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Improving foundational literacy outcomes: a brief on the components and cost of a 'just enough' model for government-led programming

Insight Note

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Insight Note

Contents

1 | Summary findings

- Governments can improve foundational literacy outcomes at a relatively low incremental cost per student using a 'just enough' foundational literacy model consisting of three components:

  Component 1: Cascaded and recurrent participatory in-service professional development,

  Component 2: High-quality, well-aligned teaching and learning materials, and

  Component 3: Instructional coaching delivered by middle-tier staff.

- In many sub-Saharan African contexts, **this model can be implemented for an estimated $4.80 per** student per year (averaged over a four-year cycle).[1]

- This cost **represents an increase of 1–2% over the median sub-Saharan government investment of ~$300 per student per year** in the primary cycle.[2]

Year 1 costs are highest at **$6.80 per student**, with professional development accounting for 75% of the total cost, followed by teaching and learning materials (15%), and instructional coaching (10%).

Years 2 and 3 see costs decline to **$3.94 and $3.42 per student**, respectively. Professional development remains the primary cost (78% and 74%), followed by coaching (19% and 23%) and materials (3% and 4%).

In **Year 4**, costs rise to **$4.80 per student**. Professional development is the primary cost driver making up 55% of the total costs, followed by materials (29%), and coaching (17%).

- **Under-utilised efficiency levers, such as de-centralised training designs and well-informed materials procurement strategies**, can result in more cost-efficient delivery of improved foundational literacy outcomes and maximise governments' return on investment.

- This **cost estimate could be lower** in cases where existing training or materials budgets can be repurposed or where instructional coaching-related costs are already accounted for.

1 See cost design and model cost estimates for assumptions and caveats.
2 Baseline government spending of $306 is the median per pupil expenditure for Sub-Saharan Africa as reported in Annex Table 1: Education System Characteristics and Education Expenditures in UNESCO. 2023. Global Education Monitoring Report 2023: Technology in education – A tool on whose terms? Paris, UNESCO. Note that the median is based on data from 24 of 48 countries in SSA and is reported as the initial government expenditure per pupil by level, in constant 2019 PPP USD.

2 | Introduction[3]

For many years, education systems have grappled with a persistent learning crisis, whereby large numbers of students complete schooling without achieving foundational literacy and numeracy skills.[4] In 2025, this crisis is compounded in low- and lower-middle income countries (LMICs) by the dual challenge of escalating public debt that is constraining government investments in social programmes,[5] and cuts of roughly $1 billion per year of overseas development assistance to education.[6] Both of these factors have disproportionately affected countries in Sub-Saharan Africa and their education systems.

While literacy improvements have been realised in some countries in Sub-Saharan Africa, they are typically produced by high-cost models with high-intensity technical support.[7] This brief argues that in the current setting of reduced funding and persistently low learning outcomes, there is an urgent need to define a minimum, or 'just enough', foundational literacy model – one that is cost-effective and can be delivered through government systems at scale. In response to this need, we present a proposed model in this brief alongside estimations of its cost as well as broader strategies to improve cost efficiencies and outcomes.

For this analysis, we modelled a foundational literacy programme based on a rapid scan of key literature and then revised the model through a series of interviews with experts.[8] We then considered the cost drivers associated with that model and how the model could be streamlined to still meet a minimum standard for effectiveness, but with a lower cost.

We place the model in an illustrative reference context to establish a baseline for government delivery relevant to foundational literacy. From there we estimate the incremental costs of the model in such a context. The model description and cost estimates are derived from historical data sources (from a range of Sub-Saharan countries including the Burundi, Democratic Republic of the Congo, Ethiopia, The Gambia, Ghana, Kenya, Malawi, Rwanda, Sierra Leone, South Africa, Uganda and Zambia)[9] and cost estimates are further optimised by applying best practice strategies (for example optimising procurements and training delivery).

3 This brief was commissioned by the Gates foundation following strategic conversations at The Economic Case for Prioritising Foundational Learning in Africa event convened by Human Capital Africa in April 2025

4 World Bank, UNESCO, UNICEF, FCDO, USAID, & Bill & Melinda Gates Foundation. (2022). The state of global learning poverty: 2022 update (Conference edition). World Bank

5 International Monetary Fund. (2025, June 12). Disclosing public debt boosts investor confidence, cuts borrowing costs. IMF Blog. https://www.imf.org/en/Blogs/Articles/2025/06/12/disclosing-public-debt-boosts-investor-confidence-cuts-borrowing-costs

6 U.S. Agency for International Development: An Overview. (2025, July 23). https://www.congress.gov/crs-product/IF10261 https://www.congress.gov/crs-product/IF10261 and The Foreign, Commonwealth & Development Office (FCDO) annual report and accounts for the financial year 2024 to 2025. https://www.gov.uk/government/publications/fcdo-annual-report-and-accounts-2024-to-2025

7 Stern, J., Jukes, M., DeStefano, J., Mejia, J., Dubeck, P., Carrol, B., Jordan, R., Gatuyu, C., Nduku, T., Van Keuren, C., Punjabi, M., & Tufail, F. (2023, October). Learning at scale: Final report (Report No. 0216840.000.000). Center for Global Development.

8 See Annexes for additional details.

9 We also recognize that the experts and literature referenced draws from learnings in Asia and Latin America.

In the subsequent sections, we present:

- The illustrative baseline reference context,
- The model, including the efficiencies and effectiveness strategies included in the model,
- The expected cost of the model based on illustrative design parameters and estimated unit prices with best practices applied, and
- Efficiencies for consideration that are not included in the 'just enough' model.

3 Context and baseline government delivery level for foundational literacy

The success of any education intervention is heavily dependent on the context – including the policy landscape, the capacity of the system and the actors within the system, existing investments, and the delivery of key inputs, as well as political, geographic, and population characteristics. For the purposes of this foundational literacy model development, we defined an illustrative baseline reference context in which to ground the model and to identify opportunities for efficiencies. The reference context is defined as an average/slightly above-average sub-Saharan African country in terms of system capacity and service delivery for foundational literacy. Figure 1 describes the baseline context at the system, school, and classroom levels, which are relevant to the design and costing of the 'just enough' literacy model.

Figure 1 Illustrative reference context

At the System Level

- Policies are generally supportive of improving foundational literacy outcomes.
- The curriculum is mapped to a scope and sequence that can be delivered within planned instructional time.
- District and other middle-tier officials do not have any specialised training in foundational literacy.
- District and other middle-tier staff have the time to attend the master training outlined in the model and can facilitate training for teachers.
- Existing middle-tier staff have the time to visit schools several times per term.

At the School Level

- Teachers have a mix of senior high school certificates and bachelors' degrees.
- Many teachers have at least two years of pre-service training focused on education in general.
- School leadership teams have general pedagogical experience, but not specific to foundational literacy.
- School leadership periodically visits classrooms, but without a focus on or tools specific to foundational literacy.
- Teachers have the time to attend the amount of training outlined in the model.
- One foundational literacy lesson each day is included in the school timetable.

In the Classroom

- Teachers' language skills and students' mother tongue are generally aligned with the language of instruction.
- Students begin primary school with some oral language skills, limited exposure to print, and minimal or no reading skills.
- Teachers have regular access to a blackboard and chalk, but no foundational literacy-specific teaching materials.
- Students share benches and chairs. Their parents or schools provide blank lined notebooks. They do not have foundational literacy specific learning materials.
- Classrooms have an average of 40 students and there is one teacher per section.

4 | The foundational literacy model[10]

Based on the evidence reviewed and conclusions drawn from the expert consultations, an efficient and effective foundational literacy model should minimally include three key components: 1) in-service training for teachers and other education staff, 2) materials for teachers and students, and 3) on-going support to teachers through instructional coaching.[11]

The most important aspect of any structured approach is the alignment across components of the system, including a curriculum that aligns with classroom instruction, textbooks, and expectations of teachers and of students. A well-structured system is a coherent one, and it in turn gives rise to efficient and effective structure on a daily basis.

In-service professional development

The training is a **2-level cascade model** with higher dosage in the early years of the programme and a consistent frequency of training within and across years. Level 1 training is delivered by national trainers at a centralised level and level 2 training is decentralised.

Level 1 training is conducted face-to-face for three days annually for the first years of the programme to a large cadre of level 2 trainers to facilitate more centralised level 2 training.[12] The dosage of level 1 training reduces over time to 2 days per year. Level 1 trainers are experts in adult learning and have a deep understanding of the contents of the foundational literacy curriculum, scope and sequence and relevant teaching and learning materials.

Figure 2 In-service professional development overview

Training for Literacy Instruction	Year 1	Year 2	Year 3	Year 4
Level 1 (Master Training)	3 days	3 days	3 days	3 days
Level 2 (Teacher, Head Teacher, District Staff Training)	7 days	4 days	3 days	3 days

10 Definitions to anchor this discussion: **Structured Pedagogy** is used in two ways: first, as a general term that includes a variety of techniques applied to a structured approach for learning, including structuring the pacing of content over time as well as structuring individual lessons; second, as a reference for a three-component approach for foundational learning – one that includes in-service training, materials and coaching. **Foundational literacy model** – the model that we define and cost, which includes in-service training, teaching and learning materials for literacy and instructional coaching. **Structured lesson** – a lesson that includes an overall structure for the lesson, with appropriate pacing and sequencing that covers the skills and learning outcomes identified in the curriculum. The structure of the lessons and level of scriptedness may vary across content; pedagogical guidance and other instructional examples are provided across all lessons in the Teachers' Guide. **Scripted lesson** – scripts in the Teachers' Guide that support instructional delivery for a specific skill by reciting the script in front of the class. The extent of scripting can vary within individual lessons.

11 See Instructional Coaching section for important qualifications about the inclusion of instructional coaching in the model.

12 The model and cost estimate assumes 100% of level 1 trainees are overnight travellers.

Figure 3 In-service professional development specifications, level 1

Master Training (Level 1)	Dosage	Features	Qualifications
Master Training with national and district level trainers	Repeated annually Year 1: 3 days Year 2: 3 days Year 3: 2 days Year 3: 2 days	1 national trainer: 20 teacher trainers Creates sufficient cadre of level 2 trainers for decentralised level 2 training	Foundational literacy concepts and instruction for young learners Adult learning expertise

Level 2 training is provided to all grade 1–3 teachers, a member of the school leadership team, and a member of the middle-tier team on a yearly basis. Teachers receive the highest amount of training in the first year of the programme, with 7 days spread across 3 face-to-face training sessions (4 days in term 1, 2 days in term 2 and 1 day in term 3). The cadence of the training allows teachers to learn, experiment and reflect as they bring the training principles into their classrooms over time. The evidence and experts suggest that face-to-face modality is a critical feature of training, allowing teachers to build a community with peers and trainers. Level 2 training is delivered at a decentralised level to maximise attendance and reduce the need for overnight travel.[13]

Figure 4 In-service professional development specifications, level 2

Decentralised Training (Level 2)	Dosage	Features	Qualifications
School leadership, middle tier and teacher training	Repeated annually/ term Year 1: 7 days (4, 2, 1) Year 2: 4 days (2 1, 1) Year 3: 3 days (1, 1, 1) Year 4: 3 days (1, 1, 1)	1 district trainer: 15 trainees School leadership + middle-tier staff included in term 1 training 80% teacher practice	Foundational literacy concepts and teaching experience Knowledge of curriculum, Teachers' Guide, and student outcomes

In subsequent years, the amount of training is reduced, but the training is still delivered every term. This helps support new and transferred teachers, facilitates feedback loops, and strengthens peer support.

13 The model and cost estimate specifies that 10% of level 2 trainees require overnight travel and the balance are day travellers.

An ideal trainer-to-participant ratio is 1:15, with two trainers per session to facilitate practice and feedback. While lectures are important for initial grounding and for modelling best practices (including the use of short videos demonstrating effective instructional delivery), the training agenda should prioritise practicum (80%) over lecture (20%).

Training should be designed around a high-quality Teachers' Guide. The Teachers' Guide establishes key concepts in literacy instruction, classroom routines and student outcomes. The term 1 training provides a foundation for teachers in the overall goals of the curriculum, the structure of the Teachers' Guide and Students' Textbook, and offers ample time for practice. Subsequent trainings in terms 2 and 3 are designed to be responsive to teachers' needs and focus on challenges and solutions with respect to operationalising the Teachers' Guide while reinforcing the core principles from term 1 training. Master Trainers are vital for providing feedback during these follow-up sessions to inform level 1 and level 2 training, as well as programme design and quality assurance.

School leadership and middle-tier staff are included in the first training session of each year. This deepens ownership of the programme across the system and facilitates better support for teachers.

Figure 5 Key features, in-service professional development

Key features of effective in-service training for foundational literacy

Level 1 and Level 2 trainings occur face-to-face.

Teachers need consistent in-person interactions with peers and trainers.

Training should maximise practice and feedback which requires a max ratio of 1:15 trainers to teachers.

Training is grounded in a high-quality Teachers' Guide.

Summary of Efficiencies Integrated into the Model: In-Service Professional Development

During expert consultations, we heard several strategies for improving the quality of training and/or reducing the cost of training. These efficiencies have been integrated into the costed model and are summarised below:

Figure 6 In-service professional development, efficiency strategies

Efficiency Strategy	How It Impacts Cost	What Is In The Model
Who Participates In Training	More participants drive costs up significantly. However, including middle tier and school leadership in training ensures they are aware of and can support teachers when they return to their schools.	Include middle tier and school leadership staff in the first training of each year. Term 2 and 3 training sessions include only teachers.
Number Of Level 2 Trainers	Trainers who facilitate training for teachers at the decentralised level are likely middle-tier education staff with supervisory responsibilities. Trainers' availability and the number of trainers directly influences the number of trainings that can be completed each term and the extent of decentralisation feasible.	Maximises the number of level 2 trainers to facilitate decentralised training. Level 2 trainers facilitate one training course every 2 weeks (or up to 5 trainings per term in our model.
Decentralisation Of Training	The location of training can significantly impact costs: the more centralised the training locations, the fewer trainers are required, but a greater proportion of trainers and trainees will require overnight lodging.	The model assumes 10% overnight trainees for level 2 training and the balance are day travellers. Decentralised training to administrative units with no more than 100 schools in the catchment area.

Additional considerations: in-service professional development

There are other strategies and design choices that have the potential to make in-service professional development more efficient and cost-effective. These include:

- Using hybrid, tech-enabled delivery strategies,
- Using AI-powered simulations or video-based modelling, and
- Offering personalised training based on diagnostics — as opposed to one-size-fits-all training.

While these were referenced during the evidence review, the evidence is limited about their potential to improve a foundational literacy programme, and as such, they are not included in the model or cost estimates.

Teaching and learning materials

The teaching and learning materials included in the model are a Teachers' Guide for each teacher and a Students' Textbook for each student.

Teachers' Guide: Every teacher should have a Teachers' Guide that covers the full academic year and aligns with the Students' Textbooks. The guide includes structured lesson plans following an approved scope and sequence. The Guide should have consistent iconography to signal certain skills and/or activities. The minimum recommended font size is 12 with sufficient spacing. Illustrations relevant to the activities should be included, but their size should be minimised. The Teachers' Guide should include references to the student texts, such as student text page numbers and thumbnails of pages.

Figure 7 Key features, Teachers' Guide

Key features of an effective Teachers' Guide for Foundational Literacy

Includes a purposeful use of scripting, guidance and examples.

Utilises scripting for specific skills like blending sounds and new routines.

Incorporates gradual release over lessons from scripting to suggested activities and structure.

Maximises the amount of text to read to students.

Is spiral-bound and uses colour and illustrations for navigability.

Figure 8 Teacher's Guide overview

Teaching Materials

Teachers Guides

Dosage

1 Guide per teacher

Annual loss rate of 10%

Replaced in year 4

Features

Scripting for specific skills like blending sounds and new routines

Gradual release over lessons with suggested activities

Specifications

Colour and illustrations for easy navigation

Thumbnails referencing activities in student materials

Spiral-bound

The level of scripting within the Teachers' Guide should vary by lesson content, with heavier scripting for building blocks like initial sounds and decoding. For other content such as reading connected text and comprehension, the Teachers' Guide should provide a structure and examples for activities but does not need to be scripted.

Students' Textbook: Every student has a textbook that is aligned with the Teachers' Guide. The textbook includes activities and content for daily practice in class and at home. Students do not write in the textbook – instead, they complete exercises from the textbook in a blank lined notebook.[14] The textbook includes decodable stories to support independent reading.[15] Colour and illustrations are generally recommended in grade 1. For grades 2–3, additional text is recommended over illustrations.

Figure 9 Key features, Students' Textbook

Key features of an effective Students' Textbook for Foundational Literacy

Includes decodable stories for students to read independently.

Includes illustrations in grade 1 but prioritises text over illustrations for Grades 2 and 3.

Figure 10 Student learning materials overview

Learning Materials	Dosage	Features	Specifications
Students Textbook (with family/school provision of blank lined notebooks)	1 Textbook per student Annual loss rate of 10% Replaced in year 4 1 lined notebook per term per student	Activities aligned with Teachers Guide Includes decodable stories for reading practice Students use blank lined notebooks for practice	Aligned with Teachers' Guide 2 pages per lesson plus decodable stories Space for text is maximised, illustrations are minimised Color, glue and stitched binding

14 This model preferences a textbook over a workbook given that the format of textbooks generally offers more print exposure and reading content (when both cannot be provided). Student reading and writing practice is critical and in contexts where it is not feasible to provide a student textbook and a workbook, we suggest that each student has one blank lined notebook per term for practice. These are not included in the model or cost estimate as they are typically provided by families and/or schools. Where possible, governments are encouraged to ensure all students are provided notebooks as part of teaching and learning material delivery.

15 The experts we interviewed consistently mentioned the importance of learning aids, such as flash cards, for independent student practice and group work. As we are defining a minimally viable model, we did not include this in the model and estimated costs. However, provision of either supplies to make learning aides or provision of learning aids is recommended.

Materials Specifications in the Model and Considerations for Procurement

The price of materials like Teachers' Guides and Students' Textbooks is dependent upon the technical specifications included in the procurement and the procurement process. Six specifications with a substantive influence on the cost and quality of materials emerged from consultation as described below.

Table 1 Material specifications and efficiency strategies

Material specification	How it impacts costs	What is in the model[16]
Size of print run	The size of the print run is a key factor in the cost of printing. Consolidating the timing of procurement/printing and/or consolidating titles to ensure the largest print run possible is a key cost reduction strategy.	The unit pricing in the model assumes a very large print run (+250,000 copies)
Illustrations	Illustrations should have a clear purpose: including drawing a young reader into a story, making it easier for a teacher to locate lesson content, supporting a reader's comprehension of the story, etc. Illustrations that do not contribute substantively to reading development crowd out text and increase development and printing costs. Generally, illustrations are more relevant for students' reading materials than for the Teachers' Guide. The use of AI can significantly reduce the cost of developing contextually relevant illustrations when done well.	Recommended for grade 1 Students' Textbooks Optional for Teachers' Guide, grade 2–3 Students' Textbooks
Paper	Paper accounts for 50–70% of the cost of a printed book. In addition to paper type, specifications such as coating, paper brightness, whiteness, opacity and weight also influence costs[17]. For example, in contexts where materials must be replaced frequently due to humidity or significant rainy seasons, investing in higher cost materials may be the lowest cost option over time.	
Binding	The type of binding will affect usability in daily practice: a teacher may struggle with a Teachers' Guide that is bound using saddle stitching but can easily turn pages when it is spiral bound. The cost of a spiral-bound book can be ~20% higher than that of a saddle stitched book. With at least seven different binding options[18] and each with cost and durability trade-offs, if binding is not specified in the procurement documentation, it may result in a binding that does not strike the ideal balance between cost, durability and utility.	Spiral-bound Teachers' Guide Saddle stitched Students' Textbook
Colour printing	Printing materials in colour makes them more appealing, easier to navigate and, for younger learners, colour can amplify their motivation to engage with books. Where advanced printing presses are available, the costs of 4-colour, 1-colour, black/white or duotone (black, white, and one colour) are comparable. If advanced presses are not available – as is typically the case in Africa where the most African printers purchase older machines on the used market – then international procurement may be cheaper. The decision to change procurement strategies based on colour requirements and availability of printing presses locally is a complex decision – one that is not purely technical in nature but political as well. At present, international procurement typically leads to lower cost and higher quality materials.	4-color printing for Teachers' Guide and Students' Textbooks assuming advanced printing presses are locally available (and cost difference versus B/W is marginal) or international procurement is used.
Number of pages	The number of pages of a Teachers' Guide was consistently mentioned by experts as a concern: either pages were packed with too much content with too-small font sizes, and/or space was ineffectively used with irrelevant illustrations or lengthy scripts. Planning for two pages per lesson in the Teachers' Guide can impose better curated content and reduce printing costs. Teachers' Guides that have more pages can be better accommodated with spiral binding.	2 pages/lesson in Teachers' Guide and Students' Textbook.

16 See Annex 4 for detailed specifications for costed materials.

17 See specifications provided for teacher and student materials in World Bank (2021) Read@Home: Guidance note. Technical Specifications for the Production of Reading Books. Washington DC: The World Bank. Available here: https://www.earlylearningresourcenetwork.org/system/files/resourcefiles/Read-Home-Book-Procurement-Support-Technical-Specifications-Guide-World-Bank.pdf

18 ibid

Additional considerations: teaching and learning materials

We heard from many experts that, while read-aloud stories were critical materials to provide to teachers, individually printed materials are often challenging to store, track and utilise in class. By integrating read-aloud content into the Teachers' Guide[19] the cost-efficiency of printing, distribution and management of materials can be improved.

Students need substantial exposure to print, such as levelled decodable stories, as they are learning to read. Experts suggested that a minimum of several decodable stories per week, in addition to the content in textbooks, is necessary to achieve strong reading outcomes. In systems where it is not feasible to deliver decodable readers, story books, etc, the option of adding supplemental decodable texts to Students' Textbooks should be considered. This strategy can minimise the cost of printing, as well as the delivery and management challenges associated with providing additional titles.

19 Printed in large font as an annex to the Teachers' Guide.

Instructional Coaching

Instructional coaching, consisting of two levels of training and three school visits per term, is included in the model and cost estimate. The model is set in our illustrative reference context with a coach to school ratio of 1:10,[20] and coaches able to visit three schools per day on average.[21] The cost estimates for instructional coaching do not include additional staff positions, which may be required in some education systems to deliver this frequency of coaching.

Figure 11 Instructional coaching overview

Instructional Coaching	Year 1	Year 2	Year 3	Year 4
Instructional Coaching Training (Level 1)	2 days	2 days	2 days	2 days
Instructional Coaching Training (Level 2)	3 days	3 days	3 days	3 days
School Visit/Lesson Observation Frequency	3/term	3/term	3/term	3/term

The inclusion of coaching as a core component of the model was a debated topic during our expert consultations. While the evidence indicates that coaching delivered with sufficient frequency and technical quality can boost instructional quality and student outcomes, the evidence also indicates that lighter-touch forms of coaching, without dedicated, specialised staff and high-frequency visits, have not demonstrated consistent impacts on learning outcomes.[22] We argue that in contexts with available middle-tier staff, the additional investment in transportation and per diems to provide instructional coaching can be a good investment – especially given the low incremental per student cost for coaching (see next section). In low-capacity systems where implementation of effective coaching is not feasible, it may be advisable to focus solely on professional development and the provision of teaching and learning materials.

20 Referencing countries including Ghana and Rwanda that currently have similar ratios and countries including Cote D'Ivoire that are moving quickly towards or have recently achieved this ratio of school facing support staff to schools.
21 This does not imply three school visits on all working days. Rather the delivery model and cost estimate assume an allocation of direct costs for travel and meals per day to be spread across three schools. Additionally, not all FL teachers are observed and receive coaching for each visit given time limitations during school visits. Coaching frequency is estimated to be 1-2 times per term in this model.
22 See Taylor, S., & Fleisch, B. (2020) and Chillers et al (2021).

5 | Estimated costs of the 'just enough' foundational literacy model

Cost Design Overview

The model and cost estimates are derived from historical data[23] and estimates of optimised prices/costs based on best practice strategies (eg optimising procurements and training delivery).[24] These cost estimates should be interpreted as 'what is possible' in terms of the cost for governments to deliver an effective foundational literacy model in many Sub-Saharan African countries.

Our cost estimates focus only on the incremental cost to government for the ingredients directly relevant to the delivery of the foundational literacy model – specifically, in-service professional development, teaching and learning materials, and instructional coaching. The cost model does not capture non-incremental costs borne by governments (eg, salaries, operating the EMIS system, overhead, existing facilities). The model does not include in-kind contributions such as volunteer labour.

In terms of price adjustments, materials and facilities prices were adjusted from the original year of the unit price (as relevant for historical data) to the year of projected expense using a standardised 10% annual inflation rate (compounded over years). The published projected average annual inflation rate for sub-Saharan Africa varies, with a prominent report estimating a 14.4% inflation rate.[25] For the purposes of this analysis, we use a rate (10%) closer to the median projected inflation rate for contexts similar to the illustrative reference context and to moderate the influence of outliers. For transportation and meal per diems, rates are adjusted using a 3% cost of living adjustment-type increase annually.[26]

All original prices (as relevant for historical prices) were converted to USD using the exchange rate for the final month of the year of the original price and then inflationary factors were applied to the USD cost estimates for projections. While the unit prices and unit price estimates reference different sources, the prices have not been adjusted (using PPP or similar methods) in the cost model. The costing model does not include a discount rate. The data and graphs in this brief reflect the marginal incremental cost per student, which includes all costs of the programme – not just the ingredients delivered to students.

23 From a range of Sub-Saharan African countries including Burundi, the Democratic Republic of Congo, Ethiopia, The Gambia, Ghana, Kenya, Malawi, Rwanda, Sierra Leone, South Africa, Uganda and Zambia.

24 See Annex 4 for base year unit prices used in the analysis.

25 https://www.imf.org/external/datamapper/PCPIPCH@WEO/SSQ accessed on May 24, 2025.

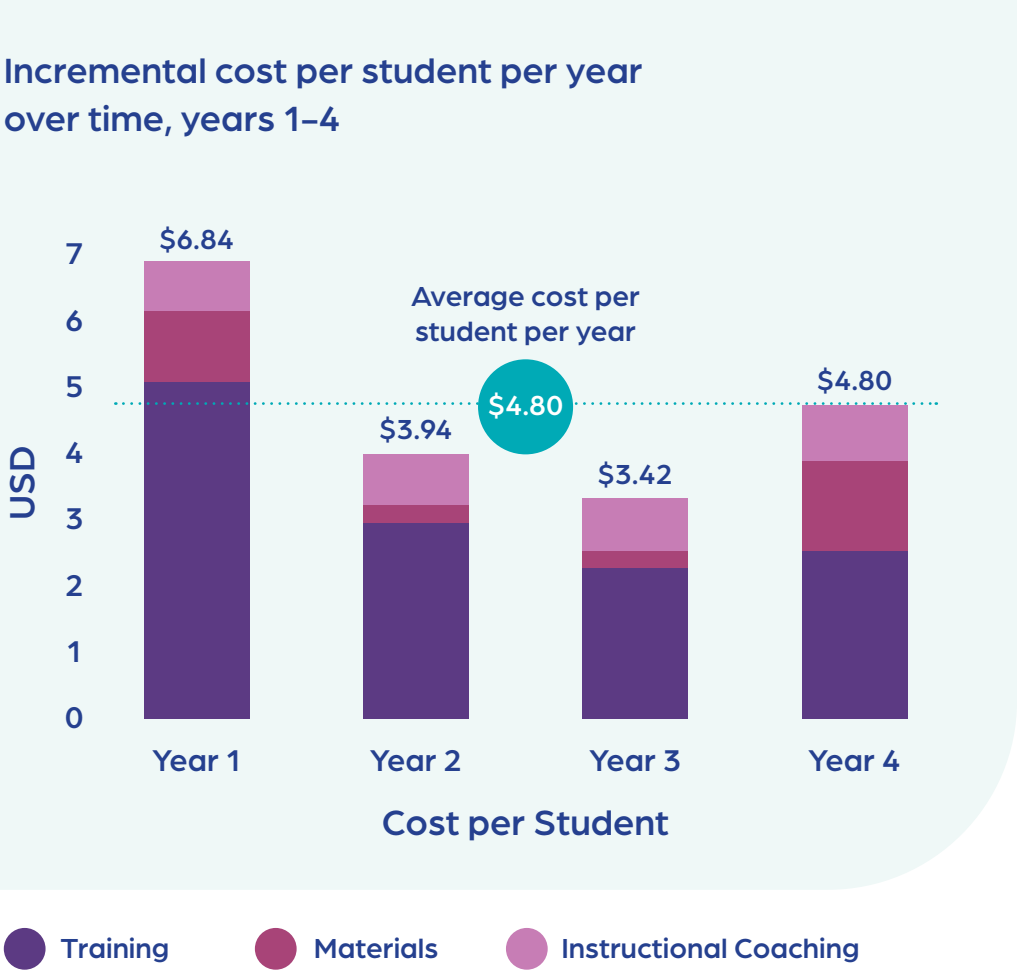
26 Given that adjustments to per diems are predominantly determined by policy and/or labour negotiations, rather than directly informed by changes in overall prices in a particular context and are usually lower than overall inflation rates. The increases are compounded over the years in the analysis.

The Cost of the Model

Total cost of the model

The model is estimated to cost $4.80 per student per year on average over the initial four-year implementation period. The first year of implementation represents the highest cost at $6.84 per student per year, primarily due to the initial training and materials provision. The cost lowers to $3.94 per student and $3.42 per student in years 2 and 3 respectively. We see an increase in year 4 to $4.80 per student per year, primarily driven by a materials replacement and inflationary factors. The average cost per year per student without instructional coaching is $4.04.

Figure 12 Estimated cost per student, year 1–4



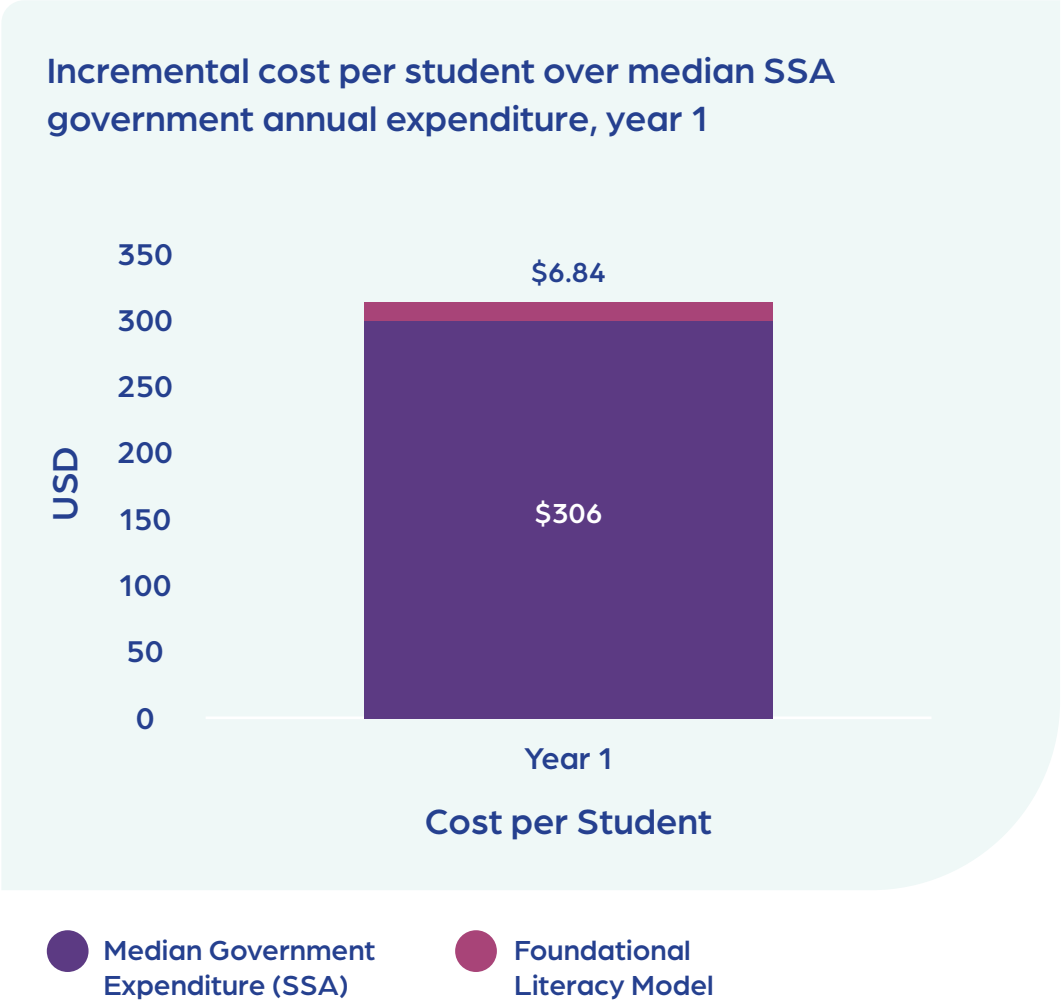
Download the cost model used in this analysis.

Cost over median government spending

The model is estimated to add roughly 2% to the median SSA government expenditure per student per year at the primary level for the first year of implementation (Figure 13).[27]

In subsequent years, the incremental per student cost is roughly 1% of the median government expenditure.

Figure 13 Estimated cost over median SSA government spending



27 Baseline government spending is the median per pupil expenditure for Sub-Saharan Africa as reported in Annex Table 1: Education System Characteristics and Education Expenditures in UNESCO. 2023. Global Education Monitoring Report 2023: Technology in education – A tool on whose terms? Paris, UNESCO. Note that the median is based on data from 24 of 48 countries in SSA and is reported as the initial government expenditure per pupil by level, in constant 2019 PPP USD.

Cost by programme component

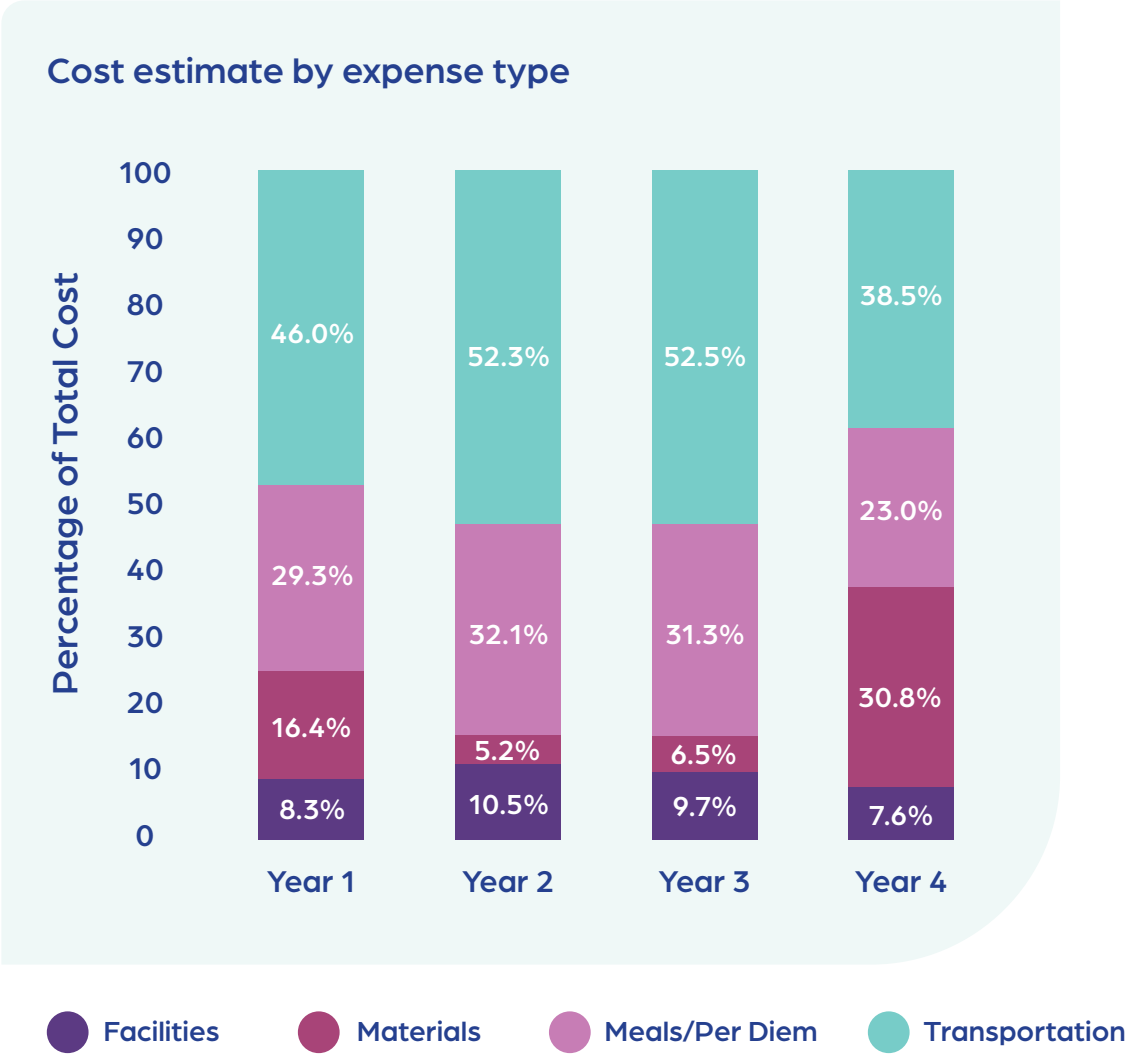
As shown in Figure 14, in-service professional development represents the highest cost programme component across the years, ranging from 78% to 55% of the estimated cost. In years 1 and 4, materials represent the second highest cost driver with 15% and 29% respectively. Instructional coaching ranges from 10% (year 1) to 23% (year 3) of the total cost, with these variations driven largely by variations in the cost of the other components.

Figure 14 Estimated cost by programme component, year 1– 4

Cost by expense type

As shown in Figure 15, transportation represents the largest expense type across years of implementation, followed by meals/per diem expenses. Materials (TLMs and materials for training and coaching) are a large cost driver in years 1 and 4 as expected with the TLM replacement cycle.

Figure 15 Estimated cost by expense type



6 | Increasing cost efficiency in materials provision

Throughout the expert consultations and review of evidence, examples of strategies to improve cost efficiency emerged. To complement the strategies for cost efficiency that we described in previous sections below we offer several immediate and longer-term strategies to lower costs for materials provision.

Immediate Strategies

Maximising the Size of the Print Run

Printing large batches of materials (eg 50,000 copies or more at a time) can significantly reduce the per unit price. As illustrated in the vignette below, the cost of materials procurement can be reduced by half by consolidating procurements to ensure large print runs.[28]

In 2012 in South Africa, at least one-third of schools bought their textbooks directly rather than through a centralised process, creating a high management burden and small, costly print runs. Centralising the purchase of teaching and learning materials resulted in a lower unit price for textbooks, allowing twice as many materials to be purchased for the same budget. The key changes included a smaller number of titles in the National Catalogue for schools to select from and better coordination of procurement timelines so that textbook orders were consolidated for larger print runs. Also, creating an open and transparent selection process for book titles limited the number of titles available while allowing for interested parties to complete in a fair and effective process. These changes eliminated the uncoordinated and costly process of multiple publishers printing smaller runs for the same titles.

28 A 25 Year Review of Progress in the Basic Education Sector: 2019. Compiled by the Department of Basic Education South Africa. https://www.education.gov.za/Portals/0/Documents/Reports/DBE%2025%20Year%20Review%20Report%202019.pdf?ver=2019-12-13-133315-127 .

Competitive Bidding and Transparent Bidding Processes

Procurement bidding processes that are open to national and international firms usually result in lower prices and higher quality than nationally restricted procurements and should be considered. In this approach, national bidders are eligible to compete, in some cases with a preference provided for national bidders.

Whether procured internationally or nationally, transparency and extensive advertising can increase competition and reduce prices. Highly visible and well-structured requests for proposals will attract more bids that are responsive to the requirements. Engaging a panel of teaching and learning materials and printing experts on procurement panels can yield higher quality selections and well-negotiated prices.

In the World Bank's procurement processes, international competitive bidding tenders allow for the provision of a local preference. This method produces bids meeting international price benchmarks while offering a competitive advantage to local bidders through a preference margin (as high as 10–15%).

Leverage Artificial Intelligence to Improve Content Development Processes and Timelines

Generative Artificial Intelligence can make workflows more efficient and improve the quality of materials. Processes that include AI-enabled translation of curricula into teachers' guides, lesson plans and student materials can reduce the amount of time required for materials development and improve alignment and quality.[29] AI-generated materials should always be reviewed by experts.

Inspiring Teachers have integrated generative AI (GenAI) into their workflow to create new structured pedagogy lesson plans and materials. Using ChatGPT & Claude alongside expert review to develop read-alouds, they generate phonetically controlled texts and images for Teachers' Guides and student workbooks. Through this process, Inspiring Teachers has created 180 lessons for grade 1 reading classes in Ghana and are working on developing 360 more to cover grades 2 and 3 and to adapt the guides for use in Uganda. The team estimates that their productivity has increased by more than 100%, allowing staff to develop the Teachers' Guides quickly, keeping pace with implementation timelines.

29 Email communications with Inspiring Teachers staff and content published at JPAL.org.

Longer-Term Strategies

Address High Import Tariffs on Raw Materials

The African educational printing market is under-developed in part due to the differing tariff regimes for finished teaching and learning materials and the raw materials used to produce teaching and learning materials. For instance, the Florence Agreement established that finished teaching and learning materials could be imported into signatory countries without payment of customs duties. In contrast, the raw materials required to produce teaching and learning materials, such as paper (that can account for up to 70% of a book's cost), are subject to different regulations and often are encumbered by import duties. In these instances, books are more expensive to produce locally than to import from international printers in part because of the duties placed on raw materials. There are efforts to address this issue by some African leaders (see example below),[30] and it is important to address this explicitly where tariff regimes unduly inhibit competitive local production of educational materials.

> In 2023, Ethiopian Minister of Education Birhanu Nega lifted the tax on imported paper in an effort to encourage domestic printing. By waiving custom duties on imported paper for textbooks, Minister Nega hoped that the 40 million textbooks needed for students across Ethiopia could be printed efficiently by local printers.

Address the Lack of 4-Colour Presses in the African Printing Market

The cost of printing colour is nearly equivalent to printing in black and white when using advanced 4-colour presses. 4-colour presses have become the norm around the world, except in Africa where many printers continue to purchase and use 1-colour machines from the resale market. This gap puts African printers at a distinct competitive disadvantage when bidding on materials with color and combined with the high tariffs on importing paper, printing on the continent remains more expensive and uncompetitive.[31] Investing in more modern printing equipment on the continent can fundamentally shift the competitive landscape for provision of educational materials.

30 https://www.thereporterethiopia.com/36269.
31 Communications with two KII informants, country names were not provided due to confidentiality considerations.

7 | Annexes

Annex 1. Expert Consultation List

This brief is based on a series of consultations with experts (listed below) in foundational literacy and a rapid scan of the literature (see references). Findings from the expert consultations and literature scan were consolidated and refined by the authors and as such, the findings presented in this brief represent the analysis and position of the authors and not any individual expert.

The experts consulted included:

1. Penelope Bender, independent
2. Christophe Barth, BlueTree Group
3. Joe DeStefano, RTI
4. Peggy Dubeck, Kersiga Consulting
5. Norma Evans, Norma Evans and Associates
6. Oby Ezekwesili, Human Capital Africa
7. Dhir Jhingran, Language and Learning Foundation
8. Rebecca Martinez, Millenium Challenge Corporation
9. Emily Miksic, FHI360
10. Pooja Nakamura, AIR
11. Benjamin Piper, Gates Foundation
12. Jennifer Swift-Morgan, Prevail Fund

The draft findings were discussed at a meeting with the Association for the Development of Education in Africa and Human Capital Africa in June 2025. We thank the Kenyan and Ugandan Ministry representatives for their insights and feedback.

Annex 2. Interview Protocol

The interview protocol is provided below and in the KII Consultation Summary excel sheets.

Training

1. Is 8 days in service training enough?
2. What is the ideal way to group teachers for training on FL? Should teachers be grouped by other than grade-level?
3. What is the most critical content to include in FL teacher training?
4. What are the most critical skills to focus on in FL teacher training?
5. How many hours are required for an initial FL teacher training?
6. How many cascades before quality reduces to an unacceptable level?
7. How much time should be spent on lecture, modeling and practice in FL teacher training?
8. What, if any, refresher trainings should be included in the first academic year of implementation of FL? How many hours, content/focus, modality?
9. What do you recommend for teacher training after year 1/on an on-going basis?
10. What do you recommend for master training after year 1/on an on-going basis?
11. What is the maximum number of trainers/teacher ratio before quality reduces to an unacceptable level?
12. What are critical features of high-quality training materials?
13. What qualifications do FL teacher trainers have to have?
14. Is it ok to have mostly teacher-teacher practicum?
15. What about modality options – face to face, remote, hybrid, etc.?

Teaching & Learning Materials

Teacher Guide

1. If teachers' guides have lesson plans or scripted lessons included, do you think it is necessary to have a separate lesson planning process?
2. How important is color vs. black and white for a teacher's guide?
3. How important are illustrations in a teacher's guide?
4. How often should one expect a teacher's guide that is used daily to be replaced (due to normal wear and tear?)
5. What percentage of SP curricula/lesson plans are usually able to be delivered in one academic year?
6. In your experience, how would you improve the leveling and pacing of FL SP curricula and lesson plans?
7. What kind of binding is the best value for money for teacher guides?

Student Textbook

1. What alternatives are there to 1:1 student textbook?
2. How important is it that students work in their own book rather than in an exercise book referencing the textbook?
3. How much of a priority is it that students bring their textbooks or workbooks home?
4. How important is color vs. black and white for a student's textbook?
5. How important is it to have illustrations in a student's textbook?
6. What is the ideal page size of a student textbook and why?
7. What kind of binding is the best value for money for student textbooks?
8. How often should one expect a student textbook that is used daily to be replaced (due to normal wear and tear?)
9. What loss rate is typical for student textbooks?

Student Workbook

1. Who usually provides students' exercise books? Schools or parents?
2. If a student is using an exercise book daily, how many do you think they would need in an academic year?

Supplemental Readers

1. What kinds of supplemental reading materials are MOST IMPORTANT for students to have access to?
2. What ratio of students to supplemental readers is needed to provide enough print exposure and reading opportunities to students?
3. How important is leveling readers and aligning students' levels vs. simple book selection by students?
4. What is the relative value of guided group reading, reading activities led by teachers, and independent student engagement with supplemental reading materials?
5. How much time per week should students engage with supplemental reading materials?
6. How important is it to have color (vs B&W) supplemental reading materials?
7. How important is it to have illustrations in supplemental readers?

Teaching Aids/Activities

1. What types of teaching and learning aids are most important to have in the classroom?
2. In your experience, are the teaching and learning aids developed by teachers optimized for learning?

District/Middle Tier Instructional Leadership & Coaching

1. What types of content knowledge and skills do you think middle tier coaches need to effectively support FL teachers?
2. How much initial training, in terms of days or hours, do you think middle coaches need?
3. How should the training be structured in terms of delivery, frequency, modality, etc.
4. What are the qualifications for trainers of middle tier coaches?

School Leadership Instructional Leadership & Coaching

1. What types of content knowledge and skills do you think SCHOOL LEADERSHIP coaches need to effectively support FL teachers?
2. How much initial training, in terms of days or hours, do you think middle coaches need?
3. How should the training be structured in terms of delivery, frequency, modality, etc.
4. What are the qualifications for trainers of school leadership coaches?

Observations/Coaching – Middle Tier

1. What do you think a practical but still effective district staff to teacher ratio is?
2. Phrased differently, take a peri-urban area, how many lesson observations and coaching sessions do you think it is reasonable for a middle tier coach to conduct per day?
3. What other CPD activities are critical to include in an SP model?
4. What is the ideal frequency of instructional coaching visits?
5. How much of a lesson do you think a coach needs to observe to adequately assess a teacher and provide robust feedback?
6. What functions do you think are most important for middle-tier staff to perform to improve foundational literacy outcomes?

Annex 3. Model Description

MODEL DESCRIPTION	
In-service professional development	
The in-service profressional development in the model is a two-level cascade that ensures optimal teacher:trainer ratios at decentralized training locations. Level 1 training is delivered by national trainers to a cadre of Level 2 trainers. Level 2 training occurs at decentralized locations. In-service professional development takes a gradual release approach with higher intensity training in the first year of implemention, with gradual decreases over time. All training is delivered in person. Training content is half pedagogy and half subject-matter with the great majority of time spent with teachers practicing using the Teacher's Guide and student materials for reference. For Level 2 training, school leadership and middle tier leadership attend only the first training each year. Teachers attend all of the Level 2 training each year.	
Level 1: Frequency/cadence	Year 1 (3 days), Year 2 (3 days), Year 3 (2 days), Year 4 (2 days)
Level 2: Frequency/cadence	Year 1 (7 days), Year 2 (4 days), Year 3 (3 days), Year 4 (3 days)
Topic/Scope	Half pedagogy, Half subject
Practicum approach	70-80% teacher practicum, 20% lecture with modeling
Materials	Level 1 training: 1:5 ratio of Teacher Guide and student materials, 1:1 training manual Level 2 training: 1:1 Training manual, 1:2 Teacher Guide, 1:5 Student materials
Delivery modality	Face to face in all years for all sessions for both level 1 and level 2.
Trainees per trainer	Level 1 - 1 trainer: 20 trainees Level 2 - 1 trainer: 15 trainees, with trainings conducted in groups of 30 with 2 trainers
Training location	Level 1 - conducted at national or regional location for all level 2 trainers Level 2 - conducted at decentralized administrative unit (such as district or cluster).
Participants	Level 1 - all level 2 trainers Level 2 - Grade 1-3 teachers + school leadership + middle tier support staff in term 1 training each year. Subsequent trainings in terms 2 and 3 each year include only teachers.
Trainer qualifications	Foundational literacy concepts, Teachers' Guide contents and objectives, foundational phase teaching experience and adult phase learning expertise.
Instructional Time	
Foundational literacy should have at least five full class hours (45-60 minutes) per week in the time table/planned. For Grade 1, if possible, classes should be split into smaller increments while maintaining the total instructional time. Classes should be scheduled (e.g., not the first session of the day or directly after lunch) to minimize lost instructional time due to tardiness and absence.	
Amount of hours per week	3.75 - 5 hours

Teaching Materials: Teachers' Guide	
Teachers' Guide	
Every teacher has a Teachers' Guide that covers the full academic year, follows an approved scope and sequence and pacing of content across the year. The guide includes lessons that are both structured and, for some skills and routines, are scripted. Within each lesson, scripts are provided depending on skill and routines taught and used in each lesson. Across lessons, the Guide is structured to maintain pacing and consistency of content and routines with gradual release that reduces scripting as activities and routines are repeated. Gradual release of scripting is balanced with suggested activities that teachers can use with whole class, small groups or by ability levels. The Guide describes the desired student skills associated with each activity and suggested follow-up activities based on the skills observed. The Guide is spiral-bound and designed for easy navigation. It includes thumbnails of the corresponding student textbook pages and uses color (or symbols) for organization and locating key information at a glance. Minimum font size is 12. The Guide has 2 pages per lesson of scripts/suggested activities plus connected text for read aloud and teacher-directed activities.	
Ratio per teacher	1 Teachers' Guide per teacher
Number of pages	2 pages per lesson scripts/activities plus additional texts for read-alouds and other teaching activities.
Content	Linked with student textbook. Includes variety of text for read-aloud and teacher-directed activities. Minimum font size of 12.
Color/B&W	Color if the cost is not higher or minimally higher than black and white. Color used for easy reference and key information.
Illustrations	Illustrations are used to support navigation, predictable organization and easy reference at a glance for the teacher during lessons. The space for illustrations is minimized.
Binding	spiral bound
Loss Rate	10% annually
Replacement cycle	4 years
Student Materials: Textbook	
Student Textbook	
Each student has a textbook that contains two pages per lesson that follow the language and skills scopes and sequences in the Teacher's Guide. Textbooks are provided on a 1:1 basis.. Students do not write in textbooks. They complete activities and practice writing in lined notebooks(provided by parents or [provided/funded at a decentralized level). Grade 1 textbooks include illustrations for motivating young readers and in later grades illustrations included are when needed to support specific skills. For all grades, text is prioritized over illustrations.	
Ratio per student	1 textbook per student
Number of pages	2 pages per lesson of activities aligned with the Teachers' Guide and leveled decodable stories for independent reading
Content	Aligned with Teachers' Guide
Color/B&W	Color
Illustrations	Text is prioritized over illustrations across grades. More illustrations in Grade 1, with only targeted use of illustrations for Grades 2 and 3.
Binding	glue with stiching
Loss Rate	10%
Replacement cycle	4 years
Lined Notebook (not costed)	
Parents provide notebooks. For students whose parents cannot provide notebooks, local provision via district/school capitation grants, etc.	
Ratio per student	1 lined notebook per student per term
Replacement cycle	termly

Instructional Coaching	
There is a 2-cascade professional development model to equip coaches. Instructional coaching in the model uses existing middle tier staff to conduct lesson observations and provide coaching to teachers.The cost model includes travel and meals to support three visits per school per team, but does not include additional staff to deliver coaching. Many systems will require additional staff position to deliver on this instructional coaching model and should include additional staff positions in their cost modeling.	
In-service professional development for coaching	Two-level model repeated annually. Level 1 (2 days/year), Level 2 (3 days/year)
Frequency of visits/observatio	3 times per term per school with focus on foundational literacy for observations. Not all teachers are observed and coached in each school visit given time constraints.
Coaching	Coach meets with the teacher after each observation and the teacher leads the coaching session with a self-reflection and questions. The coach has a guide/checklist to prioritize and support the coaching discussion.
Documentation of observation/coaching data	Tablet is recommended, but not included in cost model. Ideally observation and coaching data are uploaded into EMIS or other data system.

Annex 4. Unit prices, demographic data

The prices for ingredients listed below are from a compendium of teaching and learning materials procurement by governments provided by Early Literacy Resource Network and an instructional programme implemented fully by the government in an African country. For confidentiality reasons the countries cannot be named. All original prices (as relevant for historical prices) were converted to USD using the exchange rate for the final month of the year of the original price and then inflationary factors were applied to the USD cost estimates for projections. While the unit prices and unit price estimates reference different sources, the prices have not been adjusted (using PPP or similar methods) in the cost model.

HISTORICAL INFLATION ADJUSTMENT				FORWARD INFLATION ADJUSTMENT (materials, facilities)				FORWARD COLA ADJUSTMENT (travel, per diem)			
Year	Inflation Rate (%)	Inflation Rate (Decimal)	Cumulative Inflation Factor	Year	Inflation Rate (%)	Inflation Rate (Decimal)		Year	COLA Rate (%)	COLA Rate (Decimal)	
2025	10.0%	0.1	1.10	2026	10.00%	1.1		2026	3%	1.03	
		0	1	2027	10.00%	1.1		2027	3%	1.03	
				2028	10.00%	1.1		2028	3%	1.03	

MATERIALS								
Description			Converted to USD	Inflated to Year 2025 (YEAR 1)	Inflated to Year 2026 (YEAR 2)	Inflated to Year 2027 (YEAR 3)	Inflated to Year 2028 (YEAR 4)	Notes
Training Manual				1.00	1.10	1.21	1.33	Estimate
Literacy Teacher Guide Level 1-3				1.20	1.32	1.45	1.60	plus 20% for spiral bound.
Student Textbook				1.00	1.10	1.21	1.33	Estimate

TRAINING: FACILITY								
Description			Converted to USD	Inflated to Year 2025 (YEAR 1)	Inflated to Year 2026 (YEAR 2)	Inflated to Year 2027 (YEAR 3)	Inflated to Year 2028 (YEAR 4)	Notes
Training facility rental/day			100.00	110.00	121.00	133.10	146.41	

DAY TRAINING: MEALS, TRAVEL								
Description			Converted to USD	2025	Adjusted to COLA 2026	Adjusted to COLA 2027	Adjusted to COLA 2028	Notes
Lunch, snack, water per person/per day			6.50	6.50	6.70	6.90	7.10	
TNT for day training per day			13.50	13.50	13.91	14.32	14.75	

OVERNIGHT TRAINING: ACCOMODATION, TRAVEL, MEALS, SNACKS								
Description			Converted to USD	2025	Adjusted to COLA 2026	Adjusted to COLA 2027	Adjusted to COLA 2028	Notes
Trainee per diem for meals and accomm.			24.00	24.00	24.72	25.46	26.23	
One time travel for overnight training			34.00	34.00	35.02	36.07	37.15	
Lunch, snack, water per person/per day								not used, offset b

Proportion of trainees at national/regional level with overnight travel	1.00
Proportion of trainees at district level with overnight travel (decentralized)	0.10

INSTRUCTIONAL COACHING/SCHOOL MONITORING								
Description			Converted to USD	2025	Adjusted to COLA 2026	Adjusted to COLA 2027	Adjusted to COLA 2028	Notes
school monitoring visit (lunch/snack)			7	6.8	7.00	7.21	7.43	
fuel per school			11	10.9	11.21	11.55	11.89	
Observation sheet			0.30	0.30	0.33	0.36	0.40	

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