Zizi Afrique Foundation

Catalyzing Foundational Numeracy Excellence in the CBE Era:

Celebrating Progress, Empowering School Leadership, and Advancing Transformative Learning in Kenya

Insights, Evidence, and Action Priorities for Strengthening Instructional Leadership and Classroom Practice

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A. WHAT DOES DATA/EVIDENCE TELL US ABOUT FOUNDATIONAL NUMERACY?

Fact Sheet 1

Strengthening Foundational Numeracy in Kenya: Data, Trends, and Pathways for Action Background

Kenya's commitment to quality education is anchored in the Constitution (Article43)and the Basic Education Act(2013), which guarantee every child's right to free and compulsory basic education. The Basic Education Curriculum Framework (2025) positions numeracy as a foundational skill for lifelong learning.

Numeracy at Lower Primary

Numeracy prepares learners for mathematics at higher levels by enabling them to identify and value mathematical numerals and perform basic operations such as addition, subtraction, and multiplication. By the end of Early Years Education, learners should demonstrate basic literacy and numeracy skills essential for continued learning.

National Trends in Numeracy Achievement

Reliable statistics on foundational numeracy in Kenya, indicates are cent downward trajectory (KPSEA, 2022-2024), calling for immediate action to alleviate the situation.

- Early Grade Mathematics Assessment (EGMA, 2018): 76.1% of learners achieved at least 50% proficiency, up from 71.1% at baseline.
- National Assessment System for Monitoring Learner Achievement (NASMLA, 2022): Level1 competency rose from 83.1% to 86.3%, but 94.6% of learners failed to reach Level 4. Persistent challenges were seen in multiplication (46.9%) and division (49.1%).
- Kenya Primary School Education Assessment (KPSEA, 2022–2024): Mathematics performance rose from 44.8% in 2022 to 48.1% in 2023, but dropped to 23.5% in 2024, indicating widening learning gaps.

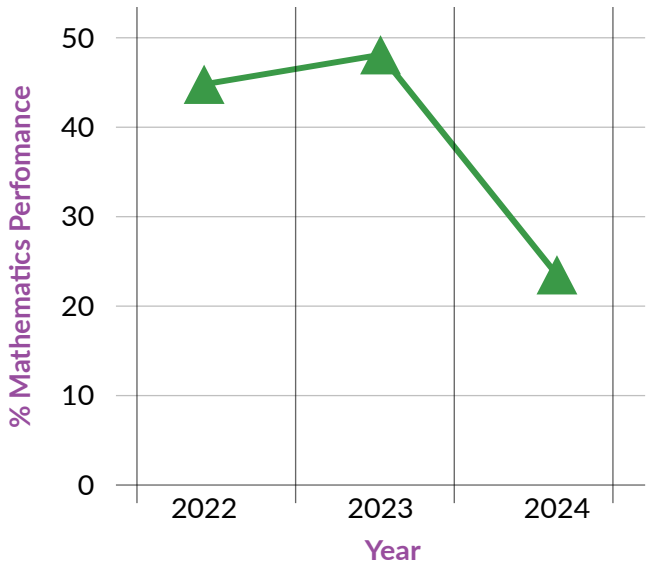
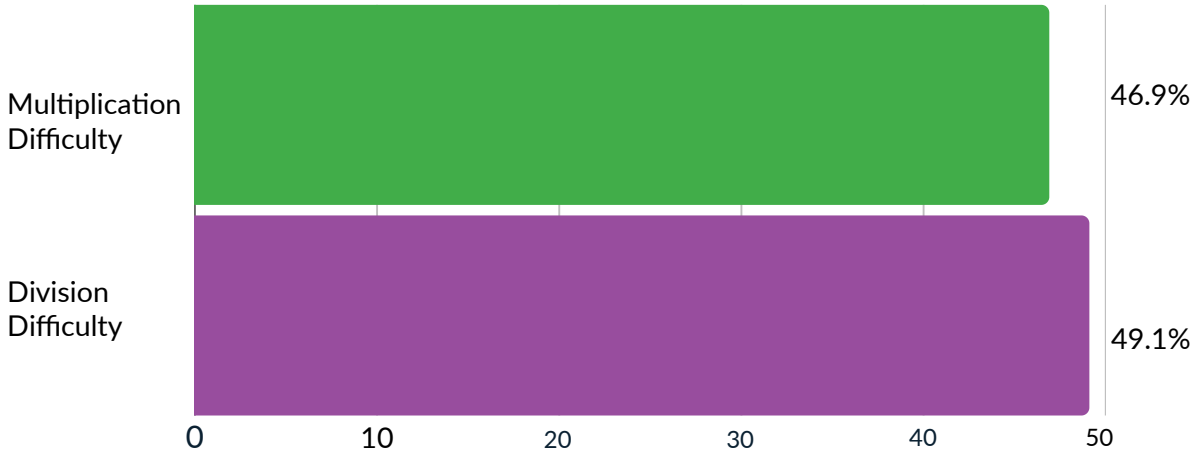


Figure1:KPSEA Mathematics Performance (2022–2024)

NASMLA Core Challenges (2022)



Percentage of learners struggling with core operations.

Kenya Primary School Education Assessment (KPSEA), 2022–2024

Year	Mathematics (%)	Learners Meeting or Exceeding Expectations	Key Trend
2022	44.8	Moderate baseline performance	
2023	48.1	Slight improvement	
2024	23.5	Sharp decline; 76.5% below or approaching expectations	Alarmingly widening learning gaps

It is important to note a similar downward trend observed is in English and Kiswahili performance, signaling systemic foundational learning challenges.

Emerging Insights

- Despite earlier gains, numeracy out comes have declined sharply post -2023, suggesting challenges in transition, pedagogy and learning continuity.
- Persistent learning gaps reflect weak foundational understanding and limited application of arithmetic concepts.
- The widening disparities call for targeted teacher support and enhanced formative assessment.

Opportunities and what must be done to strengthen foundational numeracy

The following are opportunities that education stakeholders could prioritize to enhance foundational numeracy outcomes in Kenya:

- Strengthen teacher support systems through QASOs, CSOs and school leadership.
- Enhance teacher capacity through continuous professional development.
- Institutionalize formative assessments for learning progress.
- Promote Communities of Practice (CoPs) such as ICT Teacher Champions (550+ members).
- Sustain gains through coordinated national and county-level initiatives.

Key Take aways

The following are essential takeaways. That:

- Foundational numeracy is critical for later learning and life long skills.
- Urgent interventions are required to reverse the recent decline in performance.
- Multi-stakeholder collaboration can accelerate progress toward stronger numeracy outcomes.

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B. WHAT HAS BEEN DONE TO ADDRESS FOUNDATIONAL NUMERACY GAPS? WHAT DOES THE INTERVENTION(S) TELL US?

Policy Brief
Enhancing Early Grade Numeracy through Error Analysis and Formative Assessment in Kenya, Nigeria and South Africa.

Zizi Afrique Foundation (ZAF).

Executive Summary

Foundational numeracy is central to children's lifelong learning and participation in society. Yet, millions of learners in Africa leave early grades without mastering basic number operations, limiting their progression in education and skills' development. T his policy brief synthesizes evidence from a multi-country pilot in Kenya, Nigeria and South Africa, which introduced **error analysis and formative assessment** as tools to improve teaching and learning in early grade numeracy.

Results show that when teachers use learner errors as diagnostic feedback, they deliver more targeted, effective instruction. The pilot demonstrated marked improvements in learner performance, teacher practice, and learner engagement, with the strongest outcomes observed in contexts where coaching and structured support were sustained.

To institutionalize these gains, governments and partners should:

- Integrate error analysis in to pre-service and in-service teacher training.
- Invest in on going instructional coaching structures.
- Develop low-cost, context-appropriate instructional tools.
- Embed formative assessment data in to education monitoring and supervision systems.

Scaling such evidence-based practices offers a timely opportunity to align with **continental priorities under CESA 16-25**, national curriculum reforms and global SDG 4 targets, ensuring that all children acquire essential numeracy skills for learning and life.

The Problem Statement

Despite progress in school enrollment across Africa, many children fail to master foundational numeracy. In Kenya, 60% of learners in lower primary lack grade-level competencies (Usawa, 2024). Nigeria faces persistent challenges, with only 1 in 4 early grade learners achieving minimum proficiency in mathematics (UNESCOGEMR, 2020).In South Africa, systemic assessments reveal that over half of Grade 3 learners cannot perform basic addition and subtraction.

These gaps undermine children's progression, contributing to inequities in later schooling and lifelong opportunities. Traditional teacher training models often neglect strategies for identifying and addressing learner misconceptions. Without timely, formative feedback, learners fall further behind. Addressing these gaps is urgent in the context of competency- based curricula, global commitments to universal learning(SDG4), and national reforms aiming to strengthen foundational skills.

60%

of learners in lower primary lack grade level competencies in Kenya

1 in 4

early grade learners achieving minimum proficiency in mathematics in Nigeria

Background and Context

Governments in Africa have prioritized foundational learning, reflected in Kenya's Basic Education Curriculum Framework (2017), Nigeria's National Mathematics Policy Framework and South Africa's emphasis on early grade literacy and numeracy through provincial programs. Donors, Civil Society Organizations, and teacher training institutions have piloted interventions, yet challenges persist, evidenced by fragmented teacher support systems, weak integration of formative assessment into classroom practice and inadequate coaching structures.

The multi-country pilot by Zizi Afrique Foundation (Kenya) and partners, The Education Partnerships(Nigeria) and Funda Wande (South Africa) sought to test error analysis and formative assessment as scalable innovations in resource-constrained contexts. Building on international evidence that learner errors provide critical feedback (Black & William, 2009; Heritage, 2010), the intervention trained teachers to log interpret, and respond to common learner mistakes in numeracy. Coaching and structured tools complemented the training.

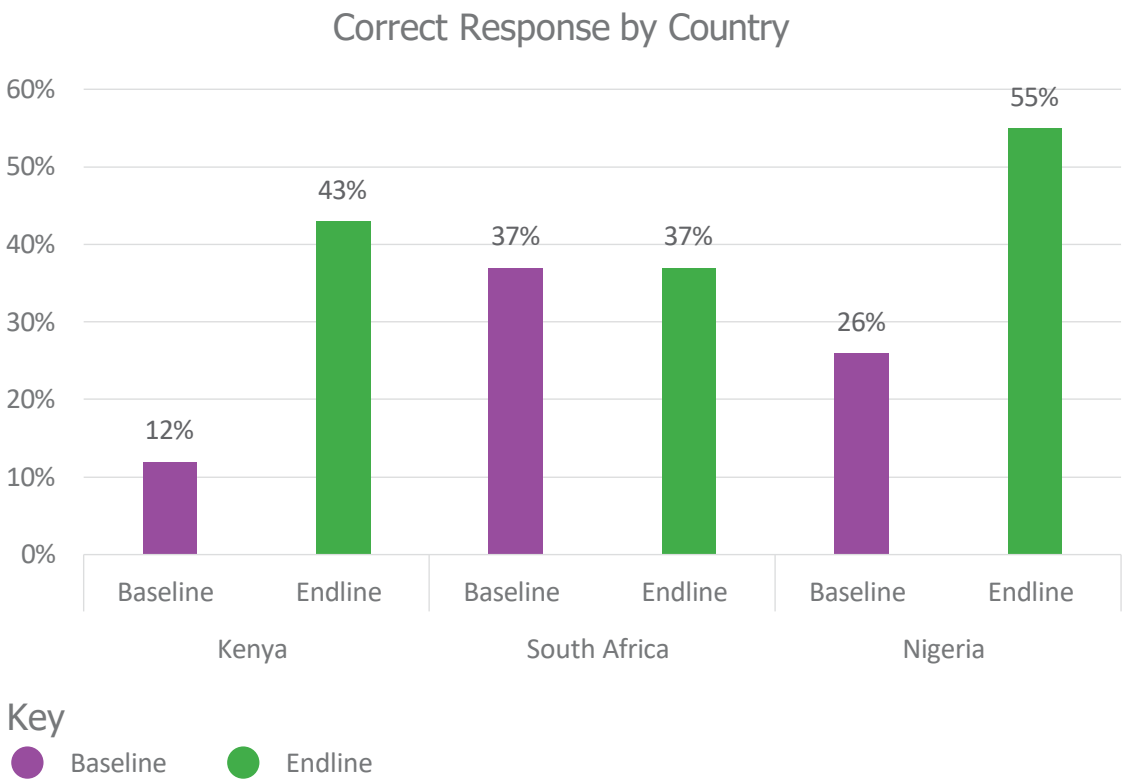
Stakeholders were drawn from the ministries of education, teacher service commissions, local education officers and community schools, who included learners from grades 2 and 3. The pilot's cross-country design provided comparative insights into what works, under which conditions, and how systems can institutionalize such practices.

Key Results

The pilot generated compelling, cross-country evidence that error analysis and formative assessment are not just classroom strategies but powerful levers for system-wide improvement in early numeracy. By equipping teachers to interpret learner errors as windows into their thinking, the intervention transformed teaching practices, boosted learner performance, and fostered more engaging classrooms. The findings reveal that even in resource-constrained contexts, structured support and context-sensitive tools can unlock significant learning gains. **The key results from the three countries are summarized below.**

1. Improved Learning Outcomes

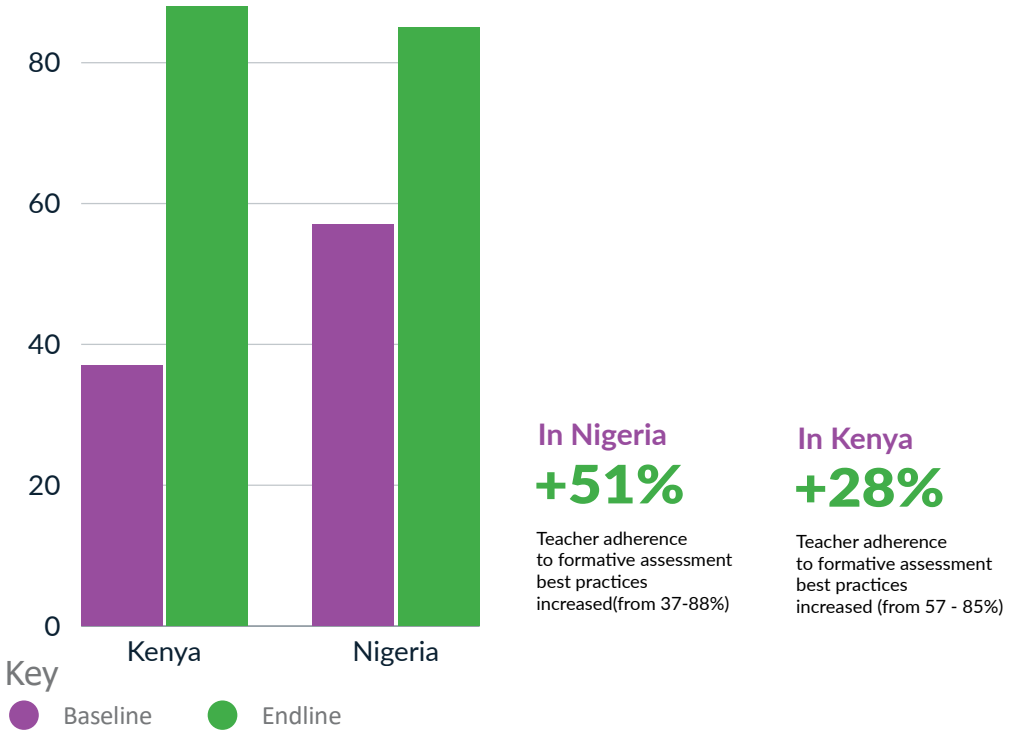
- ***Kenya***:Correct learner responses improved from 12% to 43%, showing significant gains in understanding basic operations.
- ***Nigeria:*** Conceptual errors dropped from 13% to 1%, and correct responses increased from 26% to 55%,indicating a better grasp of mathematical concepts.



- These improvements demonstrate the efficacy of using error diagnosis tools to target instruction (RTI International, 2022).

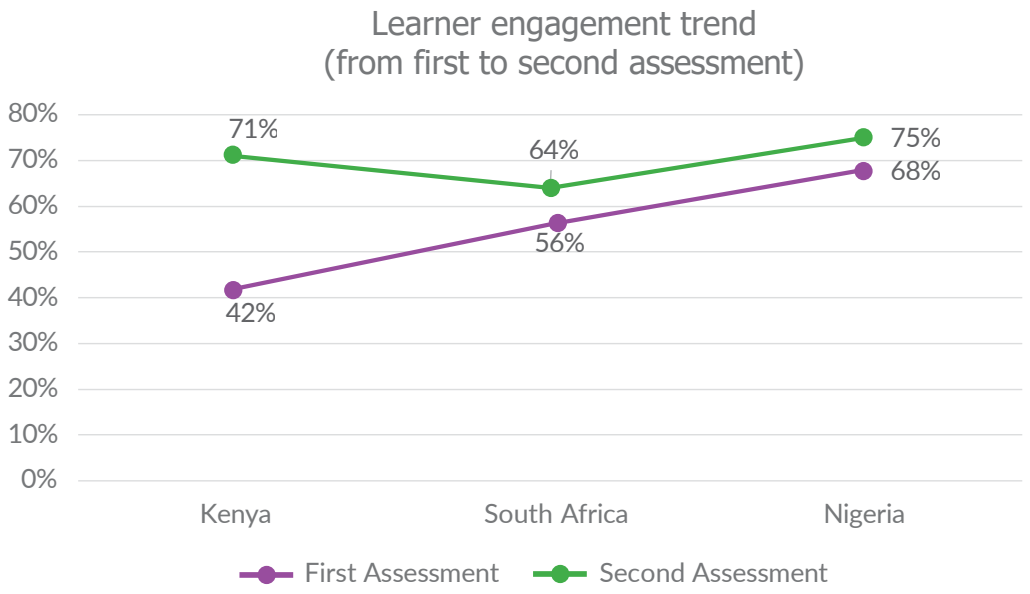
2. Growth in Teaching Practice

- ***Nigeria***: Teacher adherence to formative assessment best practices rose from 37% to 88%.
- ***Kenya:*** Increased from 57% to 85%. The gains in the two countries were driven by hands-on training, structured coaching, and the use of error logs to track and analyze learner mistakes.



3. Increased Learner Engagement

- ***Kenya***: Active learner participation rose from 42% to71%.
- ***Nigeria***: Improved from 68% to 75%.
- ***South Africa***: Increased from 56% to 64%



Kenya, Nigeria and South Africa:Teachers reported that learners became more confident and willing to engage with difficult content, reflecting a culture where errors were seen as learning opportunities (Boaler, 2016).

4. Positive Teacher Perceptions

- Across all three countries (Kenya, Nigeria, and South Africa), teachers described error analysis as *"an eye-opener"* and *"a tool to understand how learners think."*
- This perspective shift supported more targeted and responsive instruction, aligning with evidence from formative assessment research (Education Endowment Foundation, 2018).

The pilot shows that when teachers are trained and supported to view errors as diagnostic feedback rather than failure, they become more intentional in adjusting instruction. Structured tools, such as error logs and learner work samples, allowed teachers to identify patterns of misconception and apply corrective strategies.

Key insights include:

- Coaching makes the difference: Nigeria's outcomes benefited from a structured coaching system, reinforcing that professional learning must be continuous.
- Sustainability challenges: In South Africa, staff turnover and weak follow-up mechanisms dampened results, signaling that sustained implementation needs institutional embedding.
- Safe learning environments: Emphasis on creating spaces where learners can express confusion or make mistakes without stigma enhanced engagement and critical thinking, a priority in developing 21st-century skills.

Scaling the approach calls for alignment with national curriculum reforms, teacher education programs, and school supervision systems, as recommended in Kenya's Curriculum Framework (KICD, 2017) and echoed in the African Union's CESA 16-25 goals (African Union, 2016).

Policy Recommendations

The evidence underscores an urgent opportunity for policy makers to act. Strengthening foundational numeracy requires more than isolated class room interventions, since it calls for systemic reforms that integrate error analysis and formative assessment into teacher development, supervision, and curriculum implementation. To ensure sustainability and scalability, solutions must be practical, cost-effective, and tailored to national education systems. **The following recommendations present clear, actionable steps to guide policy and practice.**

1. *Mainstream Error Analysis in Teacher Development.*

- Integrate in to pre-service and in-service programs using localized case studies.
- Align with national numeracy strategies such as Kenya's National Education Sector Strategic Plan (NESSP) and Nigeria's National Mathematics Policy Framework.

2. *Invest in Ongoing Coaching Structures.*

- Train district instructional leaders and establish peer-learning circles to build a professional learning community culture.
- Leverage existing teacher support systems such as Kenya's TPD model and South Africa's subject advisor networks.

3. *Design Contextualized Instructional Materials.*

- Develop mobile-friendly, low-cost resources that support error identification and feedback routines.
- Ensure alignment with national curricula and language policies, using local languages where appropriate.

4. *Institutionalize Formative Assessment Data Use.*

- Include formative assessment indicators in national monitoring frameworks.
- Use findings to inform teacher appraisal, instructional supervision and school improvement planning (UNESCO GEMR, 2020).

Implementation Considerations

Scaling error analysis and formative assessment requires multi-stakeholder partnerships. Governments must provide policy frameworks and budgetary support, while NGOs and donors can support innovation and capacity-building. Key barriers include teacher workload, limited resources and staff turnover. Overcoming these challenges will require embedding practices in teacher professional development, integrating them into supervision systems, and providing cost-effective digital and print tools. Sustainability depends on institutional ownership by institutional and/or school communities and alignment with existing reforms, such as competency-based curricula and continental education strategies.

Conclusion

The evidence is clear. Treating learner errors as diagnostic opportunities can transform early grade numeracy outcomes. The multi-country pilots hows that with proper training, coaching and tools, teachers can deliver more effective, responsive instruction, boosting both learning and engagement. Policymakers now have an opportunity to institutionalize these practices through teacher development, curriculum alignment, and data-driven systems. Doing so will accelerate progress toward **SDG4** and Africa's **CESA16-25** goals, ensuring that every child acquires the foundational numeracy skills needed for future learning and life.

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Beyond Mistakes: How teachers are transforming numeracy through error analysis in Kenya, Nigeria and South Africa

Introduction

Across sub-Saharan Africa, many learners in early grades struggle with basic numeracy, despite investments in textbooks and teacher training. Traditional instruction often focuses on correctness over comprehension, leaving errors un addressed or misunderstood. But what if these very mistakes held the key to learning? A recent pilot across Kenya, Nigeria, and South Africa embraced this philosophy, training teachers to treat learner errors as diagnostic tools. The result? Improved learning, more engaged classrooms, and re-energized teachers.

Methodology

The pilot used a **mixed-methods design** and was implemented over 6months in 14 schools. It targeted Grade 2 and 3 teachers and learners, using:

- **Quantitative**:ICAN assessments, teacher audits and learner engagement checklists.
- **Qualitative**: Class room observations and interviews.
- **Design**:Intervention versus control in Nigeria and South Africa; Kenya implemented only the intervention.

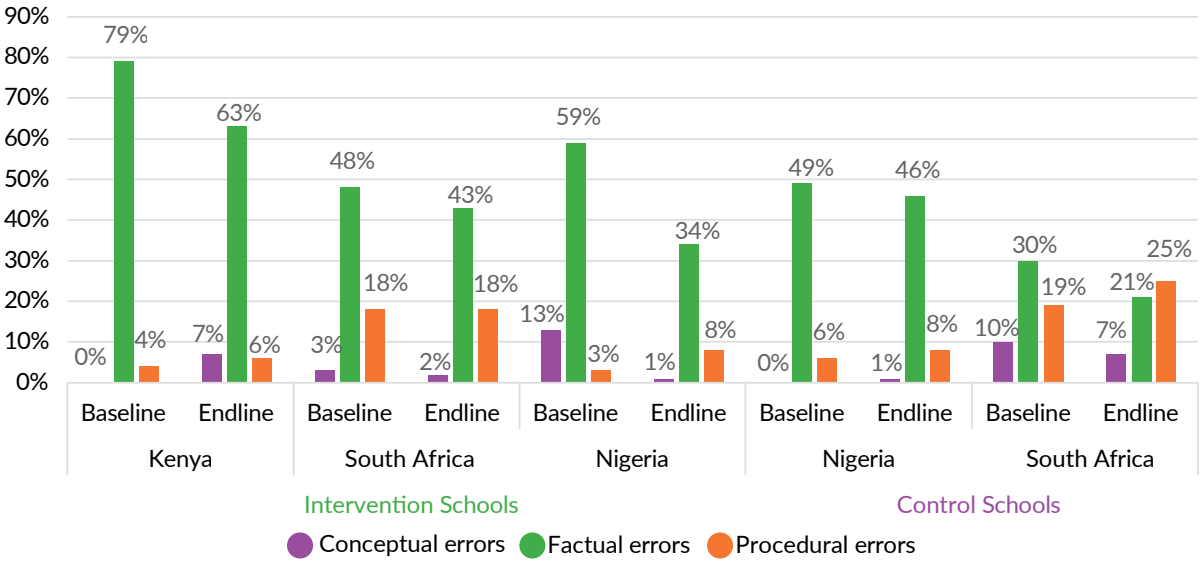
Teachers received training on using error logs to identify conceptual, factual and procedural errors and adjust instruction accordingly. Periodic coaching supported implementation.

Results

Evidence from the pilot across Kenya, Nigeria, and South Africa reveals that integrating error analysis and formative assessment into daily teaching can significantly enhance class room instruction and learner achievement in early numeracy. The results show varied observable errors (by type), including notable improvements by country, indicating that with the right training, tools, and sustained support, these instructional methods can effectively address foundational math learning challenges.Table1 below highlights results derived from the pilot by error type.

Table1:Type of Error by Country–Intervention versus control[1]

1. 1 Factual errors: These are errors due to a lack of information. The common errors here are:
   i. Lack of understanding of basic number facts.
   ii. Misunderstanding of signs.
   iii. Misidentifying digits/failure to accurately recognize digits/numerals.
   iv. Errors while counting (skipping digits during counting)
   v. Lack of understanding mathematical terms
   vi. Lack of knowledge in mathematical formulas



Nigeria: A Strong Success Story

Nigeria's results were the most impressive. Schools that received the intervention cut conceptual errors (confusions about the "why"behind math) from 13% to just 1%, and correct answers jumped from 26% to 55%. This shows that learners really started to *understand* what they were doing. However, procedural errors (trouble with applying steps) went up slightly from 3% to 8%, suggesting learners may need more practice with applying their new knowledge to real problems.

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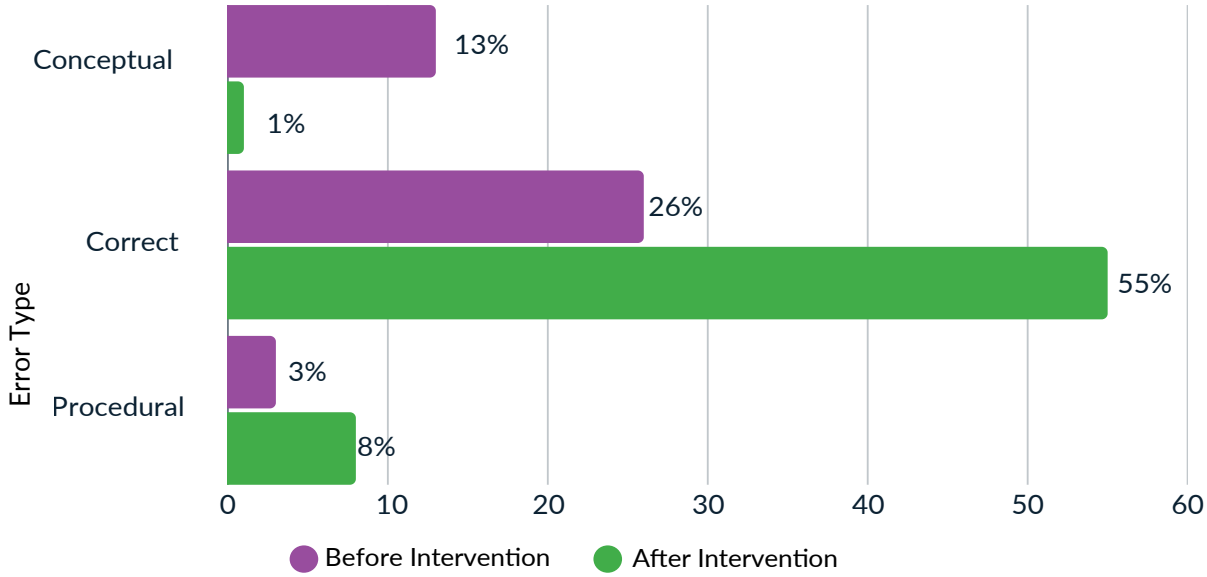
2. Procedural errors: These are errors due to the incorrect performance of steps in a mathematical process. The common errors include:
   i. Forgetting (missing/skipped) to regroup
   ii. Regrouping across a zero
   iii. Performing incorrect operation
   iv. Not aligning decimal points when adding or subtracting
   v. Not placing decimals in the appropriate place when multiplying or dividing.

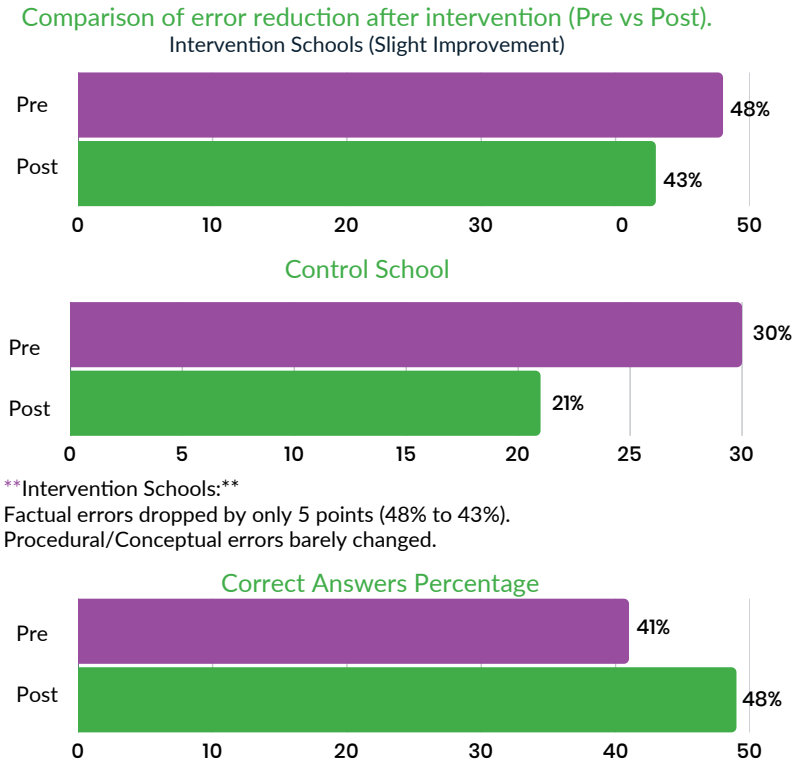
3. Conceptual errors:These are errors due to misconceptions or a faulty understanding of the under lying principles and ideas connected to the mathematical problem. The common errors include:
   i. Misunderstanding of place value
   ii. Over generalization(i.e., bigger number cannot be subtracted from smaller numbers (e.g.,21-19), mistaking all numeracy tasks as either addition or subtraction, subtracting greater numbers from less numbers (e.g., 21-19, the learner takes 9-1).



South Africa: Mixed Signals

South Africa's results were less encouraging. Factual errors only dropped slightly from 48% to 43%, and procedural and conceptual errors barely changed. Interestingly, control schools (those that didn't receive the intervention) performed better in some areas, for example, reducing factual errors from 30% to 21% and increasing correct answers from 41% to 49%.This raises important questions about how the intervention was implemented in South Africa.

Change in Factual Errors



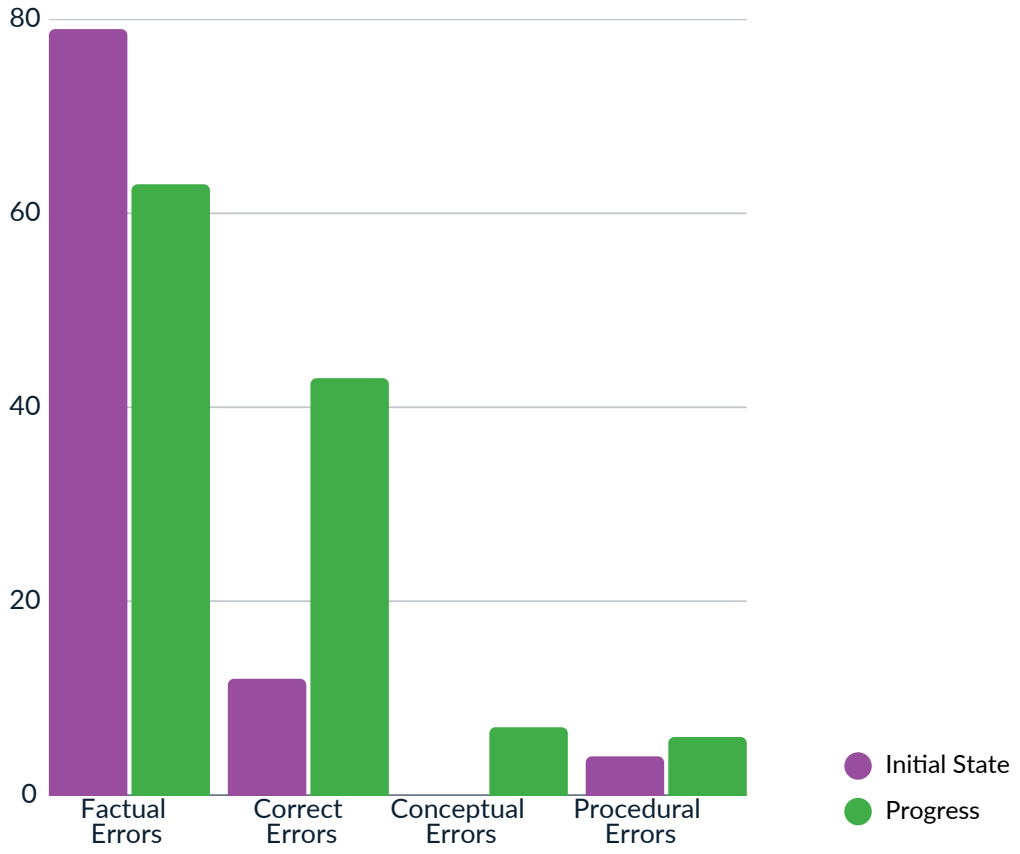
Kenya: Promising, but with some gaps

Kenya showed encouraging progress in some areas. Factual errors went down from 79% to 63%, and correct responses soared from 12% to 43%. This shows learners were

improving in basic understanding. But there were new concerns: conceptual errors appeared (0%to7%), and procedural errors rose slightly (4% to 6%), possibly suggesting that learners were improving at memorizing steps but not fully understanding the concepts behind them.

Kenya Learner Progress: Initial vs. Progress

Visualization of changes in error types and correct responses, highlighting improvement in basic understanding alongside the emergence of conceptual challenges.



Interpretation and Implications

These results show that improving early numeracy is possible—but success depends on how the program is designed and delivered.

- Nigeria's success suggests that when teachers get ongoing coaching and use structured tools, they can help learners make real progress in understanding math.
- Kenya's gains in factual knowledge are encouraging, but the rise in conceptual errors hints that rote learning may be crowding out deeper thinking.
- South Africa's minimal progress high lights a need for better follow-up and stronger implementation strategies. It also shows that just introducing a new method is not enough, it must be well supported.

Across the board, the results suggest that reducing conceptual errors is most closely tied to improving overall math performance. When learners *understand why* math works the way it does,they're more likely to get the right answers.

Recommendations

Based on the results, below are four key actions that education policy makers, school leaders, and development partners can take:

1. *Strengthen Teacher Support Through Coaching.*

- Nigeria's success shows the power of ongoing coaching. Regular support helps teachers make sense of student errors and respond effectively.
- Education ministries should train district-level coaches and create peer-learning groups for continuous improvement.

2. *Focus on Conceptual Understanding, Not Just Procedures.*

- Kenya's and South Africa's results remind us that it's not enough to teach learners
- How to solve problems—they need to know why the solution works.
- Materials and teacher guides should include strategies for building conceptual clarity, such as using visual aids, number talks and real-life examples.

3. *Customize Implementation to Local Contexts.*

- The differences across the three countries show there's no one-size-fits-all approach.
- Interventions must be adapted to local realities—including class room size, language of instruction, and teacher capacity—to succeed.

4. *Use Error Patterns to Guide Teaching*

- Teachers should be trained to use simple tools like error logs to track the kinds of mistakes learners make.
- This enables targeted re-teaching, especially around persistent conceptual errors that hinder learner progress.

Conclusion

The pilot findings from Kenya, Nigeria, and South Africa underscore the trans-formative potential of using error analysis and formative assessment to improve early grade numeracy. While the intervention yielded significant gains, particularly in Nigeria where conceptual understanding improved markedly,it also revealed key challenges, such as uneven implementation and the risk of prioritizing rote learning over deep comprehension. These insights highlight that improving foundational learning is not just about introducing new methods but ensuring they are well-supported, contextually adapted, and focused on building learners' conceptual clarity. With the right investment in teacher coaching, tailored materials and sustained system-level support, such approaches can pave the way for stronger numeracy outcomes across diverse learning environments.

Fact Sheet 2

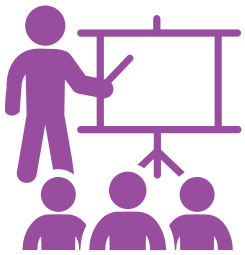
Quick Facts: Strengthening Numeracy through Error Analysis in Kenya, Nigeria and South Africa.

Overview

This pilot tested a simple but trans-formative idea:teach through mistakes. Conducted in Kenya, Nigeria and South Africa over six months, it trained teachers to analyze learner errors and use them to inform instruction. The method focused on foundational math skills, addition, subtraction and place value. Error logs, teacher checklists/observation tools and learner assessments were used to track and support learning.

Reach

14
Schools
12 Interventions,
2 Control



27
Teachers
Grades 2 & 3
Learners

900+
Learners
Reached across
diverse contexts.

3 **Implementation Partners**

- Zizi Afrique Foundation (Kenya),
- TEP Centre (Nigeria),
- Funda Wande (South Africa).

Results Snap shot from first to second assessment

Country	Correct Responses	Engagement Level	Teacher Practice[2]
Kenya	12%→43%	42%→71%	57%→85%
Nigeria	26%→55%	68%→75%	37%→88%
South Africa	41%→39%↓	56%→64%	16%→68%

2 Practices form measuring classroom management, identification and documentation of errors, diagnosis of errors and utilization of errors to inform instruction in mathematics.

Key Learnings

- **Error logs enhance instructional responsiveness:** By systematically tracking recurring learner mistakes, teachers were better able to identify common misconceptions and adjust their lesson plans to directly address areas of confusion.
- **Normalizing mistakes builds learner confidence**: Creating a classroom environment where errors were openly discussed and treated as part of learning increased learner participation and reduced fear of failure, especially in math tasks.
- **Ongoing coaching strengthens implementation:** Regular mentorship and follow-up supported teachers in adopting and consistently applying the new strategies, ensuring that training translated into classroom practice.
- **Teacher motivation amplifies impact**: Despite facing resource constraints, many teachers especially in Kenya demonstrated strong commitment and were able to implement the approach effectively, suggesting that intrinsic motivation plays a key role in uptake.
- **Contextual factors influence outcomes: Variations in staffing, school leadership, or** the absence of structured support systems (as seen in parts of South Africa) significantly affected the consistency and success of implementation.

Implications

- **Elevate error analysis within national education priorities:** Position the use of learner error data as a critical component of instructional improvement strategies and teacher development policies.
- **Invest in building and retaining a coaching workforce:** Ensure every district has trained instructional coaches who can provide sustained support to teachers, especially in the early stages of adopting new practices.
- **Develop flexible, low-cost teaching materials:** Create tools and resources print based and digital—that can be easily adapted to different class room contexts and translated into local languages to support inclusive learning.
- **Integrate error tracking into school data systems: Encourage schools to mon**itor common learner misconceptions and track how they are addressed overtime, using this data to inform school-level instructional decisions.
- **Plan for continuity through school transitions:** Design implementation models that anticipate teacher transfers, leadership changes and learner progression, ensuring long-term sustainability through follow-up mechanisms and institutional memory.

C. WHAT ARE THE KEY MESSAGES TO HEADS OF INSTITUTIONS (HoIs)?

Introduction

As Kenya transitions through the Competency-Based Education (CBE) journey, school leadership plays a defining role in shaping the quality of learning experiences for every child. Foundational literacy and numeracy remain at the heart of this transition, serving as the bedrock upon which all future learning is built. While the Competency-Based Curriculum (CBC) has made strides in re imagining classroom practices, there are still gaps in how teachers understand and teach key mathematical concepts, especially in the early years. As Heads of Institutions, you have the responsibility and opportunity to champion instructional leadership that supports teachers to teach better and learners to understand more deeply. The following key messages highlight areas of reflection and action that can strengthen leadership for foundational numeracy within the CBC transition.

Key Message 1: Subject-level knowledge of teachers influences the way teachers teach and their choice of pedagogy

When teachers possess strong subject knowledge, they can teach with confidence, make learning engaging, and adapt their methods to meet learners' needs. However, evidence from classroom observations and assessment data across four counties, including Bungoma, Isiolo, Murang'a, and Nairobi, show that some teachers still struggle with conceptual understanding of key numeracy topics, such as place value, fractions, and problem-solving. This gap affects not only how they teach but also the strategies they select, often leading to rote learning rather than understanding.

Call to Action for School Heads:

- Champion continuous professional learning for teachers focusing on deepening their understanding of foundational numeracy concepts.
- Encourage peer learning and lesson study within your schools where teachers collaboratively plan, observe, and reflect on lessons.
- Support instructional coaching and mentoring structures that build teachers' confidence and mastery in both content and pedagogy. By investing in teachers' subject knowledge, you nurture stronger classrooms where learners can reason, think critically, and connect mathematics to real-life situations, key aspirations of the CBC.

Key Message 2: Misconceptions in foundational numeracy concepts are because of how teachers teach

Research and field evidence indicate that many learning gaps among early-grade learners arise from how numeracy concepts are presented (CEMASTEA & ZAF, 2025)[3]. For instance, when teachers teach addition and subtraction through memorization rather than through manipulatives and everyday examples, learners develop misconceptions that persist into upper grades. The way teachers introduce and explain concepts directly shapes how learners understand or misunderstand them.

Call to Action for School Heads:

- Lead **classroom observations** that focus on teaching practices rather than compliance, helping identify where misconceptions may be forming.
- Promote **activity-based, play-centered, and contextualized teaching** in lower grades that helps learners visualize and internalize mathematical concepts.
- Encourage teachers to use **error analysis**, examining learners' mistakes as opportunities for understanding misconceptions and improving teaching approaches.
- As leaders, create environments where teachers are not afraid to reflect, relearn, and adjust their teaching to meet learners where they are. Your leadership in fostering reflective practice can help dismantle misconceptions and lay stronger numeracy foundations.

Key Message 3: You can do something about this situation in your school

Every Head of Institution has the power to influence learning outcomes through leadership that prioritizes teaching and learning. Foundational numeracy is not a teacher's issue, it is a school issue, and by extension, a leadership issue. Whether through school-based professional learning communities, data-driven decision-making, or resource mobilization, school heads can create systems that sustain effective numeracy teaching practices.

Call to Action for School Heads:

- Develop a **School Numeracy Improvement Plan (SNIP)** that identifies gaps, sets achievable targets, and monitors progress.
- Use **assessment data and learner work** to inform planning, support, and interventions.
- Build a **culture of collaboration** where teachers, parents, and the community work together to strengthen early learning.
- Recognize and **celebrate small wins**—from improved lesson delivery to learner engagement—to sustain motivation among teachers.

Parting Shot:

3 CEMASTEA & ZAF (2025) FOUNDATIONAL NUMERACY IN KENYA: Status, Opportunities and Challenges. CEMASTEA & ZAF.

Leadership that listens, guides, and empowers is what will shape the future of learning. As we celebrate achievements under the CBC transition, let us also recommit to strengthening instructional leadership so that every Kenyan child masters foundational numeracy, the foundation for lifelong learning and national growth.

D. WHAT IS THE CALL TO ACTION FOR HEADS OF INSTITUTIONS(HoIs) TO SUPPORT THE ADVANCEMENT OF FOUNDATIONAL NUMERACY OUTCOMES?

Introduction

As we celebrate Kenya's progress in the Competency-Based Education (CBE) journey, it is clear that our next phase of success depends on the strength of school leadership. Heads of Institutions are not only administrators, but they are also learning leaders who shape teaching quality, influence learner outcomes, and ensure that the Competency-Based Curriculum (CBC) truly transforms learning. Foundational numeracy, the ability for learners to understand and apply basic mathematical ideas, remains one of the most critical areas in this transition.

Today, we have seen that teachers' subject knowledge, their teaching approaches, and the leadership support they receive all determine how well our learners grasp numeracy concepts. You, as school heads, have the power to drive meaningful change. The following **calls to action** provide practical steps that will help you strengthen foundational numeracy in your school and lead your teachers toward better learning outcomes for every child. The calls to action follows the ***'Assess – Dialogue – Act'*** approach.

Calls to Action for School Heads

1. Assess learners regularly to track progress and set accountability targets

At the start of every term, ensure all learners are assessed using grade-appropriate tools, and repeat the assessment at the end of the term to measure progress. Use this data to identify learning gaps and plan targeted interventions. Define clear benchmarks or targets for each grade, targets that you and your teachers will be accountable for. When school leaders take assessment data seriously, it becomes a roadmap for improvement rather than a record of failure. Challenge to You: Let data drive your school improvement. For instance, ask yourself, what percentage of your Grade 3 learners can confidently solve a two-step word problem? What will you do to improve this number by next term?

2. Observe numeracy lessons weekly and prioritize the foundation classes

Make it a habit to observe numeracy lessons in PP1 to Grade 3 every week. Provide constructive feedback that helps teachers improve their practice. Allocate your most skilled and passionate mathematics teachers to these lower grades because strong beginnings create strong endings. A learner who struggles with numbers in Grade 2 will struggle with algebra in Grade 6.

Challenge to You: Commit to spending at least one hour weekly inside a numeracy classroom. What you see, encourage, and support will multiply across your school.

3. Establish school-based communities of practice on numeracy teaching

Create small teams or communities of practice within your school that meet regularly to share ideas, review lessons, and solve teaching challenges together. Use these groups to develop high-quality lesson plans, teaching materials, and peer-teaching sessions. Continuous teacher development doesn't always require expensive workshops, it begins with collaboration and shared learning.

Challenge to You: Start the first numeracy learning circle in your school next week. Who will be your champions? What problem will they solve together?

4. Promote continuous dialogue on learning progress and teaching practices

Meaningful improvement in foundational numeracy happens when teachers, parents, learners,

and school leaders talk with each other, not about each other. Create regular spaces for dialogue where teachers can share classroom experiences, discuss learner progress, and reflect on challenges together. Similarly, engage parents through structured conversations, open days, or home-school partnership meetings focused on how they can support learning at home. When dialogue becomes part of your school culture, it transforms misunderstandings into shared solutions and builds collective responsibility for learner success.

Challenge to You:

- Schedule a monthly numeracy reflection meeting where teachers review data, share what worked, and plan together.
- Establish parent-teacher dialogues, not just to report performance but to discuss how parents can support numeracy through simple home activities.
- Encourage learners to voice their experiences and challenges in learning math; their perspectives can reveal what's working or not in teaching.

5. Allocate and mobilize resources for numeracy materials

Children learn best by doing and seeing. Ensure your school has enough manipulatives such as counters, blocks, bottle tops, or abacus. Allocate part of your school's resources to purchase or make such materials. Beyond your school budget, rally parents, the community, and even alumni to support resource mobilization for teaching and learning materials. When children handle real objects, abstract math becomes alive and enjoyable.

Challenge to You: Before the next school term, identify one numeracy material your learners need most and find a way to provide it—through creativity, partnerships, or innovation.

6. Organize remediation sessions for learners lagging behind

Every learner deserves the chance to catch up. Organize focused remediation or catch-up sessions for learners who are falling behind in numeracy. Use the assessment data to group learners by their specific needs and guide teachers to support them with targeted activities. Remember, timely support can make the difference between a learner giving up and a learner succeeding.

Challenge to You: Create a weekly "Numeracy Boost" session for struggling learners. Track progress and celebrate every small improvement.

Closing Reflection

Your voice as a school head sets the tone for open, constructive, and purposeful communication within your school community. Dialogue nurtures trust, builds accountability, and ensures that every decision, whether about teaching methods, resource allocation, or learner support, is grounded in shared understanding. Strong numeracy foundations are not built in a day; they are built through intentional leadership, informed teaching, and consistent follow-up. As you return to your schools, remember that foundational numeracy is everyone's business, but its success begins with you. Let your leadership inspire confidence, curiosity, and joy in learning, so that every child comes to see mathematics not as difficult, but as discoverable, enjoyable, and achievable.

About Zizi Afrique Foundation

The **Zizi Afrique Foundation(ZAF)** is a not-for-profit organization advancing foundational learning, youth skills, and lifelong learning across Africa. Through evidence-driven programs and policy engagement, ZAF supports systems to deliver equitable learning outcomes. For more information, visit **www.ziziafrique.org**

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Catalyzing
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Excellence in the CBE Era:

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Insights, Evidence, and Action Priorities for Strengthening Instructional Leadership and Classroom Practice

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