



SPOTLIGHT ON BASIC EDUCATION COMPLETION AND
FOUNDATIONAL LEARNING

Zambia



Ushirikia wa Maendeleo ya Elimu Barani Afrika
الرابطة لأجل تطوير التربية في إفريقيا
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Foreword

The Government of Zambia is committed to improving access to basic education. The Spotlight report supports this mission, as articulated in our national education policy, 'Educating our Future', and as operationalized further under the flagship Education for All Policy in 2021.

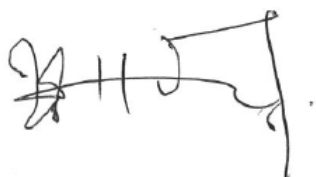
The Zambia Spotlight country report aligns with the Ministry of Education's efforts to promote access to and completion of primary education. It also contributes to our ongoing curriculum review and development process. The report focuses on mathematics and shows how the government's national vision aligns with the country's curriculum, textbooks, teacher guides, and learning assessments. The report findings provide timely inputs as we consider how the curriculum impacts pupils' learning. We will draw on its analysis that points at the need to focus more on problem-solving skills from the outset of their schooling.

Taking part in the Spotlight report process this past year was motivated by our desire to ensure quality education for all. In line with the Spotlight report recommendation, the Government of Zambia has recruited over 37,000 teachers to address the teacher shortage. Addressing this challenge is vital to delivering the curriculum. The Ministry of Education also acknowledges the need to improve the provision of teaching and learning materials to facilitate learning.

A partnership between the African Union, the Global Education Monitoring Report and the Association for the Development in Education in Africa, the Spotlight series promotes peer learning and knowledge exchange so that countries across the continent can share their experiences and prompt innovative solutions that fit each other's context. In that sense, the Zambia country report, as the other country reports in this series, are meant to be shared continent-wide to highlight selected positive policy implementation practices. In this report, we have identified our initiative to institutionalize assessment of foundational learning and our Catch-up program, which supports remediation, as notable good practices coming out of Zambia.

At the continental level, Zambia called on the African Union Commission and member states to recognize the lack of data to assess progress in learning as a critical challenge for educational development in Africa. Drawing on its experience in assessing foundational learning, Zambia is helping put forward a common continental approach for monitoring learning achievement, which is crucial for promoting the continental (CESA) and global (SDG 4) education objectives.

We welcome the contribution of the 2024 Spotlight Zambia country report.



Hon. Douglas Munsaka Syakalima
Minister of Education





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Abbreviations

8NDP	Eighth National Development Plan
CDC	Curriculum Development Centre
CDF	Constituency Development Fund
CPD	Continuous Professional Development
CS	Civil Societies
DEBS	District Education Board Secretary
DODE	Directorate of Open and Distance Education
ECE	Early Childhood Education
ECZ	Examinations Council of Zambia
EFA	Educatoin for All
EGMA	Early Grade Mathematics Assessment
EGRA	Early Grade Reading Assessment
EMIS	Education Management Information System
EMIS	Education Management Information System
ESSP	Education and Skills Sector Plan
FAWEZA	Female Education and the Forum for African Women Educationalists of Zambia.
FCDO	Foreign Commonwealth and Development Office
FTC	Financial Technical Committee
GPE	Global Partnership for Education.
GRACE	Grade Meeting at Resource Centre
IPeCK	Improvement of Pedagogical Content Knowledge.
JICA	Japan International Cooperation Agency
KGS	Keeping Girls in School
LOI	Language of Instruction.
MESVTEE	Ministry of Education, Science, Vocational and Early Education
METC	Monitoring and Evaluation Technical Committee
MOE	Ministry of Education
MOGE	Ministry of General Education
MOHE	Ministry of Higher Education
NAS	National Assessment Survey
NGOs	Non-Governmental Organisations.



PDR	Pupil-Desk Ratio
PISA-D	Part in the International Student Assessment for Development
PITC	Policy and Implementation Technical Committee
PLP	Primary Literacy Programme
PTC	Parent-Teacher Association
PTC	Procurement and Technical Committee
PTR	Pupil-Teacher Ratio
SBA	School-Based Assessment
SBA	School-based assessment
SBA	School-Based Assessments
SEN	Special Education Needs
SHN	School Health and Nutrition
TCZ	Teaching Council of Zambia
TESS	Teacher Education and Specialized Services
THRASS	Teaching Handwriting Reading and Spelling Skills
TLMs	Teaching and learning materials
TTE	Transforming Teacher Education
UNICEF	United Nations Child Fund
USAID	United States Agency for International Development
USAID	United States Agency for International Development
VVOB	Flemish Association for Development Cooperation and Technical Assistance.
WASH	Water, Sanitation, and Hygiene in Schools
WV	World Vision
ZEEL	Zambia Enhancing Early Learning
ZEEP	Zambia Education Enhancement Project
ZEEP	Zambia Education Enhancement Project
ZESSTA	Zambia Education Sector Support Technical Assistance
ZIC	Zonal Insert Coordinators
ZOCS	Zambian Open Community Schools



Executive summary

Objectives and research questions

The Zambia Spotlight report is intended to provide timely, evidence-based diagnostics to support the country's education leaders in their efforts to achieve out-of-school, completion, and foundational learning targets (benchmarks) through research, dialogue with country governments, and advocacy activities.

This country report is part of a series spotlighting the national curriculum. Research conducted for the report systematically analyses the extent to which government vision is reflected in concrete, actionable objectives to improve basic skills (e.g., in mathematics) and how these intentions are translated into fit-for-purpose curricula and textbooks, teacher support mechanisms, and learning assessment.

The Spotlight series uses data collected by mapping four pedagogical inputs together—the national curriculum, student textbooks, teacher guides, and learning assessments— with insights from semi-structured interviews and classroom observations to discuss the extent to which pupils are provided with coherent opportunities to learn foundational skills. The series investigates foundational learning policy alignment using a systematic approach that combines mapping competences found across a country's education system, and insights into all levels of curriculum implementation from the intended curriculum to the curriculum as it is enacted in the classroom. The 2023 Spotlight series addresses the following questions:

- Which domains, constructs, subconstructs, and competences are included in the country's curriculum/textbooks/teacher guides/national assessment for grades three and seven?
- To what extent do teaching and learning materials and learning assessments align with the intended curriculum? And how are they supporting the learning process?
- How do teaching and learning materials reflect pedagogical guidance expressed in curriculum documents? Do practices observed in the classroom correspond to what is expected by the curriculum and to known best practices in teaching basic numeracy and literacy skills?
- How does the national curriculum compare with the international minimum proficiency requirements at grades 3 and last grade of primary education?

Out-of-school, completion and minimum proficiency in reading and mathematics

The rate of out-of-school children of primary school age is estimated to have fallen from 32% in 2000 to 18% in 2010 and 13% in 2020. The population of out-of-school children of primary school age is estimated to have fallen from 653,000 in 2000 to 407,000 in 2006 but then to have increased to 524,000 in 2016, as the demographic growth rate exceeds the pace with which the out-of-school rate has been declining. Up until the abolition of fees in 2022 recent years it has fluctuated around 470,000. In the past two years, government schools have reported increased enrolment rates attributed to the new Education for All policy. Late entry into primary school is a major policy challenge facing the government with as many as 27% being two years too old for their grade.

National statistics indicate a completion rate of 92% at Grade 7, with notable regional and gender disparities in access to primary school. For instance, the northern region has recorded a rate of 81% and 72% for girls. (UNICEF, 2021). Estimates based on data available from census and household surveys indicate that the primary completion rate increased from 53% in 2000 to 71% in 2010 but it has stagnated since, being at 69% in 2020. This indicator is calculated over children aged three to five years above graduation age. Taking into account those who have completed after even more years of delay, this 'ultimate' primary completion rate increased from 64% in 2000 to 78% in 2020, after which point it has also stagnated, being at 77% in 2020.

Learning outcomes in Zambia are low. In 2007, among grade 6 students, 12% in reading had achieved the global minimum proficiency level (MPL) at the end of primary. In 2023, as part of the Assessment for Minimum Proficiency Level, the percentage of grade 7 students who reached the MPL at the end of primary was 10% in reading and



16% in mathematics. The percentage of grade 4 students achieving the minimum proficiency level expected at the end of lower primary school (grades 2/3) was 12% in reading and 14% in mathematics. The same test was also administered to grade 7 students: results show that 24% of grade 7 students in mathematics and 45% in reading had not achieved the minimum proficiency level expected by the end of grade 3. The pace of learning is slow in early grades. For example, as part of the USAID Let's Read project, an Early Grade Reading Assessment in 2018, had shown that among grade 2 students, 38% could not get any letter sound correctly in the language of instruction, 64% were not even able to successfully start to read a small passage, and 72% could not answer any reading comprehension question. As part of an Early Grade Mathematics Assessment in 2014, among grade 2 students, 66% could answer a simple addition and 56% a simple subtraction problem, but only 25% could answer a more complex addition and 18% a more complex subtraction problem, at the conceptual level.

National vision and learning

Achieving universal foundational literacy and numeracy skills is a goal embedded in Zambia's development strategy documents. Foundational literacy and numeracy are an explicit feature of Zambia's national vision for education. The provision of adequate resources for basic education is stated as a matter of priority in the national policy document *Educating our Future* (1996). Two policies have fundamentally altered education in Zambia, the *Education for All Policy* (EFA) and 2013 changes in the language of instruction. The *National Strategy 2020-2024* seeks to "improve the progression of learners", which first requires building foundational learning skills. It focuses on ensuring learning by enabling access to basic nutrition through the Home Grown School Meals programme.

In 2022, education was made free up to the secondary level. The government's policy on Universal Access to Education for All was augmented by the Minister of Finance and National Planning during the presentation of the 2022 budget, which led to user fee abolition in early childhood and primary education levels. The Government of Zambia now takes responsibility for paying all user fees through school grants.

Mapping the curriculum, learning and teaching materials, and assessment

The 2023 Spotlight series reviewed the curriculum and teaching and learning materials in Zambia. A research team collected systematic data across pedagogical inputs (curriculum, textbooks, teacher guides, and learning assessments) and analyzed the extent to which pupils are provided with coherent opportunities to learn foundational numeracy skills. The degree of alignment across pedagogical inputs is one factor that contributes to whether pupils effectively master foundational numeracy skills. In addition to the extensive mapping analysis, the research team conducted fieldwork in four districts representative of four regions. This work included classroom observations, interviews with stakeholders, and extensive mapping of schools and their characteristics to better understand the degree to which the intended curriculum is enacted in classrooms, and the challenges teachers and administrators face in implementing Zambia's curriculum.

Content alignment: The analysis indicates substantial alignment of curriculum and textbooks in grade 3 numeracy content, but less alignment in grade 7 content. In grade 3, intended learning opportunities found in the curriculum are reflected in the material included in the grade 3, *Let's do Mathematics* student textbook. Domains intended and enacted, include number and number operations (69% in the curriculum and 74% in the textbook) as well as measurement (19% in the curriculum and 12% in the textbook). The remaining learning opportunities are dedicated in similar shares to geometry, statistics and probability, and algebra competencies.

What is being taught in grade 7 differs from what is being assessed in the Grade 7 Composite Examination. In Zambia, assessment in grade 7 is not intended to solely provide an evaluation of all skills mastered in the grade 7 curriculum. The objective of the examination is to ensure that each student leaves primary education with an understanding of important learning outcomes across the primary curriculum before continuing to secondary education. Hence, the analysis of items included in the 2022 Grade 7 Composite Examination highlights the fact that 57% of items measure curriculum competencies addressed in grade 7. The remaining 43% measure learning competencies addressed in grades 4, 5 and 6.

Pedagogical alignment: The mathematics curriculum in grades 3 and 7 is competency-based, with learning opportunities and expectations expressed in terms of competences, life skills and values. The content to be taught in each school term is indicated in a logical sequence. Curricular documents link to syllabi for each grade denoting the amount of time that should be allocated to each subject. It is assumed that all learners will be able to progress



at around the same pace and attain the set competencies specified for each term. Teachers are also expected to assess pupils and to provide remediation within the time allocated to teaching and learning mathematics, and assessments are provided in teacher guides. Grade 3 receives ten 30-minute periods of mathematics per week which is equivalent to approximately 20% of the total instructional time.

Fieldwork confirms several challenges associated with implementing Zambia's curriculum. One of the largest challenges is overcrowding in classrooms, which makes it difficult for teachers to teach all the content based on the sequence and amount of time stipulated in the syllabus, and to adequately assess student learning. In fieldwork, respondents interviewed noted three major shortages: classrooms, teachers, and teaching and learning materials.

Access to textbooks poses a hurdle in Zambia. Data collected during interviews and classroom observations highlighted that even though quality teaching and learning materials have been designed and well-produced, their availability is limited. Many pupils have neither textbooks nor other learning materials. In schools where textbooks were available, an average of three pupils shared one book, contrary to the prescribed standards of 1:1 learner-to-book ratio. On average, during classroom observations, only 52% of teachers referred to these materials. Moreover, less than a quarter of observed classes had manipulatives or other kinds of learning materials.

Political alignment: Analysis of alignment between Zambia's curriculum and minimum proficiency requirements described in the Global Proficiency Framework indicates that the curriculum for grades 3 and 7 addresses around 67% and 58%, respectively, of the sub-constructs outlined in the framework.

Teacher support for implementing the curriculum. Teacher guides are aligned with the intended curriculum and student textbooks. Aligning with the curriculum and textbooks, 71% of the content in teacher guides covers numbers and operations in Grade 3 and 59% in Grade 7. This is followed by measurement concepts and equal measures in geometry, statistics and probability, and algebra. Competencies, or learning outcomes, are specified for each unit chapter and lesson, and learning outcomes appear to be aligned with the language used in the curriculum and student textbooks.

The textbooks propose remedial activities and exercises for pupils lagging behind but do not appear to provide extension activities for high-performing pupils. The grade 3 curriculum provides minimum standards for numbers and measurement, and these are generally consistent with the global proficiency framework. An issue with these 'minimum standards', however, is that they make no allowance for the wide range of children's achievement on entry to the grade. The curriculum provides no guidance as to how teachers are to cope with diversity in children's learning in the classroom between low- and high-performing pupils.

Additionally, during interviews and focus group discussions, head teachers mentioned providing various forms of support to teachers, which encompassed the provision of teaching and learning materials, and creating a conducive environment for teaching and learning. However, most teachers had received very little formal teacher professional development and head teachers noted a need for more to help teachers implement the curriculum. Head teachers further emphasized the significant challenges teachers encountered in teaching and assessment.

Recommendations

Based on the mapping analysis and fieldwork carried out for this report, the following recommendations are made:

- Articulate a clearer vision of foundational literacy and numeracy in Zambia.
- Incorporate problem-solving skills early.
- Enhance accessibility of the curriculum, teacher guides and textbooks.
- Ensure students can access materials in their language of instruction.
- Increase the number of teachers and teacher support.
- Prioritize assessment for monitoring student progress.
- Improve infrastructure to accommodate increases in student enrolment.



1. Introduction

1.1 Background

The Global Education Monitoring (GEM) Report is an editorially independent report hosted and published by UNESCO with the mandate to monitor progress (i) on education in the SDGs and (ii) on the implementation of national and international strategies to achieve SDG 4. As part of the GEM Report's objectives to build partnerships and increase impact at the regional and national level, a regional report series was introduced in 2019 to examine the theme of the global report in more depth in selected regions. The concept of the regional report was adjusted in the case of Africa. Entitled Spotlight, this report series:

- focuses on the theme of universal basic education completion and foundational learning.
- consists of three report cycles, covering the entire continent
- is underpinned by reports in 5-6 focus countries.
- is informed by additional country case studies and other background papers covering the broad range of policy issues associated with foundational learning.

Primary education, and early grades in particular, is the level of interest. In this series, the GEM Report has partnered with the Association for the Development of Education in Africa (ADEA) and the African Union (AU).

The Spotlight series has three goals:

- Support countries in their efforts to achieve out-of-school, completion, and foundational learning targets (benchmarks) through research, dialogue with country governments, and advocacy activities;
- Support countries to share positive practices that promote foundational learning with their peers on the continent; and
- Raise the political salience of foundational learning in Africa, through mobilization of regional organizations and peer learning mechanisms.

The first Spotlight continental report, country reports, country case studies, and other background papers were launched in October 2022 at the ADEA Triennale¹. The report introduced the Spotlight analytical framework and its seven factors. The second Spotlight cycle focuses on selected elements of three of these factors, seeking to elaborate on how countries align their national vision with their curriculum and workbooks; teacher support; and assessment. A specific focus on mathematics is used to illustrate variations observed across the continent.

The focus of the second Spotlight cycle on curriculum, textbooks, and assessment matches the intent of the Spotlight series to work with three clusters of the Continental Education Strategy for Africa 2016-25 – curriculum, teacher development, and planning – as part of the Leveraging Education Analysis for Results Network (LEARN). This peer-learning mechanism aims to act as a catalyst for cross-cluster collaboration to address foundational learning issues in Africa.

The Spotlight study in Zambia comprised a set of activities, each generating evidence and findings related to the study's four research questions:

- Literature review and stakeholder mapping (May to August 2023).
- Initial stakeholder workshop (September 2023).
- Fieldwork (July 2023).
- Validation workshop (October 2023).

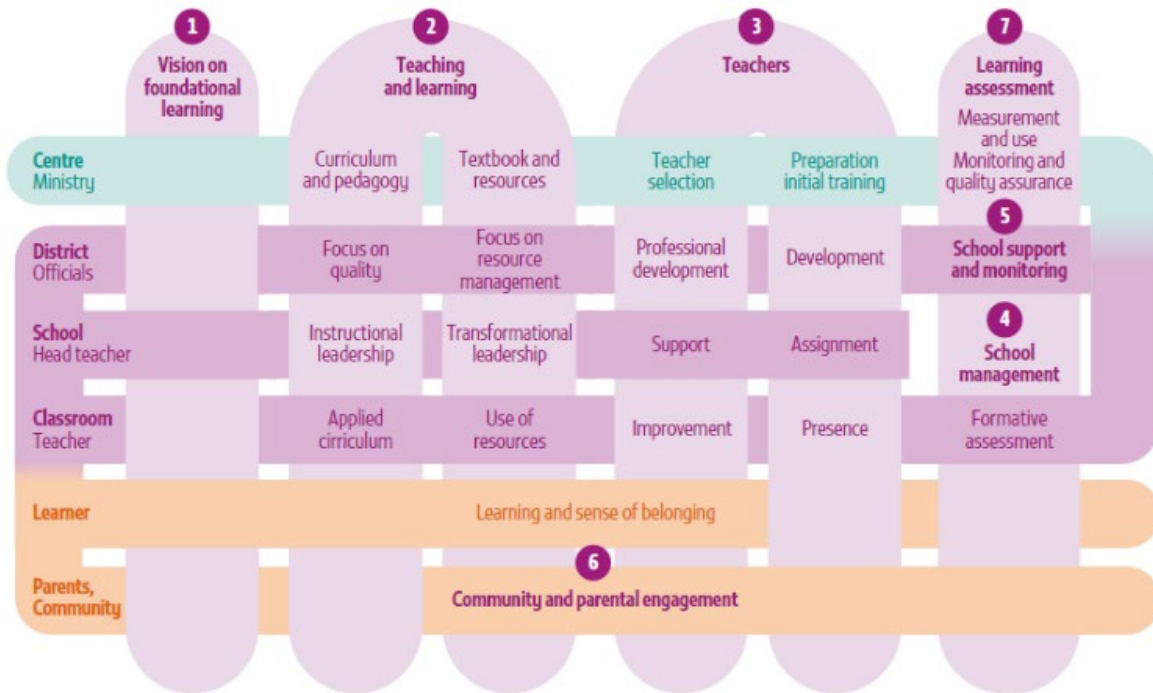
¹ All reports and background papers are available at: <https://www.unesco.org/gem-report/en/2022-spotlight-africa>



1.2 Analytical framework

The Spotlight analytical framework takes a system approach and acknowledges the interdependencies between multiple levels and policy levers in an education system that need to be mobilized to achieve foundational learning (Figure 1). Seven broad factors are distinguished, which can be customized to fit the country context.

FIGURE 1. ANALYTICAL FRAMEWORK OF THE SPOTLIGHT SERIES



First, a country needs to have a clear vision to improve foundational learning for all children (1), with full understanding and buy-in from all education leadership levels, from the ministry to local authorities to school personnel. This is expressed through specific targets that are monitored and reported on. The vision should be reflected and communicated via policy decisions on the 'what' (curriculum) and the 'how' (pedagogy) of teaching and learning in early grades (2), including the language of instruction and the use of appropriate materials, especially textbooks. Eventually, the national vision should be reflected in policy decisions on teacher preparation, management, and support (3).

School-level decisions are central to ensuring that foundational learning skills improve through better classroom practices. Headteachers need to be prepared to focus on instructional and transformational leadership (4). Their skills should be nurtured and developed to support teachers and to communicate with parents and communities. Schools also need to be supported by local education authorities, which effectively communicate expectations for improvement and provide the latest information (5).

An often-neglected policy dimension is that community and parental engagement can strengthen school responsiveness to external scrutiny and monitoring. Efforts need to overcome barriers to such participation due to lack of confidence and resources (6). Finally, reliable data on access, completion, and learning are needed. An assessment system is needed that monitors progress on what learners are expected to learn and is linked to classroom processes and practices as well as international standards (7).



While the 2021/2 research cycle addressed each of the seven factors of the analytical framework, the 2023/4 cycle addresses the coherence and alignment of elements of three factors with the national vision: curriculum and textbooks (2), teacher support mechanisms (3), and assessment (7).

Each country report under the second Spotlight research cycle systematically analyses the extent to which government vision is reflected in concrete, actionable objectives to improve basic skills in mathematics and how these intentions are translated in fit-for-purpose curricula and textbooks, teacher support mechanisms, and learning assessment (Table 1). The questions can be adapted to country context.

Table 1. Policy analysis in the second Spotlight series country reports

	Curriculum and textbooks	Teacher support	Learning assessment
Key analytical questions	How is the national vision translated into the curriculum and relevant and effective teaching and learning materials?	How are teachers supported to realize the national vision on foundational learning? What are the main support mechanisms at their disposal and to which extent are their teaching resources adapted to support and improve teaching practices?	How does the country monitor the achievement of its national vision? How is <i>classroom assessment</i> used to generate formative feedback? How is <i>system assessment</i> organized, including national examinations, and how is it used to inform policy?
Data and evidence	Curriculum, syllabus, and textbooks	Teacher guides and support structures	National assessment framework and strategy, teacher training in assessment, primary school examinations, system-wide assessments
Methods and outputs	Systematic mapping and coding of curriculum, textbook content, qualitative analysis of workbooks and curriculum	Systematic mapping and coding of teacher guides, policy analysis of teacher support structures, qualitative analysis of teacher guides and their use	Systematic mapping and coding of national learning assessment frameworks and practices
Overall analysis of alignment and coherence	Which domains and constructs are reflected in textbooks? What is the time allocated to foundational learning in the curriculum? What are the pedagogical underpinnings in textbook design?	Which domains and constructs are reflected in teacher guides? Are these aligned with workbooks? What are the pedagogical underpinnings in teacher guide design?	Which domains and constructs are reflected in national learning assessment frameworks and practices? To what extent is learning assessment used to improve teacher practice and system improvement?

1.2 Research questions

Learners' achievement is shaped by the quality of their opportunities to learn (Muijs et al., 2014). The Spotlight series uses data collected by mapping pedagogical inputs together with insights from semi-structured interviews and classroom observations to discuss the extent to which learners are provided with coherent opportunities to learn foundational skills.

Opportunities to learn are the “observable structure” of education systems and their quality builds on the alignment between educational goals and teaching and assessment practices (Alia et al., 2022; Scheerens, 2017; World Bank 2020). Whether learners effectively master foundational skills depends in large part on the degree to which learners are provided with the right opportunities to learn, shaped by the education system's policy alignment. In the second Spotlight series analytical framework education system policy alignment is the bedrock of educational effectiveness and constitutes one of the prerequisites to improving levels of foundational learning.



Policy alignment is understood as:

- **Content alignment** between all the pedagogical resources that determine learners' learning experience.
- **Pedagogical and cognitive alignment** between the curriculum, existing best practices and what is happening in the classroom, throughout learners' learning experience.
- **Political alignment** between a country's regional and international commitments, such as improving the proportion of learners who meet minimum proficiency levels, and its national policy.

The second Spotlight series investigates foundational learning policy alignment using a systematic approach that combines mapping competencies found across a country's education system, and insights into all levels of curriculum implementation from the intended curriculum to the curriculum as it is enacted in the classroom. The second Spotlight series addresses the following questions:

- Which domains, constructs, subconstructs and competencies are included in the country's curriculum, textbooks, teacher guides and assessment for grades 3 and 7?
- To what extent do teaching and learning materials and learning assessments align with the intended curriculum? How are they supporting the learning process?
- How do textbooks and teacher guides reflect pedagogical guidance expressed in curriculum documents?
- Do practices observed in the classroom correspond to what is expected by the curriculum and to best practices in teaching basic numeracy and literacy skills?
- How does the curriculum compare with international minimum proficiency descriptions at grades 3 and 7?

A government's policy to improve foundational numeracy skills is mediated by at least four key elements; the official curriculum, learners' textbooks, teachers' pedagogical support such as teacher guides, and learning assessments.

- The official **curriculum** outlines what learners should know and do. It communicates a government's vision of what learners are expected to learn, how they are to learn it, and the amount of time they are to spend learning it. Ideally, the curriculum sets measurable learning outcomes at each grade level and against which teachers and the system at large can measure progress.
- **Textbooks** act as mediators between the official curriculum and curriculum as implemented by teachers. They translate a somewhat abstract curriculum into concrete operations that teachers and learners can easily follow. Because of their roles as mediators of intent, textbooks heavily influence what mathematics teachers teach, how they teach it and by extension how learners experience it, and how much instructional time they devote to each topic.
- **Teacher guides** assist teachers in structuring and articulating learners' opportunities to learn. They provide guidance on textbook intended use and help teachers develop and plan lessons. Just as textbooks frame teachers' instructional decisions, teacher guides can 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 learners and include summative evaluation tools to measure learner 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.
- **Learning assessments** are designed to measure the extent to which learners can demonstrate the knowledge and skills specified in the curriculum. Summative assessment measure general levels of skills and formative assessments identify domains where systems may require improvements. Learning assessments take different forms: national assessments, national examinations or classroom assessments, and their content must be assessed against their objectives.

These four pedagogical inputs are highly interconnected. In an environment designed to maximize learning, each input reinforces and builds on the other three. Textbooks and teacher's guides, for example, assist teachers in implementing the vision outlined in the curriculum and should therefore be closely keyed to curriculum learning outcomes expected at each grade level. From a policy perspective, aligning these four pedagogical inputs provides learners with a comprehensive and systematic learning experience, which is at the heart of the second Spotlight series.



2. Country context

2.1 The Zambian education system

Zambia is a diverse, multilingual country (USAID, 2021). The median age of its population is among the lowest in the world. In 2021, the population was 19.47 million, of which 42% were below the age of 15 (United Nations, 2022). The population is expected to double in the next 25 years if it sustains its current growth rate of 2.8%. Zambia has an estimated gross national income per capita of \$1,270 in 2022 (using the World Bank Atlas method). Over the past 25 years, Zambia has achieved high levels of participation in primary education with a total net enrolment rate of 85% in 2022. By the age of 18, children have completed an average of 8.8 years of school.

Zambia's education system includes four years of pre-primary education, seven years of primary and five years of secondary education. The curriculum at the primary level is designed to provide pupils with knowledge and skills in mathematics, science, social studies, English and Zambian languages. At the lower secondary level, the curriculum incorporates subjects such as history and geography. At the upper secondary level, pupils are introduced to more advanced subjects, including physics, biology, and chemistry with additional opportunities to specialize in fields such as metalwork, arts, and commercial subjects (UNESCO, 2016).

Progression from one level to the next is determined by outcomes of high-stakes national assessments at the end of grades 7, 9, and 12 administered by the Examinations Council of Zambia (ECZ). To assess early foundational learning skills, the ECZ also administers an Early Grade Reading Assessment (EGRA) and Early Grade Mathematics Assessment (EGMA) to grade 2 pupils.

FIGURE 2. STRUCTURE OF ZAMBIA'S EDUCATION SYSTEM

Age	Education year	Structure	Type of schooling	Others
25	19	4 YEARS (Minimum)	Tertiary education (doctorate, master, and bachelor's degrees)	Various training programmes
24	18			
23	17			
22	16			
21	15	3 YEARS	Upper secondary education (Grades 10-12)	Various vocational training programmes (TEVET)
20	14			
19	13			
18	12	2 YEARS	Lower secondary education (Grades 8-9)	CONTINUING EDUCATION
17	11			
16	10	PRIMARY 7 YEARS	Primary education (Grades 1-7)	
15	9			
14	8			
13	7			
12	6			
11	5			
10	4			
9	3	Pre-school education		
8	2			
7	1			
2-6				

Source: Educational Statistical Bulletin (Ministry of Education, 2004).

Access to and completion of primary education

The rate of out-of-school children of primary school age is estimated to have fallen from 32% in 2000 to 18% in 2010 and 13% in 2020 (Figure 3a). The population of out-of-school children of primary school age is estimated to have fallen from 653,000 in 2000 to 407,000 in 2006 but then to have increased to 524,000 in 2016, as demographic growth exceeded the pace with which the out-of-school rate had been declining. Up until the abolition of fees in

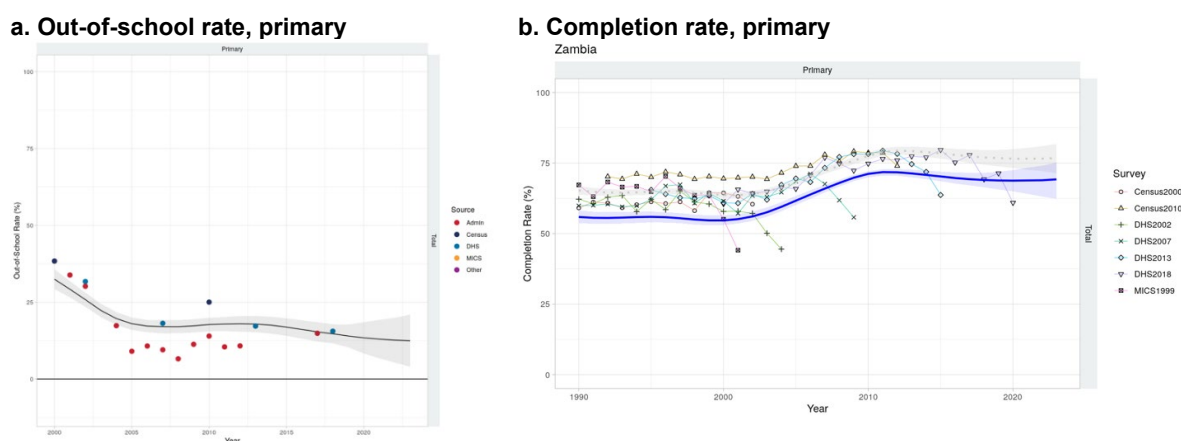


2022 recent years, the out-of-school population has fluctuated around 470,000. Late entry into primary school is a major policy challenge facing the government with as many as 27% being two years too old for their grade.

In 2022, primary education was made free in Zambia. The government's policy on universal access to education for all was supported in the 2022 budget by the abolition of user and PTA fees in early childhood and primary education. The government now takes responsibility for paying these fees through school grants. An early review of the policy suggests that the policy has led to enrolment increases and a reduction of out-of-school children. But it has also resulted in further classroom overcrowding, as observed by 96% of head teachers interviewed. Some schools have reported pupil/teacher ratios as high as 100:1. Further pressure has been exerted on school facilities and resources such as laboratories and toilets. Overcrowding affects teachers' ability to teach effectively. Among head teachers, 71% believed that teachers are unable to assess their learners, manage classes, and allocate sufficient learning contact time. Among head teachers surveyed, 88% reported that government funding was inadequate, especially considering that 51% of schools indicated not having any other sources of income (ZOCS and Irish Aid 2023).

National statistics indicate a completion rate of 92% at Grade 7, with notable regional and gender disparities in access to primary school. For instance, the northern region has recorded a rate of 81% and 72% for girls. (UNICEF, 2021). Estimates based on data available from census and household surveys indicate that the primary completion rate increased from 53% in 2000 to 71% in 2010 but it has stagnated since, being at 69% in 2020. This indicator is calculated over children aged three to five years above graduation age. Taking into account those who have completed after even more years of delay, this 'ultimate' primary completion rate increased from 64% in 2000 to 78% in 2020, after which point it has also stagnated, being at 77% in 2020.

FIGURE 3. OUT-OF-SCHOOL AND PRIMARY COMPLETION RATE ESTIMATES



Source: UNESCO, Visualizing Indicators of Education for the World (VIEW) 2023

2.2 Foundational literacy and numeracy

It has long been known that learning outcomes in Zambia are low. According to the third round of the Southern and Eastern African Consortium for Monitoring Educational Quality (SACMEQ III) in 2007, Zambia was ranked second to last among 15 education systems: among grade 6 students, 12% in reading and 2% in mathematics had achieved Level 5, which has since been equated with the global minimum proficiency level (MPL).

Zambia has not taken part in more recent SACMEQ rounds in 2014 and 2021. The most recent example of a cross-national assessment in which it has taken part is the Assessment for Minimum Proficiency Level, which was developed by the UNESCO Institute for Statistics 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.



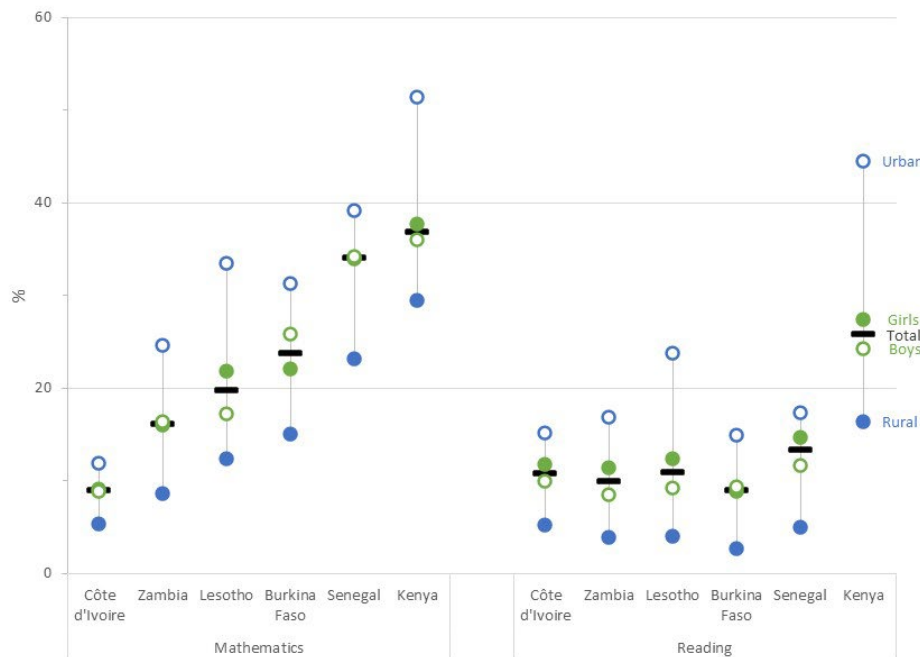
The AMPL has been developed in two stages. The first stage in 2021 was part of the MILO project, which aimed to evaluate the impact of COVID-19 on learning outcomes. The second stage has been ongoing since 2023. In Africa, Gambia and Zambia administered the AMPL to assess learning at the end of lower primary education while Kenya, Lesotho and Zambia administered it at the end of primary education. In Zambia, 250 schools were sampled with almost 5,000 students from grades 4 and 7, respectively.

Selected results from six of the countries that administered the AMPL in 2021 and 2023, including Zambia, show that about 10% of grade 7 Zambian students reached the MPL **at the end of primary education** in reading, which is similar to the other countries except Kenya, where 1 in 4 students reached that level. 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.

In Zambia, there is gender parity in mathematics but in reading, girls have a three percentage-point advantage over boys. In contrast, the urban-rural gaps are very large. In reading, 4% of students from rural schools achieve the MPL compared to 17% in urban schools. In mathematics, 9% of students from rural schools achieve the MPL compared to 25% in urban schools. (Figure 4).

FIGURE 4. MINIMUM PROFICIENCY LEVEL IN MATHEMATICS AND READING AT THE END OF PRIMARY SCHOOL

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.

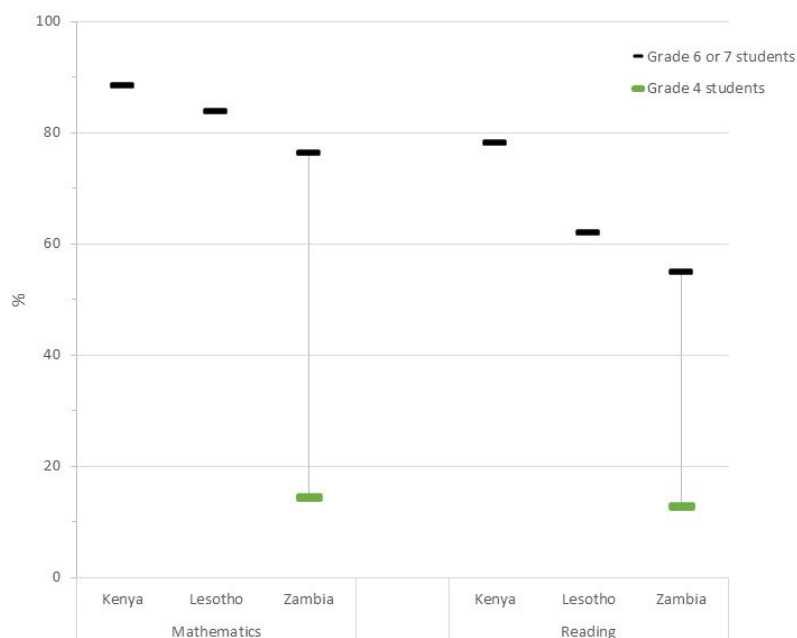
The way the AMPL was administered also shows the pace with which learning is acquired in Zambia through primary school. The assessment reviewed how many grade 4 students achieved the minimum proficiency level expected **at the end of lower primary school** (grades 2/3). About 14% of grade 4 students achieved the minimum proficiency level in mathematics and 12% in reading. But the same test was also administered to grade 7 students, which enables a review of how many of them achieved that lower level of proficiency. Results show that 24% of grade 7 students in mathematics and 45% in reading had not achieved the minimum proficiency level



expected at the end of grade 3 at the latest. Zambia was slightly behind Kenya and Lesotho, as even in these countries there was a sizable minority that had not mastered basic skills (**Figure 5**).

FIGURE 5. MINIMUM PROFICIENCY LEVEL IN MATHEMATICS AND READING AT THE END OF LOWER PRIMARY SCHOOL

Proportion of students in grade 4 in Zambia and in grade 6 (Kenya and Lesotho) or grade 7 (Zambia) achieving the minimum proficiency level for the end of lower primary in mathematics and reading, 2023



Source: 2023 Assessment for Minimum Proficiency Level reports.

The slow pace of learning in early grades had been highlighted previously, when the Early Grade Reading Assessment (EGRA) and Early Grade Mathematics Assessment (EGMA) had been administered in Zambia. For example, as part of the USAID Let’s Read project, a baseline assessment in 2018, among grade 2 students, 38% could not get any letter sound correctly in their language of instruction, 64% were not even able to successfully start to read a small passage, and 72% could not answer any reading comprehension question. The oral reading fluency was 6 correct words per minute, reaching at most 8 words among Luvale and Silozin speakers. All these statistics had slightly deteriorated by 2021, possibly linked to the effect of COVID-19 (USAID, 2022). As part of the 2014 EGMA, among grade 2 students, 66% could answer a simple addition and 56% a simple subtraction problem, at the procedural level. But only 25% could answer a more complex addition and 18% a more complex subtraction problem, at the conceptual level. Even among the simple subtractions, only 12% could answer the question 13–8, while among the complex subtractions, only 7% could answer the question 38–26 (RTI, 2015).

2.3 National vision and learning

There is a political commitment to achieving foundational learning and numeracy. The current development agenda, as articulated by the National Vision 2030, focuses on the realization of the revised Seventh National Development Plan (SNDP) and the achievement of the nation’s long-term objective to become a prosperous middle-income country, with a specific focus on free primary and secondary education.



The provision of adequate resources for basic education was stated as a matter of priority in 'Educating our Future' (1996), the national policy document on education. Two policies have since fundamentally altered education in Zambia: the Education for All policy and the changes in the language of instruction in 2013. The National Strategy 2020-2024 seeks to "improve the progression of learners", which first requires building foundational learning skills. It focuses on ensuring learning by enabling access to basic nutrition through the Home Grown School Meals programme. In 2022, education was made free up to the secondary level. The government's policy on Universal Access to Education for All was augmented by the Minister of Finance and National Planning during the presentation of the 2022 budget, which led to user fee abolition in early childhood and primary education levels. The Government of Zambia now takes responsibility for paying all user fees through school grants.

Promising practices for improving foundational learning

The government has been taking several measures to improve foundational learning outcomes. Two have been singled out as potential initiatives that are worth sharing with Zambia's peers in African policy dialogue fora. The first is an attempt to institutionalize the use of early grade reading and mathematics assessments, which is an exception among African countries and demonstrates a commitment to monitor progress in lower primary education including for those students who learn in languages other than English (**Box 1**). The second is an example of a policy that collects data on student progress to place them in remediation classes that reflect their current level. Started as a small scale donor-funded project, it has been adopted by the government at national scale (**Box 2**).

Box 1. Institutionalization of foundational learning assessment

- **Ownership:** The experience of assessing foundational learning in Zambia provides valuable guidance for other countries on the continent. Zambia recognizes that education systems must assess pupils' learning journeys in the early years to ensure they acquire literacy and numeracy competencies.
- **Implementation:** The Ministry of Education and the Examinations Council of Zambia encourage both formative and summative assessments. Approached in different ways, partnerships with various programs, including Teaching at the Right Level with VVOB and UNICEF, Student Testing About Reading with World Vision, and others, have supported formative assessment and enabled teachers and educators to monitor student progress towards achieving learning objectives and to guide remediation actions for those falling behind. EGRA and EGMA have informed both summative and formative assessments. Through the implementation of the Assessment of Minimum Proficiency Levels, the UNESCO Institute for Statistics has provided technical assistance to generate data for tracking SDG 4.1.1a.
- **Institutionalization:** MoE has institutionalized the early grade reading and mathematics assessment (EGRA and EGMA) into the national assessment of learning achievement at grade 2. As the Ministry and Council aim to enhance efficiency in assessment, in addition to data validity, reliability, and availability considerations, they are reviewing cost- and sustainability-related factors. With the aim of enhancing the efficient use of resources and reducing duplication, the Ministry and the Council note the need to amalgamate the fragmented assessments undertaken by partners. The efforts would also reduce the assessment burden on learners and schools and free up time for classroom instruction.
- **Link to policy:** In Zambia, the Ministry of Education has used assessment data on foundational learning to inform policy. For example, results on foundational learning informed the revision of the 2013 curriculum and the development of the new curriculum in 2023.
- **Supporting continental efforts:** Unlike most other countries in Africa where data gaps exist on foundational learning, Zambia has at least two data points to enable analysis of proficiency levels over time. At the continental level, Zambia called on the African Union Commission and member states to recognize the lack of data to assess progress in learning as a critical challenge for educational development in Africa. Drawing on its expertise, the Examinations Council of Zambia, as a member of the Association for Educational Assessment in Africa (AEAA) and through the AU Leveraging Education Analysis for Results Network (LEARN), is working to foster collaboration and a common continental approach to addressing gaps in monitoring learning achievement, which is crucial for promoting the results agenda of CESA and SDG 4.



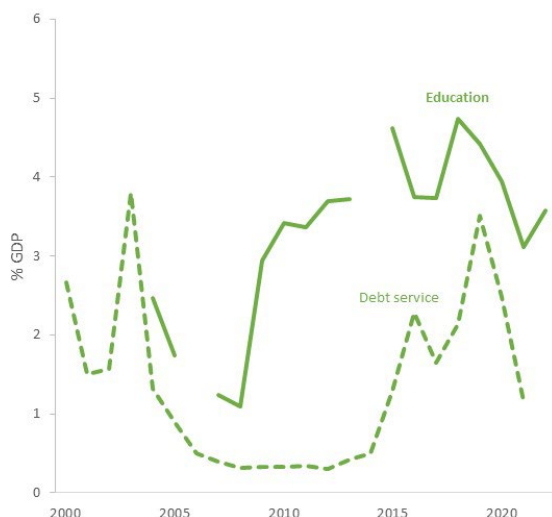
Box 2. Catch-up Program

- **Intervention:** The Catch-up programme is a remedial education initiative aimed at helping primary school learners who are behind in their learning. Using the Teaching at the Right Level (TaRL) approach, it groups learners according to their literacy and numeracy levels, not their age or grade. Classes therefore comprise learners of mixed ages and grades. In Zambia, TaRL targets grades 3-5.
- **Implementation:** The Catch-up piloting phase commenced in 2016 and implemented in the Eastern Province with 470 schools. It then rolled out to 1140 schools in the Southern province. By 2020, the number of schools increased to over 1800 in the Eastern and Southern provinces. This number has continued to grow since 2021, as the government has streamlined the approach to Luapula, Muchinga, Northern, Western, Lusaka, and North-western provinces.
- **Outcome:** Through the Catch-up programme, learners' performance in literacy and numeracy has increased by up to 27% in some cases.
- **Looking ahead:** In Zambia, teachers lack competences to teach learners foundational literacy and numeracy skills. This is compounded by limited access to materials and large class sizes with no opportunities for individualized support. TaRL addresses these challenges by enhancing the capacity of teachers to group students by level. It has also tried and tested materials to support learners acquire these skills. Acknowledging that the acquisition of these critical skills is key for any further learning, the government identified TaRL as a methodology it wanted to test and roll out. After a successful pilot supported by the United Kingdom, UNICEF, VVOB, JPAL Africa and TaRL Africa, the government now aims to scale up the programme at national level, with the financial support of additional funders.

Financing

Education financing is a key factor in the achievement of foundational learning goals. Public education expenditure as a share of GDP was among the world's lowest, at just 1.1% in 2008. Following the implementation of the Heavily Indebted Poor Countries initiative, it increased to 3.7% by 2012, reaching 4.6% in 2015. However, in recent years the increase in external debt and the rise in debt service payments has put public expenditure again under pressure. In 2021, it fell to 3.1% of GDP before bouncing back to 3.6% in 2022, remaining below the minimum benchmark of 4% endorsed by the international community in the Education 2030 Framework for Action (UNESCO, 2015) (Figure 6). In fact, to make good progress towards the SDGs in an equitable manner, African governments need to be spending at least 6-7% of GDP on education (Lewin, 2020), which is nearly double what Zambia spends.

FIGURE 6. PUBLIC EDUCATION EXPENDITURE AND INTEREST PAYMENT ON EXTERNAL DEBT, 2000-22



Source: UNESCO Institute for Statistics and World Development Indicators, 2023



In 2017, the latest year for which comparable international data were available, Zambia was allocating two thirds of its education budget to primary education. According to national data, primary education accounted for 56% of the budget in 2022, still one of the largest shares globally.

The share of government financing of the education budget increased from 90% in 2021 to 94% in 2022. After the implementation of the Education for All policy and the abolition of user fees and charges, the government has taken up a higher share of education financing, including some direct budget support from development partners (UNICEF, 2022). Development partners account for the remaining 6% of the budget through ring-fenced project activities.

Development partner support

Development partners have provided financial and technical assistance to support foundational literacy and numeracy. Projects include the World Bank financed Zambia Enhancement of Early Learning (ZEEL) project, the Zambia Education Enhancement Project (ZEEP), and the Keeping Girls in School bursary under the Girls Education and Women's Empowerment (GEWEL) project (**Table 2**).

Multiple other international development partners and various NGOs, both international and local, are active in supporting foundational literacy and numeracy initiatives throughout Zambia. Collaborative efforts between the MoE and cooperating partners are underway in Zambia to enhance foundational learning. These efforts include the THRASS reading project in Southern Province, a Primary Literacy Programme funded by VVOB, USAID, UNICEF, and the SOLON foundation, and the USAID Let's Read program, which focuses on teacher literacy. Despite these initiatives, concerns have arisen among stakeholders regarding the lack of integration among organizations with similar interests in literacy and numeracy.



Table 2. Recent and ongoing development partner supported initiatives focusing on early learning

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)	<i>Improve the quality of teacher education in mathematics and science by linking colleges of education and collaborating schools.</i> ● 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)	<i>Improve early grade literacy and numeracy by providing a remedial programme based on the Teaching at the Right Level methodology.</i> ● 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)	<i>Improve the quality of teaching and learning conditions in targeted primary and secondary schools by strengthening the teacher training system and improving textbook availability.</i> ● 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)	<i>Improve reading outcomes from pre-primary through Grade 3 in seven official local languages of instruction.</i> ● >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	<i>Strengthen the capacity of 12 pre-service teacher training institutions (universities and colleges of education) to improve learning.</i> ● 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	<i>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.</i> ● 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	<i>Improve the delivery of foundational learning and learning outcomes in early grades.</i> ● 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



3. Alignment and fieldwork findings

An extensive mapping analysis of content outlined in Zambia's national curriculum (*intended curriculum*) was conducted. The degree to which the content is included in student textbook and teaching materials (*enacted curriculum*), and national learning assessments (*assessed curriculum*) was systematically mapped to better understand policy alignment. Mapping foundational learning policy alignment requires knowledge of learning domains and constructs, a consistent method of analysis, as well as insights into all levels of curriculum implementation. The Spotlight series mapping was carried out using a tool designed for this purpose which enabled rigour and consistency of mapping across all the participating countries in the series.

In addition to the curriculum and materials mapping analysis, the Spotlight research team conducted fieldwork in ten schools across two provinces (**Annex 1**). The work included classroom observations, focus group discussions, interviews with stakeholders, and extensive mapping of schools and their characteristics to better understand the degree to which the intended curriculum is enacted in classrooms, and the challenges teachers and administrators face in implementing Zambia's national curriculum.

3.1 Curriculum

The Spotlight research team reviewed Zambia's Curriculum Framework 2015 and the Mathematics Syllabus as well as related teaching and learning materials and conducted an extensive mapping analysis of the material. The analysis provides insight into the learning opportunities of grade 3 and grade 7 learners. The research team collected systematic data across four pedagogical inputs: curriculum, learner workbooks, teacher guides, and learning assessments. It analysed the extent to which learners are provided with coherent opportunities to learn foundational numeracy skills through these inputs. The degree of alignment across pedagogical inputs is one factor that contributes to whether learners effectively master foundational numeracy skills (Alia et al., 2022; Scheerens, 2017; World Bank 2020). Extensive data were also collected from Zambia's curriculum content to assess competencies present in the curriculum by level of cognitive demand.

In the mapping analysis, the material assessed includes:

- the Curriculum and Mathematics syllabus for Grade 3
- the *Let's do Mathematics Grade 3* student textbook and *Mathematics Teacher guide - Let's do Grade 3*
- the Curriculum and Mathematics syllabus for Grade 7
- the *Let's do Mathematics Grade 7* student textbook and *Mathematics Teacher guide - Let's do Grade 7*
- the Primary Leaving Examination.

Content alignment

Content across pedagogical inputs – the curriculum, textbooks, and assessment – in Zambia indicates substantial alignment of curriculum and textbooks in Grade 3 numeracy content, but less alignment in Grade 7 content (**Figure 7**). In grade 3, intended learning opportunities found in the curriculum are reflected in the material included in the grade 3 *Let's do Mathematics* student textbook. Domains intended and enacted include number and number operations (69% in the curriculum and 74% in the textbook) as well as measurement (19% in the curriculum and 12% in the textbook). The remaining learning opportunities are dedicated equally to geometry, statistics and probability, and algebra competencies.

What is being taught in grade 7 differs from what is being assessed in the grade 7 composite examination. For example, almost 20% of the grade 7 competencies in the curriculum concern statistics and probability. However, these represent only 9% of the learning opportunities enacted in the grade 7 textbook and as little as 2% of the learning opportunities assessed in the grade 7 composite examination. On the other hand, competencies dedicated to numbers and number operations represent 52% of the curriculum and increase to 60% in the textbook and almost 70% in the grade 7 examination.

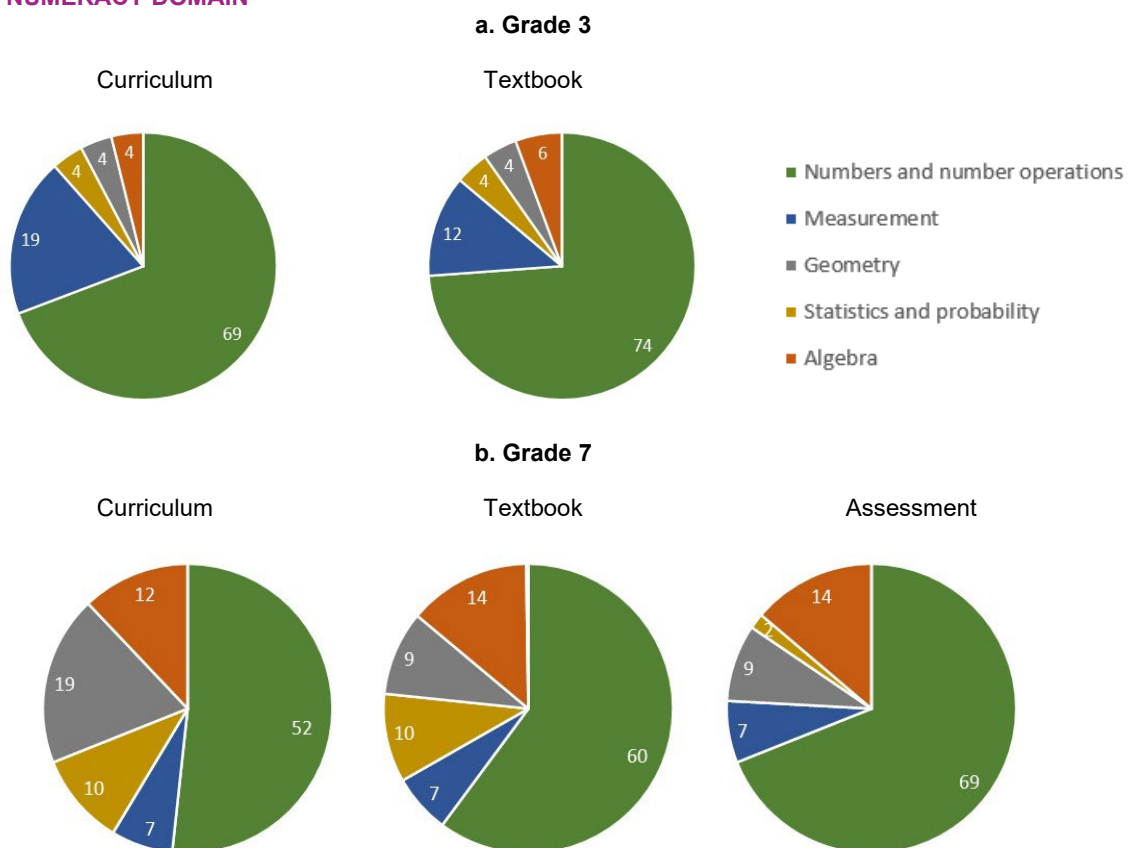
In Zambia, assessment in grade 7 is not intended to solely provide an evaluation of all skills mastered in the grade 7 curriculum. The objective of the examination is to ensure that each student leaves primary education with an



understanding of the primary curriculum before continuing to secondary education. It is a high-stake and mandatory examination that certifies completion of primary education. The analysis of items included in the 2022 Grade 7 Composite Examination revealed that 57% of items measured curriculum competencies addressed in grade 7. The remaining 43% measured competencies addressed in the three previous grade levels (i.e., grades 4, 5 and 6). The item analysis by cognitive difficulty level provided an indication of what pupils are expected to know or do, cognitively, upon entering lower secondary (**Figure 8**). The cognitive demand required for the Grade 7 examination fosters an emphasis on skills aligned with the overarching objectives of Zambia’s competency-based curriculum, as more than half of questions asked pupils to utilize learned skills (to use standard equipment or to use investigating and problem-solving skills).

Additionally, the 2022 Composite Examination did not cover a range of competencies included in the grade 7 curriculum, indicating either a choice that these competencies may not be essential for higher grades or a gap between what the Ministry of Education and the Curriculum Development Centre expect and what the Examinations Council of Zambia assesses. For instance, both the grade 7 curriculum and textbook present opportunities to learn competencies belonging to the exponents and roots mathematical construct but these were not included in the 2022 Composite Examination. A more detailed figure visualizes how the curriculum, textbook and national learning assessment address the same set of competencies, plotting each competency found in each document in Grade 7 (**Figure 9**).

FIGURE 7. COMPETENCES FOUND IN THE CURRICULUM, TEXTBOOK AND LEARNING ASSESSMENT, BY NUMERACY DOMAIN



Source: GEM Report team analysis.

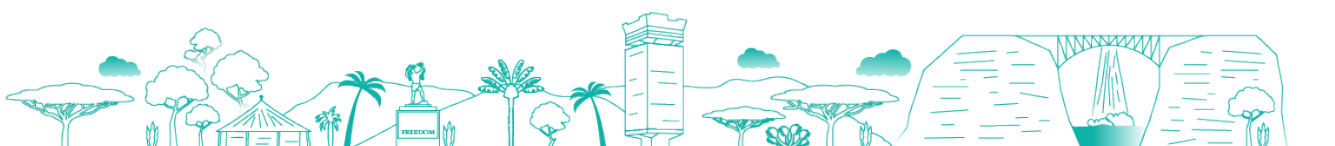
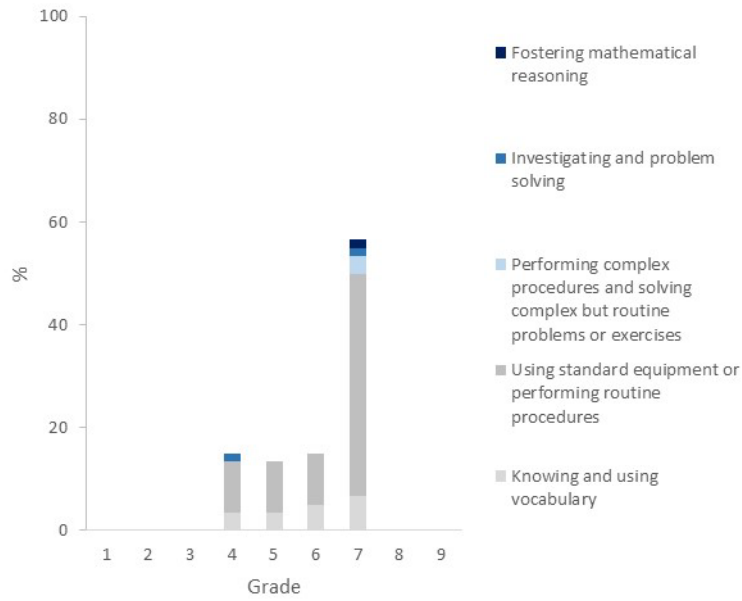


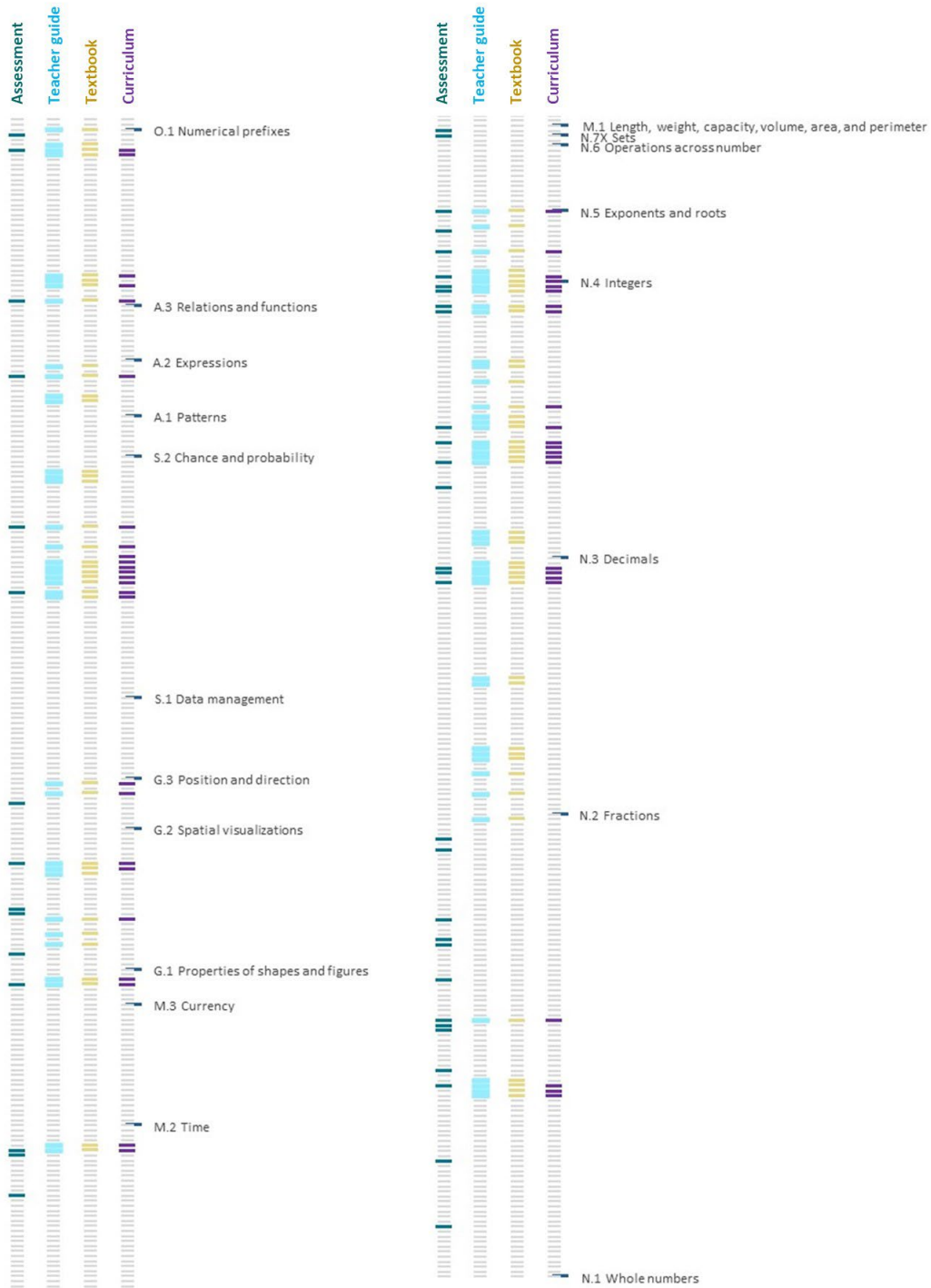
FIGURE 8. DISTRIBUTION OF ITEMS IN THE NATIONAL ASSESSMENT: THEORETICAL GRADE AND COGNITIVE DEMAND



Source: UNESCO GEM Report team analysis



FIGURE 9. SUMMARY OF CONTENT ALIGNMENT BETWEEN CURRICULUM, TEXTBOOK AND LEARNING ASSESSMENT IN P7



Source: UNESCO GEM Report team analysis



Political alignment

Zambia's grade 3 and grade 7 mathematics curriculum is competency-based, with learning opportunities and expectations expressed in terms of competencies, life skills, and values. The content to be taught in each school term is indicated in a logical sequence. Curricular documents link to syllabi for each grade denoting the amount of time that should be allocated to each subject. It is assumed that all learners will be able to progress at around the same pace and attain the set competencies specified for each term. Teachers are also expected to assess pupils and to provide remediation within the time allocated to teaching and learning mathematics, and assessments are provided in teacher guides. Grade 3 receives ten 30-minute periods of mathematics per week which is equivalent to approximately 20% of the total instructional time.

The Ministry of Education faces many challenges implementing the curriculum and syllabus. The largest challenge since the introduction of free education in 2022 is overcrowding in classrooms, which makes it difficult for teachers to teach all the content based according to the sequence outlined in the curriculum. Teachers also have difficulty following the recommended allocation of time, by competency, stipulated in the syllabus. Finally, teachers report not having time to adequately assess student learning.

Further, fieldwork conducted as part of this report indicates that teachers lack adequate training to implement the competency-based approach. The curriculum and syllabus, as well as accompanying teacher guides assume teachers have received the necessary training to implement the material, but in practice, teachers are not well-equipped. More broadly, the increase in enrolment has enhanced the teacher shortage, and there is a substantial need for more teachers and more training for implementing the curriculum and syllabus.

Language of instruction presents a related challenge in grade 3. For instance, many Zambians migrate from rural to urban areas, which results in many pupils learning to read in a language that is not spoken in their home (RTI 2015). In several cases, there are entire districts where all the pupils learn in a language that is not their local language. English is not introduced as a subject until grade 2, but pupils are assessed in a local language and English in grade 2. EGRA results from 2015 indicate that the typical grade 2 pupil could sight-recognize a few words, but pupils struggled to string the words from a passage into a coherent sentence.

Access to textbooks poses another hurdle. Data collected during interviews and classroom observations highlighted that even though quality teaching and learning materials have been designed and well-produced, their availability is limited. Many pupils have neither textbooks nor other individual learning materials. In schools where textbooks were available, an average of three pupils shared one book, contrary to the prescribed standards of 1:1 learner-to-book ratio. On average, during classroom observations, only 52% of teachers referenced these materials. Moreover, less than a quarter of observed classes had manipulatives or other kinds of learning materials. Many of the available textbooks were not up to date, and possibly not aligned with the current curriculum. During interviews, one head teacher noted: *"As for numeracy, the school really needs support because most of the teachers don't have teacher guides and the pupil books... All the teachers... don't have the numeracy framework as well"*. The few textbooks and teacher guides in both numeracy and literacy were either insufficient or had become worn due to frequent use.

Head teachers identified several essential requirements to enhance early grade literacy and numeracy in their schools. These included the need for sufficient concrete and locally relevant teaching and learning materials to support learning within and beyond the classroom, as reported by one head teacher: *"It is essential that there are enough teaching and learning materials for all... accessible beyond the classroom to support independent learning"*. Another head teacher added: *"... at a tender age, children learn by touching the physical things like building blocks, ... books ... where there are pictures ... building blocks..."*. Results of the 2015 EGRA and EGMA indicated that 80% of pupils did not have a textbook in the language of instruction, or a reading text critical for foundational reading development. If pupils are unable to access and use textbooks, they cannot learn effectively. EGRA results further showed that pupils with access to a textbook were outperforming their peers, reading four more words per minute, on average (RTI, 2015).

Further analysis illustrated how textbooks structure pupils' learning experience and their opportunities to learn. For both grades 3 and 7, textbooks analysed place emphasis on cognitive level A (Knowing and using vocabulary) and B (Using standard equipment or performing routine procedures). Prior to grade 3 pupils may be learning vocabulary and standard procedures through processes of rote memorization. Pupils may have memorised skills but no foundational knowledge on how to apply them.

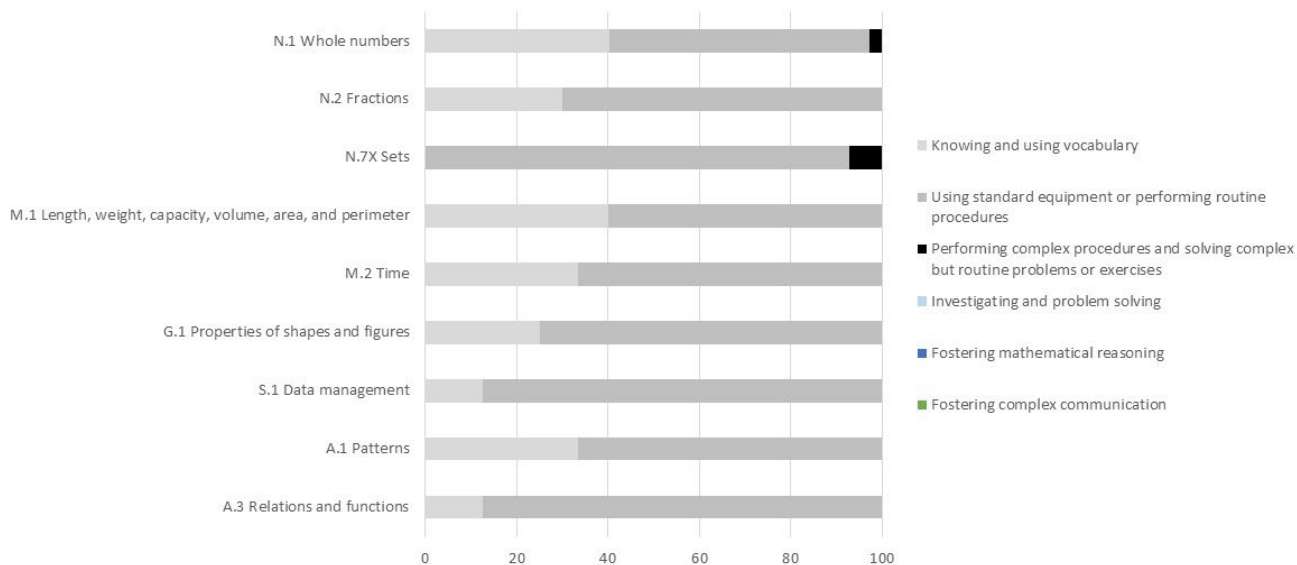


The research team also examined five types of activities contained in textbooks and teacher guides, which were identified and coded: narrative explanations, graphic explanations, worked examples, exercises and problems, and learning activities (i.e., activities that require students to leave the textbook to complete them). The grade 3 textbook uses predominantly exercises and problems, with worked examples. The examples mainly help pupils understand specific constructs such as *Whole numbers* and *Relations and functions*. In grade 7, on the other hand, there seems to be more of a balance across constructs between narrative explanations, exercises and problems, and worked examples (Figure 10).

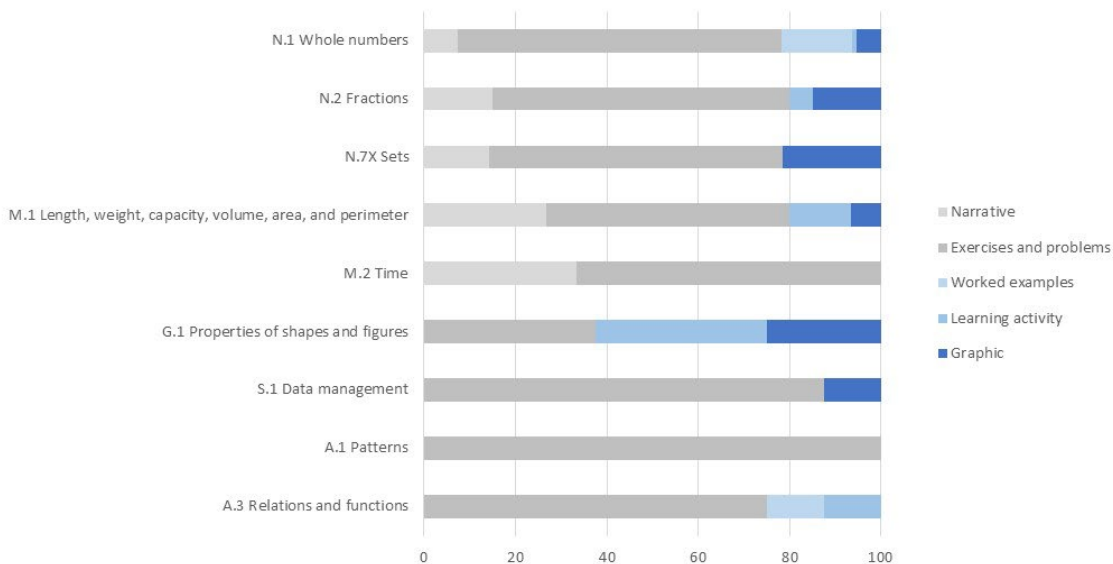
FIGURE 10. LEARNING ACTIVITIES IN TEXTBOOKS BY TYPE AND LEVEL OF COGNITIVE DEMAND

a. Grade 3

1. By cognitive demand

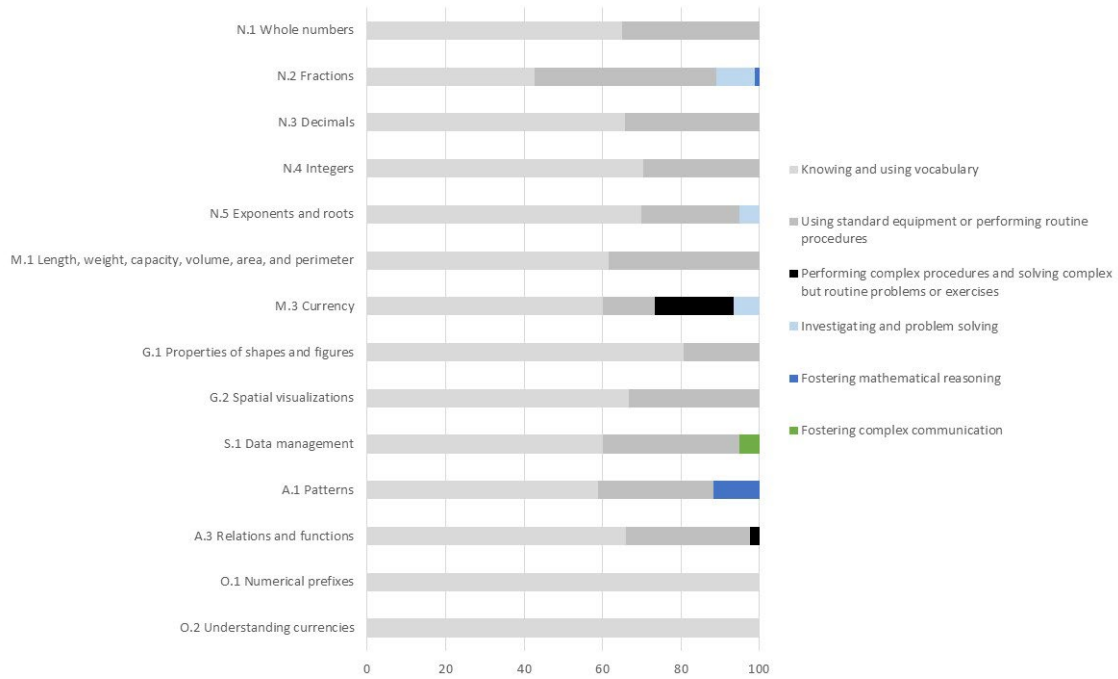


2. By type of learning activity

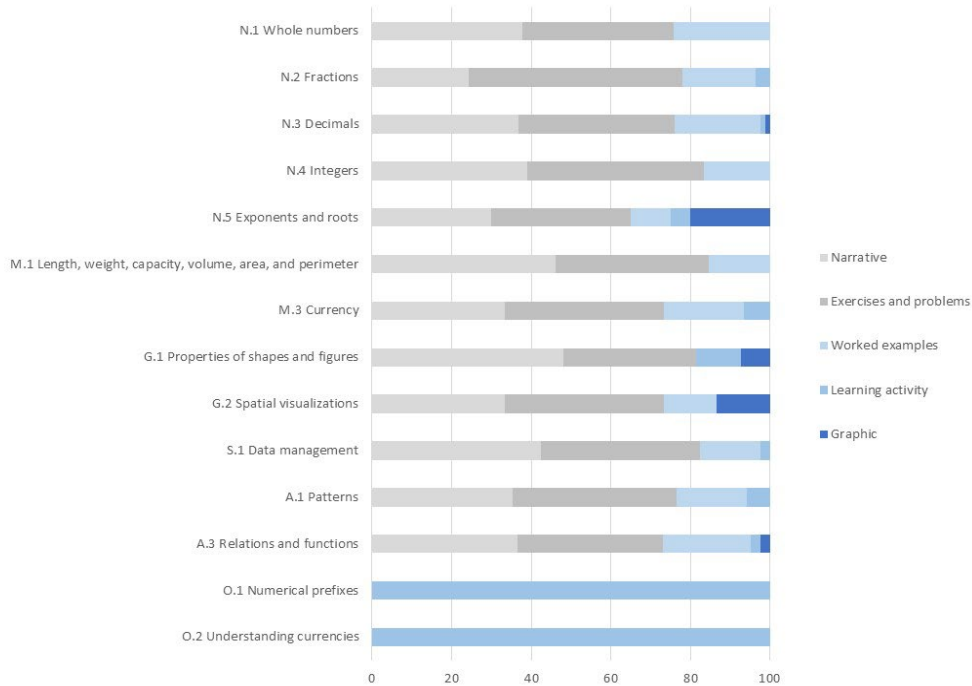


b. Grade 7

1. By cognitive demand



2. By type of learning activity



Source: UNESCO GEM Report team analysis.



In Zambia, there is a critical lack of formative assessment in teacher practice. Historically, education in Zambia has focused almost entirely on summative, large-scale, national high-stakes examinations with important implications for pupils' careers. These lack a necessary focus on formative evaluations that may contribute more to raising pupils' learning experience and ultimately their achievement on test scores, particularly for lagging pupils (Clarke and Luna-Bazaldua, 2021; UNESCO 2016).

The Ministry of Education has established guidelines for conducting school-based assessment as part of the teaching and learning process. Assessments are required every 5th, 10th and 13th week. However, classroom assessment practices still remain weak. For instance, teachers do not have a standardized grading format and do not provide parents with explanations of how their children perform at school (UNESCO, 2016). It is not clear that school-based assessments are linked to larger national assessments. There is room for training teachers and for improving the capacity of the Examinations Council of Zambia and others tasked with administering examinations, developing tests, and analysing examination results, particularly for incorporating formative assessments into the Zambian education system. During the school visits for the Spotlight fieldwork research, head teachers noted that assessments vary among educators, with some conducting them on a monthly, twice-per-term, or weekly basis. Educators use a combination of oral, practical, and written assessments. Informal assessment practices are also common, such as daily observation of learners' progress and use of checklists or observation schedules.

Political alignment

As part of SDG 4, Zambia has committed to increase the proportion of children who achieve at least a minimum proficiency level in reading and mathematics. Minimum levels of proficiency are indicatively described in the Global Proficiency Framework (GPF) and one question is whether Zambia's curriculum is aligned with descriptions. The analysis concluded that the Zambian curriculum for grade 3 and 7 covered respectively around 67% and 58% of the sub-constructs recommended for minimum proficiency by the GPF (**Figure 11**).

One-third of grade 3 competencies outlined in the GPF do not appear in Zambia's grade 3 curriculum. The missing competencies focus on problem-solving and higher-order thinking above numbers and operations. At grade 3, there are five sub-constructs which appear in the GPF but are not addressed in the national curriculum at that grade. At the same time, the curriculum addresses three sub-constructs that are not included in the GPF in grade 3 and one sub-construct (*Recognizing sets*) which is not included at all in the GPF.

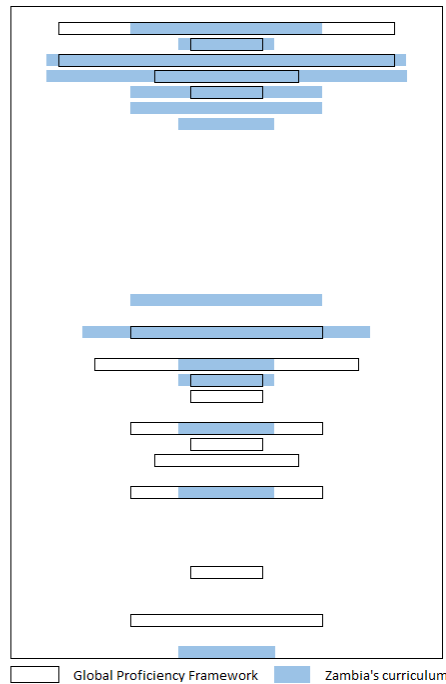
In grade 7, there are 10 GPF competencies that the curriculum does not address. Moreover, the curriculum addresses three sub-domains not included in the GPF for that grade level. Spotlight research highlights that at least six sub-constructs appearing as requirements for minimum proficiency are not addressed by the curriculum for this grade. In both grades 3 and 7, the curriculum places excessive emphasis on numbers and operations. While grade 7 is more balanced than grade 3, there is still a need to incorporate domains, which require higher-order problem solving skills and abstract thinking (geometry, algebra, statistics and probability, and measurement). For instance, statistics and probability are emphasized in the curriculum, but not fully enacted in student textbooks and assessment, and relative to minimum standards, it appears that the statistics and probability skills taught in grade 7 emphasize retrieving and interpreting data over analysing it.



FIGURE 11. NATIONAL CURRICULUM VS. MINIMUM PROFICIENCY IN THE GLOBAL PROFICIENCY FRAMEWORK

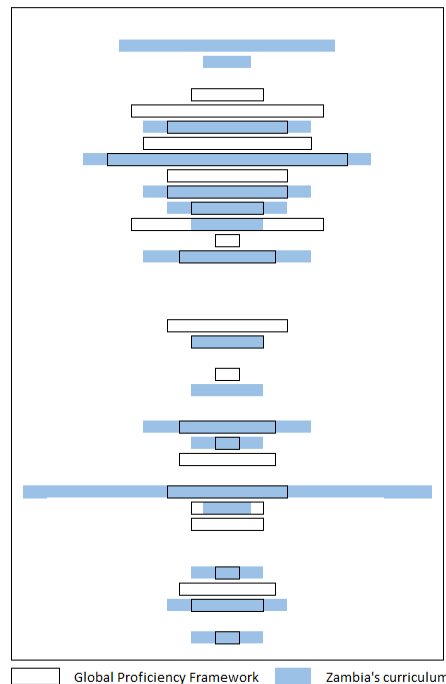
a. Grade 3

- Numbers and number operations**
 N.1.1 Identify and count in whole numbers, and identify their relative magnitude
 N.1.2 Represent whole numbers in equivalent ways
 N.1.3 Solve operations using whole numbers
 N.1.4 Solve real-world problems involving whole numbers
 N.2.1 Identify and represent fractions using objects, pictures, and symbols, and identify relative magnitude
 N.2.2 Solve operations using fractions
 N.2.3 Solve real-world problems involving fractions
 N.3.1 Identify and represent decimals using objects, pictures, and symbols, and identify relative magnitude
 N.3.2 Represent decimals in equivalent ways (including fractions and percentages)
 N.3.3 Solve operations using decimals
 N.3.4 Solve real-world problems involving decimals
 N.4.1 Identify and represent integers using objects, pictures, or symbols, and identify relative magnitude
 N.4.2 Solve operations using integers
 N.4.3 Solve real-world problems involving integers
 N.5.1 Identify and represent quantities using exponents and roots, and identify the relative magnitude
 N.5.2 Solve operations involving exponents and roots
 N.6.1 Solve operations involving integers, fractions, decimals, percentages, and exponents
 N.7.1X Recognizing sets
- Measurement**
 M.1.1 Use non-standard and standard units to measure, compare, and order
 M.1.2 Solve problems involving measurement
 M.2.1 Tell time
 M.2.2 Solve problems involving time
 M.3.1 Use different currency units to create amounts
- Geometry**
 G.1.1 Recognize and describe shapes and figures
 G.2.1 Compose and decompose shapes and figures
 G.3.1 Describe the position and direction of objects in space
- Statistics and probability**
 S.1.1 Retrieve and interpret data presented in displays
 S.1.2 Calculate and interpret central tendency
 S.2.1 Describe the likelihood of events in different ways
 S.2.2 Identify permutations and combinations
- Algebra**
 A.1.1 Recognize, describe, extend, and generate patterns
 A.2.1 Evaluate, model, and compute with expressions
 A.3.1 Solve problems involving variation (ratio, proportion, and percentage)
 A.3.2 Demonstrate an understanding of equivalency
 A.3.3 Solve equations and inequalities
 A.3.4 Interpret and evaluate functions



b. Grade 7

- Numbers and number operations**
 N.1.1 Identify and count in whole numbers, and identify their relative magnitude
 N.1.2 Represent whole numbers in equivalent ways
 N.1.3 Solve operations using whole numbers
 N.1.4 Solve real-world problems involving whole numbers
 N.2.1 Identify and represent fractions using objects, pictures, and symbols, and identify relative magnitude
 N.2.2 Solve operations using fractions
 N.2.3 Solve real-world problems involving fractions
 N.3.1 Identify and represent decimals using objects, pictures, and symbols, and identify relative magnitude
 N.3.2 Represent decimals in equivalent ways (including fractions and percentages)
 N.3.3 Solve operations using decimals
 N.3.4 Solve real-world problems involving decimals
 N.4.1 Identify and represent integers using objects, pictures, or symbols, and identify relative magnitude
 N.4.2 Solve operations using integers
 N.4.3 Solve real-world problems involving integers
 N.5.1 Identify and represent quantities using exponents and roots, and identify the relative magnitude
 N.5.2 Solve operations involving exponents and roots
 N.6.1 Solve operations involving integers, fractions, decimals, percentages, and exponents
- Measurement**
 M.1.1 Use non-standard and standard units to measure, compare, and order
 M.1.2 Solve problems involving measurement
 M.2.1 Tell time
 M.2.2 Solve problems involving time
 M.3.1 Use different currency units to create amounts
- Geometry**
 G.1.1 Recognize and describe shapes and figures
 G.2.1 Compose and decompose shapes and figures
 G.3.1 Describe the position and direction of objects in space
- Statistics and probability**
 S.1.1 Retrieve and interpret data presented in displays
 S.1.2 Calculate and interpret central tendency
 S.2.1 Describe the likelihood of events in different ways
 S.2.2 Identify permutations and combinations
- Algebra**
 A.1.1 Recognize, describe, extend, and generate patterns
 A.2.1 Evaluate, model, and compute with expressions
 A.3.1 Solve problems involving variation (ratio, proportion, and percentage)
 A.3.2 Demonstrate an understanding of equivalency
 A.3.3 Solve equations and inequalities
 A.3.4 Interpret and evaluate functions



Source: GEM Report team analysis.



3.2 Teacher support for implementing the curriculum

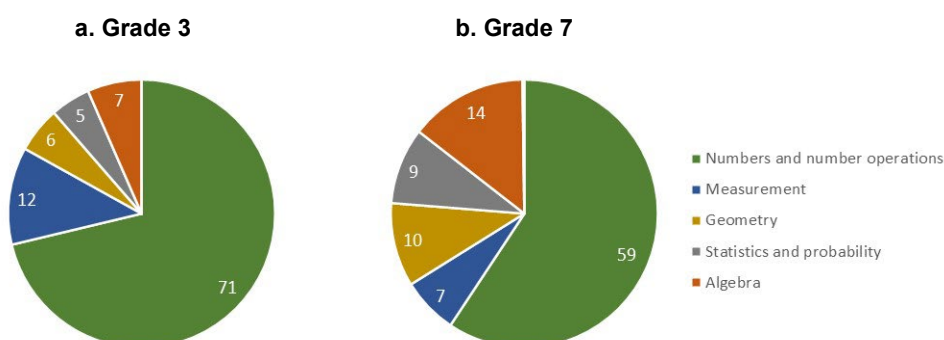
Teacher guides are aligned with the intended curriculum and student textbooks (**Figures 12**). Aligning with the curriculum and textbooks, 71% of the content in teacher guides covers numbers and operations in grade 3 and 59% in grade 7. This is followed by measurement concepts and equal measures in geometry, statistics and probability, and algebra. Competencies are specified for each unit chapter and lesson and are expressed the same way they are in the curriculum and textbooks. Teacher guides are highly scripted, though the grade 3 teacher guide is much more scripted than the grade 7 one. Lessons are highly structured, with a description of suggested activities to carry out at the beginning, middle and end of the lesson. There is also information on the amount of time teachers should spend on each activity. The teacher guide provides information on assessment and learning outcomes. It also explains the methodology that teachers should use when teaching mathematics.

The textbooks propose remedial activities for pupils lagging but do not appear to provide extension activities for high-performing pupils. The grade 3 curriculum provides minimum standards for numbers and measurement, and these are generally consistent with the Global Proficiency Framework. An issue with these ‘minimum standards’, however, is that they make no allowance for the wide range of children’s achievement on entry to the grade. The curriculum provides no guidance as to how teachers are to cope with diversity in learning levels in the classroom.

During interviews and focus groups discussions for the Spotlight fieldwork research, head teachers mentioned providing various forms of support to teachers, which encompassed the provision of teaching and learning materials, motivation for teachers, offering solutions to the challenges faced by teachers, and creating a conducive environment for teaching and learning, *“I support them in terms of provision of teaching and learning materials, organization of continuous professional development”*. But most teachers in schools had received very little formal teacher professional development and head teachers noted a need for more professional development to support teachers implementing the curriculum.

Head teachers further emphasized the significant challenges teachers encountered in teaching and assessment. These challenges primarily revolved around overcrowding, leading to difficulty in providing personalized attention during teaching and assessment, on top of a lack of teaching and learning materials. To accommodate the high number of learners, schools implemented double classes, which reduced the time available for learning, impacting the depth and quality of assessment and teaching. The use of familiar languages was another challenge, as some teachers and learners struggled to effectively teach and learn with them. One head teacher reported: *“... inadequate teaching and learning resources... inadequate classroom space making teachers have reduced periods to create room for the other grades... in terms of assessments is language ... some teachers and learners are not familiar with the familiar language of instruction hence they are unable to read words correctly...”*.

FIGURE 12. DISTRIBUTION OF COMPETENCES FOUND IN TEACHER GUIDE, BY DOMAIN



Source: GEM Report team analysis.



4. Recommendations

Following the Spotlight research mapping, fieldwork, two rounds of stakeholder consultations, and meetings with education leaders, the following recommendations have emerged covering six broad themes.

Articulate a clearer vision of foundational literacy and numeracy in Zambia.

- **Foundational learning, while a substantial part of the government's educational vision, can be articulated more clearly in the Government's national strategy, planning and policy documents.** A clearer perspective on basic numeracy and literacy skills needs to be developed and disseminated to all stakeholders of the education system.

Incorporate problem-solving skills early.

- **Pupils need to learn more problem-solving skills and application of foundational numeracy skills early on in their schooling.** Pupils in early grades are not learning adequate problem-solving skills. There is an overemphasis on learning vocabulary and standard procedures. Numeracy skills are weaker when learners are asked to move beyond memorized vocabulary and procedures to the application of what they have learned, indicating that early grade pupils may be learning vocabulary and standard procedures through processes of rote memorization.
- **Ensure that textbooks include higher cognitive level blocks.** The majority of assessment items in the grade 7 national examination focus on cognitive level B (using standard equipment and performing routine procedures) and less on higher levels like mathematical reasoning, investigative and problem-solving or performing complex procedures solving routine problems and exercises.

Enhance access to the curriculum, teacher guides, and student textbooks.

- **Improve the provision of teaching and learning materials.** It is necessary to prioritize procurement and dissemination of up-to-date textbooks and teacher guides in a timely manner. Zambia's teaching and learning materials are, in general of good quality and can shape the right opportunities to learn for grade 3 and 7 pupils if implemented as intended. However, scarcity of textbooks is a missed opportunity.

Ensure students can access materials in their language of instruction.

- **Ensuring pupils learn in the language spoken at home or providing remedial assistance to those who do not have that opportunity, will help reinforce foundational learning opportunities.** The government recognizes the importance of teaching in local languages. However, this presents many challenges for pupils, teachers, and administrators.

Increase teachers and teacher support.

- **More teachers are needed to reduce pupil/teacher ratios to teach the curriculum as intended.** Zambia is facing a teacher shortage. The current curriculum is intended for class sizes manageable to assess pupils individually. Following the enactment of the Education for All policy in Zambia, overcrowding in classrooms, especially in early grades, means that classrooms are not manageable for most teachers.
- **Teachers need additional training to implement the curriculum effectively.** Fieldwork indicates support to teachers should be improved as it remains difficult for them to implement the government's vision in overcrowded classrooms and with a lack of training and resources.

Prioritize assessment for monitoring student progress.

- **Promote formative assessment at school level supported with in-service teacher training.** Teacher training should include materials linking to teacher guides on how to conduct formative assessments and how to evaluate pupils.

Improve infrastructure to accommodate increases in student enrolment.

- **Due to increased enrolment, there is a need to increase infrastructure.** While the government has outlined a long-term plan to build schools, there is a need to focus on short-term strategies such as increasing the number of classroom blocks.



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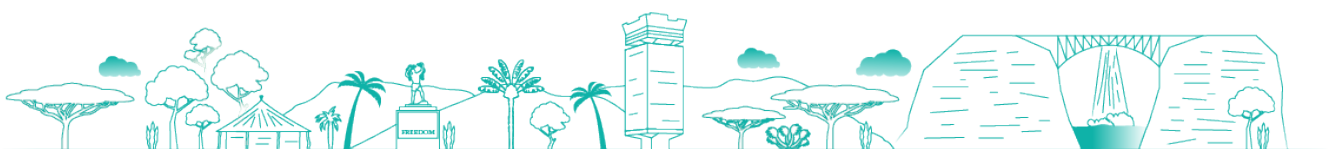
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Annex 1. Field research

The research conducted the fieldwork from September 25-29, 2023. The fieldwork's purpose was to further understand the priority areas the stakeholders identified during the workshop. After the workshop, the research team updated the protocols to achieve this purpose. The fieldwork did not focus on collecting robust statistical data. Instead, it focused on collecting perspectives from teachers, head teachers, and parents on the key priority areas identified by the stakeholders to determine whether their analysis of issues and solutions is consistent with that of the stakeholders. The data from this fieldwork is not meant to be nationally representative. It is meant to provide insight into factors contributing to the difference between high and low-performing schools and rural and urban dimensions.

Before data collection, the research team obtained ethical clearance to conduct the research and MoE approval to work in the schools. The research team purposively selected ten schools across two provinces. In each of the provinces, the research team selected two districts, one rural and one urban. The team selected the provinces, districts, and schools based on their performance in the national Grade 7 examinations, including low and high-performing schools and geographical locations to include rural and urban districts and schools. In the schools, the research team administered a structured questionnaire to head teachers and Grade 3 and Grade 7 teachers and subsequently conducted interviews with a structured interview schedule. In addition, the team conducted classroom observations in the classrooms of the teachers who were interviewed. The fieldwork also included interviews with the Provincial Education Officers (PEOs) and the District Education Board Secretaries (DEBS). Furthermore, the team conducted focus group discussions with parents from the Parent Teacher Committees. Below is a summary of the data collected.

Table A1. Fieldwork details

	Lusaka province		North-western province		Total
	Lusaka (Urban)	Chongwe (rural)	Solwezi (Urban)	Kalumbila (Rural)	
KII head teachers	3	3	2	2	10
KII teachers	3	3	2	2	10
Grade 7 Classroom observations	2	3	2	2	9
Grade 3 classroom observations	3	2	2	1	8
PTC FGDs	3	3	2	2	10
KII PEO	1		1		2
KII DEBS	1	1	1	1	4

Classroom observations

Table A.2 below provides information on the number of learners in the classrooms observed across the two provinces and districts. The minimum number of learners in the classrooms was 22, and the maximum was 186. Based on the results, only two schools have over-enrolled and exceeded the TPR of 1:45 at the primary level outlined in the MoE Standards and Evaluation guidelines. None of the classes observed had assistance teachers.

Table A2. Number of learners in the classrooms observed

Province	District	Grade	Number of learners
North-Western	Urban	Three	48
North-Western	Urban	Seven	48
Lusaka	Urban	Three	56
Lusaka	Urban	Seven	56
Lusaka	Urban	Three	53
Lusaka	Rural	Seven	138
Lusaka	Rural	Three	78



North-Western	Rural	Seven	137
North-Western	Rural	Three	39
Lusaka	Rural	Seven	48
Lusaka	Rural	Three	94
Lusaka	Urban	Three	47
Lusaka	Rural	Seven	90
Lusaka	Rural	Three	97
North-Western	Urban	Three	186
North-Western	Urban	Seven	163
North-Western	Rural	Seven	22

Instructional materials

The government liberalized education in 1996. This means that private organizations can produce teaching and learning materials based on the various syllabi approved by the Ministry. To this end, the Zambian education system has several different teacher guides and learner textbooks produced by multiple publishers and approved by the Ministry for use in schools. Teachers must use the approved teacher guides to prepare their lesson plans, which guide how they structure the lesson and teach a particular topic within the prescribed period. In the case of mathematics, a lesson is 30 minutes per period, and learners in grades 1-4 are expected to have ten periods of numeracy per week, equivalent to five hours per week. In addition to the lesson plan, learners are expected to have learner textbooks. The learner textbooks provide additional examples and exercises to the learners. These align with the content in the teacher guides.

Out of 17 teachers observed, 11 (or 65%) reported having a copy of the curriculum framework. Sixteen of the seventeen teachers had a copy of the syllabus, while thirteen reported having a copy of the literacy and numeracy framework. Regarding the availability of course books, most teachers (15 out of 17) reported having a teacher and learner guide that aligns with the curriculum. All the teachers in the study base their teaching on the curriculum. Regarding the time spent teaching mathematics weekly, teachers observed and interviewed in the survey devote 150–360 minutes a week to teaching mathematics. Teachers in eleven schools spent less than the prescribed 300 minutes per week teaching mathematics. The factors contributing to reduced contact time for mathematics lessons included the lack of adequate infrastructure or having more than one stream per grade, thereby reducing the contact time to cater to the other streams. Overall, the results indicate that teachers have teacher guides aligned to the learner's textbooks and used to prepare lesson plans.

Teacher guides and lesson plans

During lessons, the teacher is expected to use the lesson plan, and learners are expected to have textbooks, which the teacher refers to for further examples, explanations, and exercises. During the observations, the researchers noted that while some teachers referred to their lesson plans during teaching, others preferred teacher guides.

The majority of teachers do not utilize teacher guides. Only six observed (35%) clearly used the teacher guide, while 10 out of 17 teachers observed (59%) followed lesson plans. More teachers used the lesson plan during the lesson than the teacher guide. It was unclear whether teachers used it in some classes because they conducted the lesson without referring to these materials. This suggests that the teacher had either taught the lesson before or was very familiar with it; they could teach it without referencing these materials.

Learner textbooks and instructional materials

Results from the lesson observations show that most classes did not learn with textbooks. The teacher wrote examples on the board and asked learners to either solve the examples in their exercise books or call on learners to solve the problem on the board in front of the class. When asked about the learners' textbooks, most teachers explained that the books were inadequate. Hence, they do not use them in class. In schools where textbooks were available, an average of three learners shared a book, contrary to the prescribed MoE standards of 1:1 learner-to-book ratio. Moreover, most classes observed lacked instructional materials. Less than half of classes (7 out of 17)

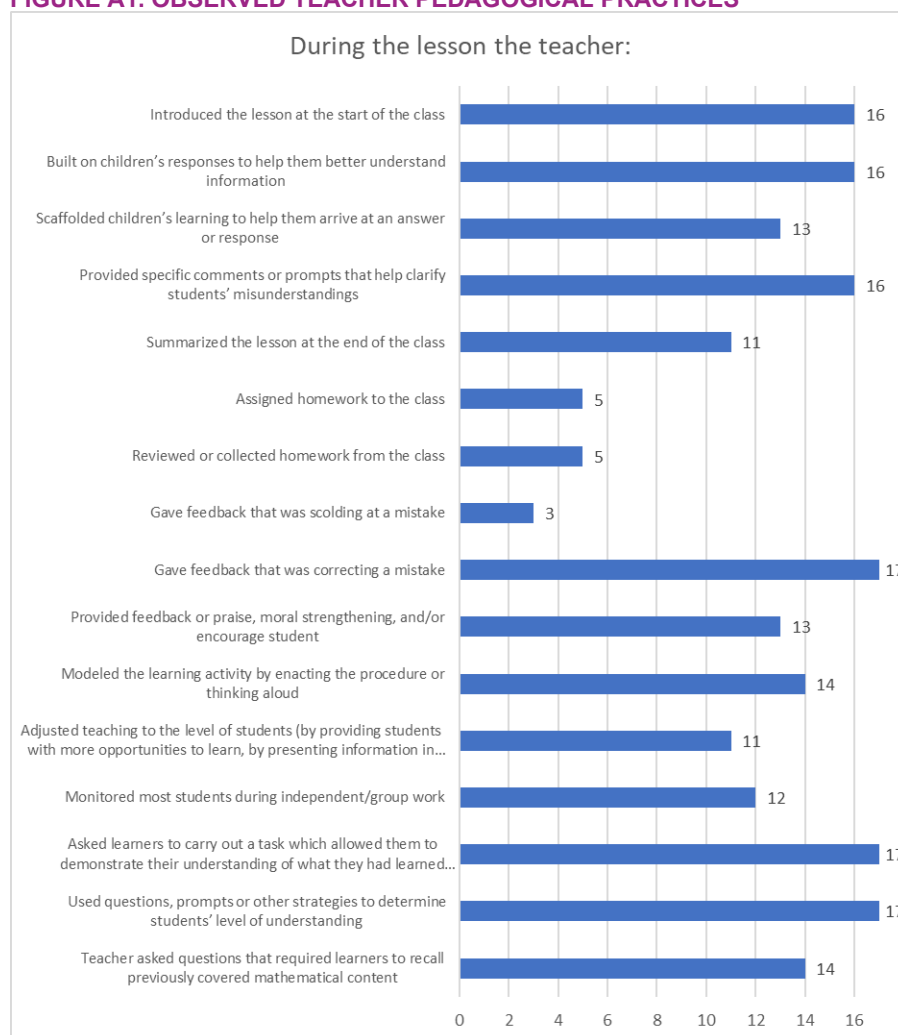


have blackboards pupils regularly use and even fewer classes have other kinds of learning materials or manipulatives (only 4 out of 17, or 24%).

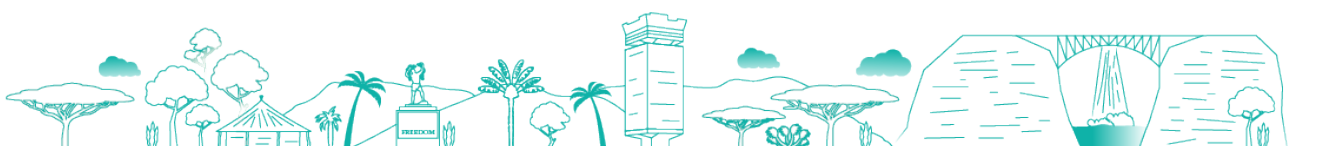
Pedagogical practices

In this study, pedagogical practices focused on the teacher asking questions, monitoring learners as they conducted their work, and how teachers facilitated the lesson. The figure below shows that all of the teachers observed allowed their learners to demonstrate their understanding of the material taught at least once; they asked questions to determine the learners' level of understanding and gave feedback to correct mistakes. Almost all teachers (16 out of 17, 94%) introduced their lessons, built on children's responses to help them understand information, and provided comments to clarify student's misunderstandings during the lesson. Many teachers in lessons went above standard activities and asked learners to recall previously learned material (14 out of 17 teachers), modelled learning activities, and provided praise to their students when appropriate (13 out of 17 teachers). Few teachers observed demonstrated negative behaviours such as scolding children for learning mistakes (only 3 out of 17).

FIGURE A1. OBSERVED TEACHER PEDAGOGICAL PRACTICES



Note: Out of 17 teachers observed



Challenges in implementing the Zambian foundational stage curriculum

The data collected from the fieldwork underscore the persistent challenges within Zambian schools and among teachers to implement the foundational stage curriculum as envisioned effectively. Despite dedicated efforts by schools and teachers to adhere to the prescribed curriculum and utilize recommended teacher guides and learner textbooks for literacy and numeracy, several challenges hinder their successful execution.

A fundamental issue revolves around the shortage of learner textbooks. This scarcity severely constrains teachers' ability to proficiently deliver the curriculum's content, impeding their capacity to engage learners effectively. Moreover, the absence of readers tailored for early grade learners, particularly in local languages, exacerbates these challenges.

A notable gap exists between the theoretical training received in teacher training institutions and the practical classroom experience. This disconnection significantly impacts teachers' proficiency in imparting foundational literacy and numeracy skills, affecting their support for learners, especially those lagging behind. Inadequate training and orientation compound this problem, leaving some teachers ill-equipped to navigate the curriculum's complexities and efficiently convey knowledge to learners.

The challenge of overcrowded classrooms worsens these issues, leading schools to implement double classes due to a shortage of qualified teachers and limited classroom space. Consequently, this leads to reduced contact time, impacting the coverage of essential content and the delivery of the curriculum. In addition, over-enrolment has led to inadequate desks and chairs, and some learners have to sit on the floor, making it an uncomfortable environment for both the learners and teachers. The pupil/teacher ratio is high in most schools, potentially impacting pupil-teacher interactions and individualized attention. Another finding from this research is that over-enrolment has affected the provision of homework, an essential part of learning. Homework allows independent practice and helps learners develop responsibility and time management skills.

Moreover, the language barrier poses a significant obstacle, particularly for teachers and learners unfamiliar with the local languages employed for instruction. The lack of familiarity with these languages among some teachers significantly impacts their ability to effectively teach and communicate, thereby impeding the learning process and ultimately affecting curriculum delivery.

In essence, the collective effect of these multiple challenges significantly hampers the effective implementation of the Zambian foundational stage curriculum, highlighting the urgent need for targeted interventions and support to address these systemic issues to improve educational outcomes.



Annex 2. Stakeholder workshop

On 14 September 2023, an initial stakeholder workshop was conducted and attended by Ministry of Education officials from the various directorates, officials from the provincial and district offices, implementing partners working on foundational literacy and numeracy, lecturers and researchers, early-grade teachers, and cooperating partners. The overall purpose of the workshop was to (i) present and validate the high-level analysis of the initial literature review which included a situational analysis of education in Zambia, particularly on foundational learning, (ii) share results from the stakeholder key informant interviews with Ministry officials and (iii) share preliminary results from the document mapping exercise. The goal was to collaboratively identify critical focus areas for validation and exploration during field research work.

The session commenced with presentations by the research teams. A question-and-answer session followed each presentation. After this session, the research team engaged with the participants to identify essential areas, information, or needed updates based on the presented situation analysis.

- The Zambian curriculum is undergoing reform, which will be introduced in 2024.
- The World Bank has an active focus on improving access and infrastructure by constructing over 200 fully-fledged schools with teacher accommodation. This is expected to alleviate challenges related to the teacher-pupil ratio (Zambia Education Enhancement Project, ZEEP).
- The World Bank is collaborating with the government to enhance the Education Management Information System to facilitate data-driven decision-making, further contributing to the construction of schools and infrastructure development.
- The implementation of the Education for All policy has increased access but has also led to various challenges. To deal with overcrowding and the challenges linked to this, the government has:
 - Increased government funding for schools.
 - Allocated funds through initiatives like the Constituency Development Funds.
 - Continued to work with local organizations and partners, e.g., in producing desks and tables.

After the above submissions, the participants validated the barriers to improving foundational literacy and numeracy among Zambian learners. Overall, the participants identified the following barriers to improving foundational literacy and numeracy: overcrowding, inadequate teaching and learning materials due to over-enrolment; poor teacher knowledge of how to teach foundational skills to learners, challenges using the designated language of instruction to teach literacy, challenges assessing learners due to increased enrolment. The workshop was a pivotal step toward understanding and addressing the challenges and opportunities in Zambia's education sector. The research team noted the three main areas of focus for data collection: curriculum, assessment, and teacher support.



Annex 3. Stakeholder quotes

Thematic area	Relevant quotes
Curriculum	<p>"The Curriculum (PLP) is very focused on improving literacy and numeracy. It is a good curriculum; the challenge is implementation. Challenges are caused by (a) Multiplicity of literacy and numeracy programmes in schools, which can be confusing for teachers (b) Number of learners in class, too many learners making it difficult for teachers to teach effectively (c) Inadequate teaching and learning materials (d) poor staffing - there is an imbalance in the distribution of teachers across the provinces." (PEO)</p> <p>"We need a curriculum that aligns with our goals of improving literacy and numeracy. The current curriculum might not be adequately addressing these foundational skills." (Directorate of Primary Education)</p> <p>"Having clear teaching standards outlined in the curriculum framework is beneficial for educators; it guides our teaching practices." (Director Curriculum Development)</p>
Teacher training and support	<p>"Although many teachers receive training by virtue of having a teaching qualification, they are not qualified (well trained) to teach literacy and numeracy" (PEO)</p> <p>"Teachers have the right training but should always be sharpened through in-service training" (PEO)</p> <p>"I support them [teachers] in terms of provision of teaching and learning materials, organization of CPDs. Another head teacher added: 'I coach all the teachers once in a term and other administrators do the same....' (Headteacher)</p> <p>"I need support in teaching methodology, to enable me teach well, I also need support with the teaching aids." (Teacher)</p>
School Leadership	<p>"Monitoring is conducted by (a) mainly by standards officers in the schools; (b) provincial and district officers (c) internal monitoring conducted by the head teacher within the school. Internal monitoring within the school conducted by the head teacher and deputy head teachers is key" (PEO)</p> <p>"To ensure that the head teacher is working as an overseer. There is a tool, a monitoring tool and we evaluate if all is going on well. Furthermore, we aim to create a supportive environment for head teachers to execute their duties effectively." (DEBs)</p>
Curriculum, support materials, and the local language issue	<p>"Using local languages for initial instruction is a positive step, but there are challenges in regions with multiple languages. We need better strategies for language transition." (Director Primary Education)</p> <p>"... inadequate teaching and learning resources... inadequate classroom space making teachers have reduced periods to create room for the other grades... in terms of assessments is language ... some teachers and learners are not familiar with the familiar language of instruction hence they are unable to read words correctly..." (Headteacher)</p> <p>"Using local languages for initial instruction enhances literacy acquisition, but challenges arise in multilingual regions." (Director of Curriculum Development)</p>



	<p>'There are meetings that are held... I also take the first step to talk to the school or teachers about any weakness, e.g. there is a problem of language of instruction, I am Bemba and we moved here because my husband got a job in the mines, now this school they learn in another language and not Bemba so my son complains that mummy, ' I don't understand what the teacher is saying.' (Parent)</p> <p>"The language of instruction in Nyanja is a challenge and some concepts are hard to explain in the local language." (Teacher)</p> <p>"Some children who came from private schools also have difficulties to understand what is taught in the local language." (Teacher)</p>
Other relevant quotes	<p>"Most of the classes have more than 150 learners... Most of the learners in the early grade classes sit on bricks, making it hard for them to learn and write well in their books." (Headteacher)</p> <p>"As for numeracy, the school really need support because most of the teachers don't have teacher guides and the pupil books... All the teachers... don't have the numeracy framework as well." (Headteacher)</p> <p>"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)</p> <p>"WhatsApp groups and communities of learning among teachers help facilitate knowledge sharing and peer support." (TESS Director)</p>

