implementation. *OECD Education Working Papers, 239.* OECD Publishing. https://doi.org/10.1787/efe8a48c-en

Gouëdard, P., Ramos, C., and Tameza, B. (2023). *Women in Learning Leadership (WiLL): What does women's school leadership look like in Chad?.* (Innocenti Research Report.) UNICEF Innocenti – Global Office of Research and Foresight. https://www.unicef-irc.org/publications/1905-women-in-learningleaders hip-will-what-does-womens-school-leadership-look-like-in-chad.html

Henaku, C.B., and Pobbi, M.A. (2017). Measuring teacher classroom management skills: A comparative analysis of distance trained and conventional trained teachers. *Journal of Education and Practice, 8*(10), 54–64.

Hennessy, S., D'angelo, S., Koomar, S., Kreimeia, A., Adam, T., Cao, L., and Haßler, B. (2023). *Technology use in teacher preparation and professional development in low- and middle-income countries.* (Background paper prepared for the *Global Education Monitoring Report 2023: Technology in education.*) https://doi.org/10.54676/NJZV8067

Hennessy, S., Haßler, B., and Hofmann, R. (2015). Challenges and opportunities for teacher professional development in interactive use of technology in African schools. *Technology, Pedagogy and Education, 24*(5), 1–28. https://doi.org/10.1080/1475939X.2015.1092466

Hennessy, S., Haßler, B., and Hofmann, R. (2016). Pedagogic change by Zambian primary school teachers participating in the OER4Schools professional development programme for one year. *Research Papers in Education, 31*(4), 399–427. https://doi.org/10.1080/02671522.2015.1073343

Hsieh, J. (2021). *The professional competencies of Gambia college* graduates – *Report for the 2020 Gambia College External Competency Exam (GCECE).*

IIEP-UNESCO. (2021). *Diagnostic des pratiques de pilotage de la qualité de l'éducation au Burkina Faso: Synthèse des principaux résultats.* https://dakar.iiep.unesco.org/sites/default/files/2022-02/APIQ_Burkina_Synthese.pdf

International Task Force on Teachers for Education 2030. (2020). A *review of the use of contract teachers in sub-Saharan Africa.* UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000374581

Játiva, X. (n.d.). *Teachers for All – Améliorer l´équité dans l'allocation des enseignants au Niger.* (Innocenti Research Report.) UNICEF Innocenti – Centre Mondial de la Recherche et de la Prospective.

Jukes, M.C.H., and Norman, J. (2024). *Social and emotional learning, academic achievement and inequality.* [Background paper prepared for the *Global Education Monitoring Report Spotlight on Basic Education Completion and Foundational Learning in Africa.*] https://unesdoc.unesco.org/ark:/48223/pf0000389734

Kotze, J., Fleisch, B., and Taylor, S. (2019). Alternative forms of early grade instructional coaching: Emerging evidence from field experiments in South Africa. *International Journal of Educational Development, 66*, 203–213. https://doi.org/10.1016/j.ijedudev.2018.09.004

Louge, N., Miksic, E., and Lu, Y. (2022). *Remedial education: Models and approaches for successful impact on student achievement.* FHI 360. https://www.fhi360.org/sites/default/files/media/documents/resource-remedial-education-technical-brief.pdf

Malhotra, N., Ayele, Z.E., Zheng, D., and Amor, Y.B. (2021). Improving social and emotional learning for schoolgirls: An impact study of curriculum-based socio-emotional education in rural Uganda. *International Journal of Educational Research, 108*, 101778. https://doi.org/10.1016/j.ijer.2021.101778

Mauritania Ministry of Economic Affairs and Sustainable Development. (2022). *Programme National du Développement du Secteur Educatif: Revue conjointe 2022.* https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fwww.education.gov.mr%2Fsites%2Fdefault%2Ffiles%2F2023-08%2FRapport%2520final%2520Revue%2520Conjointe%2520PNDSE%25202023%252028.07.23%2520VF.docx&wdOrigin=BROWSELINK

Moussa, S., Cissé, R., and Lô, C. (2021). How remediation helps to improve children's educational learnings in primary education in Senegal. In I.I. Munene (Ed.), *Ensuring all children learn: Lessons from the South on what works in equity and inclusion.* Lexington Books. https://rowman.com/ISBN/9781793636270/Ensuring-All-Children-Learn-Lessons-from-the-South-on-What-Works-in-Equity-and-Inclusion

Norman, J., Jukes, M.C.H., Randolph, E., Sowa, P., and Harden, K. (2023). P*romoting social and emotional learning in the classroom: A guide to evidence-based practices in low- and middle-income countries.* https://www.rti.org/sites/default/files/sel_guidebook_2023_rti-international.pdf

OECD. (2014). *TALIS 2013 results.* OECD Publishing. https://doi.org/10.1787/9789264196261-en

OECD. (2019). *TALIS 2018 results (Volume I).* OECD Publishing. https://doi.org/10.1787/1d0bc92a-en

PASEC. (2020). *PASEC 2019: Qualité des systèmes éducatifs en Afrique subsaharienne francophone : Performances et environnement de l'enseignement-apprentissage au primaire.* Programme for the Analysis of Education Systems of CONFEMEN. https://pasec.confemen.org/wp-content/uploads/sites/2/2022/08/RapportPasec2019_Rev2022_WebOK.pdf

Pettersson, G., Rawle, G., Outhred, R., Brockerhoff, S., Wills, G., Nugroho, D., Jasper, P., Kveder, A., and Beavis, A. (2015). *Impact evaluation of education quality improvement programme in Tanzania: Final baseline technical report, Volume I.* https://www.opml.co.uk/files/Publications/8383-assessing-equip-t/baseline-impact-evaluation-vol.1.pdf

Pouezevara, S., Brunette, T., Jordan, R., and Nakyejwe, D. (2019). *Uganda impact study report.* RTI International. https://ierc-publicfiles.s3.amazonaws.com/public/resources/RTI_StudyReport_Uganda_31Jan19%20SHARE.pdf

Rakotoarivony, R.A., and Rabenstein, F. (18 December 2023). Transforming education in the Central African Republic. *Education for All Blog.* https://www.globalpartnership.org/blog/transforming-education-central-african-republic

Randolph, E., Burkholder, G., and Sempa, H.K. (2019). *The Journeys approach to building a safe, inclusive and positive school and fostering social and emotional learning.*

Senegal Government. (2013). *Programme d'amélioration de la qualité, de l'équité et de la transparence (PAQUET) secteur éducation formation 2013-2025.* https://www.globalpartnership.org/fr/content/plan-sectoriel-education-2013-2025-senegal

Ripoche, J.-L. (2024). *La remédiation scolaire au Tchad : Leçons du projet d'amélioration de la qualité de l'éducation de base par la promotion d'une gestion de proximité (PAQEPP).* [Background paper prepared for the *Global Education Monitoring Report Spotlight on Basic Education Completion and Foundational Learning in Africa.*] https://unesdoc.unesco.org/ark:/48223/pf0000389727.locale=en

RTI International. (n.d.). *Benefits to providing wrap-around service for continuous professional development of practicing teachers: Tanzania case study.* [Background paper prepared for the Global Education Monitoring Report Spotlight on Basic Education Completion and Foundational Learning in Africa.] +LINK

Schweig, J., Hamilton, L., and Baker, G. (2019). *School and classroom climate measures: Considerations for use by state and local education leaders.* RAND Corporation. https://doi.org/10.7249/RR4259

Tienin, R.B. (2024). *Note sur les mécanismes de support aux enseignants burkinabè dans leurs pratique pédagogiques liées à l'enseignement des compétences fondamentales.* [Background paper prepared for the *Global Education Monitoring Report Spotlight on Basic Education Completion and Foundational Learning in Africa.*] https://unesdoc.unesco.org/ark:/48223/pf0000389726.locale=en

Trust, T., Krutka, D.G., and Carpenter, J.P. (2016). *"Together we are better": Professional learning networks for teachers. 102*, 15–34. https://doi.org/10.1016/j.compedu.2016.06.007

UNICEF. (2022). *UNICEF education case study: Zambia.* UNICEF. https://www.unicef.org/media/124586/file/Zambia%20case%20study%20on%20scaling%20up%20FLN.pdf

von Lautz-Cauzanet, E., and Buchstab, A. (2023). *Low-tech, high impact: WhatsApp and other messenger systems as catalysator for scaled teacher training.* [Background paper for *Global Education Monitoring Report 2023: Technology in education.*] https://unesdoc.unesco.org/ark:/48223/pf0000386110.locale=en

VVOB. (2021). *Attention for the new teacher in Rwanda.* [Policy brief.] VVOB – Education for Development. https://rwanda.vvob.org/sites/rwanda/files/policy_brief_on_induction_of_new_teacher-layout_v0.0_20211203_final.pdf

Wawire, B., Barnes-Story, A., Kiru, E., and Kim, S. (2023). Primary school learning in sub-Saharan Africa during COVID-19: A scoping review of responses and recovery initiatives induced during school closures. *Current Issues in Comparative Education, 25*(1), 25–50. https://doi.org/10.52214/cice.v25i1.9969

World Bank. (2023). *Enquêtes sur les Indicateurs de Prestation de Services dans les Écoles Primaires au Tchad.* The World Bank. http://documents.worldbank.org/curated/en/099051123210011963/P1650920a6cdab053093e704956c82caea3

Wurie, M., Mondiwa, K., and Kargbo, K. (21 February 2023). Emergencies remind us that remedial learning is key for low performing students. *Education for All Blog*. https://www.globalpartnership.org/blog/emergencies-remind-us-remedial-learning-key-low-performing-students

Chapter 6

Begue-Aguado, A. (2021). *Use of learning assessment data in the planning cycle: Case study Senegal.* United States Agency for International Development. https://www.edu-links.org/sites/default/files/media/file/LearningAssessmentData_CaseStudy_Senegal_Mar21.pdf

Concern Worldwide. (2022). *Early grade reading assessment Concern Niger.* https://admin.concern.net/sites/default/files/documents/2022-03/EGRA%202019%202022%20Final%20Report%20Turing.pdf

Crawfurd, L., Le, T., and Sandefur, J. (5 December 2023). Saving SDG 4.1.1a. *Center for Global Development Blog.* https://www.cgdev.org/blog/saving-sdg-411a

Fazzio, I., Eble, A., Lumsdaine, R.L., Boone, P., Bouy, B., Hsieh, P.-T.J., Jayanty, C., Johnson, S., and Silva, A.F. (2021). Large learning gains in pockets of extreme poverty: Experimental evidence from Guinea Bissau. *Journal of Public Economics, 199*, 104385. https://doi.org/10.1016/j.jpubeco.2021.104385

Fiszbein, A., and Bhattacharjea, S. (6 December 2023). The foundational learning data challenge: A civil society view from the Global South. *World Education Blog*. https://world-education-blog.org/2023/12/06/the-foundational-learning-data-challenge-a-civil-society-view-from-the-global-south

Global Coalition for Foundational Learning. (1 December 2023). The importance of SDG 4.1.1a for foundational learning. *Education for All Blog.* https://www.globalpartnership.org/blog/importance-sdg-411a-foundational-learning

Global Education Evidence Advisory Panel. (2024). *Importance of measuring foundational learning (SDG 4.1.1a).* https://www.linkedin.com/posts/global-education-evidence-advisory-panel-geeap_statement-by-the-global-education-evidence-activity-7158109994565980160-vV0r

IDinsight. (2023). *Luminos Program impact evaluation: Randomized controlled trial of an accelerated learning program for out-of-school children in Liberia.* IDinsight. https://luminosfund.org/wp-content/uploads/2023/11/Luminos-Program-Impact-Evaluation_15Nov2023_final.pdf

IIEP. (2021). *Learning assessments in the Gambia.* [IIEP information sheet.] https://www.iiep.unesco.org/sites/default/files/informationsheet_ulad_thegambia.pdf

Montoya, S. (12 April 2024). On the way forward for SDG indicator 4.1.1a: Our proposal. *World Education Blog*. https://world-education-blog.org/2024/04/12/on-the-way-forward-for-sdg-indicator-4-1-1a-our-proposal

Montoya, S., and Crouch, L. (22 April 2022). The learning assessment market: Pointers for countries – Part 1. *World Education Blog*. https://world-education-blog.org/2019/04/26/the-learning-assessment-market-pointers-for-countries-part-1

Montoya, S., and Crouch, L. (20 May 2022). The learning assessment market: Pointers for countries – Part 2. *World Education Blog*. https://world-education-blog.org/2019/05/20/the-learning-assessment-market-pointers-for-countries-part-2

Nkoya, S., Chilala, M., Gomez, A., Ngota, E., Njengere, D., and Mohale, M. (2024). *Implementing assessments for minimum proficiency levels (AMPL): Experiences and lessons learned from the Gambia, Kenya, Lesotho and Zambia.* [Background paper prepared for the *Global Education Monitoring Report spotlight on Basic Education Completion and Foundational Learning in Africa*.] https://unesdoc.unesco.org/ark:/48223/pf0000389731

Raudonyte, I. (2021). *The use of learning assessment data: Zambia.* (IIEP Policy Brief/The Use of Learning Assessment Data No. 6). UNESCO IIEP. https://unesdoc.unesco.org/ark:/48223/pf0000375498

Raudonyte, I., and Foimapafisi, T. (2022). *Using learning assessment data for educational planning in sub-Saharan Africa: Comparative analysis.* UNESCO. https://unesdoc.unesco.org/ark:/48223/pf0000382621

Soonarane, M. (2024). *Using evidence from assessment to improve foundational learning in Mauritius.* [Background paper prepared for the *Global Education Monitoring Report Spotlight on Basic Education Completion and Foundational Learning in Africa.*] https://unesdoc.unesco.org/ark:/48223/pf0000389730.locale=en

UNESCO. (2016). *Zambia: Education policy review: Paving the way for SDG 4-Education 2030.* https://unesdoc.unesco.org/ark:/48223/pf0000246408

United Nations Statistical Commission. (2024). *Report of the Inter-Agency and Expert Group on Sustainable Development Goal Indicators.* https://unstats.un.org/UNSDWebsite/statcom/session_55/documents/2024-4-SDG-IAEG-E.pdf

Varly, P. (2022). *Successes and challenges in establishing a national system for learning assessments: The example of Sierra Leone.* [Background paper prepared for the G*lobal Education Monitoring Report 2022 Spotlight on Basic Education Completion and Foundational Learning in Africa.*] https://unesdoc.unesco.org/ark:/48223/pf0000383165

Chapter 7

Baba, T., and Matashi, A. (2024). *Japan International Cooperation Agency primary mathematics programmes in Africa.* [Background paper prepared for the *Global Education Monitoring Report Spotlight on Basic Education Completion and Foundational Learning in Africa.*] https://unesdoc.unesco.org/ark:/48223/pf0000389732

Desalegn, T.A., Gebremedhin, S., Alemayehu, F.R., and Stoecker, B.J. (2021). The effect of school feeding programme on class absenteeism and academic performance of schoolchildren in southern Ethiopia: A prospective cohort study. *Public Health Nutrition, 24*(10), 3066–3074. https://doi.org/10.1017/S1368980021000501

Destaw, Z., Wencheko, E., Kidane, S., Endale, M., Challa, Y., Tiruneh, M., Tamrat, M., Samson, H., Shaleka, D., and Ashenafi, M. (2022). Impact of school meals on educational outcomes in Addis Ababa, Ethiopia. *Public Health Nutrition, 25*(9), 2614–2624. https://doi.org/10.1017/S1368980022000799

Döhrmann, M., Kaiser, G., and Blömeke, S. (2012). The conceptualisation of mathematics competencies in the international teacher education study TEDS-M. *ZDM, 44*(3), 325–340. https://doi.org/10.1007/s11858-012-0432-z

GEM Report team. (2024). *Can African countries afford their national SDG 4 benchmarks?* (*Global Education Monitoring Report* Policy Paper 49a.) https://doi.org/10.54676/QSFJ8148

GEM Report team, UIS, and World Bank. (2024). *Education finance watch 2023: Special edition for the African Union year of education 2024.* https://doi.org/10.54676/FBHB3925

Global Nutrition Report. (2022). *Country profiles: Ethiopia.* https://globalnutritionreport.org/resources/nutrition-profiles/africa/eastern-africa/ethiopia

Hill, H.C., Ball, D.L., and Schilling, S.G. (2008). Unpacking pedagogical content knowledge: Conceptualizing and measuring teachers' topic-specific knowledge of students. *Journal for Research in Mathematics Education, 39*(4), 372–400. http://dx.doi.org/10.5951/jresematheduc.39.4.0372

Ishihara, S., and Kawaguchi, J. (2022). Improvement of teachers' classroom practices for quality teaching and learning: The Japanese approaches. In N. Kayashima, K. Kuroda, and Y. Kitamura (Eds.), *Japan's international cooperation in education: History and prospects* (pp. 99–124). Springer Nature Singapore. https://doi.org/10.1007/978-981-16-6815-9_5

Kayashima, N., Kuroda, K., and Kitamura, Y. (Eds.). (2022). *Japan's international cooperation in education: History and prospects* (Vol. 63). Springer Nature Singapore. https://doi.org/10.1007/978-981-16-6815-9

Watkins, K. (2022). *School meals programmes and the education crisis: A financial landscape analysis.* https://educationcommission.org/wp-content/uploads/2022/10/School-Meals-Programmes-and-the-Education-Crisis-A-Financial-Landscape-Analysis.pdf

Kusaka, S., Nhêze, I. C., and Baba, T. (2021). Analysis of the intended mathematics curriculum revision process in Mozambique from the perspective of relevance. *Journal of Curriculum Studies, 53*(5), 642–658. https://doi.org/10.1080/00220272.2020.1855256

Maruyama, T., and Igei, K. (2023a). *Developing collective impact to improve foundational learning: Evidence from Madagascar after the COVID-19 pandemic shock.* (JICA Ogata Research Institute Discussion Paper No. 15.) JICA Ogata Research Institute for Peace and Development.

Maruyama, T., and Igei, K. (2023b). Community-wide support for primary students to improve foundational literacy and numeracy: Empirical evidence from Madagascar. *Economic Development and Cultural Change*, 726178. https://doi.org/10.1086/726178

Memirie, S.T. (2023). *School meals case study: Ethiopia.* London School of Hygiene & Tropical Medicine. https://doi.org/10.17037/PUBS.04671611

Mideksa, S., Getachew, T., Bogale, F., Woldie, E., Ararso, D., Samuel, A., Girma, M., Tessema, M., and Hadis, M. (2024). School feeding in Ethiopia: A scoping review. *BMC Public Health, 24*(1), 138. https://doi.org/10.1186/s12889-023-17613-4

OECD, African Union Commission, and African Tax Administration Forum. (2023). *Revenue statistics in Africa 2023.* OECD Publishing. https://doi.org/10.1787/15bc5bc6-en-fr

Podems, D. (2018). *Evaluation of sustained outcomes in basic education: Synthesis report.* United States Agency for International Development. https://pdf.usaid.gov/pdf_docs/PBAAJ315.pdf

Poppe, R., Frölich, M., and Haile, G. (2019). School meals and educational outcomes in rural Ethiopia. *The Journal of Development Studies, 55*(8), 1741–1756. https://doi.org/10.1080/00220388.2017.1311405

RTI International. (2023). Numeracy at scale: Introducing a new study on successful, large-scale numeracy interventions. *Insights Blog.* https://www.rti.org/insights/improving-numeracy-outcomes-lmics

Seek Development. (2023). *Funding critical skills: How are donors supporting foundational literacy and numeracy?.* https://donortracker.org/publications/funding-critical-skills

Uganda Bureau of Statistics. (2023). *Statistical abstract.* Uganda Bureau of Statistics. https://www.ubos.org/wp-content/uploads/publications/2023-Statistical-Abstract.pdf#page=131&zoom=100,57,753

UNESCO. (2021). *Global Education Monitoring Report 2021/2: Non-state actors in education: Who chooses? Who loses?.* https://doi.org/10.54676/XJFS2343

Wenger, E. (1998). *Communities of practice: Learning, meaning, and identity* (1st ed.). Cambridge University Press. https://doi.org/10.1017/CBO9780511803932

World Bank. (2005). *From schooling access to learning outcomes: An unfinished agenda: An evaluation of World Bank support to primary education.* The World Bank. https://ieg.worldbankgroup.org/sites/default/files/Data/reports/primary_education_evaluation.pdf

Learning counts

2024

This publication is the second in a three-part Spotlight series. It is produced by a partnership between the *Global Education Monitoring Report*, the Association for the Development of Education in Africa and the African Union.

It synthesises evidence on completion rates and minimum learning proficiency levels on the continent, informing the debate on national benchmarks for Sustainable Development Goal 4 (SDG 4) and the Continental Education Strategy for Africa (CESA) 2016−25. It aims to support a policy dialogue mechanism on foundational learning, Leveraging Education Analysis for Results Network (LEARN), hosted by the African Union.

The 2024 *Spotlight Report* draws on research in five focus countries: Mauritania, Niger, South Africa, Uganda and Zambia. Case studies were also prepared on Burkina Faso (professional learning communities), Chad (remedial education), Ethiopia (school feeding), The Gambia (language of instruction), Mauritius (diagnostic assessments) and the United Republic of Tanzania (teacher support).

The report focuses on the extent to which countries align their mathematics curricula, textbooks, teacher guides and assessments to advance foundational numeracy. Emphasizing the need for coherence, it evaluates the alignment of these policy documents with each other but also with a global standard of what students are expected to know and by when. It also assesses how these key documents are used in classrooms and what the implications are for children's opportunities to learn.

Various analyses focus, among other, on public opinion about education quality, progress on out-of-school and completion rates, the latest evidence on the potential impact of COVID-19 on learning, the learning pace of the curriculum, minimum required qualifications for teachers, the extent to which learning assessments report results and share data, and evidence on donor support to foundational learning. The report updates its eight policy-oriented recommendations to contribute to the debate on how countries can achieve their national benchmarks on completion and learning by 2030.

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