



SPOTLIGHT ON BASIC EDUCATION COMPLETION AND
FOUNDATIONAL LEARNING

Uganda



Ushirikia wa Maendeleo ya Elimu Barani Afrika
الرابطة لأجل تطوير التربية في أفريقيا
Association for the Development of Education in Africa
Association pour le développement de l'éducation en Afrique
Associação para o Desenvolvimento da Educação em África

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

This programme document accompanies the 2024 Spotlight Report on Basic Education Completion and Foundational Learning in Africa and was commissioned by the Global Education Monitoring Report to base the analysis of the 2024 Spotlight Report on Basic Education Completion and Foundational Learning in Africa firmly on the national context. The views and opinions expressed within should not be attributed to the Global Education Monitoring Report, its Director, or to UNESCO.

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This document can be cited with the following reference: Spotlight on Basic Education Completion and Foundational Learning in Uganda 2024.

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Published in 2024 by the United Nations Educational, Scientific and Cultural Organization
7, Place de Fontenoy, 75352 Paris 07 SP, France
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Cover photo: Andrew Pacutho / Save the Children

Typeset and layout by UNESCO
Graphic design by Optima Graphic Design Consultants Ltd
Any errors or omissions found will be corrected in the online version at www.unesco.org/gemreport

ED/GEMR/MRT/2024/SL/CR/2
<https://doi.org/10.54676/LHPP9242>

This document and all related materials are available for download here:
<http://bit.ly/spotlight2024-uganda>



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Acronyms and abbreviations

CCT	Coordinating centre tutor
CPI	Consumer price index
ECCE	Early childhood care and education
EGR	Early Grade Reading (programme)
EGRA	Early Grade Reading Assessment
FLN	Foundational literacy and numeracy
GDP	Gross domestic product
GEM	Global Education Monitoring
GPF	Global Proficiency Framework
LOI	Language of instruction
MoES	Ministry of Education and Sports
NAPE	National Assessment of Progress in Education
NDP III	Third National Development Plan
PLE	Primary Leaving Examination
PTC	Primary teacher colleges
SACMEQ	Southern and Eastern Africa Consortium for Monitoring Educational Quality
SDG	Sustainable Development Goal
TDMS	Teacher Development Management System
TELA	Teacher Effectiveness and Learner Achievement
UGX	Ugandan schillings (currency)
UIS	UNESCO Institute for Statistics
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VACIS	Violence against children in school



Acknowledgements

This report would not have been possible without the contributions of numerous people and institutions.

The Spotlight series on universal basic education completion and foundational learning in Africa aims to leverage research insights to influence policy decisions at continental and national levels. We extend our gratitude to the Minister Hon. Janet Kataaha Museveni and senior management team at the Ministry of Education and Sports for their leadership in guiding the direction of the report and validating its findings. Within the Ministry of Education and Sports, Commissioner Dr Cleophus Mugenyi and Dr Jane Egau provided overarching guidance that facilitated the preparation of the report.

We extend special gratitude to Mary Goretti Nakabugo, head of the research team, along with her team members Sarah Kisa and Joyce Ayikoru from Kyambogo University, and Amos Kaburu and James Urwick from Uwezo Uganda, for their leadership in driving the research, analysis and collaborative efforts in developing the report. Additionally, we recognize Joseph Kateregga, Joseph Kasasa, Judith Nyakaisiki and other Uwezo staff for their invaluable contributions in facilitating the operations, including coordinating field visits and stakeholder consultations.

Using insights gathered from stakeholders across both the national and subnational levels, the report was enriched through extensive consultations. We highly appreciate the perspectives shared at the subnational level by teachers, school administrators, district officials and community members. We would particularly like to thank Uwezo trainers and district partners, including the Child Concern Initiatives Organisation, the Kiyita Family Alliance for Development, the Citizens Initiative for Democracy and Development Uganda, and Partners in Development and the Center for Holistic Transformation, who coordinated consultations in Bundibugyo, Wakiso, Pallisa and Maracha districts. Consultations at the national level encompassed policy makers, civil society representatives and development partners (see Annex E).

We appreciate the partnership and collaboration with the Association for the Development of Education in Africa, notably the guidance provided by Albert Nsengiyumva and Shem Bodo, and with the African Union.

The tireless efforts of Jennifer Allain in copy-editing the report are recognized. We also extend our gratitude to Optima Graphic Design Consultants Ltd who supported the design and production of the report.



Foreword

The Government of Uganda is steadfast in its commitment to deliver quality education to all its citizens, as outlined in Uganda Vision 2040 and its Third National Development Plan. This Spotlight Uganda report resonates with this mission by underscoring the significance of foundational learning, particularly the acquisition of basic numeracy skills, which are crucial for acquiring the more advanced competencies necessary to propel our national development forward.

With a specific focus on mathematics, the report examines the alignment of Uganda's national vision with its curriculum, textbooks, teacher's guides and learning assessments. The evidence presented in this report offers timely insights that enhance our understanding of the implementation of the mathematics curriculum. The outcomes derived from the curriculum mapping and the report's findings will inform our ongoing curriculum review and development efforts, aimed at elevating student learning outcomes.

To tackle the challenge of universal primary completion and foundational learning skill acquisition, Uganda has initiated programmes such as the Early Grade Reading Programme and the Teacher Development Management System. By examining these practices, alongside initiatives from other focus countries like Mauritania, Niger, South Africa and Zambia, the 2024 Spotlight continental report, to which this country report is an essential building block, will offer an invaluable opportunity for us to not only showcase our successes across the continent but also to glean insights from others' experiences. We look forward to such discussions in 2024, which has been declared as the African Union Year of Education.

We enthusiastically embrace the opportunity to participate as a partner in the Spotlight initiative. Through the Spotlight process, we reaffirm our commitment to reshaping Uganda's future through tangible actions aimed at ensuring that children acquire foundational skills and complete their primary education, thereby paving the way for a brighter and more prosperous future.

All our children are born to learn.

Hon. Janet Kataaha Museveni
Minister of Education and Sport



Executive summary

Objectives and research questions

This Uganda country report is part of the second Spotlight cycle on universal basic education completion and foundational learning, which focuses on policy alignment in early grade mathematics using a systematic approach combining mapping key documents in five focus countries' education systems with insights into all levels of curriculum implementation, from intentions to enactment in the classroom. This Spotlight cycle addresses the following questions:

- Which mathematics domains, constructs, subconstructs and competences are included in the country's curriculum/textbooks/teacher's guides/national assessment for Grade 3 and the last grade of primary?
- To what extent do teaching and learning materials and learning assessments align with the intended curriculum? How do they support 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 skills?
- How does the national curriculum compare with the international minimum proficiency requirements for mathematics at Grade 3 and the last grade of primary?

This country report analyses the extent to which the Government of Uganda's vision to improve numeracy is aligned with its main policy documents. The data from each document were mapped against each other and against the global proficiency framework for mathematics and complemented with insights from semi-structured interviews and classroom observations to discuss the extent to which students are provided with coherent opportunities to learn foundational skills.

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

Foundational literacy and numeracy, completion, and out-of-school rates

Since 2000, the number of children enrolled in primary education has steadily increased in Uganda, from 6.5 million to 9 million according to 2017 data. But estimates based on data from census and household surveys find that only around six out of ten children complete primary education on time, and an estimated 9% of children of primary school age are out of school.

Learning levels remain low. By Grade 3, only half of enrolled pupils achieved minimum national proficiency standards in English and mathematics, according to the 2018 National Assessment for Progress in Education (NAPE) (50% for literacy in English and 55% for numeracy). Only one out of five pupils attain learning levels that meet international minimum proficiency standards in numeracy by the end of primary education according to the 2013 Southern and Eastern Africa Consortium for Monitoring Educational Quality (SACMEQ), which is the most recent cross-national assessment in which Uganda took part. The SACMEQ findings are more consistent with those of a citizen-led assessment conducted by Uwezo in 2021, which showed that about 16% of children aged 10 and 48% of those aged 14 could read and comprehend a Grade 2 level story in English. Regarding numeracy, the assessment showed that about 20% of children aged 10 and 48% of those aged 14 could perform simple division using arithmetic symbols.

National vision and learning

The overall objectives of Uganda's education system are embedded in social and economic priorities reflected in Uganda Vision 2040 and Uganda's Third National Development Plan (NDP III), which explicitly emphasizes access to and completion of education and achieving gender parity. Uganda's education system is principally steered by the 2008 Education Act, the 2019 National Teacher Policy and Uganda's 2006 revised curriculum. Foundational literacy and numeracy are not an explicit feature of Uganda's national vision for education. Yet Uganda will not achieve its vision of 'a modern and prosperous country' without ensuring the foundations of its children's educational development.



Mapping the curriculum, learning and teaching materials, and assessment

As part of the second Spotlight cycle, the research team collected systematic data across pedagogical inputs: the national curriculum, student textbooks, teacher's guides and learning assessments. It 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 the acquisition of such skills (Alia et al., 2022; Scheerens, 2017). In addition to the extensive mapping analysis, a research team at Uwezo conducted fieldwork in four districts representative of Uganda's 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 it.

Content alignment: Content alignment is defined as alignment between all the pedagogical resources that determine pupils' learning experience: curriculum, textbooks, teacher's guides and assessment. Results of an extensive mapping analysis indicate substantial alignment of curriculum and textbooks in Primary 3 (P3) numeracy content, but less alignment in Primary 7 (P7) content.

In P3, intended learning opportunities found in the curriculum are reflected in the material included in the P3, New MK Primary Mathematics, Pupils Book Three student textbook. Material included in the curriculum and teaching and learning materials for P7 differs from what is being assessed in the Primary Leaving Examination (PLE), which is not intended to solely provide an evaluation of all skills mastered in the P7 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.

Pedagogical alignment: In terms of pedagogical alignment, for both P3 and P7 in Uganda, textbooks analysed place an emphasis on knowing and using vocabulary, and on using standard equipment or performing routine procedures. In terms of the type of activities, the P3 textbook predominantly uses exercises and problems, with worked examples. The examples mainly support pupils in understanding specific constructs, such as 'whole numbers' and 'relations and functions'. In P7, on the other hand, pedagogical content is more balanced across constructs between narrative explanations, exercises and problems, and worked examples.

Outcomes of previous examinations (e.g. Early Grade Reading Assessment and Early Grade Mathematics Assessment in 2015) find that numeracy skills drop among early grades above Level B (using standard equipment or performing routine procedures), indicating that prior to P3 pupils may be learning vocabulary and standard procedures through processes of rote memorization. Pupils may have memorised the steps in the procedures without having foundational knowledge of the connection between these steps and the underlying concept, or how to apply these procedures to solve non-routine problems. The findings of this mapping exercise align with these results. Likewise, Uwezo's field research found that only 42% (10 of 24) of observed teachers asked questions that required students to use creativity or imagination, or to apply information to new topics during numeracy lessons. More than half (54%) of the teachers observed during the field research used material from the textbook, as opposed to the curriculum or the teacher's guide, when planning lessons.

Political alignment: As part of its SDG 4 commitment, Uganda has promised to increase the 'Proportion of children and young people: (a) in Grades 2/3; (b) at the end of primary; and (c) at the end of lower secondary achieving at least a minimum proficiency level in: (i) reading; and (ii) mathematics, by sex'. These minimum levels of proficiency are defined by the global proficiency framework (UIS, 2019). An important question is whether Uganda's curriculum sufficiently enables it to meet these commitments. Analysis of alignment between Uganda's curriculum and minimum proficiency requirements at the global level indicate that the Ugandan curriculum for P3 and P7 addresses respectively around 67% and 58% of the sub-constructs recommended for minimum proficiency in the Global Proficiency Framework.

Fieldwork confirms several challenges associated with implementing Uganda's thematic curriculum in P3 and P7. One of the greatest challenges is overcrowding in classrooms in both P3 and P7, which makes it difficult for teachers to teach all the content based on the sequence and amount of time stipulated in the syllabus. Teachers do not have time to adequately assess student learning. In fieldwork, respondents interviewed across districts in all four regions noted three major challenges: classroom shortages; teacher shortages; and shortages in teaching and learning materials in government schools.

Access to textbooks poses a hurdle in Uganda. 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 for mathematics.



Head teachers identified several essential requirements to enhance early grade literacy and numeracy in their schools: sufficient concrete and locally relevant teaching and learning materials to support learning within and beyond the classroom; improved school facilities; remedial classes to mediate overcrowding in classrooms; and school feeding, as many pupils do not have the opportunity to receive a midday meal.

Teacher support for implementing the curriculum: Teacher's guides are well-aligned with the intended curriculum and student textbooks. In field interviews, many head teachers and teachers considered the teaching and learning materials for primary schools to be suitable but not distributed in sufficient quantity. The Ministry of Education and Sports does not procure teaching and learning materials. Moreover, an earlier study had found that teachers skipped significant portions of activities (38%) when observed (Piper et al., 2018). One explanation for this is that the Ugandan teacher's guides required the teacher to skip back and forth within the guide to find the instructions and the content of the lesson. Easy-to-use, structured teaching guides are associated with improvements in teaching and learning outcomes.

Regarding the supervisory capacity of head teachers, there was some consensus among head teachers that their appointments were mainly based on length of experience rather than evidence of leadership or management skills. The National Teacher Policy states that postgraduate educational management qualifications are expected in the future, but it is not clear that postgraduate programmes of that kind will be sufficiently available or affordable for head teachers.

Recommendations

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

- Articulate a clearer vision of foundational literacy and numeracy in Uganda.
- Rethink curriculum content and structure.
- Enhance the accessibility of the curriculum, teacher's guides and student textbooks.
- Improve teacher's guides and teacher support.
- Prioritize assessment for monitoring student progress.
- Strengthen foundational learning opportunities.



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 on education in the Sustainable Development Goals (SDGs) and 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 levels, 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 five to six 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, except where it is necessary to also address issues related to pre-primary or lower secondary education. In this regional report series, the GEM Report has partnered with the Association for the Development of Education in Africa and the African Union.

The Spotlight series has three goals:

- Support countries in their efforts to achieve out-of-school, completion, and foundational learning targets (benchmarks) through research, policy dialogue and advocacy activities.
- Support countries to share positive practices that promote foundational learning with their peers on the continent.
- Raise the political salience of foundational learning in Africa, through the 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 2022.¹ 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 textbooks; 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 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. 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 Uganda comprised a set of activities, each generating evidence and findings related to the study's four research questions:

- Literature review and stakeholder mapping
- Initial stakeholder workshop
- Fieldwork
- Validation workshop.

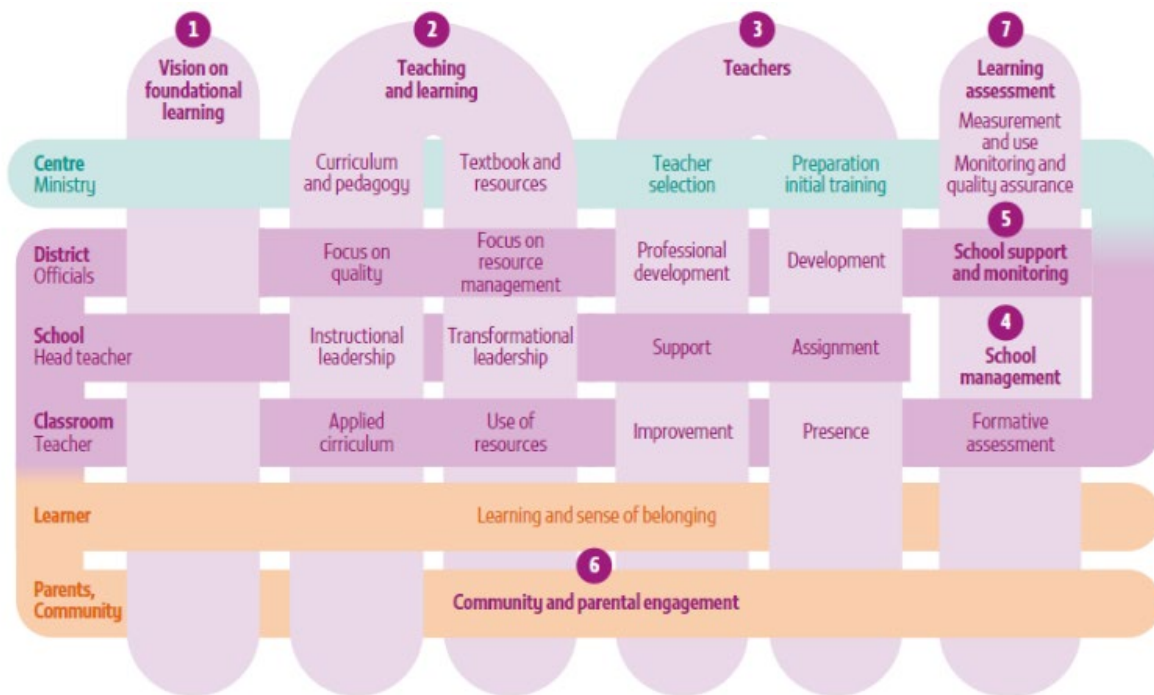
¹ All reports and background papers are available at: <https://www.unesco.org/gem-report/en/2022-spotlight-africa>



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. Seven broad factors are distinguished, which can be customized to fit the country context (**Figure 1**).

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 levels of education, 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. Head teachers need to be prepared to focus on instructional and transformational leadership (4). Their skills should be nurtured and developed to support teachers and 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 a 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 students are expected to learn and is linked to classroom processes and practices as well as international standards (7).

While the first research cycle (2021/22) addressed each of the seven factors of the analytical framework, the second cycle (2023/24) 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 the government’s vision is reflected in concrete, actionable objectives to improve basic mathematics skills and how these intentions are translated into fit-for-purpose curricula and textbooks, teacher support mechanisms, and learning assessment (Table 1). The questions are adapted to country context.

TABLE 1. POLICY ANALYSIS IN THE SPOTLIGHT 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 what 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 classroom assessment used to generate formative feedback? How is system assessment organized, including national examinations, and how is it used to inform policy?
Data and evidence	Curriculum, syllabus and textbooks.	Teacher’s 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 textbooks and curriculum.	Systematic mapping and coding of teacher’s guides, policy analysis of teacher support structures, qualitative analysis of teacher’s 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? How much time is allocated to foundational learning in the curriculum? What are the pedagogical underpinnings in textbook design?	Which domains and constructs are reflected in teacher’s guides? Are these aligned with textbooks? What are the pedagogical underpinnings in the design of teacher’s guides?	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?

1.3 Research questions

Pupils’ learning 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 pupils 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). Whether pupils effectively master foundational skills depends in large part on the degree to which they are provided with the right opportunities to learn, and opportunities to learn are shaped by the education system’s policy alignment. In the Spotlight analytical framework, education system policy alignment is the bedrock of educational effectiveness and constitutes one of the prerequisites for improving levels of foundational learning.

Policy alignment in the second Spotlight research cycle is understood as:

- **Content alignment** between all the pedagogical resources that determine pupils’ learning experience.
- **Pedagogical and cognitive alignment** between the curriculum, existing best practices and what is happening in the classroom, throughout pupils’ learning experience.



- **Political alignment** between a country's international commitments, such as improving the proportion of pupils who meet internationally agreed-upon minimum proficiency levels, and its national policy.

The Spotlight 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 second Spotlight series addresses the following questions:

- Which domains, constructs, subconstructs and competences are included in the country's curriculum, textbooks, teacher's guides and national assessment for Grade 3 and the last grade of primary?
- 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 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 Grade 3 and last grade of primary education?

A government's policy to improve foundational numeracy skills is mediated by at least four key elements: (a) the official curriculum; (b) pupils' textbooks; (c) teachers' pedagogical support such as teacher's guides; and (d) learning assessments.

- The **official curriculum** outlines what pupils should know and do. It communicates a government's vision of what pupils 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 the curriculum as it is implemented by teachers. They translate a somewhat abstract curriculum into concrete operations that teachers and pupils can carry out. Because of their roles as mediators of intent, textbooks heavily influence what mathematics teachers teach, how they teach it and, by extension, how pupils experience it and how much instructional time they devote to each topic.
- **Teacher's guides** assist teachers in structuring and articulating pupils' opportunities to learn. They provide guidance on textbooks' intended use and help teachers develop and plan lessons. Just as textbooks frame teachers' instructional decisions, teacher's guides have the potential to influence the pedagogical choices teachers make in the classroom. At the very least, they identify the order in which teachers should address topics and how much time they should spend on each topic. Many provide guidance on how teachers should present topics to pupils and include summative evaluation tools to measure pupil performance on these topics. Teacher's 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's 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 pupils can demonstrate the knowledge and skills specified in the curriculum. They can be used in a summative way to assess general levels of skills or formatively to identify domains where systems may require improvements. Learning assessments take different forms: national assessments, national examinations and 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. Large-scale assessments measure learner performance on these same key learning outcomes.

From a policy perspective, aligning these four pedagogical inputs provides pupils with a comprehensive and systematic learning experience which is at the heart of the 2023 Spotlight series. One of the objectives underpinning the 2023 Spotlight research cycle is to examine the extent to which pupils' opportunities to develop foundational numeracy skills could be shaped by the degree of alignment of the four inputs and classroom practices in each focus country. The series focuses on early grades and the last grade of primary to also match with countries' commitment to the Continental Education Strategy for Africa 2016–2025 and SDG 4 agenda.



2. Country context

Uganda has a great geographical, ethnic and linguistic diversity. In 2020, it had a population of 45.7 million, of which 68% were below the age of 25. Uganda is classified as a low-income country, having an estimated gross national income per capita of USD 840 in 2023 (using the World Bank Atlas method). Over the past 25 years, Uganda has achieved a high level of participation in primary education. Expenditure on public education, however, has been persistently low by international standards. In 2022, education expenditure was 8.5% of gross domestic product (GDP).

2.1 Structure of Uganda's education system

Uganda's education system includes three years of pre-primary education, seven years of primary and six years of secondary education. Primary education is divided into three main cycles: Primary 1 to Primary 3 (P1 to P3) dedicated to basic skills acquisition; Primary 4 (P4), where pupils transition from theme-based to subject-based curriculum and from their home language to English; and Primary 5 to Primary 7 (P5 to P7), with a subject-based curriculum geared towards preparing pupils for further education (National Curriculum, P1).

The Primary Leaving Examination (PLE) is a national, high-stakes assessment that determines progression from primary to lower secondary. It is developed by the Uganda National Examinations Board and administered to all P7 pupils who have registered (at a cost of UGX 65,000 to parents or guardians). The examination is administered over two days and covers four core subjects: English, mathematics, science and social studies. To assess early foundational learning skills, the Uganda National Examinations Board also administers the National Assessment of Progress (NAPE) to P3 and P6 pupils, and development partners work with the Ministry of Education and Sports (MoES) to conduct Early Grade Reading Assessments (EGRA) and Early Grade Mathematics Assessments (EGMA) to monitor foundational learning.

In parallel with general education, there are technical and vocational programmes leading to Junior Vocational Certificates (alternatives to the Uganda Certificate of Education) and to National and Technical Craft Certificates (alternatives to the Uganda Advanced Certificate of Education). The recently revised curriculum for lower secondary education, however, places more emphasis on vocational studies within the framework of general education (National Curriculum Development Centre, 2021).

Access and completion of primary education

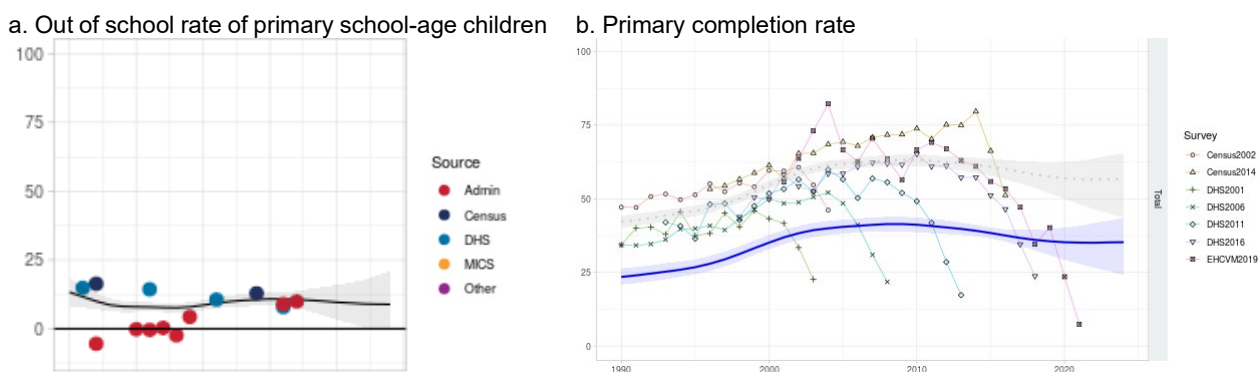
Uganda has had close to universal access to primary school for a long time. The number of children enrolled in primary education increased from 6.5 million in 2000 to 9 million in 2017 according to the latest available UIS data. But while the out-of-school rate is estimated to have fallen slightly from 15% in 2000 to 11% in 2022 (**Figure 2a**), the out-of-school population, due to rapid demographic growth, is estimated to have increased in this period from 745,000 to 1,065,000.

At the time of writing, no data were available post-pandemic to assess the situation on completion rates with accuracy. But available data suggest that, while the completion rate increased from 35% in 2000 to 41% in 2010, it had declined to its 2000 level by 2020. This is the official definition of the indicator, which is calculated for children aged 3 to 5 years above graduation age (the blue line in **Figure 2b**). The data show that children finish primary school with several years' delay. Taking into account late completers, the ultimate completion rate increased from 55% in 2000 to 63% in 2010 and declined to 57% in 2020 (the grey line in **Figure 2b**).

The rate of transition from primary (P7) to secondary school (S1) is about 61%. Some students are unable to transition due to financial constraints or distance from their homes to lower secondary schools (Sefa-Nyarko, Kyei and Mwambari, 2018). Many children, however, are unable to transition to secondary education because they do not pass the PLE. For example, 12% of children who took the 2022 PLE obtained Division U (Ungraded). These children did not obtain the minimum level of performance to qualify for entry into secondary education (Uganda National Examinations Board, 2022).



FIGURE 2. OUT-OF-SCHOOL AND PRIMARY SCHOOL COMPLETION RATES, 2000–20



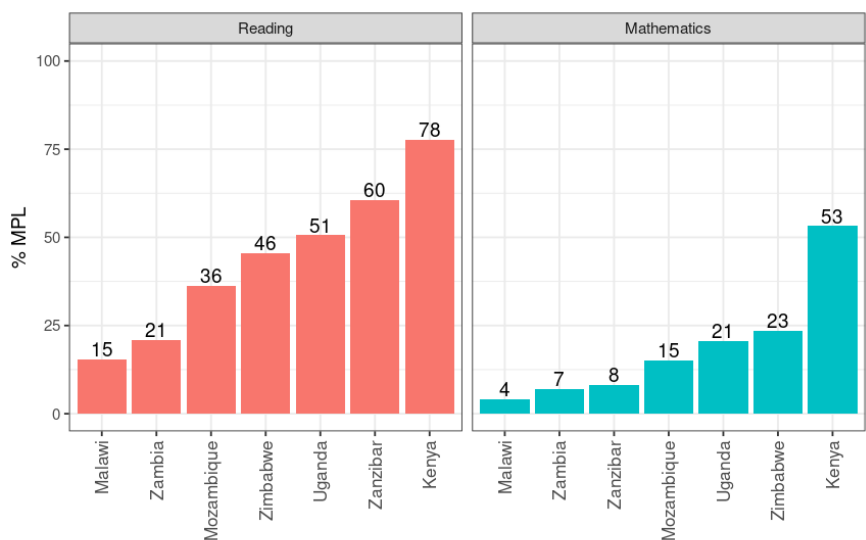
Note: DHS: Demographic and Health Survey; EHCVM: Uganda National Panel Survey; MICS: Multiple Indicators Cluster Survey.
Source: Visualizing Indicators of Education for the World (VIEW).

2.2 Foundational literacy and numeracy

Learning levels are low. According to the 2018 NAPE, the percentage of P3 students who achieved minimum national proficiency standards was 50% in English and 55% in mathematics (Uganda National Examinations Board, 2018).

However, the standard of this assessment may be lower than the global minimum proficiency level, at least in mathematics. One supporting, albeit old, piece of evidence comes from the last time Uganda participated in a cross-national assessment with recognized comparable standards – the Southern and Eastern Africa Consortium for Monitoring Educational Quality. According to its 2013 round, only one out of five pupils at the end of primary school achieved the global minimum proficiency level in numeracy. Proficiency levels are higher than in Malawi, Mozambique and Zambia, but lower than in Kenya (**Figure 3**).

FIGURE 3. PERCENTAGE OF STUDENTS REACHING MINIMUM PROFICIENCY BY THE END OF PRIMARY SCHOOL, SELECTED EASTERN AND SOUTHERN AFRICAN COUNTRIES, 2013



Note: MPL: minimum proficiency level.
Source: GEM Report team analysis based on the 2013 SACMEQ data.



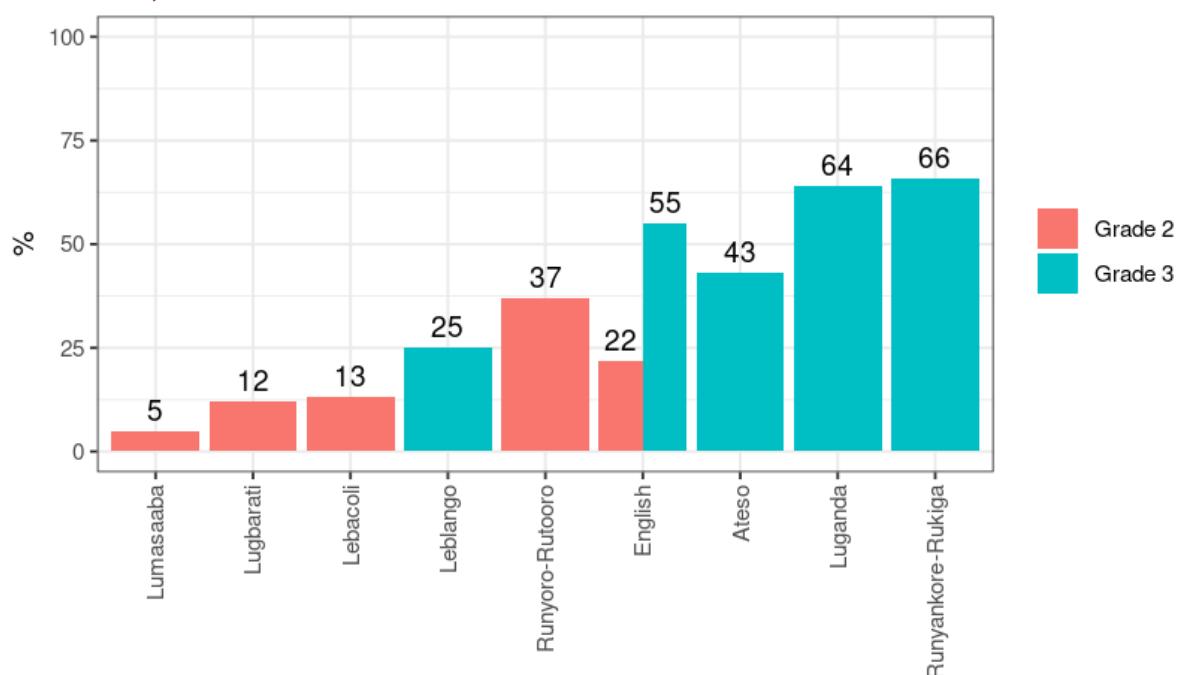
Low levels of foundational learning have also been suggested in assessments carried out by development agencies. For instance, the USAID-funded Learning Achievement and Retention Activity carried out assessments in 2019 in its target schools but also in control schools. Among P3 students, 41% in Luganda-speaking regions and 45% in Runyankore/Rukiga-speaking regions could not read a single word (NORC, 2020).

The same findings had been made in 2015, also using an Early Grade Reading Assessment, as part of another USAID-funded project, the School Health and Reading Program, which found that 45% of P3 students could not read a word ([Early Reading Barometer, 2023](#)). Results from that assessment also showed two other aspects. First, there is considerable change between P2 and P3: the percentage of students who could read at least a word increased from 22% to 55%. Second, learning levels are even lower for some ethnic groups. Among P2 students, the percentage of those who could read at least one word ranged from 5% in Lumasaaba-speaking regions to 37% in Runyoro/Rutooro-speaking regions. Among P2 students, the percentage of those who could read at least one word ranged from 25% in Leblango-speaking regions to 66% in Runyankore/Rukiga-speaking regions (**Figure 4**).

Further, Uwezo's citizen-led assessment survey conducted by in 2021 shows that the percentage of pupils able to read and comprehend a P2-level story increases from 5% in P2 to 24% in P4 and 60% in P6. The percentage of pupils able to solve a division problem increases from 10% in P2 to 21% in P3 and 71% in P6. Since the same P2-level reading and mathematics tasks are given to all children irrespective of grade, the findings indicate that children are acquiring reading and numeracy skills late (in P5 or P6), although partly this may also reflect that weaker students drop out early. The declining sample size the higher the grade being assessed does not suggest demographic growth (**Figure 5**). The fact that only 60% of students can read a simple text by P6 must be a substantial factor contributing to low completion rates. Children who fail to read in the early years fall further behind each school year, leading some to drop out of school (Gove et al., 2017).

Another finding from the 2021 Uwezo is that about 16% of children aged 10 and 48% of those aged 14, irrespective of grade, could read and comprehend a P2-level story in English. Regarding numeracy, the assessment showed that about 20% of children aged 10 and 48% of those aged 14 could perform simple division using arithmetic symbols (Uwezo, 2021).

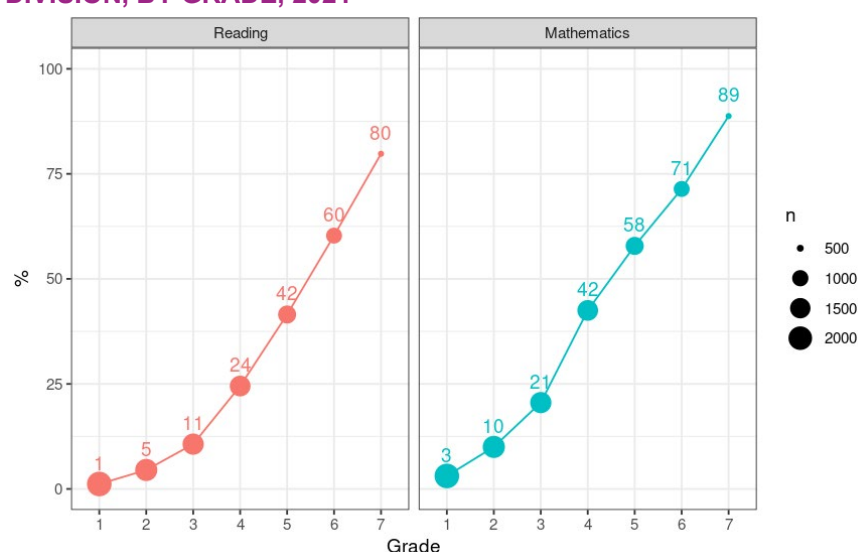
FIGURE 4. PERCENTAGE OF CHILDREN ABLE TO READ AT LEAST ONE WORD, BY LANGUAGE, 2015



Source: 2015 EGRA data.



FIGURE 5. PERCENTAGE OF PUPILS WHO CAN READ A P2-LEVEL TEXT AND DO SIMPLE DIVISION, BY GRADE, 2021



Source: GEM Report team analysis based on Uwezo 2021 data.

2.3 National vision and learning

The overall objectives of Uganda's education system are embedded in social and economic priorities reflected in Uganda Vision 2040 and Uganda's Third National Development Plan (NDP III), which explicitly emphasizes access to and completion of education and achieving gender parity. Achieving universal foundational literacy and numeracy skills is a goal implicitly embedded in Uganda's development agenda through every education policy and activity. Uganda will not achieve its vision of 'a modern and prosperous country' without ensuring the foundations of its children's educational development.

Uganda's education system is principally steered by the 2008 Education Act, the 2019 National Teacher Policy and Uganda's 2006 revised curriculum. The curriculum was revised following the government's desire to tackle the issue that 'many pupils in the country were failing to achieve acceptable levels of literacy and mathematics in primary education'. It stresses the importance the government gives to basic skills for any further educational development. A central place is made for 'the fast development of basic skills, with emphasis on the development of literacy, mathematics and key life skills'.

Uganda's national vision for education

Major policy documents in Uganda do not convey a single national vision for education, but rather a series of overlapping visions, with a gradual shift of emphasis from educational reconstruction to civic and economic rationales. The 1992 Government White Paper on Education (Government of Uganda, 1992) provided the initial vision for educational reconstruction and development. Since then, further statements of goals for education can be found in the Constitution, the 2008 Education Act and Uganda Vision 2040 (Government of Uganda, 2013).

National policies present civic and economic rationales for including foundational literacy and numeracy (FLN) as a national priority. Regarding civic rationales, the Government White Paper on Education presents basic education as a service that enables people to be effective citizens and useful members of their local communities. Consistently, the Constitution prescribes free and compulsory basic education, as well as a general obligation of the state to provide education in an equitable manner (Government of Uganda, 1992). The Education Act reinforces this by stating that primary education is universal, compulsory and freely available to all children of suitable age. Schools funded by the government are allowed to obtain voluntary financial contributions from parents but not to make these compulsory (Government of Uganda, 2008).

National policies also present an economic and human capital rationale for FLN. Uganda Vision 2040 and the NDP III use the language of human capital development through education to support a more competitive and



industrialised economy. Education is discussed under human capital development. The NDP III notes inefficiencies of primary education, calling for support to 'lagging schools' not meeting basic requirements and for early grade reading and numeracy assessments (EGRA and EGMA) to be 'rolled out' (National Planning Authority, 2020). The NDP III's vision is one of harnessing the 'demographic dividend'. There are draft policies for inclusive education and early childhood education that give more attention to rights and equity in education, but these have yet to be approved (Ministry of Education and Sports, 2020a; 2020b).

Civic and economic rationales for FLN in Uganda's national policies are complementary, supporting an overarching agenda in primary education. However, goals and implementation activities for achieving FLN are not explicit.

National policies do not provide clear strategies for the implementation of FLN goals

The official curriculum for P1–P3 stands in the tradition of the White Paper on Education in presenting a balanced set of civic, cultural, cognitive, welfare and economic goals. The document summarises the intended learning outcomes for children in P1–P3 as 'basic literacy, mathematics and life skills as well as values in a first language or familiar language at a level that will enable the child to mature and be prepared for further learning', 'sufficient skills in English to act as basis for developing English as the medium of instruction in the upper primary cycle', and 'an appreciation of their culture and the roles they can play in the society' (Ministry of Education, Science, Technology and Sports, 2008). The transition from a local language to English as the medium of instruction is intended to take place in P4, leading to English-medium teaching in P5–P7. However, there is no specific guidance for how this transition should occur.



Box 1. Two promising policy developments in Uganda

Early Grade Reading (EGR) Programme

- **Intervention:** The EGR Programme, which was introduced based on the USAID-funded Literacy Achievement and Retention Activity project (2012–19), offers pupils basic reading skills, which underpin eventual reading comprehension. The EGR emphasizes five components of reading: alphabetic principle, phonemic awareness, vocabulary, oral passage reading and comprehension.
- **Implementation:** The EGR Programme covered 80% of public primary schools and encompassed 6 million pupils in 9,750 schools (Gove et al., 2017). Through ministry systems, the programme supported the development of reading materials; methods and training for teaching reading; the development of a literacy framework; the incorporation of reading methods into pre-service teacher training curriculum; and periodic early-grade reading assessments.
- **Outcome:** Results in terms of the P3 proficiency rate in English improved from 54% in the 2012 National Assessment of Progress in Education (NAPE) to 60% in the 2015 NAPE.
- **Looking ahead:** One way of sustaining the benefits of the EGR Programme has been to include it in the primary teacher education curriculum to expose all teacher trainees to creative models, procedures, content and instructional resources with the potential to improve the teaching of literacy and mathematics.

Teacher Development Management System (TDMS) and Coordinating Centre Tutor (CCT)

- **Intervention:** The TDMS was created with the objective to restructure the role of Uganda's primary teacher colleges (PTCs) to strengthen teacher training through the integration of pre-service, in-service and management training for teachers and administrators in Uganda's primary schools between 1993 and 2000.
- **Implementation:** 18 PTCs were initially re-designated as 'core' PTCs, although this number later increased to 23. The project supported the core PTCs with funding, in-kind support, tools and technical assistance to act as a hub for implementing and delivering in-service teacher training for surrounding primary schools. To enhance efficiency and effectiveness, the primary schools were grouped into 539 clusters, referred to as coordinating centres. The centres were managed by coordinating centre tutors (CCTs). The CCTs serve as the link between PTCs, primary schools and practising teachers and were required to visit each school at least twice per school term.
- **Outcome:** A 2017 evaluation found that the TDMS and CCTs strengthened the role of Uganda's PTCs to offer tailor-made support for teacher training and continuous professional development for improved teacher performance in primary schools. To date, the core structures of the TDMS outreach function through CCTs continue to exist. The CCTs still deliver training and instructional support to primary school teachers, although the support is under-resourced and limited in scope (USAID, 2017).
- **Looking ahead:** CCTs are still an integral part of Uganda's primary teacher education and continue to deliver a range of teacher education professional services to primary school teachers. CCTs are expected to be instrumental in supporting teacher trainees on the one-year school-based internship programme recommended in the National Teachers Policy. Increasing the capacity of the system and funding, therefore, remain critical to the effectiveness and sustainability of the TDMS and the CCT initiative.



Financing foundational literacy and numeracy

Education financing is a key factor in the achievement of the FLN goals. Reviews of existing expenditures and policy point to two observations. First, public education expenditure as a proportion of GDP is low by international standards, at 2.7% in 2021, well below the expectations of the Education 2030 Framework for Action that endorses a key benchmark for government to allocate at least 4% of GDP to education (UNESCO, 2015). Second, over the past 10 years, public educational expenditure has been increasing in real terms, but not at a consistent pace and not to an extent that is sufficient to respond to the increase in the child population and the growth in demand for education at various levels.

The low level of public education expenditure is a challenge that Uganda shares with several low-income countries. To make good progress towards the SDGs in an equitable manner, these countries' governments need to be spending 6–7% of GDP on education (Lewin, 2020), more than twice the level that Uganda is achieving today. Underlying the challenge is a taxation system that is overly dependent on formal sector income and does not raise enough revenue from land, property, capital transfers and the profits of multinational corporations (Lewin, 2020).

There was hardly any increase in public expenditure between 2020 and 2021 but an increase of 10% between 2021 and 2022 in real terms. The average rate of increase in the decade 2013–22 was 6.5% per annum (**Table 2**). At first glance, this may look impressive, but not when one considers population growth of 3.5% per annum, a low level of participation in secondary education and the lack of public funding for early childhood care and education (ECCE).

In 2021/22, the total recurrent expenditure of UGX 3,255.48 billion can be subdivided into a wage component of UGX 2,138.05 billion (66%), dominated by teachers' salaries, and a non-wage component of UGX 1,117.43 billion (34%). The non-wage component consists largely of grants to schools that have a fixed component and a component based on the number of pupils (the 'capitation grant'). The donor, 'external financing' component, contributes both to recurrent and capital expenditure, but disaggregated statistics are not available (**Table 3**).

Primary education accounts for 36% of the budget for 2021/22 and the MoES' budget for the supervision of pre-primary education is drawn from the same allocations as primary education expenditure. The 'other' category mainly represents the costs of the administration and planning of education at the national level.

TABLE 2. TREND IN UGANDA'S PUBLIC EDUCATIONAL EXPENDITURE, 2013–2022

Year	2013	2014	2015	2016	2017
CPI (annual average), 2010 = 100	137.79	142.02	149.96	158.52	166.78
Ed. budget, current prices, UGX billion	1,761.59	2,026.63	2,029.07	2,447.46	2,501.12
Ed. budget, 2010 prices, UGX billion	1,278.49	1,426.96	1,353.05	1,543.94	1,499.66
Index of budget, 2013 = 100	100	112	106	121	117
Annual percentage change		+11.6	-5.2	+14.1	-2.9

Year	2018	2019	2020	2021	2022
CPI (annual average), 2010 = 100	171.14	176.05	181.88	185.89	199.27
Ed. budget, current prices, UGX billion	2,781.10	3,397.65	3,682.11	3,798.10	4,484.20
Ed. budget, 2010 prices, UGX billion	1,625.03	1,929.94	2,024.44	2,043.17	2,250.33
Index of budget, 2013 = 100	127	151	158	160	176
Annual percentage change	+8.4	+18.8	+4.9	+0.9	+10.1

Source: Consumer price index (CPI) from World Bank data. Education budget totals from the Ministry of Education and Sports.

Per pupil spending is likely inadequate to improve FLN. In 2023, the capitation grant for primary school pupils was sharply reduced from the budgeted amount of UGX 22,000 to UGX 14,500 (according to information from a stakeholder consultation workshop in May 2023). This results in non-wage funding of UGX 16,445 per primary pupil



when the fixed, per-school component is included (equivalent to about USD 4.80 at official exchange rates).² However, in the next budget, an increase of 25.7% in this non-wage allocation is predicted (UNICEF, 2023). Even if this increase takes place, such a low level of funding per pupil will continue to force public primary schools to levy additional funds for feeding, learning materials and other necessities.

TABLE 3. COMPONENTS OF EDUCATION BUDGET BY PURPOSE AND LEVEL OF EDUCATION, 2021/22

Category	Primary	Secondary	BTVET	Tertiary	Other	Total
Recurrent (wage and non-wage)	1,291.26	671.37	177.00	918.16	197.69	3,255.48
Capital (domestic development)	69.17	157.80	28.98	61.80	102.19	419.54
Donor (external financing)	7.69	26.93	81.52	6.54	6.54	122.68
Total	1,368.12	856.10	287.50	986.50	299.88	3,798.10

Notes: BTVET: business technical vocational education and training. The amounts shown are in billion Ugandan shillings.

Development partner support

Assistance from development partners has worked through and alongside the MoES. Most assistance has come in the form of projects and programmes, which have targeted districts seeking to develop nationally representative samples or to select districts with specific issues, such as refugee settlement or extreme poverty. Projects such as the Uganda Teacher and School Effectiveness Project, Strengthening Education Systems for Improved Learning, the School Health and Reading Programme, and the Literacy Achievement and Retention Activity have funded interventions such as the Early Grade Reading programme and Teaching at the Right Level to improve FLN (Table 4).

Several other international development partners support initiatives in basic education. For example, Irish Aid has a special educational programme in the Karamoja sub-region and the Belgian non-profit organization VVOB supports Teaching at the Right Level programmes in various districts. International and national non-governmental organisations actively support refugee populations and their host communities, especially in the West Nile. Save the Children Uganda supports 120 early childhood development centres and works with over 400 primary schools to provide 'boost' programmes for FLN in P1–P3 and Teaching at the Right Level programmes in P4–P6.

The financial contribution of all development partners, as a proportion of Uganda's educational expenditure, is reported to have fallen from 15.6% in 2017/18 to 3.2% in 2021/22, primarily as a result of COVID-19 and decreased investment from the United Kingdom according to the MoES. However, the level of external funding recovered slightly to 5% in FY 2022/23 and 7% in FY 2023/24 (UNICEF, 2023).

² This excludes a small additional grant to schools for pupils with special needs.



TABLE 4. FOUNDATIONAL LEARNING INITIATIVES SUPPORTED BY DONORS

Project	Partner	Intervention	Outcome for foundational literacy and numeracy
Uganda Teacher and School Effectiveness Project (UTSEP) 2015–20 USD 100 million	Global Partnership for Education, World Bank	Responded to challenges of quality and quantity in primary education, with components to support teacher effectiveness, school management, physical facilities and managerial capacity at the national level.	Helped improve the provision of learning materials and early-grade reading achievement in target districts and funded the development of the draft ECCE policy and selective training of ECCE teachers/carers.
School Health and Reading Program (SHRP) and Literacy Achievement and Retention Activity (LARA) 2012–17 USD 200 million	United States Agency for International Development	Implemented Early Grade Reading Assessments (EGRA) and provided assistance for language of instruction in foundational literacy and numeracy.	Conducted EGRA; increased the number of local languages used for teaching in P1–P3; and improved the supply of pupils' language books in some districts.
Strengthening Education Systems for Improved Learning (SESIL) 2018–22 USD 40 million	Foreign, Commonwealth & Development Office (United Kingdom)	Project focused on improving the management of primary education; the assessment system; and public-private partnerships in secondary education.	Implemented a 'community-led learning' initiative, which provided extracurricular support for the literacy and numeracy of primary pupils, in a manner similar to Teaching at the Right Level programmes.



3. Alignment analysis and fieldwork

3.1 Curriculum

The Spotlight series conducted an extensive mapping analysis of Uganda’s national curriculum (defined as **intended content**) and systematically mapped the degree to which this content is included in textbooks and teaching materials (defined as **enacted content**), and in national learning assessments (defined as **assessed content**) to better understand policy alignment. Mapping foundational learning policy alignment requires knowledge of learning domains and constructs, a consistent method of analysis, and insights into all the levels of curriculum implementation, from the intended curriculum to its implementation in the classroom.

A research team collected systematic data across pedagogical inputs³ and analyzed the extent to which pupils are provided with coherent opportunities to learn foundational numeracy skills. The degree of alignment across pedagogical inputs (curriculum, textbooks, teacher’s guides and assessments) is one factor that contributes to whether pupils effectively master foundational numeracy skills (Alia et al., 2022; Scheerens, 2017). In addition to the extensive mapping analysis, a research team at Uwezo conducted fieldwork in four districts representative of Uganda’s 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 it (Ministry of Education and Sports, 2011; 2017).

Content alignment

Content across pedagogical inputs – the curriculum, textbooks and assessment – in Uganda indicates substantial alignment of curriculum and textbooks in P3 numeracy content, but less alignment in P7 content (**Figure 6**).

In P3, intended learning opportunities found in the curriculum are reflected in the material included in the P3, New MK Primary Mathematics, Pupils Book Three student textbook. Domains intended and enacted include number and number operations (66% in the curriculum and 66% in the textbook) as well as measurement (16% in the curriculum and 19% in the textbook). The remaining learning opportunities are dedicated to similar shares to geometry, statistics and probability, and algebra competences.

Material included in the curriculum and teaching and learning materials for P7 differs from what is being assessed in the P7 Primary Leaving Examination (PLE). For example, in the curriculum document, a large part of intended learning opportunities is dedicated to numbers and number operations (58%), yet these represent only 35% of the learning opportunities provided in a typical P7 textbook and 22% of the learning opportunities assessed in the P7 national exam (the PLE). In contrast, algebra accounts for 9% of learning opportunities in the official curriculum but 16% of the competences in the textbook and 33% of competences assessed in the PLE.

The PLE assessment is not intended to solely provide an evaluation of all skills mastered in the P7 curriculum, but rather to ensure that each student leaves primary education with an understanding of the primary curriculum before continuing to secondary education. Hence, the analysis of items included in the PLE highlights the intended cognitive demand of what pupils are expected to know going into lower secondary (**Figure 7**).

The cognitive demand required for the PLE emphasizes skills aligned with the overarching objectives of the curriculum. More than half of the questions asked pupils to utilize learned skills (e.g. to use standard equipment [13%] or investigating and problem-solving skills [34%]). Most items (61%) in the PLE correspond to competences acquired in P7, while the remaining 39% concern competences acquired in P3 through P6. This helps explain why the PLE falls short on the side of difficulty.

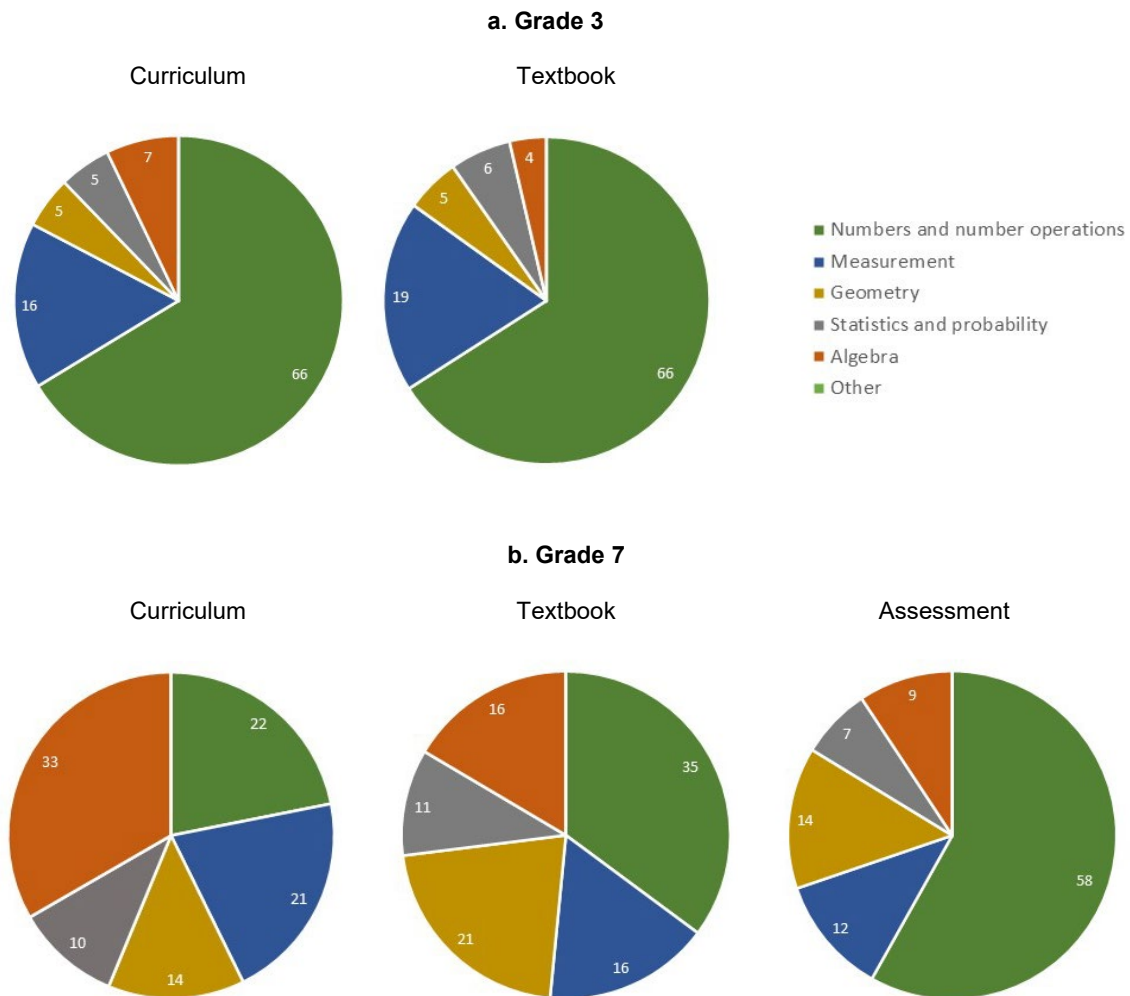
³ Documents reviewed include: the Primary Curriculum; *A New MK Primary Mathematics, Pupils Book Three*; *A New MK Primary Mathematics 2000, Teacher’s Guide Book 3*; *Primary 7 Mathematics Curriculum*; *MK Primary Mathematics, Pupils Book 7*; and *A New MK Primary Mathematics, Teacher’s Guide Book 7*.



Additionally, the 2022 PLE does not cover the full range of competences included in the P7 curriculum, indicating either a choice by the authorities that these competences may not be essential for higher grades or that there is a gap between what the curriculum expects and what the PLE assesses. For instance, both the P7 curriculum and textbook present opportunities to learn competences belonging to the 'decimals and integers' mathematical construct but these were not included in the 2022 PLE.

Content alignment between the intended and enacted curriculum in P3 and P7 can be regarded as high. In P7, the content assessed in the PLE, which is intended to cover a range of broader content, is less aligned with the P7 curriculum (**Figure 8**).

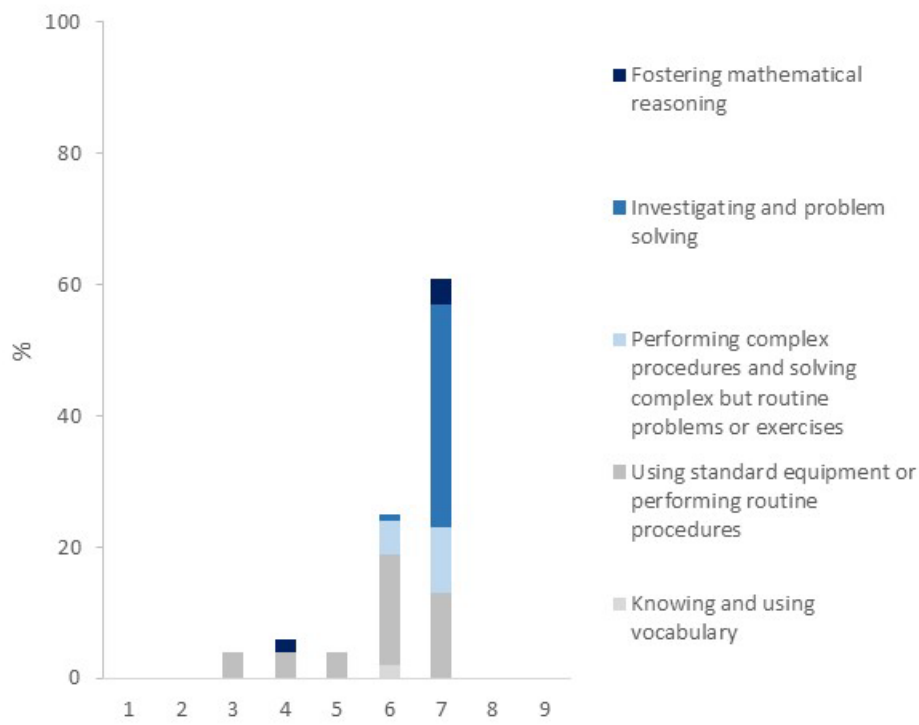
FIGURE 6. COMPETENCES FOUND IN THE CURRICULUM, TEXTBOOK AND LEARNING ASSESSMENT, BY NUMERACY DOMAIN



Source: GEM Report team analysis.



FIGURE 7. DISTRIBUTION OF ITEMS IN THE NATIONAL ASSESSMENT: THEORETICAL GRADE AND COGNITIVE DEMAND



Source: GEM Report team analysis.



FIGURE 8. SUMMARY OF CONTENT ALIGNMENT BETWEEN CURRICULUM, TEXTBOOK AND LEARNING ASSESSMENT IN P7



Source: GEM Report team analysis.



Pedagogical alignment

The P3 and P7 mathematics curricula are 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. However, the P7 curriculum is much more thoroughly stated and ‘teacher-friendly’ relative to the P3 curriculum. For every topic covered in P7, there are indications of learning objectives, methods for teaching and materials to be used. Each topic also has sections entitled ‘Guidance to the teacher’ and ‘Suggested competences for assessment’. The P3 curriculum does not include this level of detail. The P7 curriculum seeks to develop problem-solving techniques and logical reasoning skills, as opposed to teaching mere routines. Teachers are encouraged to build on pupils’ own experiences. The curriculum recommends frequent use of mental work to ‘build the mental capacity of pupils’ (P7 curriculum, p.131). However, the numeracy curriculum does not involve teaching quantitative reasoning, which is important both in P7 and at lower levels (Nunes et al., 2016).

Curricular documents link to P7 syllabi denoting the amount of time that should be allocated to each subject or topic. In P7, teachers are encouraged to allow for remediation and unforeseen situations within the allocated time for teaching and learning mathematics (National Curriculum Development Centre, 2012). It is assumed that all pupils will be able to progress at around the same pace and attain the set competences specified for each term. Teachers are also expected to assess pupils and provide remediation within the time allocated to teaching and learning mathematics, and assessments are provided in teacher’s guides. In P3, there are nine 30-minute periods of mathematics per week, or the equivalent of 18% of the total learning/instructional time. In P7 there are seven 40-minute periods of mathematics per week, which is equivalent to 17% of the total learning/instructional time.

A specific issue associated with the P3 mathematics curriculum is that it does not conform to the thematic structure intended for P1–P3. Mathematics is treated in practice as a separate subject; linkages to main themes or children’s experiences are not always explicitly made and depend on the teacher. For instance, in observed classrooms, 46% of teachers (11 out of 24) linked subject content to the theme being taught through modelling or demonstrating a learning activity. This differs from the blended approach used in P1 and P2 where reference to and use of real-life examples are explicitly integrated into the curriculum. The thematic approach is partially implemented whereby the curriculum sometimes does not make the link between the theme and the targeted mathematical constructs.

A related challenge is that the P3 mathematics does not attempt to vary the domain (spiralling) but proceeds in a mechanical fashion from learning large numbers (Term 1) to arithmetic operations (Term 2) and measurement tasks (most of Term 3). This sequence does not leave enough time for the frequent practice necessary for mastering arithmetic operations. Limiting Term 1 to counting, reading and writing numbers is potentially not stimulating enough. Teachers may depart from the structure, for instance, to give more space for weekly practice in arithmetic.

Additionally, the curriculum proposes implementation solutions for the need to learn mathematical vocabulary in two languages – the home language and English. This contradicts the national policy, as the 2006 reform mandates the use of local languages until P3, especially in rural areas (Ssentanda et al., 2016; National Curriculum Development Centre, 2006a, 2006b). Teaching the curriculum in local languages remains a challenge, as illustrated by student learning outcomes. Uwezo’s estimates from 2018 indicate that only 51% of P3 pupils could read at least a word in English and only 44% could read at least a word in a local language (Uwezo, 2019).

Taking this into account, the MoES faces many challenges implementing the curriculum. One of the biggest is overcrowding in classrooms in both P3 and P7, which makes it difficult for teachers to teach all the content based on the sequence and amount of time stipulated in the syllabus. Teachers do not have time to adequately assess student learning. In fieldwork, respondents interviewed across districts in all four regions noted three major challenges: classroom shortages, teacher shortages, and teaching and learning material shortages in public schools.

Access to textbooks is a challenge. 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 for mathematics, and more than half of teachers (54%) observed during the fieldwork utilized material from the textbook – rather than the curriculum or teacher’s guide – to plan lessons for their students.

Head teachers identified several essential requirements to enhance early grade literacy and numeracy in their schools, such as providing sufficient concrete and locally relevant teaching and learning materials to support learning within and beyond the classroom; improving school facilities; providing remedial classes to mediate overcrowding in classrooms; and organising a school feeding programme, as many pupils do not have the opportunity to receive a midday meal.



Textbooks structure pupils' learning experiences. For both P3 and P7, the textbooks analysed place emphasis on cognitive level A (Knowing and using vocabulary) and B (Using standard equipment or performing routine procedures). In terms of the type of activities, the P3 textbook uses predominantly exercises and problems, with worked examples. The examples mainly support pupils in understanding specific constructs (such as 'whole numbers' and 'relations and functions'). In P7, on the other hand, there seems to be more balance across constructs between narrative explanations, exercises and problems, and worked examples (**Figure 9**).

Outcomes of previous examinations (e.g. 2015 EGRA) found sharp declines in numeracy skills above the level of 'using standard equipment or performing routine procedures', indicating that prior to P3, pupils may be learning vocabulary and standard procedures through processes of rote memorization. Pupils may have memorised skills but have no foundational knowledge on how to apply those skills, or they may lack the basic skills to access the curriculum content. Findings of this mapping exercise align with these results. Likewise, the fieldwork found that only 42% of observed teachers (10 of 24) asked questions that required students to use creativity or imagination, or likewise, to apply information to new topics during numeracy lessons.

Language of instruction presents a related challenge in P3, because many pupils are learning to read in a language that is not spoken in their home, and teachers are required to teach in languages that are not their mother tongue. Among the classes observed, 33% of teachers reported knowing only some of the language of instruction they were intended to teach, and only 42% of classrooms had material in the language of instruction.

School-based assessment practices are characterized by a critical lack of formative assessment in teacher practice and at the national level. Historically, education in Uganda has focused almost entirely on summative assessments that have important implications for pupils' careers – large-scale, national high-stakes examinations. These lack a necessary focus on formative evaluations that may contribute more to raising pupil's learning experience and ultimately their achievement on test scores, particularly for pupils who are lagging behind (Clarke and Luna-Bazaldúa, 2021; UNESCO, 2016). The 'exam culture' in schools is shaped by the competition for impressive results. Among most of the key informants who commented on the issues, there was a consensus that primary schools made excessive use of examinations (six examinations per term in some cases). As one of them put it: 'Exams are working the curriculum instead of the other way round. We need to go back to the basics.'

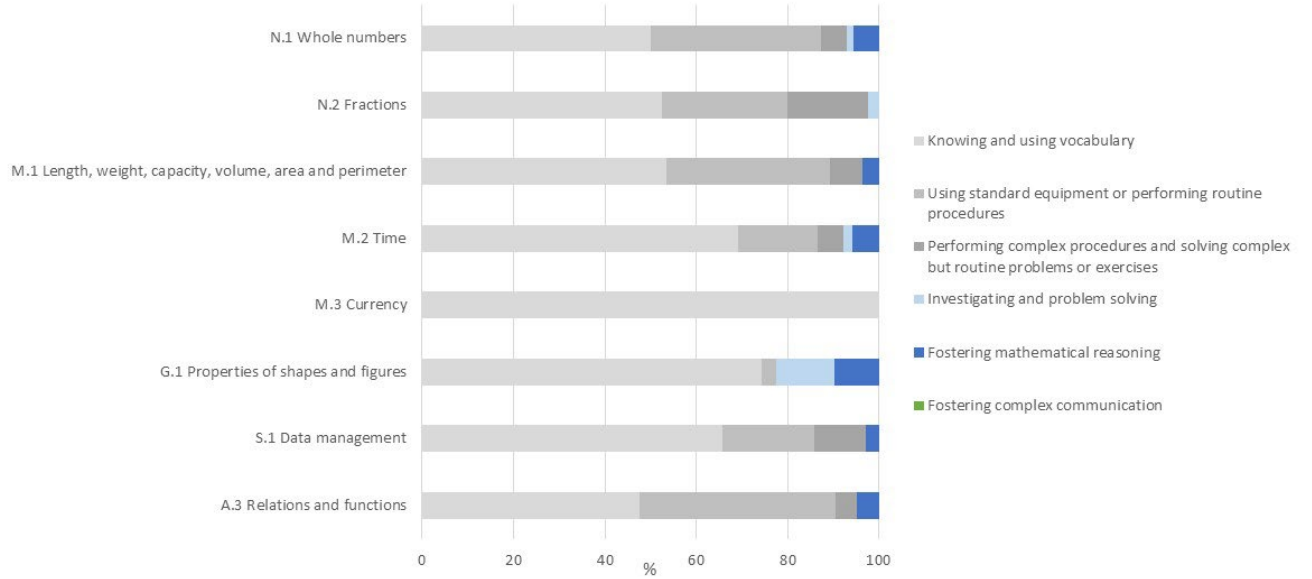
There is no national assessment framework document and, although the MoES has issued an assessment guide for teachers at the lower secondary level, it has not done so for the primary level. Teachers, head teachers and, sometimes, district officials take their own decisions about how assessment is to be done. The main assessment then focuses on the PLE and NAPE assessments for monitoring student progress.



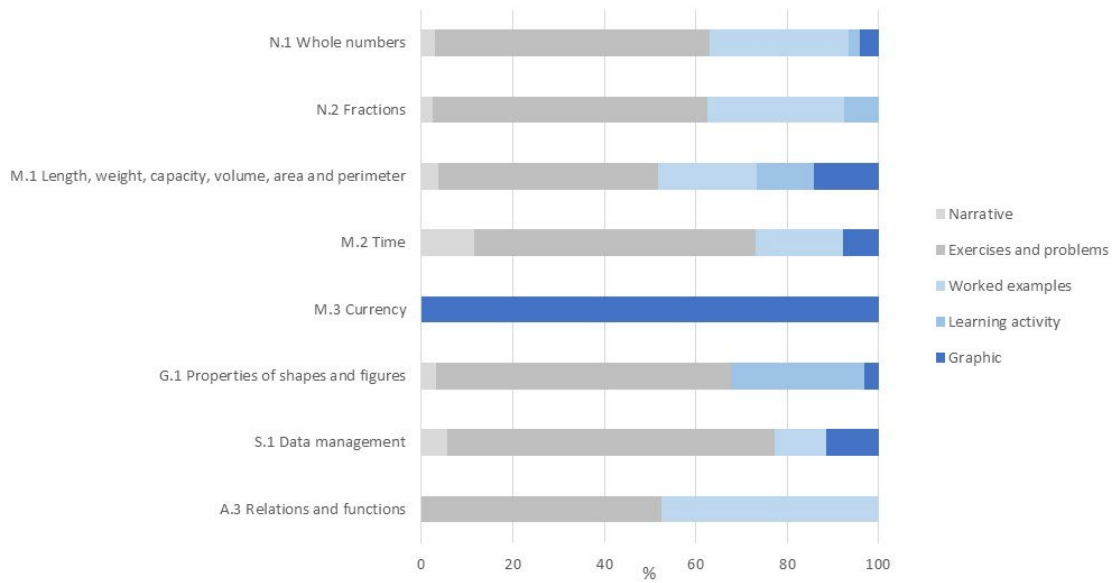
FIGURE 9. DISTRIBUTION OF TEXTBOOK BLOCKS BY CONSTRUCT

a. Grade 3

1. By cognitive demand

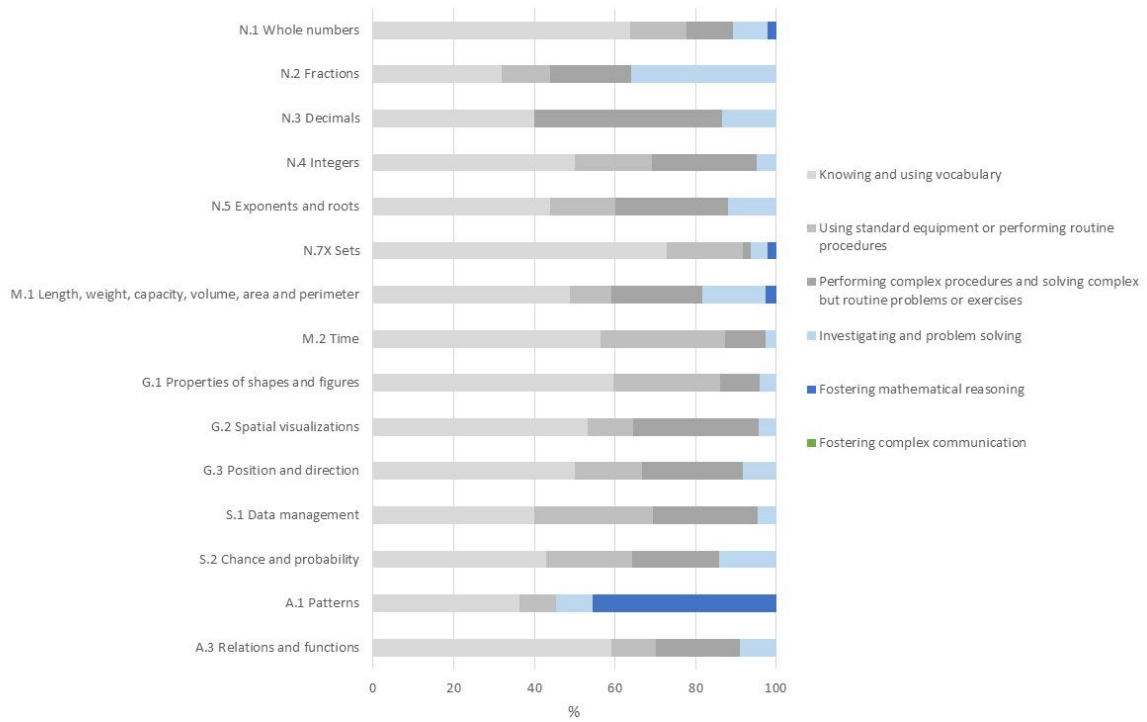


2. By type of learning activity

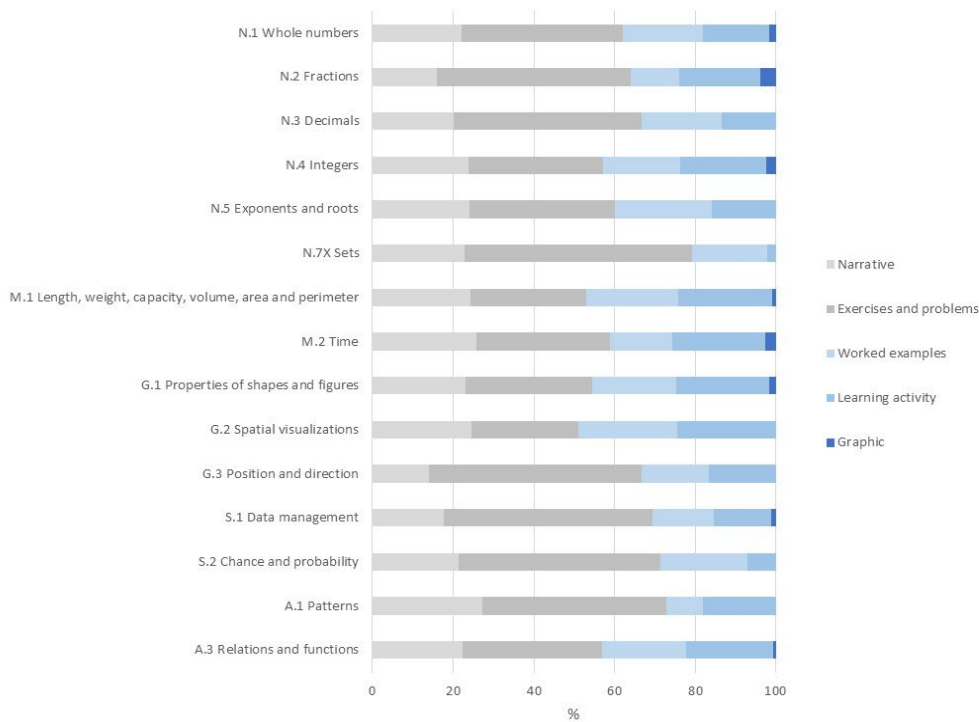


b. Grade 7

1. By cognitive demand



2. By type of learning activity



Source: UNESCO GEM Report team analysis.



Political alignment

As part of its SDG 4 commitment, Uganda has promised to increase the proportion of children and young people achieving at least a minimum proficiency level in reading and mathematics (a) in Grades 2/3; and (b) at the end of primary. These minimum levels of proficiency are defined by the Global Proficiency Framework (GPF). An important question is whether Uganda's curriculum enables it to meet these commitments. Analysis of alignment between Uganda's curriculum and minimum proficiency requirements at the global level indicates that the Ugandan curriculum for P3 and P7 addresses part of the sub-constructs recommended for minimum proficiency in the GPF.

About 67% of Uganda's P3 mathematics curriculum is aligned with global minimum standards (**Figure 10a**). The third of the content in the GPF that is not included in Uganda's curriculum mostly requires problem-solving and higher order thinking above numbers and operations. Most of the competences in the P3 curriculum are matched with complete alignment to the GPF. However, a few competences are partially aligned with the GPF. These included reading and writing unit fractions from $\frac{1}{2}$ to $\frac{1}{10}$, whereas the GPF goes up to $\frac{1}{12}$. Another example is interpreting information on bar graphs and pictographs, which could limit pupils to retrieving information from the bar graphs and pictographs. The closest GPF competence requires pupils to be able to compare between categories on a bar graph (pictograph) using terms like 'more than' and 'less than'. Competences like 'multiplying tables of 2, 3, 4, 5 and 10'; and 'multiplying tables of 6, 7, 8, 9 and 10' give no clear indication of the nature of multiplication to be done. In such cases, reference could be made to the P3 pupils' textbook to determine how far pupils go with the interpretation or the multiplication. These and any other similarly written competences need to be described more explicitly when the P3 curriculum is reviewed.

About 58% of competences in Uganda's P7 curriculum are completely aligned with the GPF (**Figure 10b**). As in P3, a few competences are partially aligned with the GPF. These include 'working out problems on proportion and percentage in daily life', for which the closest GPF competence requires that pupils extend their abilities to work with percentages greater than 100% and those less than 1% (a more restricted objective). A P7 competence like 'solves problems involving application of square root' involves a learner's ability to perform all four basic operations. The GPF has four related and separate competences, for addition, subtraction, multiplication and division of numbers in exponential notation. This and any other similarly written competences ought to distinguish between the four basic operations and be more explicit. The P7 curriculum expects pupils to be able to carry out the basic operations of clock arithmetic; and to add, subtract and multiply in the binary system for up to five digits. These competences are not in the GPF. On the other hand, some competences like ordering positive and negative decimals and fractions and conversion of time between years, months, weeks, days and hours appear in the GPF but not in the P7 curriculum.



FIGURE 10. NATIONAL CURRICULUM VS. MINIMUM PROFICIENCY IN THE GLOBAL PROFICIENCY FRAMEWORK

a. Grade 3

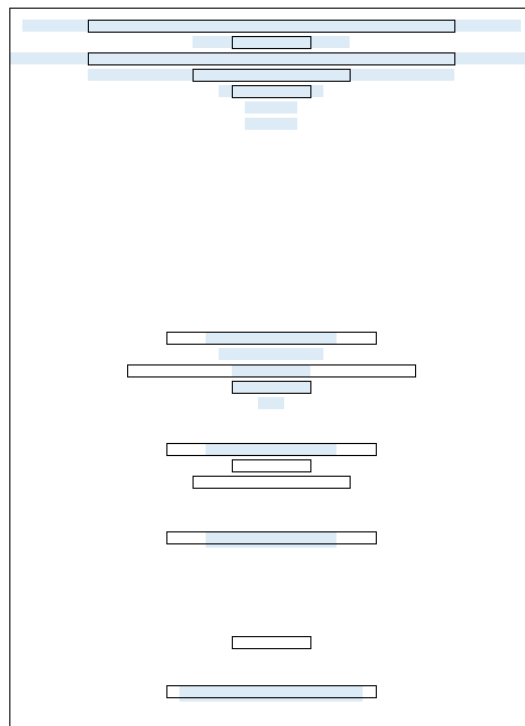
- N.1.1 Identify and count in whole numbers, and identify their relative magnitude
- N.1.2 Represent whole numbers in equivalent ways
- N.1.3 Solve operations using whole numbers
- N.1.4 Solve real-world problems involving whole numbers
- N.2.1 Identify and represent fractions using objects, pictures 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

- 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

- 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

- 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

- 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 equivalence
- A.3.3 Solve equations and inequalities
- A.3.4 Interpret and evaluate functions



b. Grade 7

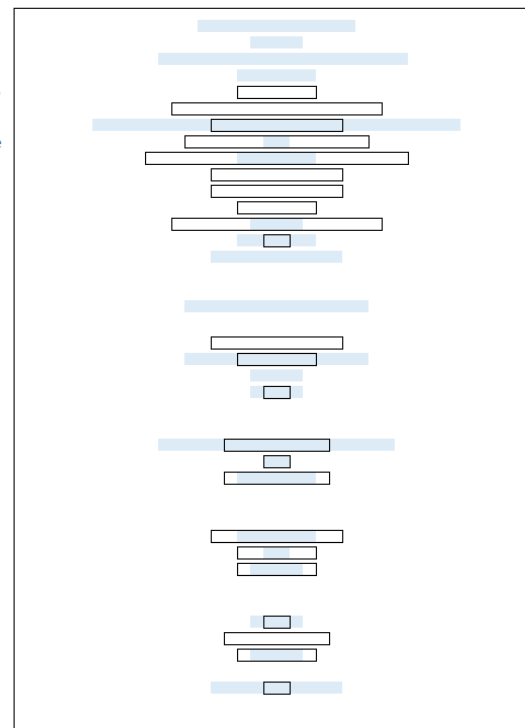
- N.1.1 Identify and count in whole numbers, and identify their relative magnitude
- N.1.2 Represent whole numbers in equivalent ways
- N.1.3 Solve operations using whole numbers
- N.1.4 Solve real-world problems involving whole numbers
- N.2.1 Identify and represent fractions using objects, pictures 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 Use sets

- 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

- 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

- 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

- 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 equivalence
- A.3.3 Solve equations and inequalities
- A.3.4 Interpret and evaluate functions



Source: UNESCO GEM Report team analysis.



3.2 Teacher support for curriculum implementation

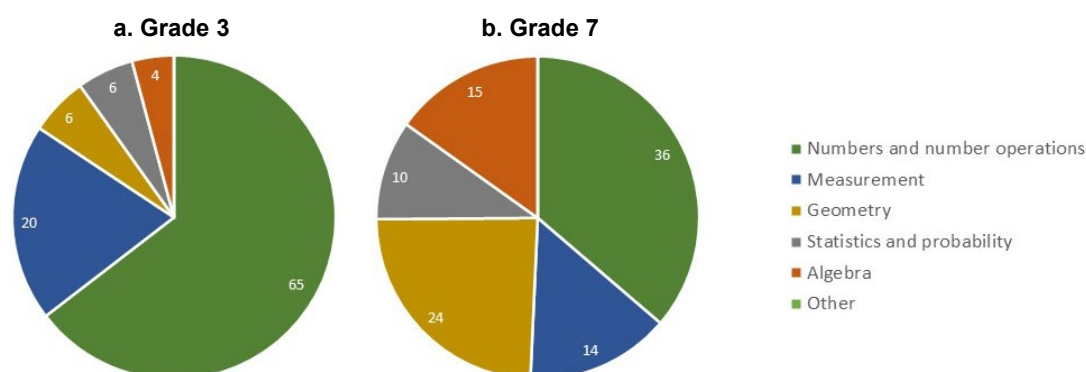
Teacher's guides are well-aligned with the intended curriculum and student textbooks (**Figure 11**). In line with the curriculum and textbooks, 65% of content in teacher's guides covers numbers and operations in P3 and 36% in P7. In P3, this is followed by measurement concepts and equal measures in geometry, statistics and probability, and algebra. However, competences, or learning outcomes, are specified for each unit chapter and lesson in P7 and appear to be aligned with the language used in the curriculum and student textbooks. Lessons are highly structured in P7, with information on contact time allotted for each lesson. The teacher's guide provides information on continuous and overall assessment and learning outcomes. It also explains the teaching methodologies that teachers can use with their pupils, unlike in the teacher's guide for P3.

The 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. From the Uwezo national assessment of 2018, it was estimated that only 23% of P3 pupils were able to perform a simple P2-level division task (using one digit and with no remainder), while 31% had not progressed beyond the stage of recognising numbers from 10 to 99 and 6% were completely non-numerate (Uwezo, 2019). The curriculum does not provide any guidance on how teachers are to cope with diversity in children's learning in the classroom.

In field interviews, many head teachers and teachers considered the teaching and learning materials for primary schools to be suitable but not available in sufficient quantity. The MoES does not procure teaching and learning materials frequently enough. The last time was in 2018. With a deteriorating stock, government-funded schools are left to buy what they can using the meagre grants. A few respondents argued that the textbook market liberalisation had gone too far and that more quality assurance was needed, especially with regard to local language materials. A 2018 assessment had found that teachers skipped significant portions of activities (38%) when observed. One explanation for this is that the teacher needed to skip back and forth within the guide to find instructions and the lesson content. Easy-to-use, structured teaching guides are associated with improvements in teaching and learning outcomes (Piper et al., 2018).

There was some consensus among interviewed head teachers that their appointments were mainly based on length of experience rather than evidence of leadership or management skills. The National Teacher Policy states that postgraduate educational management qualifications will be expected in the future: but it is not clear that postgraduate programmes of that kind will be sufficiently available or affordable. More teacher professional development on school management and how to support teachers is needed. Since 2018, the Directorate of Education Standards has been developing and testing a Teacher Effectiveness and Learner Achievement (TELA), instrument. TELA is a smartphone-based inspection tool to curb head teacher and teacher absenteeism in public schools by monitoring their real-time attendance using smartphones with Global Positioning System and biometric features. The system is also used to track timetable implementation at every school. The tool has had encouraging trials and may help improve school-level supervision efficiency, including lesson observations. It can be used without an internet connection. Some respondents mentioned TELA as a 'success story'. The Strengthening Education Systems for Improved Learning programme also developed a tool for lesson observation by head teachers, which was in use before the COVID-19 pandemic.

FIGURE 11. DISTRIBUTION OF COMPETENCES FOUND IN TEACHER'S GUIDE, BY DOMAIN



Source: UNESCO GEM Report team analysis.



4. Recommendations

Following the Spotlight mapping analysis, fieldwork, two rounds of stakeholder consultations and meetings with national education leaders, the following recommendations emerged covering six broad themes:

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

- The national curriculum document for P1–P3 states goals for basic literacy and numeracy skills by the end of P3, but foundational learning only stands at the fringes of major policy documents such as the Third National Development Plan (NDP III). The NDP III mentions a range of actors who should play a part in improving primary school pupil literacy and numeracy, such as the Ministry of Education and Sports, the Ministry of Local Government, local government authorities, civil society organizations, and the private sector. But the roles of these actors are not stated. A clearer perspective on basic numeracy and literacy skills is needed. One way could be better articulation of Uganda’s national reading policy with guiding policy documents and plans.

Rethink curriculum content and structure.

- **Rethinking the thematic curriculum:** The lower primary curriculum tries to build on the child’s experience by using a thematic structure, but there is a tension between the thematic structure and the need for a coherent sequence of skill development in mathematics, local language and English. There is also a lack of flexibility to cater to learners who are diverse in their numeracy and literacy levels, some having had no preschool experience. Evidence suggests that teachers rarely differentiate the tasks given to learners. Modifications to curriculum and pedagogy are, therefore, needed.
- **Pupils need to learn more problem-solving skills and application of foundational numeracy skills from the outset:** Outcomes of the curriculum mapping indicate that pupils in early grades are not receiving adequate problem-solving skills. There is an overemphasis on learning vocabulary and standard procedures. The 2015 Early Grade Reading Assessment found that skill levels decline sharply when pupils are asked to move beyond memorized vocabulary and procedures to application and use of problem-solving skills, indicating that early-grade pupils may be learning vocabulary and standard procedures through rote memorization. Pupils may have memorized skills but not acquired foundational knowledge on how to apply those skills.

Enhance the accessibility of the curriculum, teacher’s guides and student textbooks.

- **There is a need to make the curriculum as well as teaching and learning materials available in local languages:** At present the curriculum document is only available in English, although the language of instruction varies across the country. For teachers, administrators and other stakeholders to understand the curriculum and make it a living part of their day-to-day discourse, it needs to be available in the language that matches the school’s local language of instruction. Moreover, teaching and learning materials are provided in English, and teachers must translate them into local languages through P4. This adds an additional translation burden to the role of being a teacher in P1 through P3.
- **Improve the provision of teaching and learning materials:** Uganda’s teaching and learning materials are, in general, of good quality and would in theory shape the right opportunities to learn for P3 and P7 pupils. However, they are scarce in classrooms. National-level procurement is too infrequent and school grants do not allow for enough purchases. Improving the procurement and dissemination of textbooks and teacher’s guides should be a priority at the national level.

Improve teacher’s guides and teacher support.

- **Teachers need simple, structured teacher’s guides:** Teacher’s guides seem to require teachers to skip back and forth to find instructions and lesson contents. Teacher’s guides should be more comprehensive and include guidance for lesson plans and more remedial activities.
- **Teachers need additional training to implement the curriculum effectively:** Fieldwork indicates support to teachers should be improved, as it remains difficult for teachers to implement the government’s vision in overcrowded classrooms, with a lack of training and resources.

Prioritize assessment for monitoring student progress.



- **Promote formative assessment at the school level supported with in-service teacher training:** Frequent examinations and ‘teaching to the exam’ have become a way of life in primary schools, motivated by competition for good results in the Primary Leaving Examination. P3 and P7 learners are given as many as three and seven examinations per term respectively and less attention is given to formative and continuous assessment. Educators need to be reorientated to focus on the all-round development of children and on helping every child to complete the primary cycle. Teachers should be trained on the importance of rewarding pupils’ efforts rather than their abilities.

Strengthen foundational learning opportunities.

- **Develop strategies for assisting learners who have fallen behind:** Learning assessment evidence shows that most children’s literacy and numeracy skills develop much later than the curriculum’s expectations. Grade repetition has been abolished and many schools are attempting to provide some remedial classes. But schools need guidance on the best approaches and such classes need to be included in the official school timetable to benefit all children. Extra charges to parents by schools result in some learners not receiving the help they need.
- **Provide access to early childhood education:** This study has focused on the delivery of primary education but the importance of early childhood care and education (ECCE) for foundational literacy and numeracy (FLN) should not be overlooked. ECCE, which is left to private providers (100% in 2017), is widely valued by families and communities but currently about 40% of children never attend an early childhood development centre or nursery and, for those who do, the quality of the service is often poor. The draft ECCE policy would commit the government to selective financial support to widen access to ECCE. Approval of the policy has, however, been delayed.
- **Address teacher and classroom shortages in government-funded schools:** The shortage of teachers is a long-term problem and discontent about it has been noted from every district visited and from various stakeholders at district and school level. This and the shortage of classrooms results in large and overcrowded classes, in which it is difficult to use appropriate teaching methods for FLN. Support to teachers in this area should be improved, as it remains difficult for them to implement the government’s vision in overcrowded classrooms. The ministry’s goal of a 40:1 pupil-teacher ratio is realistic but temporary measures such as funds for local teaching assistants could be explored until the supply of teachers has improved.
- **Address the absenteeism of learners and teachers:** Local informants see absenteeism as a major obstacle to learning in general. Evidence from research by Uwezo Uganda shows pupil absenteeism to be associated with high pupil-teacher ratios and teacher absenteeism. Local informants attribute teacher absenteeism partly to low pay. Addressing teacher welfare is a persistent matter that still needs to be addressed.
- **Consider implementing a school feeding programme:** Provision of midday meals in many education systems is associated with improvements in student learning. When children are well nourished, they are better able to pay attention and participate in education programmes. Teachers and administrators in field interviews recommended feeding programmes. Key stakeholders at the second consultation workshop for this Spotlight study recommended that part of the capitation grants should be allocated to school feeding.



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Annex A. Field research

Objectives of the field research

The field research reports on a range of examples of mathematics lessons in primary schools, and on the school and district contexts in which the lessons took place. These examples illustrate the relationships between the actual delivery of education and the official curriculum and guidelines for foundational literacy and numeracy (FLN). They also helped test and validate the list of priority issues included in the Interim Report, which was solely based on key informants and written sources at the national level.

Research approach and methods

The research approach is qualitative and uses a purposive sample of districts, schools and classrooms. Focus group discussions were held with district officials and representatives of civil society organizations at the district level, and with teachers, parents and community leaders at the school level. For each example of a lesson, observation data were obtained through a questionnaire format, and a questionnaire was also administered orally to the teacher concerned. In both cases, the data were recorded digitally in Kobo Collect. The research team for each district and the core researchers provided narrative records, based mainly on the focus group discussions but with some reference to the observation and interview data. The interview data were also analysed centrally to provide summaries and comparisons of districts.

The data collection was completed in August 2023. Uwezo Uganda engaged and deployed two researchers to each district; four core researchers also assisted. In each district, a local civil society organization also provided two research assistants who spoke the main local languages.

Although the general approach to analysis is qualitative, descriptive statistics are used, together with other types of data, to show trends and compare cases.

Selection of districts, schools and grades

Four districts were selected to satisfy the following criteria (**Table A1**):

- One each is located in each of the four major regions of Uganda.
- Two (Maracha and Pallisa) are in poorer sub-regions and two (Bundibugyo and Wakiso) in wealthier ones, as indicated by poverty rates.⁴
- The two districts in poorer sub-regions have contrasting rates of combined P2-level competence in reading and numeracy, for children in P3–P7, and the same applies to the two districts in wealthier sub-regions (Uwezo Uganda, 2021).

TABLE A1. DISTRICTS AND SELECTION CRITERIA

District	Sub-region	Region	Competence rate (2021)	Sub-region poverty rate
Wakiso	Central 1	Central	56.7 (high)	3.7 (low)
Maracha	West Nile	Northern	32.2 (high-medium)	42.3 (high)
Bundibugyo	Tooro	Western	18.8 (low)	9.8 (low)
Pallisa	Bukedi	Eastern	14.7 (low)	24.7 (high-medium)

Some district indicators from the 2018 Primary Leaving Examination (PLE) results are also shown for reference (**Table A2**). These indicators of the quality of PLE results and participation in the PLE are more clearly aligned with

⁴ Poverty rates are from Ministry of Finance, Planning and Economic Development (2014).



the level of wealth and rank the districts differently. Over the years, the level of participation in primary education has been much higher in the Central and Western Regions generally, including the Bundibugyo District, than in the other regions, where many children drop out.

TABLE A2. DISTRICT INDICATORS OF PRIMARY LEAVING EXAMINATION PERFORMANCE, 2018

District	Candidates sitting	Passes	Population cohort age 12 (projected)	Percentage placed in Divisions 1 and 2	Passes as a share of cohort (gross ratio)
Wakiso	49,150	42,272	49,690	74	95
Maracha	2,428	2,226	6,690	39	34
Bundibugyo	4,187	4,021	5,440	61	74
Pallisa	5,304	4,491	10,110	31	44

Within each district, three primary schools were selected, with the help of educational officials, as representing perceived 'high', 'medium' and 'low' performance in FLN. The selection was, however, modified by stratification: in each district, one private school, together with two government-funded schools, was selected.⁵ In practice, this meant that either the 'high' or the 'medium' choice was a private school.

Within each school, one P3 and one P7 classroom was selected for interviewing the teacher and observing a mathematics lesson. The selection corresponds to the focus on the P3 and P7 curricula and learning materials. Membership of the focus groups was negotiated with the help of the head teacher and, where possible, local community leaders were combined with parents in one focus group; the other focus group consisted of teachers, including the head.

School characteristics and differences

Code names are used for the 12 schools to keep the informants anonymous, as well as their performance classification, type of ownership and location (**Table A3**). Information on attendance rates and key indicators of resource provision were also available. In all districts except Wakiso, public (government-funded) schools had serious shortages of teachers, classrooms and toilet stances if a ratio of 40:1 is assumed to be a reasonable norm for all of these. The schools with extreme shortages tended to have low attendance rates as well: for example, Maracha Schools B and C and Pallisa School C. The Wakiso schools, and the private schools generally, had more adequate resources and higher levels of attendance, but even some Wakiso schools had shortages of classrooms.

TABLE A3. SCHOOL CATEGORIES AND ESSENTIAL STATISTICS

Code name of school	Perceived performance	Ownership	Location type	Total enrolment	Attendance rate (%)*	Pupil-teacher ratio	Pupil-classroom ratio	Pupil-stance ratio
Wakiso A	High	Public	Urban	1,036	95	24	61	29
Wakiso B	Medium	Private	Urban	148	88	15	21	15
Wakiso C	Low	Public	Urban	580	81	48	73	48
Maracha A	High	Private	Urban	530	95	28	76	53
Maracha B	Medium	Public	Rural	1,763	29	104	252	147
Maracha C	Low	Public	Rural	1,282	32	58	321	183
Bundibugyo A	High	Public	Rural	1,326	50	58	111	66
Bundibugyo B	Medium	Private	Rural	239	73	16	24	16
Bundibugyo C	Low	Public	Urban	1,075	59	67	83	72
Pallisa A	High	Private	Rural	492	100	29	49	25
Pallisa B	Medium	Public	Rural	968	84	74	88	108
Pallisa C	Low	Public	Rural	981	48	82	123	89

Note: Seriously understaffed schools (pupil-teacher ratio > 50) are shaded.

* The attendance rate is the headcount as a percentage of the enrolment.

⁵ Nationally, about one-third of the primary enrolment is in private schools.



Further details of the school's physical facilities and services were also obtained (**Annex B**). Of the 12 schools, 10 had drinking water available for learners and 10 had a feeding programme. Violence against children in school (VACIS) focal persons (teachers appointed to prevent violence) existed in nine of the schools. Six of the schools had an early childhood development centre or nursery section on site. Ten claimed to be providing free remedial classes.

The research teams were told of some successful school initiatives. For example, Wakiso School A had a weekly 30-minute event called 'Drop everything and read' to promote the reading of English and had set up a bookstore. Bundibugyo School A had a reputation for success due to strong leadership, committed teachers, local community support and engagement in World Vision's 'Unlock Literacy' programme. Pallisa School B was tackling the problem of large classes by using co-teaching and small groups for certain purposes and managed to keep absenteeism low. A less successful case was Bundibugyo School C, where an active parent-teacher association leadership was trying to employ some supplementary teachers but could not raise the money to pay them regularly. The head teacher commented, 'We don't have much control over them, they teach when they want'.

Schools varied with regard to local languages, decisions about the language of instruction (LOI) in P1–P3, teacher competence in the LOI and whether learning materials were available for local LOIs. At Bundibugyo School C, teachers had translated materials into Lubwisi themselves, as published ones were not available (**Table A4**).

TABLE A4. LANGUAGE OF INSTRUCTION IN P1–P3 AND CONTEXT, BY SCHOOL

School code name	Language of instruction (LOI) in P1-P3	Are teachers competent in the LOI?	Are there materials for the local LOI (if applicable)?	Percentage of pupils with first language different from local language used in school*
Wakiso A	English	All		11–30%
Wakiso B	Luganda	Some	Yes	11–30%
Wakiso C	English	Some		1–10%
Maracha A	English	All		1–10%
Maracha B	Lugbarati	All	Yes	None
Maracha C	Lugbarati	Some	Yes	None
Bundibugyo A	Lukonzo	All	Yes	1–10%
Bundibugyo B	English	All		> 60%
Bundibugyo C	Lubwisi	All	Yes**	1–10%
Pallisa A	English	All		None
Pallisa B	English	Some		1–10%
Pallisa C	English	All		> 60%

* This is how the question was interpreted in practice, although the wording was, 'different from language(s) of instruction'.

** Translated materials prepared by teachers.

Major perceived challenges and local responses to them

There were many similarities between the districts in the challenges for foundational learning and numeracy (FLN) reported by the focus groups. Some of the reported local responses to the challenges were also similar.

Informants were well aware of the shortage of teachers (**Table A5**), which holds back the development of FLN by limiting the scope for interactive teaching methods and formative assessment. Absenteeism of teachers and learners, also reported by all districts, was thought to be related to teachers' low pay: they acquire debts and spend time on secondary occupations. It was also thought to be more prevalent where teachers have to live a distance from the school. Maintaining a positive relationship with parents is often a difficult task for the head teachers and school management committees of government-funded schools, as development levies, feeding contributions and examination fees cannot legally be compulsory. The challenges relating to learning materials and assessment will be discussed later.

Important local responses (**Table A6**) included remedial teaching: but this is not necessarily free of charge. School feeding programmes are economical and useful but cannot be compulsory, so the priority seems to be to improve parents' attitudes to them. Development partners' initiatives in specific districts have focused more on literacy than on numeracy but there is increased attention to numeracy. Many schools are taking other initiatives in the face of resource constraints. One example is 'peer supervision' by teachers to guide each other, which responds to the scarcity of classroom visits by head teachers and inspectors.



TABLE A5. SUMMARY OF FOUNDATIONAL LITERACY AND NUMERACY CHALLENGES, FIELD DATA

	Challenge (by order of the frequency shown in the last column)	Wakiso	Maracha	Bundibugyo	Pallisa	Number of districts reporting
1	Shortage of teachers in government-funded schools	√	√	√	√	4
2	Absenteeism of pupils and teachers (teacher absenteeism being related to low pay)	√	√	√	√	4
3	Lack of midday meals for most pupils, in most government-funded schools	√	√	√	√	4
4	Lack of accommodation for teachers in or near schools	√	√	√	√	4
5	Shortage of classrooms in government-funded schools	√	√	√	√	4
6	Shortages of teaching and learning materials in schools	√	√	√	√	4
7	Many pupils have not received any early childhood education (in a nursery school/early childhood development centre)	√	√	√	√	4
8	Difficulties of multilingual classrooms and lack of learning materials in some local languages	√	√	√	√	4
9	Parental opposition to the use of local languages for teaching (in P1–P4)	√	√	√	√	4
10	Weak supervision of schools from the district level	√		√	√	3
11	Insufficient training of teachers for the lower primary grades	√	√		√	3
12	Lack of local language versions of curriculum documents		√	√	√	3
13	Insufficient parental participation and support for schools, related to excessive charges at government-funded schools	√			√	2
14	An out-of-date approach to assessment, with overuse of examinations			√	√	2
15	Geographical challenges: Remoteness, floods, landslides			√	√	2

TABLE A6. SUMMARY OF LOCAL RESPONSES TO FOUNDATIONAL LITERACY AND NUMERACY CHALLENGES, FIELD DATA

S/N	Response (by order of frequency in the last column)	Level of application	Wakiso	Maracha	Bundibugyo	Pallisa	Number of districts reporting
1	Provision of remedial classes	School	√	√	√	√	4
2	Organising a school feeding programme (sometimes supported by a school garden)	School	√	√	√	√	4
3	Initiatives by development partners to support foundational literacy and numeracy: Save the Children, UNICEF, USAID, World Vision, Good Neighbours, Stir, ActionAid	District	√		√	√	3
4	Attempts to improve physical facilities	District and school	√	√	√	√	4
5	School management committees working closely with parents/parent-teacher associations in schools	School	√		√	√	3
6	Daily homework with parental monitoring	School	√	√		√	3
7	Use of group work and pair work in class	School	√	√	√		3
8	Special activities to support the use of English and promote a reading culture	School	√	√		√	3
9	Teachers' production of their own aids	School	√	√	√		3
10	Provision of teacher housing (some schools)	School		√	√	√	3
11	Comprehensive annual work plans for the district	District	√			√	2
12	Assigning capable teachers to the lower grades	School	√			√	2
13	Peer supervision by teachers	School			√	√	2
14	Employment of supplementary teachers by parent-teacher association	School			√	√	2



Teachers' use of curriculum, textbooks and other sources for mathematics

Both the teacher interview data and the lesson observation data are considered as evidence about teachers' use of sources for their teaching. Of the 24 teachers selected, 21 said that they were familiar with the curriculum document for the grade they were teaching and 19 confirmed that they based their teaching content on the curriculum. However, it can be inferred from other responses that the process was often mediated by a learner's textbook. For the selection of topics, 13 teachers said they used a textbook as the main source, while only 10 reported using the curriculum directly. Further insight is provided by the observed alignment of teaching with four different types of sources (**Table A7**).

TABLE A7. ALIGNMENT OF TEACHING WITH SOURCES

School code name	Grade	Pupil headcount	Alignment of teaching with:			
			Scheme of work	Lesson plan	Textbook	Teacher's guide
Wakiso A	P3	63	3	3	3	2
	P7	62	2	2	2	2
Wakiso B	P3	16	0	0	0	0
	P7	21	3	3	3	3
Wakiso C	P3	79	3	3	0	2
	P7	49	3	3	2	2
Maracha A	P3	94	0	0	3	0
	P7	44	3	3	3	2
Maracha B	P3	96	0	0	2	0
	P7	29	3	3	2	2
Maracha C	P3	67	1	2	2	1
	P7	17	3	3	3	2
Bundibugyo A	P3	85	0	0	3	0
	P7	42	3	3	3	1
Bundibugyo B	P3	24	0	0	0	0
	P7	24	0	2	1	0
Bundibugyo C	P3	90	3	3	3	0
	P7	30	0	0	2	0
Pallisa A	P3	66	3	3	3	3
	P7	39	0	0	0	0
Pallisa B	P3	162	3	3	1	1
	P7	49	3	3	3	3
Pallisa C	P3	66	3	3	3	3
	P7	21	3	3	3	3
Sum of ratings			45	48	50	32

Notes: 3 = largely aligned; 2 = partially aligned; 1 = not aligned; 0 = teacher did not have the item. Lessons with apparent lack of planning are shaded.

The textbook had the highest sum of ratings and 20 teachers possessed a textbook. Only 17 teachers could show a scheme of work, lesson plan or both to the observer and only 15 had a teacher's guide. These findings indicate a lack of planning and textbook dependence as serious problems. The interviews also showed textbooks to be the most common source for methods used and tasks given to learners.

Learners' textbooks in Uganda's primary schools are used more widely by teachers than by learners. In 14 of the 24 classrooms observed, the learners did not have textbooks; in another 6 classrooms, no more than one-quarter of the learners had them. Textbooks are, therefore, very influential but not in the way intended.

Teacher characteristics, pedagogy and other support

All but one of the teachers was qualified, most holding the Primary Teaching Certificate. Insufficient pre-service training for the lower grades was a significant concern among stakeholders.

The lesson observation schedule provides data on selected pedagogical practices (**Figure A1**), types of teacher-learner interaction (**Figure A2**) and feedback strategies used (**Figure A3**). They do not vary substantially between P3 and P7 or by district. The frequencies suggest that considerable time was given to recall and probing questions and to application tasks with monitoring. Less emphasis was given to demonstrating procedures. Interactions imply that teachers conducted most of their questioning and supervised tasks with the whole class, rather than with small groups. Teacher interaction with individuals was frequent and quite often the teachers used feedback to individual



learners as a means of enabling the whole class to understand the information or procedures that they wanted students to acquire. The feedback strategies ranged from correcting a mistake to providing specific prompts to clear misunderstandings for the benefit of the individual and the entire class. However, attempts to involve the less responsive children were few.

FIGURE A1. FREQUENCIES OF PEDAGOGICAL PRACTICES

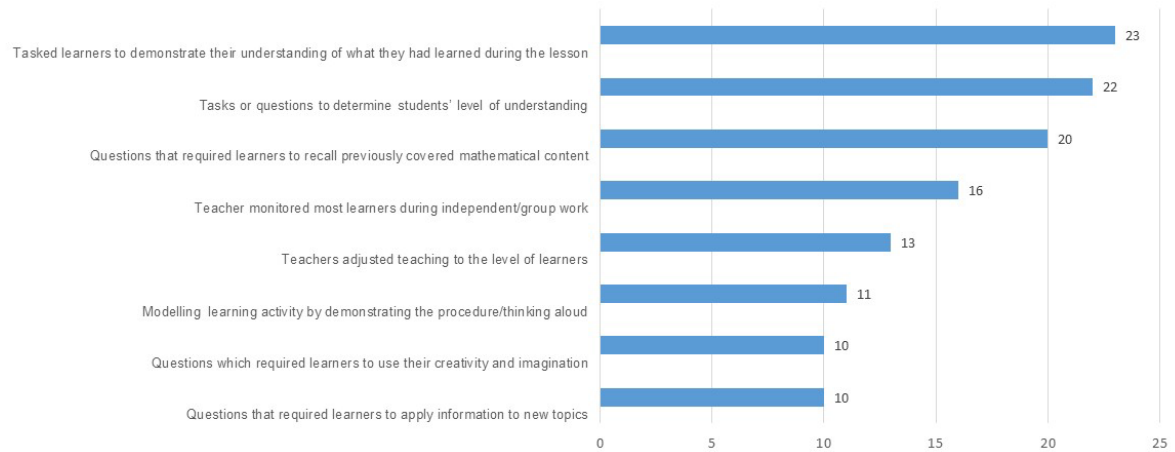
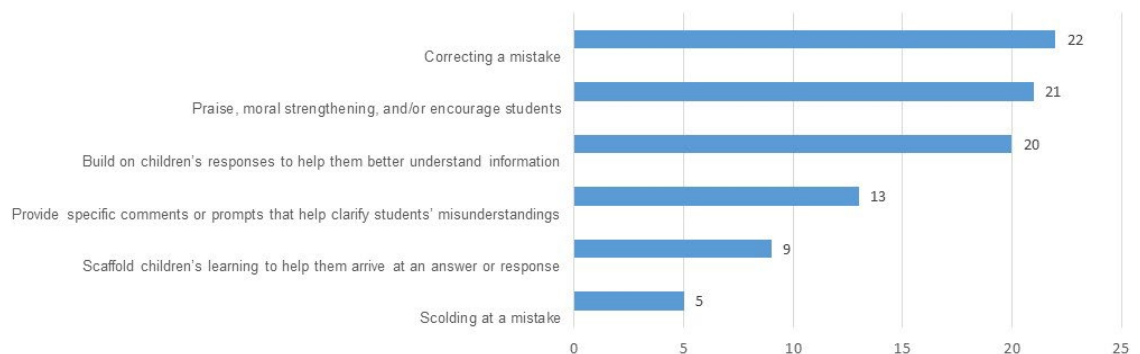


FIGURE A2. FREQUENCIES OF TYPES OF TEACHER INTERACTION WITH LEARNERS



FIGURE A3. FEEDBACK STRATEGIES USED AT LEAST ONCE DURING THE OBSERVATION



To some extent, these limitations can be attributed to the large classes, in which it is challenging to organise group work. In interviews, half of the teachers said that they used small groups or pair work in at least some lessons. But work with the whole class, and individual work, were reported to be more frequent. The data do not provide clear



evidence about how much attention teachers gave to conceptual understanding, as opposed to procedural knowledge.

On the question of external support for teaching, head teachers were asked whether inspectors, peer heads and development partners had visited their school in 2022 or 2023. All the schools had been visited by an inspector within that period, six by a peer head and four by a development partner. There are no major differences between districts in the responses, which represent a fair degree of support.

Assessment practices at classroom and school level

Evidence of assessment practices draws mainly on interview responses from teachers and head teachers.

Most teachers said that they gave 'major emphasis' to 'assessments of students' ongoing work', to 'classroom tests', and to 'national or regional achievement tests' (**Table A8**) and the pattern was very similar for P3 and P7. But this finding needs to be treated with caution, as individual teachers have limited autonomy in assessment matters. Head teachers and senior colleagues control school examinations and determine whether a teacher's assessment records will be used in the end-of-year results. Head teachers had varied perceptions of the types of assessment that teachers used: five just mentioned tests while others mentioned a mixture of tasks. Only one used the term 'continuous assessment'.

TABLE A8. TEACHER SELF-REPORTED EMPHASIS ON DIFFERENT KINDS OF ASSESSMENT

Degree of emphasis	Continuous assessment	Classroom tests	External tests
Little or none (1)	0	1	5
Some (2)	4	6	6
Major (3)	20	17	13
Total	24	24	24
Mean rating	2.83	2.67	2.33

School examinations are seen as preparation for the competitive Primary Leaving Examination. The extent of the examination culture is shown by head teachers' responses on the number of examinations per term (**Table A9**). There are typically three per term for P3 and as many as six per term for P7, the 'candidate class'.

TABLE A9. NUMBER OF EXAMINATIONS PER TERM IN P3 AND P7: BASIC STATISTICS

Grade	Mean	Standard deviation	Number of schools
P3	2.67	0.88	12
P7	6.25	2.77	12

When asked about the sourcing of the question papers, 6 of the 12 head teachers said that those of P3 were all externally sourced, and the same number, 6, applied to P7 question papers. The remainder reported a mixture of internal and external sourcing, except for one case of P3 papers all being set internally. Outsourcing of question papers is usually a commercial transaction and the situation raises questions about how far teachers are being de-skilled in assessment and how far they are obliged to 'teach to the exam', as opposed to meeting the needs of learners. All teachers reported using written forms of assessment as the main form of assessment, though some supplemented it with other forms, such as oral, practical or observation (**Table A10**).

TABLE A10. FORMS OF ASSESSMENT USED BY TEACHERS

Assessment form	P3	P7	All
Written only	4	5	9
Written and oral	4	2	6
Written and observation	2	1	3
Written and practical	1	2	3
Written, oral and observation	1	1	2
Written, oral and practical		1	1
Total	12	12	24

Nine teachers reported only using written assessment. The fact that written forms of assessment were reported to dominate classroom practice indicate an over-reliance on individualized paper-pen assessments, leaving little room, if any, for learners to demonstrate what they have learned or know in multiple ways.



Annex B. Additional facilities and services of sampled schools

School code name	Storeroom	Staffroom	Library	Girls' private room	Playground	Sports field	Handwashing stations	Drinking water
Wakiso A	1	1	1	0	1	1	1	1
Wakiso B	1	1	1	1	1	0	1	1
Wakiso C	0	0	0	1	1	0	1	0
Maracha A	1	1	0	1	1	1	1	1
Maracha B	0	1	0	0	1	1	1	1
Maracha C	0	0	0	0	1	1	1	0
Bundibugyo A	1	0	0	1	1	1	1	1
Bundibugyo B	1	1	1	1	1	0	0	1
Bundibugyo C	1	1	1	0	1	0	0	1
Pallisa A	1	0	0	1	1	1	1	1
Pallisa B	0	0	0	0	0	1	1	1
Pallisa C	1	0	0	1	0	0	1	1

School code name	Nursery section	Special Needs unit	Free remedial classes	Remedial hour/week	Feeding programme	VACIS focal person	Senior man	Senior woman
Wakiso A	1	0	1	10	1	1	1	1
Wakiso B	1	0	1	5	1	1	1	1
Wakiso C	1	0	0	N/A	1	1	1	1
Maracha A	0	0	1	7	1	0	1	1
Maracha B	0	0	1	5	0	1	1	1
Maracha C	0	0	1	10	0	1	1	1
Bundibugyo A	1	0	1	1	1	1	1	1
Bundibugyo B	1	1	1	5	1	0	1	1
Bundibugyo C	0	0	0	N/A	1*	1	1	1
Pallisa A	1	0	1	10	1	1	1	1
Pallisa B	0	0	1	2	1	0	1	1
Pallisa C	0	0	1	5	1	1	1	1

Notes: 1 = yes; 0 = no. VACIS = Violence against children in school.

* Used by very few children.



Annex C. Workshops

Two blended stakeholder consultation meetings have been held since the Spotlight report series study was commissioned in Uganda. Each consultation meeting was preceded by a data collection phase.

First stakeholder consultation meeting

This half-day meeting was held on 18 May 2023 at the Fairway Hotel in Kampala with three objectives: (re)introduce stakeholders to the Spotlight report series on foundational learning in Uganda; share the study's initial findings, receive insight/feedback and seek consensus on priority issues; and identify possible actions to be explored and validated during fieldwork at the district/school level.

The meeting was held after the interviews with 28 stakeholders across the foundational learning ecosystem that brought together policy makers, development partners, academia and civil society leaders. The meeting was attended by 24 participants who also included the core research members. The findings from the interviews were compiled and shared in a PowerPoint presentation and participants were allowed to react to the findings. Further, in three breakout groups, participants helped brainstorm on the priority issues to be addressed in the field study.

Participants concurred with the findings from the interviews and helped sieve through the issues as those touching on policy articulation (framing of the vision of foundational learning and communication of the vision/goal to different stakeholders), implementation gaps of the intended vision (through the implementation of the curriculum/syllabus) and the school-based realities (contexts for curriculum implementation and indications of good practices).

Workshop participants settled on four key priority issues for the school visits: curriculum interpretation/alignment, school-based supervision and inspection, assessments, and teachers' effectiveness and competence.

Second stakeholder consultation meeting

The second workshop took the same format and structure as the first workshop. The half-day workshop held on 22 September 2023 at the Fairway Hotel in Kampala was attended by diverse stakeholders, including from the Ministry of Education and Sports (including officials from its key agencies, such as the Directorate of Education Standards, the National Curriculum Development Centre and the Uganda National Examination Board); development partners such as the World Bank, UNICEF, UNESCO and VVOB; civil society organisations; academia; and the core research team members. The meeting was held against the backdrop of a draft report that drew data from the school visits and stakeholder interviews. The meeting had three objectives: review and validate the draft study's findings; receive insights from participants and reach consensus on the identified priority issues; and identify any outstanding questions that need to be addressed by the analysis with reference to curriculum and textbooks, teacher's guides, and support mechanisms and assessment.

The second stakeholder consultation meeting was attended by 41 participants (30 physically and 11 virtually). The draft report was presented and participants were allowed to react to its findings. Participants lauded the timely nature of the study, concurred with the findings of the study, enriched the study's findings and took a position on the two positive case studies to profile in the study report: the early grade reading methodology and the almost three-decade coordinating centres model that has been supporting pre-primary and primary school teachers.



Annex D. Relevant stakeholder quotes from workshops and interviews

Thematic area	Relevant quotes
Assessment and examinations	<p>'...normally it's the dog that wags the tail but when it comes to the education system in Uganda it's the tail that wags the dog! It's examinations that push the teaching, yet it should be the opposite.' (Former Commissioner, Ministry of Education and Sports)</p> <p>'The Ministry of Education should curb down examination bureaus since they are affecting the education system.' (Member, Uganda National Examinations Board)</p> <p>'...assessment is like assessment, every 2 hours a teacher is giving an assessment! A teacher delivers a lesson of 40 minutes and then after gives an assessment, you ask yourself is that assessment or testing? What are you assessing? Learning is not like a switch that works instantly.' (Commissioner Teacher Education and Training Department, Ministry of Education and Sports)</p>
Teacher training and support	<p>'When student teachers come out of college they are very good. Who spoils them? It's the system they find outside when they start teaching! Peers say, "we also started like you", this fresh teacher starts also to decline in practice, they start out preparing lesson plans, in a short while they start going without.' (Commissioner, Directorate of Education Standards)</p> <p>'...we give teacher trainees the same dose while teaching them at universities and training colleges, you find them scoring A in school practice but when they go out to practice they do things differently. When you compare those in private against government schools, you wonder why.' (Principal, primary teacher college)</p> <p>'...we need to change the mindset of parents towards education. Some parents are still sending children to school for two weeks or more without a pen and a book! When you ask them they say the president said it's free education...'. (Assistant Commissioner, Ministry of Education and Sports)</p> <p>'Some teachers go hungry at school like pupils, walk long distances and lack enough materials to use while teaching.' (Principal, primary teacher college)</p> <p>'There are many organisations providing [continuous professional development], you find an organisation going into the school calling a strategy a certain name and another organisation going to the same school with the same strategy calling it a different name. There is a need to harmonise who can provide pre-service and in-service trainings.' (Civil society organization representative)</p> <p>'[Coordinating centre tutors, CCTs] are overwhelmed by the number of schools, you find one CCT serving over 100 schools! There is a need to focus on the number of teachers per CCT rather than tagging the number of schools per CCT. CCTs do not mentor schools, they mentor teachers.' (Principal, primary teacher college)</p>
School leadership	<p>'...you find most resources are devoted to upper primary! You find one teacher in a P1 class handling all learning areas but when you get to P7 you find four or more teachers! All resources are concentrated in one area!' (Principal, primary teacher college)</p> <p>'I recall when I was still a District Education Officer, I used to put much emphasis on school leadership and the performance in schools was good. If the head teacher is good, the results will also be good.' (Former commissioner, Ministry of Education and Sports)</p>
Curriculum, support materials and	<p>'...all promoters of local language for learning, we have our children not only taught in English but we also speak and communicate with our children in English, even at home.' (Education specialist at UNICEF)</p>



<p>the local language issue</p>	<p>'...you can't do preparations for effective teaching when you don't understand and interpret the curriculum. Teachers are using teacher's guides and the textbooks as if they are following a Bible. A lot is needed to discuss what can guide teachers to understand the curriculum.' (Commissioner, Ministry of Education and Sports)</p> <p>'In most cases, translating some English words to the local language is very difficult, for example "I don't know a radio in Lugbarati". The government tells us to implement this policy, but we do not have teacher's guides, textbooks and a syllabus in our local languages. Everything is in English yet we are supposed to teach them in the local language.' (P3 teacher, Northern Region)</p> <p>'Most parents have a negative attitude towards the use of the local language in schools, this discourages some parents from sending their children to schools that use the local language. Other parents deliberately refuse to pay school fees because they didn't send their children to school to learn the local language'. (Parent)</p> <p>'In our school, textbooks are very few. The teachers use these few books to write exercises and activities on the blackboard for the learners.' (Teacher)</p> <p>'Too few textbooks for many learners, about five learners in our school share one textbook. This may benefit only two or three learners.' (Parent)</p>
<p>Other relevant quotes</p>	<p>'...you don't need to check the whole blood in the body to know that you are sick. The education system has problems that need to be addressed.' (Senior education officer, Ministry of Education and Sports)</p> <p>'Donors are not here to do the work of the government but to supplement. Most of the donor-supported interventions die away when the project intervention period ends. The system is not supportive enough.' (Development partner)</p>



Annex E. Key informants at the national level

Organisation or group	Number of informants
Department of Basic Education, Ministry of Education and Sports	2
Department of Teacher and Instructor Education, Ministry of Education and Sports	1
National Curriculum Development Centre	1
Directorate of Education Standards	1
Educational Policy Review Commission	1
National Planning Authority	1
Uganda National Examinations Board	1
Federation of Non-State Education Institutions	1
Uganda National Teachers' Union	1
National Inspector of Schools Association	1
National Association of District Education Officers	1
UNESCO	1
UNICEF	1
Foreign, Commonwealth & Development Office (United Kingdom)	1
United States Agency for International Development	1
VVOB	1
Save the Children, Uganda	1
Uganda Society for Disabled Children	1
Forum for Education NGOs in Uganda	1
Forum for African Women Educationalists, Uganda Chapter	1
Regional Education Learning Initiative in East Africa	1
Principals of primary teachers' colleges	1
Teacher educators based in universities	2
University researchers with relevant publications	1
Educational publishers	1
Authors of textbooks	1

