

## NUMERACY AT SCALE FINDINGS BRIEF

# Grade R Maths Program in South Africa

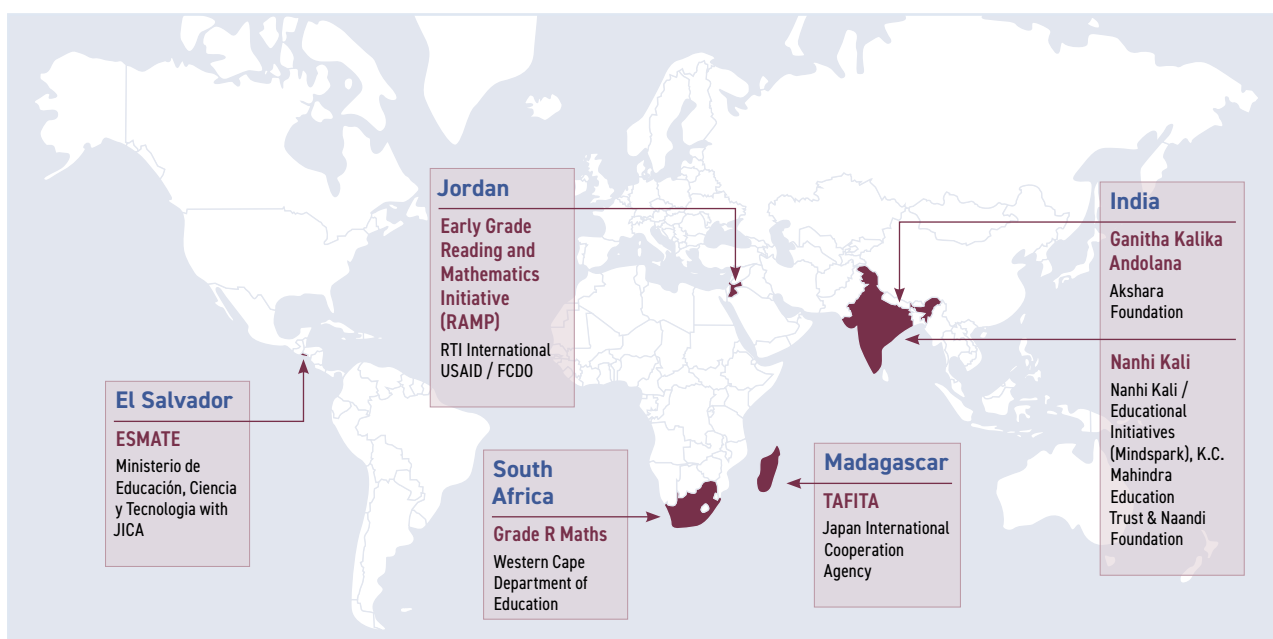


## Introduction to Numeracy at Scale

The Learning at Scale study was designed to explore programs that have a demonstrated impact on foundational learning outcomes at scale. The goal of this research is to identify and examine successful aspects of these programs to provide policy makers and development practitioners with evidence-based strategies for improving instruction and learning outcomes across contexts. The research is being led by RTI International and is part of the Center for Global Development education research consortium, funded by the Bill and Melinda Gates Foundation.

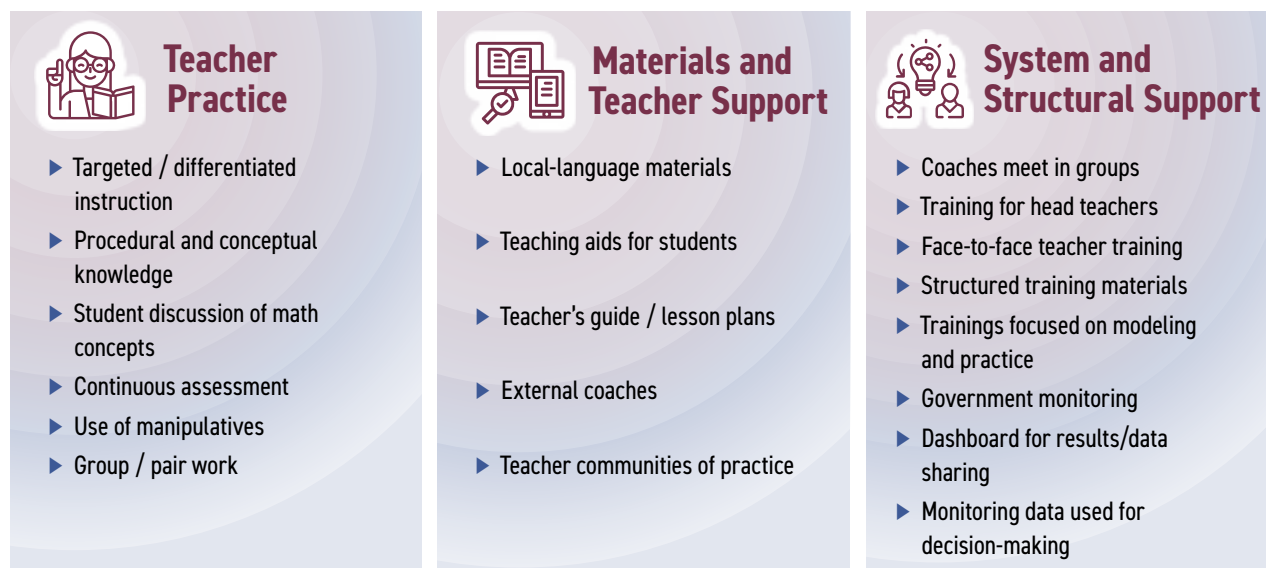
While the first phase of Learning at Scale focused on literacy, the second phase, Numeracy at Scale, is focused on (1) identifying instructional strategies that are essential for improving numeracy outcomes at scale in low- and middle-income countries; and (2) learning about the characteristics of the education systems within which successful scaled-up numeracy programs operate. To this end, the study team identified and analyzed six programs across five countries that had rigorous evidence of impact on numeracy learning outcomes and which were operating at scale (see Figure 1).

Figure 1. Numeracy at Scale partners



The six Numeracy at Scale programs represent a variety of designs, from providing instruction to at-risk girls via interactive software to a national-scale numeracy initiative integrated into all public primary schools. Despite their differences, these programs share a large number of common elements (see Figure 2).

**Figure 2. Common elements across successful large-scale numeracy programs**



Even with these common elements, these programs provide evidence of multiple pathways to success. For example:

- All programs provided teachers with training and support, but the forms that teachers found most impactful for student learning varied.
- In all programs, teachers incorporated independent and group work and focused on building both procedural and conceptual understanding, but their use of materials and student discussion varied.
- Head teachers were trained and relied on the use of data for decision-making in five of the programs, but they differed across programs in how they provided (or sought) support for struggling teachers.
- Coaches or mentors were engaged across programs, but their roles, expectations, and level of support varied greatly.

The remainder of this brief provides an overview of the Numeracy at Scale research methodology generally and explores the findings from one of the programs studied—the Grade R Maths program in South Africa.

# ▶▶ Numeracy at Scale Research Methodology

The Numeracy at Scale study investigated three main research questions:

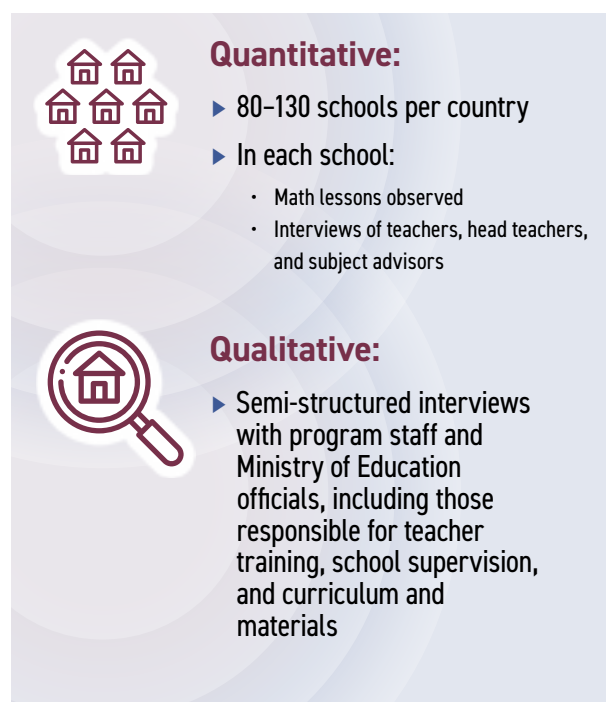
- 1 What classroom ingredients (such as teaching practices and classroom environment) lead to learning in programs that are effective at scale?
- 2 What methods of training and support lead to teachers adopting effective classroom practices?
- 3 What system-level support is required to deliver effective training and support to teachers and to promote effective classroom practices?

In addition, cross-cutting questions, based on previous research on mathematics teaching and learning, focused on whether and how teachers emphasized conceptual understanding, the role of representations or conceptual models, and the use of manipulatives or other hands-on activities.

In each country, the study teams carried out a mixed-methods study. See Figure 3 for an overview of the study design.

The data collection in South Africa was different because the program focused on preschool mathematics whereas other programs focused on primary school mathematics. As a result, the mathematics knowledge test and the qualitative protocols were not appropriate and were dropped from the study. Figure 4 shows the respondents from the data collection in South Africa.

**Figure 3. Numeracy at Scale study design**



**Figure 4. South Africa study respondents**

Respondent	Total
<b>Quantitative</b>	
Schools	80
Teachers	80
Head teachers	80
Subject advisors	4
<b>Qualitative</b>	
Subject advisors	1
District officials	2
Provincial officials	3
Donors	1

## Grade R Mathematics Program Overview

The Grade R Maths program (also referred to as R-Maths) was initiated in 2017 in the Western Cape by the Western Cape Education Department (WCED) with funding from the Zenex Foundation and the Maitri Trust and technical support from the Schools Development Unit at the University of Cape Town.

The goal of the program is to improve the conceptual understanding and mathematics skills of grade R students in the Western Cape. It has three specific objectives:

- 1 To develop an effective project (including resources and training materials) that supports a conceptual approach to grade R mathematics teaching and learning.
- 2 To capacitate grade R and foundation phase subject advisors to train and support grade R teachers and practitioners effectively and to serve as a knowledgeable resource for grade R mathematics content and teaching methods.
- 3 To capacitate grade R teachers and practitioners in foundational mathematics conceptual knowledge and teaching skills and to improve the quality of grade R mathematics teaching.

The program has restructured and enriched teaching of the curriculum to ensure an increased focus on children's understanding of mathematical concepts and their ability to carry out mathematical procedures.

The training portion of the R-Maths program consists of two stages. The first stage trains subject advisors—subject specialists based in district offices who support teachers in schools. In the second stage, subject advisors are then responsible for training grade R teachers.

After the training, subject advisors provide support to grade R teachers through regular visits (roughly once a term). Additional support to teachers is provided by foundation phase heads of department. Teachers are also supported by a professional learning community (PLC) that meets termly to discuss a particular topic each time, as well as by district-level foundation phase heads. Subject advisors participate in a week of professional development on a quarterly basis with senior curriculum planners.

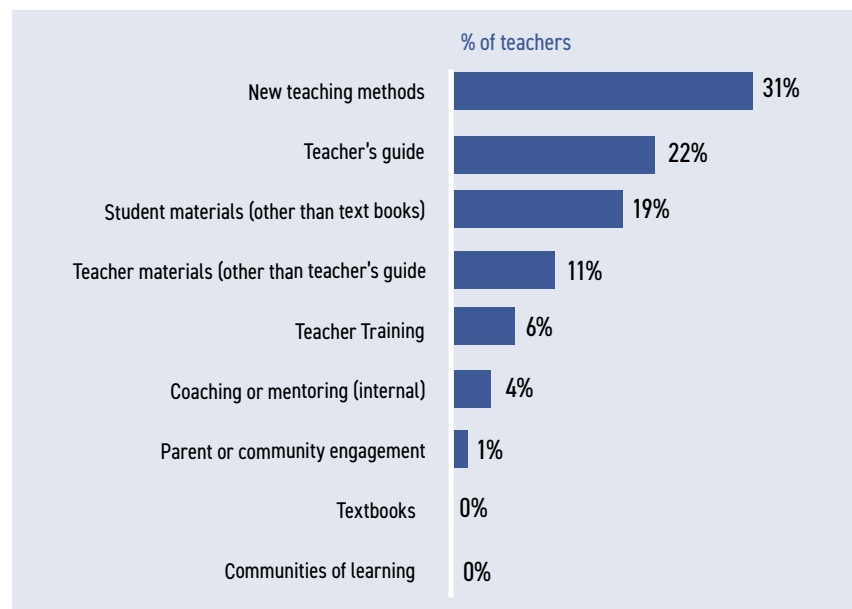
The program materials are designed to align with the grade R Curriculum Policy Assessment Statement (CAPS). They are available in all three of the dominant Western Cape languages (Afrikaans, isiXhosa, and English) and include a facilitator's guide, a concept guide, activity guides, posters, and materials for students. The activity guide includes learning objectives and activities for one lesson every day of each term. Each lesson involves whole-class instruction and small groups based at workstations, one of which involves teacher support and informal monitoring.

The project is led by a small team based at WCED. When initial support from funders and the University of Cape Town ended in 2018, WCED took over responsibility for management, budgeting, and training. A new position has since been created to ensure sustainability, and the program continues to operate as an integrated part of the Western Cape education system.

## Findings from the Grade R Maths Program

The R-Maths program has been positively received by teachers. Figure 5 shows the aspects of the program considered most important by the teachers interviewed.

Figure 5. Teachers' views on the "single most important aspect" of R-Maths



The following subsections discuss the findings from R-Maths in relation to the three Numeracy at Scale research questions.

### Research Question 1

*What classroom ingredients (such as teaching practices and classroom environment) lead to learning in programs that are effective at scale?*

To understand what instructional practices may be leading to improvements in learning outcomes, the study team analyzed data from classroom observations and teacher interviews.

Overall, the team found that teachers appreciated the new materials and new approaches to instruction, and they were observed to be effectively applying methods recommended by the R-Maths program, such as active learning and group work. Also, teachers were observed to probe students for their understanding and adjust instruction accordingly.

**THEME 1** New approaches to instruction were seen as critical; they involved more active learning and greater student engagement.

Overall, the R-Maths approach to instruction was seen as critical by teachers. When asked what the most important aspect of the program was, 31% of teachers said "new teaching methods." This was the most common answer (Figure 5). When asked how their instruction had changed as a result of R-Maths, teachers most commonly cited using multiple strategies to teach a concept,

focusing more on having students explore and solve problems, and using a new methodology or instructional approach (see Figure 6).

Although only 61% of teachers said that they had increased their focus on using multiple strategies (Figure 6), during teacher interviews 91% of the teachers endorsed the statement **“Teaching multiple strategies to solve the same problem can help learners.”** In response to open-ended questions, some teachers explained why they agreed with this statement over teaching learners one strategy to solve a problem. One teacher said, **“There is not a fixed way to solve a problem. They [students] think differently and all children can solve a problem using their own ability and understanding.”** Another explained, **“They pick up very easily when they learn by different ways; children interlink the things they learn all the time.”**

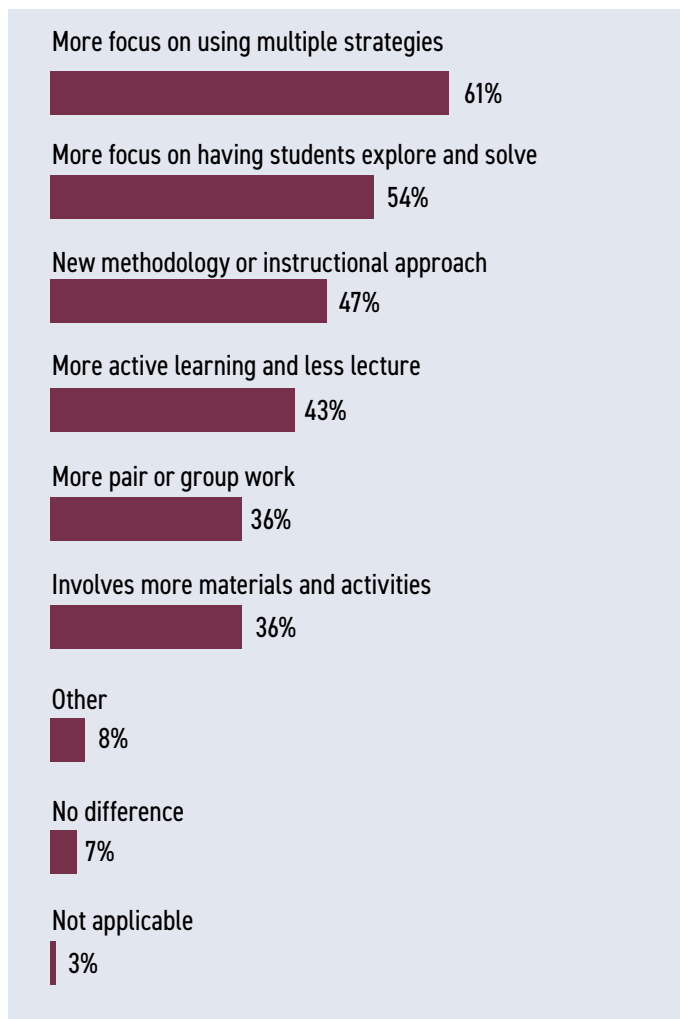
When asked which part of their instruction has had the biggest impact on students, 27% of teachers cited their focus on having students exploring and solving problems, 22% cited their focus on student-centered approaches, and 19% cited the use of multiple strategies.

Relatedly, 97% of teachers agreed with the statement “The process of solving a problem is the most important part of math class” over students getting the correct answer. One teacher elaborated, **“Even if the child does not give the correct answer, learning is a process. Children need to practice and understand the process, and eventually they will know how to get to the answers. How you get to the answer is important, and learners should be allowed to make mistakes along the way and learn from it.”**

The R-Maths instructional approach involves a strong emphasis on group work and independent work. Although almost all classes observed (99%) involved whole-class instruction, 78% also included independent or group work. In all classes with independent or group work, active learning activities—such as games and puzzles—were observed. In 82% of classes observed, students were engaged throughout these independent activities.

During 68% of the classes that included time for independent work, teachers gave students different problems or activities to work on. On average, 18.1 minutes (from a total of 45.8 minutes per lesson) were spent on group or independent work.

**Figure 6. Teacher interviews: Has your instruction changed since you started working with R-Maths? If yes, how?**



When teachers were asked to explain the most important parts of a mathematics lesson in their own words, many mentioned the use of manipulatives and concrete materials for learning. Several teachers also highlighted the importance of active learner engagement, including age-appropriate or play-based activities, to support children’s learning and understanding. These are all aspects emphasized by the Grade R Maths program.

One teacher identified the most important parts of a mathematics lesson as **“learners interacting; allowing learners to solve their own math problems independently; relatable and patient teacher.”**

One district-level curriculum advisor summarized the change in instructional approach as follows: **“The Grade R program brought back the fun element to maths teaching and learning.”**

---

### **THEME 2** Materials developed for R-Maths were widely used and seen as effective.

Materials developed for the program included teacher’s guides, student workbooks, manipulatives, and posters. Teacher’s guides were received by 81% of teachers. These guides were seen by 22% of teachers as the most effective part of the program—the second most common response (Figure 5). In addition, 21% of teachers said that the teacher’s guides were the most helpful support they received (the second most common response), and 33% of teachers said that the teacher’s guides were the most useful materials they received (the most common response). When asked how they compared to previous guides, 78% of teachers said that they were easier to use, 61% said that they had better step-by-step instructions, and 53% said that they included more or better examples. One teacher explained that lesson plans and teaching guides were the most important part of the program **“because the teacher knows what to prepare and focus on and the teacher can see results.”**

When asked about the difference between R-Maths student materials and those they had used before, 54% said that the R-Maths student materials were more attractive, 47% said that they now had manipulatives for students that they did not have before, 46% said that the new content was more clearly presented and easier to follow, and 42% said that the new content was more appropriate and better aligned to context.

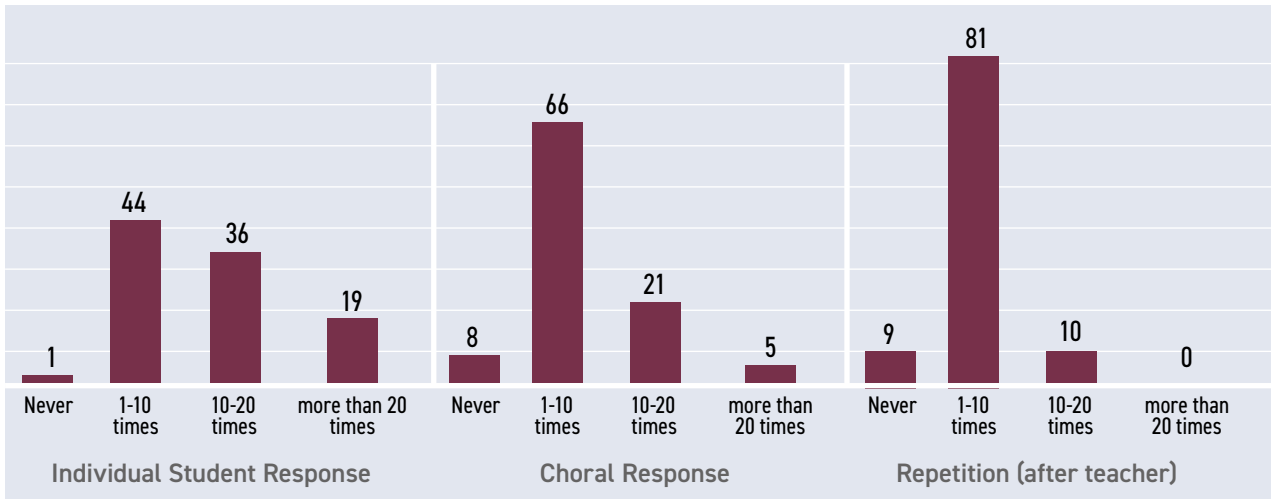
Other materials were widely observed in classrooms. For example, 96% of classrooms displayed posters, and 71% had materials for students to use. Materials were widely used, too: during teacher discussion or modeling, counters were used in 75% of classrooms, shapes in 51% of classrooms, and number cards in 45% of classrooms. Where independent work took place, students were observed using materials in 89% of classrooms, including the use of shapes in 66% and counters in 63% of classrooms.

---

### **THEME 3** Teachers probed students for their understanding and adjusted instruction accordingly.

During whole-class instruction, there was a good level of questioning of individual students. In 55% of lessons observed, the teacher asked individual students to respond to questions at least ten times. In general, individual questioning was more common than choral response or repetition in classrooms (see Figure 7).

Figure 7. Student responses (% of lessons observed)



However, 91% of teachers were observed to call on the same handful of students to answer questions, 99% of lessons involved some choral repetition, and only 8% of classes involved children answering questions in pairs during whole-class instruction.

Teachers were responsive to students after questioning. In classes where students offered an incorrect answer (observed in 70% of all classes), the teacher simply provided the correct answer in only 25% of classrooms. More commonly—in 70% of classes—they helped students solve the problem through modeling and clarifying questions.

In 57% of classes with group work, teachers spent more time with one group of children than another. In 94% of cases, this was to help students solve a problem. Teachers' monitoring of student performance was evident in their interview responses, with the majority of teachers reporting using formative assessments daily, and the remainder saying they used them a few times a month.

## Research Question 2

▶ *What methods of training and support lead to teachers adopting effective classroom practices?*

Overall, teachers found the training—which emphasized modeling and practice over lecturing—to be the most helpful support they received. Subject advisors were perceived as coaches and mentors (rather than inspectors) but visited too infrequently to be highly effective. The support provided by PLCs was variable and not the most critical part of the program.

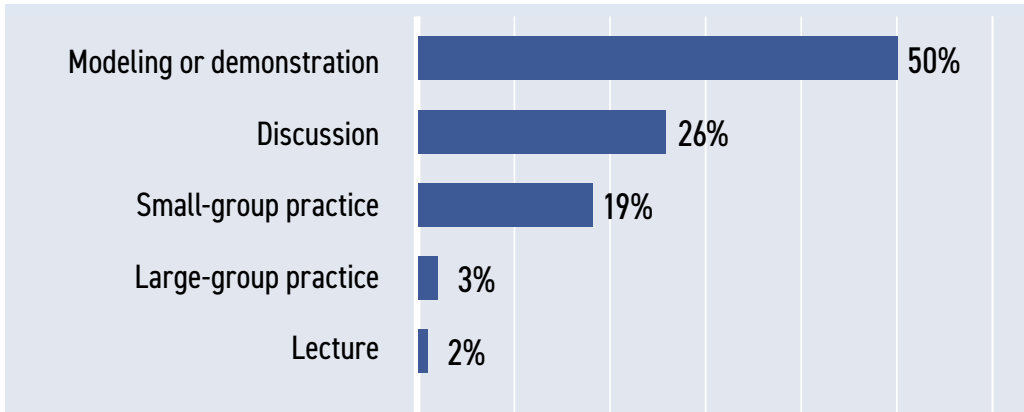
### **THEME 1** Training emphasized modeling and practice over lecturing, which teachers found to be helpful.

Teachers found the R-Maths training to be effective. Sixty-eight percent said they had received in-person training. When asked about the most useful support they had received as part of the program, 42% cited this training. This was the most common answer.



According to teachers who received the training, R Maths used several effective training methods more than previous projects. 78% of R-Maths trained teachers said the Program used modeling and demonstration more, 66% said discussion was more common than in other trainings, and 64% of trained teachers said R-Maths used more small-group practice. Fifty percent of trained teachers (see Figure 8) – and all four subject advisors interviewed – said modeling and practice was the most helpful part of training.

**Figure 8. Teacher interviews: Which of these training methods during R-Maths trainings did you find most useful?**



The key difference between R-Maths training and that of other projects, according to teachers, was that the materials were more helpful (50% of teachers said this) and there was more time for discussion (47%) and practice (43%). All four of the subject advisors interviewed said that teachers practiced new skills in training and practiced in front of a large group.

In terms of content, the most useful thing that teachers learned was related to lesson plan development (36% of teachers said this) and mathematics instruction (31%). One teacher said that lesson plan development was the most important thing they learned because “preparation is important, and in my experience I have seen how important being prepared is; this is because it avoids confusion and increases the opportunity of seamless lesson in terms of structure.”

A curriculum advisor interviewed stressed the importance of the teacher training: **Success has been built on the very systematic approach that the WCED took to the roll out of training on the Grade R Maths program.**

A former high-level WCED official offered further details on R-Maths’ approach to training: **What is key to the project is the in-depth training. Not as a once-off block training. We did cluster trainings every month. That was very effective because it could happen in a small group decentralized at the school level. And they build up a relationship and are not afraid to ask when they don’t understand certain concepts. This was a key element that made things successful.**

During the consolidation phase of the program, training was adapted to include “lead teachers” as trainers. One subject advisor described the effect of this change: **Grade R teachers really like to be trained by their peers—this creates more trust in the process.**

## THEME 2 Coaches (subject advisors) emphasized mentoring and coaching over inspection and evaluation.

Forty-nine percent of teachers received coaching. The teachers who did receive coaching strongly endorsed it, with 89% saying that their teaching had changed because of the coaching from subject advisors. When teachers were asked about the differences between R-Maths coaching and previous coaching, the most common responses were that they received more helpful feedback, that coaches were more supportive, and that they received more suggestions on how to improve teaching (see Table 1).

**Table 1.** How are (or were) your interactions with the coach different than with coaches before the program?

I receive more helpful feedback	44%
Coaches are more supportive	36%
I receive more suggestions for how to improve my teaching	34%
Coaches are friendlier	24%
I have more opportunities to ask questions	24%
No differences	18%
More frequent visits	18%
Other	16%
This is my first experience with a coach	6%
I don't remember	6%

All four subject advisors said that the most useful part of coaching was helping teachers reflect on practice. They all reported discussing their observations in class with the teacher during a visit. Coaching was conducted relatively infrequently. Only 11% of teachers said that they received coaching at least once a month. Meanwhile, 39% of teachers said that they received coaching a few times a year, and 10% reported receiving coaching once a year or less. These findings are broadly in line with the design of the coaching system, whereby teachers should receive a visit roughly once a term, with more regular visits paid to teachers who are in greater need. However, all four coaches interviewed said that they had too many schools to support and that more frequent coaching visits would be helpful. The low frequency of coaching visits is perhaps reflected in the finding that only 13% of teachers found coaching to be the most helpful part of the R-Maths program.

One curriculum advisor reflected on the role of the subject advisors as follows: **Our subject advisors have been the main drivers of program success—but we feel we could have done more. Currently we don't have enough subject advisors to cover all grade R sites—we have created posts that support public schools (75% of time) and ECD [early childhood development] sites (25% of time)—we are trying to upskill where needed but time is a big issue. We don't have enough advisors to ensure full coverage.**

One subject advisor told us: **I have great passion for Grade R and try my best, but I am realistic that I cover 380 teachers and unfortunately I can't get to all of them.**

These findings are consistent with those of a previous evaluation<sup>1</sup> in which participants expressed a need for greater support in the form of lesson observations and feedback from subject advisors, heads of department, or other suitably trained individuals.

**THEME 3** Support meetings focused on instruction rather than administrative issues but were not central to the program’s effectiveness.

Some teachers received support in a PLC meeting (28%) or a meeting with foundation phase teachers in their schools led by the department head (38%). Table 2 shows teacher responses for the topics covered during these two types of meetings. In the meetings, teachers discussed instruction and areas for improvement more than administrative topics. The most useful aspects of these meetings, as reported by teachers, were discussion with other teachers (mentioned by 64% of teachers) and learning new information or approaches (also 64%).

**Table 2.** Topics covered by professional learning communities

Areas of improvement	72%
General instructional practices	64%
How to teach a lesson	56%
Issues or challenges	52%
Administrative topics	32%
Review of teacher or student materials	28%
Reminders about the program	16%
Other	4%

However, only 10% of teachers said that these meetings were the most helpful aspect of the program. It seems unlikely that these communities are central to the success of the R-Maths program.

A high-level WCED official explained: **PLCs differ from district to district. They are going much better where there are grade R specialists. They have their finger on the pulse as far as the grade R teachers are concerned.**

### Research Question 3

*What system support is required to deliver effective training and support to teachers and to promote effective classroom practices?*

Overall, findings suggested that the system supporting the R-Maths program was highly functional. WCED’s ownership, leadership, and commitment ensured the immediate success and subsequent sustainability of the program. There was clear communication between partners and throughout the education system. WCED ensured that monitoring took place and was sustained.

<sup>1</sup> N. Roberts and M. Mawoyo, *R-Maths Consolidation Phase Evaluation Report* (Kelello: Johannesburg, 2020).

---

## **THEME 1** WCED's ownership, leadership, and commitment was key to the program's success.

WCED's approach was fundamental to the success of the R-Maths program. The program was initiated by WCED, and the department's strong commitment to the program was evident from the start. One senior WCED official said: **"The [WCED] head of department declared the foundation phase [grade R–grade 3] as a priority in the province, which was huge. Due to that, we received a considerable budget so that we can continuously provide for the Grade R Maths."**

WCED's evident commitment attracted external funding. One donor official explained: **"We agreed to support [the R-Maths program] because the department were keen on the program. They had money to support it and to keep it going. So we wanted to invest because it had potential for sustainability."**

WCED also showed strong leadership in guiding the development of the program, which helped coordinate the different organizations involved. A former high-level WCED official explained: **"When it came to Grade R Maths, we knew what we wanted—the concept guide and certain topics, and to retain the Grade R system. But the funders and [Cape Town University] had their own ideas. We said, "You can keep your ideas but it must be consistent with the CAPS [curriculum assessment policy statements]"—a 256-page document."**

A donor official also recognized this quality of WCED, saying, "They led well. I think this is one of the characteristics of an effective system." They added: **"The positive is to get government to lead. Make sure it's integrated into their official policy processes and planning process. And have them drive some of this and get into robust engagements. We don't push what we think is best. People will take it, because it's money. But it won't last. We did a year of stakeholder engagement first. A lot of ad hoc things. Meeting officials at a variety of levels. Working on the [memoranda of understanding] between the different parties. Getting relevant officials to comment on the materials. Partake in the design of the evaluation and the theory of change."**

The commitment to the project was evidenced by the involvement of WCED staff. One WCED official explained: **"The head office staff, the entire foundation phase, were part of the initial training. And monitored sessions. They would go across the province."**

A former high-level WCED official added, **"[The program] needs dedication. I would sometimes leave the office at 3 a.m. to get all the paper work done."**

---

## **THEME 2** Communication was clear throughout the education system and among partners.

There was evidence of clear communication regarding all aspects of the R-Maths program. One donor official explained: **"There was a memorandum of agreement. Then everyone [all partners] was on board. There was a workshop on theory of change and how we are going to do this during class time, and teacher support from coaches and mentors."**

A subject advisor described the level of communication and engagement in the initial rollout of training: **"Yes, the program was well communicated—when UCT [University of Cape Town] were training us—the SDU [Schools Development Unit] was doing the training. We as subject advisors engaged very robustly with them and provided very substantive inputs so when the program was designed we all went out on the same page. UCT were great, they listened to us and made changes where required."**

A former high-level WCED official described how the program was communicated to districts: **“It’s a head office initiative with a strategic plan every August for the next year. They know for that period of the year they are doing R-Maths. We conduct three or four planning sessions with districts where we brief them on what they are going to do.”**

A subject advisor described communication at the school level: **“We have had consistent messaging on the Grade R Maths in the province—with principals, heads of department, and foundation phase teachers.”**

---

### **THEME 3** Monitoring was driven by WCED and was critical to project sustainability.

Monitoring of project activities was conducted by subject advisors. One high-level WCED official explained: **“Subject advisors give a report after each visit. We expect them to submit [a report] every term. They do dedicated monitoring with a certain percentage of schools. They look at everything in the classroom. Is it the way it should be? They complete a monitoring tool. Everything that is in the classroom, print-rich classes, it also includes the teacher practices. They submit to [the WCED official]. She can look where the challenges were and make recommendations—for example, if they are not using manipulatives or group work—and ask the subject advisor to focus on these issues when they visit.”**

Another WCED official explained how her persistence was critical to ensuring that monitoring takes place: **“I need to follow up with them to get things done. I’m forever asking, “When can I have the report?””**

---

### **THEME 4** WCED leadership commitment to R-Maths promoted sustainability.

The sustainability of the R-Maths program was not a focus from the beginning. This was noted in the evaluation of the consolidation phase<sup>2</sup> and by a donor official: **“There wasn’t enough conversation about institutionalization and sustainability up front.”**

However, Roberts and Mawoyo note several aspects of WCED leadership—described above under theme 1 above—that promoted sustainability.<sup>3</sup> First, provincial buy-in and ownership was assured from the start, with deep engagement in the design of materials and the project overall. Second, there was a budgetary commitment to the continuation of the program, with training extended to incorporate new teachers.

A former high-level WCED official discussed how subject advisor ownership promoted sustainability: **“It was successful because the subject advisors owned it. They knew that when they had trained on it, they had to go and support the teachers in the field. And put them in PLCs and they would have regular meetings. And now they are sustaining it.”**

The commitment to sustainability was also evident in the comments of two current WCED officials. One said: **“The memorandum of association was for us to run all the training without any external assistant or budget. You don’t just set up a program and then you’re done. You need to sustain it. You need to reflect on things and change things occasionally.”**

Another added: **“One of the successes is that districts have to be well trained. That is where they**

2 N. Roberts and M. Mawoyo, R-Maths Consolidation Phase Evaluation Report (Kelello: Johannesburg, 2020).

3 Ibid

receive their support. The curriculum advisors need to be up-skilled and trained. Continuous training, reminders, and up-skilling needs to be there. You can't just train and leave it there."

A key step toward sustainability was taken in the transition from external funding and technical support. A former high-level WCED official said: "The transition from external funding to WCED was smooth. We didn't want for anything."

In sustaining the program, the focus has been on ensuring that new teachers are trained. A curriculum advisor explained: "For new grade R teachers coming into the system, we run novice teacher orientation sessions ... Every year we run induction and refresher courses with grade R teachers either for R-Maths or E Lit training [the literacy program for grade R]."

A donor official offered some reflections on their role in project sustainability, saying: "Donors must be in for the long haul. A five-year minimum if we want to work in a system. There must be a deliberate plan around institutionalization, a plan for systemic embedding. Some kind of deliberate outcomes around the theory of change and putting resources in to make it happen. There is not enough thinking about this."

The official added. "Systemic change is not as easy as we thought. It's a ten-year thing. It requires very explicit up-front agreement ... [which] ... sits in their performance contracts. Everyone is aligned and everyone is doing that. If that condition isn't met, we struggle."

## Future Considerations

Two main issues for the future of the R-Maths program are teacher professionalization and national scale-up.

Until 2010, grade R teachers were employed by the Department of Social Development, as part of early childhood development (ECD) programming. A 2013 report found that 78% of grade R teachers did not have the minimum qualification to teach in that grade. In line with other countries that have moved from viewing ECD less as a child protection function and more as an early learning function, the South African government made a policy decision to migrate the early learning responsibility from the Department of Social Development to the Department of Basic Education. In this regard, the functions of the Department of Basic Education include (1) ensuring universal availability and adequate quality of, and equitable access to, inclusive learning opportunities and (2) the development, delivery, regulation, registration, monitoring, improvement, and evaluation of ECD programs. This process has also included efforts to professionalize the cadre of grade R teachers. WCED saw the R-Maths program (and the related E-Lit program in literacy) as an opportunity to achieve this professionalization of grade R teachers through training and support. Although the two grade R programs have been successful in achieving this aim, more work is required to assimilate grade R teachers into the education system. One issue is that grade R teachers are on a different salary scale than primary school teachers because they do not have a bachelor's degree in education. The education department encourages grade R teachers to study for a bachelor's degree in education as part of their own professional development. However, this qualification allows them to move up to teach grades 1–3, where there they can receive a higher salary. This presents a challenge to the department because it loses grade R teachers and needs to recruit and train replacements.

A second challenge relates to integration of the R-Maths training with other subjects and with pre-service training. The first part of that challenge is that grade R practitioners are trained on CAPS, E-Lit, and R-Maths and find it hard to do refresher trainings on all three topics. WCED has been working on streamlining the training so that all three components can be included without too much of a burden on teachers. The second part of the challenge is that the R-Maths program has yet to be integrated into pre-service teacher training.

Based on the evaluation findings, the R-Maths program has been revised and adapted for implementation in a new province: Gauteng. Implementation in this new province required adaptation and development of the program from one African language to all nine recognized as official languages in South Africa. There is also a closer alignment between the literacy and math components in the Gauteng program. To achieve national scale, the R-Maths program would need to be adopted by the seven other provinces. Education policy is decentralized in South Africa, so this decision would be made on a province-by-province basis and would likely require support from an external donor to fund start-up of the program. However, evidence in this brief provides a roadmap for achieving successful implementation, scaling, and ownership by provincial governments.

---

*Authored by: Matthew Jukes, Philip Browne, & Kellie Betts*  
SEPTEMBER 2023