Structured Pedagogy

GUIDE 2

Designing an Effective Structured Pedagogy Program

INTRODUCTION

The effectiveness of structured pedagogy programs depends on key program design decisions. Even the best implementation cannot overcome poor program design. This guide suggests several key steps for designing programs effectively, designing for large-scale implementation within government systems, and organizing programs to respond to various options.

ESSENTIAL PROGRAM DESIGN CONSIDERATIONS

Do More by Doing Less

A key metric that determines how effective a structured pedagogy program will be is the proportion of teachers implementing the program daily. Many programs struggle for two reasons. 1) The program does not sufficiently incorporate what is known about how to implement foundational literacy and numeracy (FLN) programs effectively. (See Guides 3 and 4), and 2) The teachers that the program targets do not teach the program consistently or at all. The program is not fundamentally ineffective, but teachers resist it.

This lack of adherence is likely if a program is not designed to change the instructional decision-making of typical teachers, in the given context. **In other words, a program will never have a chance if it asks teachers—the key clientele—to learn and carry out too many new instructional practices, or if the teachers perceive the new methods to be too complicated or too much additional work**. Consider ways to design a program that teachers find actually simplifies their lives such as a teachers' guide with daily lessons and instructions so teachers can focus on the instruction and not spend too much time reorganizing content.

In short, remember that students' average performance gains will depend primarily on the percentage of schools and teachers that implement the FLN program consistently, and program design can have a substantial impact on this ratio. While simplifying program design is essential, this must not ignore the needs of children from vulnerable populations or those with special needs.

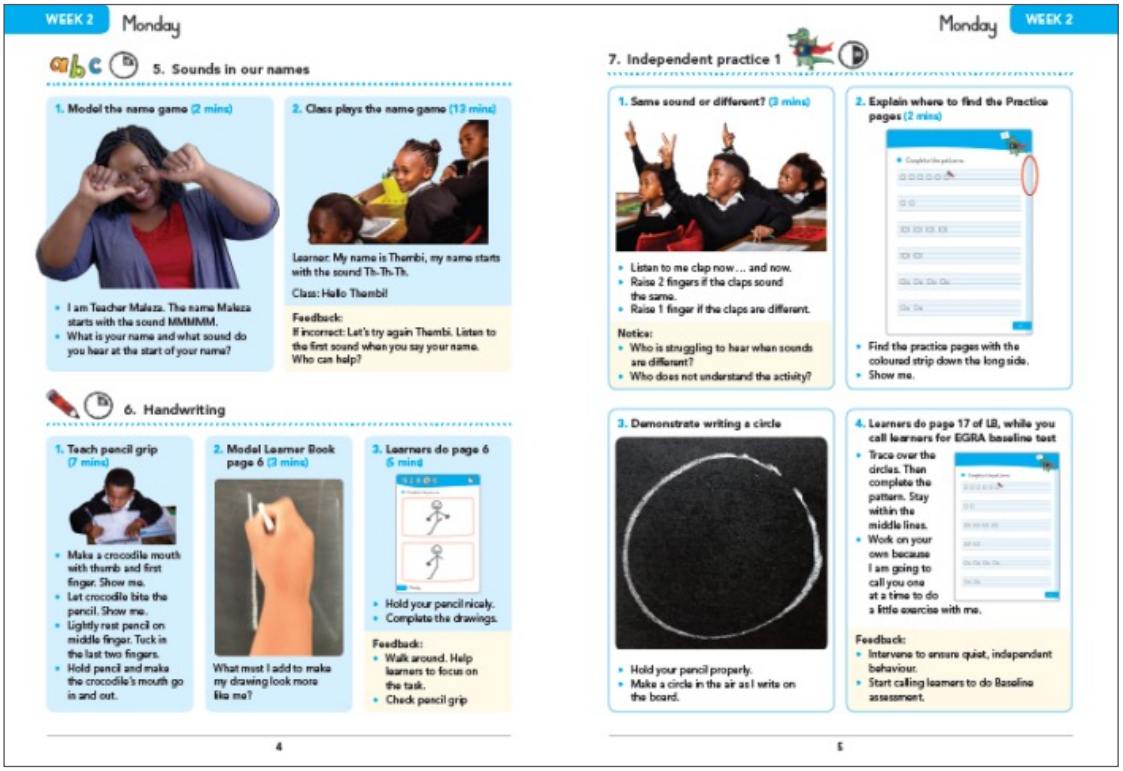
Focus on the Teacher-Change Process

Pay attention to the threshold for what teachers are likely to take up during the short period that they are in training, and to attempt once they are alone back in their classroom. Limit the instructional approach to require as little new information as possible. Some literacy programs have made the mistake of starting their training and implementation with too much: a teacher's guide, an assessment manual, teacher read-alouds, a core textbook, supplementary readers, and writing journals. These materials are not useless in and of themselves, but having too many new program elements make it more likely that teachers perceive the program to be too complicated.

The Funda Wande program revised their instructional materials in 2020 to reduce their instructional content to simplify the work for teachers. Figure 2 shows the revised integrated teachers' guides. They are attractive, integrate many elements that were previously separated, and make the task of following the lesson routine easy for teachers. Programs like Funda Wande show what is possible when the teacher-change process is considered and materials are simplified to help teachers implement more easily.

What does this mean, in practice? Many teachers will not use carefully designed but overly complex program materials daily. If they do not teach every day, the program will not work. In other words, the complexity of the intervention ultimately will reduce its effectiveness. Instead, determine what materials can be combined or let go, and simplify the new instructional activities expected of teachers.

FIGURE 1. Sample of Funda Wande revised integrated teacher's guides



Source: Funda Wande, 2020.

Design a Program That Uses Multiple Touch Points

Learning is not generally an isolated experience for children. Teachers of young students, on the other hand, often do their work with no other adults present. When designing implementation, consider the frequency and consistency with which teachers can realistically learn and be supported through trainings, coaching, and communities of practice. The more often teachers have an opportunity to be in touch with, learn from, and ask questions of trainers, coaches, and other teachers, the more likely they are to feel confident and supported (see Guide 6 on ongoing teacher support).

We recommend more frequent but shorter touchpoints rather than fewer, longer and more costly trainings. These multiple touch points can also incorporate accountability checks and reviews of what challenges teachers are having, so the program can pivot or adapt as needed.

Respond to Policy Opportunities

Effective structured pedagogy programs find strategic opportunities to fit within the policy environment. These windows are chances to align the intervention to individual educators' incentives and the overall direction of the system (see Guide 1 on government leadership and program adoption). Key opportunities include curriculum reforms or the development of new teacher evaluation standards.

A structured pedagogy intervention can link to these massive system changes, using the new structures to steer behaviors toward improved implementation. On the other hand, revising an existing program while a new curriculum is coming online leads to a complicated process of

Possible policy opportunities include:

- Curriculum reform
- Revised standards for evaluating teachers
- Revised timetable
- New school year calendar
- Language-of-instruction policies
- Development of sector plan
- Joint sector review

determining how much of the program to keep and what will need to be changed. It is essential for the program to fit into the curriculum, but many curricula do allow opportunities for reorganization and resequencing (see Guide 3 on curriculum and scope & sequence).

Other opportunities in the policy environment might include changes in instructional time, reallocations of subject times or topics, new school calendars, or revised language-of-instruction policies. **It is likely, if not inevitable, that a structured pedagogy program implemented over several years will face a major policy change within its lifespan, so design into the program a process to rapidly realign with high-level changes.** It is also likely, if not inevitable, that the intervention will face a policy change that contravenes improving instruction at large scale. Retain policy experts who can help to advocate for decisions that will maximize the likelihood that the intervention's core components can withstand the change.

DESIGN FOR SCALE

Listen to Government Leaders

The first step in designing an effective large-scale structured pedagogy intervention is to listen to government leaders' priorities and incentives. We present recommendations in Guide 1 on government leadership and teacher adoption.

Pilot for Scale-Up

The second step is to structure a pilot intervention in a way that it can be scaled up. To emphasize this point: Design the pilot for scale. If the pilot or the small-scale activities that precede the scale-up are substantially different from what will happen during implementation across the country, the intervention will fail.

If your intervention will operate within government systems, use the pilot to test your assumptions of how government officers will actually function. For example, **if your intervention addresses language of instruction, test it in contexts where the teachers do not necessarily speak the language fluently and coaches may have no skills in the language at all—particularly if that is the reality of implementation in significant parts of the country**. Introducing a language-of-instruction intervention only in contexts in which the policy environment is already perfectly attuned to it will reduce the pilot's ability to inform implementation in contexts with language mismatches.

Design for Iterations

Expect to be wrong: Avoid the hubris of assuming you will figure it out the first time. Effective structured pedagogy programs anticipate a desperate need to iterate and revise, **so plan for and build in the time and opportunity to reflect and adapt. Be prepared, for example, to improve the design of textbooks, the structure and pace of teacher training, and the mechanisms for teacher support**:

- **Student and teacher textbooks.** As knowledge increases regarding what works, revise textbooks with respect to the physical layout, the depth and complexity of the guidance to teachers, the instructional time actually available and used, and the correlations between the student textbooks and teachers' guides (refer to Guide 5 on teacher professional development). Conduct user testing and respond iteratively to adapt to what teachers prefer and use most effectively.
- **Teacher training**. Modify training to balance time for content absorption with enough practice for teachers to internalize new techniques with confidence. Writing out the entire training program at once will prove too inflexible, though we know that having time for modeling and practice is essential. Instead, design a plan for the trainings but expect to respond to classroom feedback to determine what teachers need to practice and what skills they need to develop at the next training.
- **Teacher support**. Adapt your program design over time in response to which instructional supervisors prove most capable of cost-effectively providing ongoing support. At the beginning, you might not know whether the best resource consists of head teachers, inspectors, quality assurance officers, or coaches (if that position exists). Moreover, the initial means for incentivizing coaching visits might change. Investigate the variety of instructional support methods that programs

EXPECT TO BE WRONG: AVOID THE HUBRIS OF ASSUME YOU WILL FIGURE IT OUT CORRECTLY THE FIRST TIME.

have used (see Guide 6 on teacher support); test and determine which ones work best in your context.

In short, initial missteps and oversights in program design are inevitable. Build into your design the time and opportunities for ongoing comparisons to determine how to fix the initial problems.

MAXIMIZE THE AVAILABLE TIME

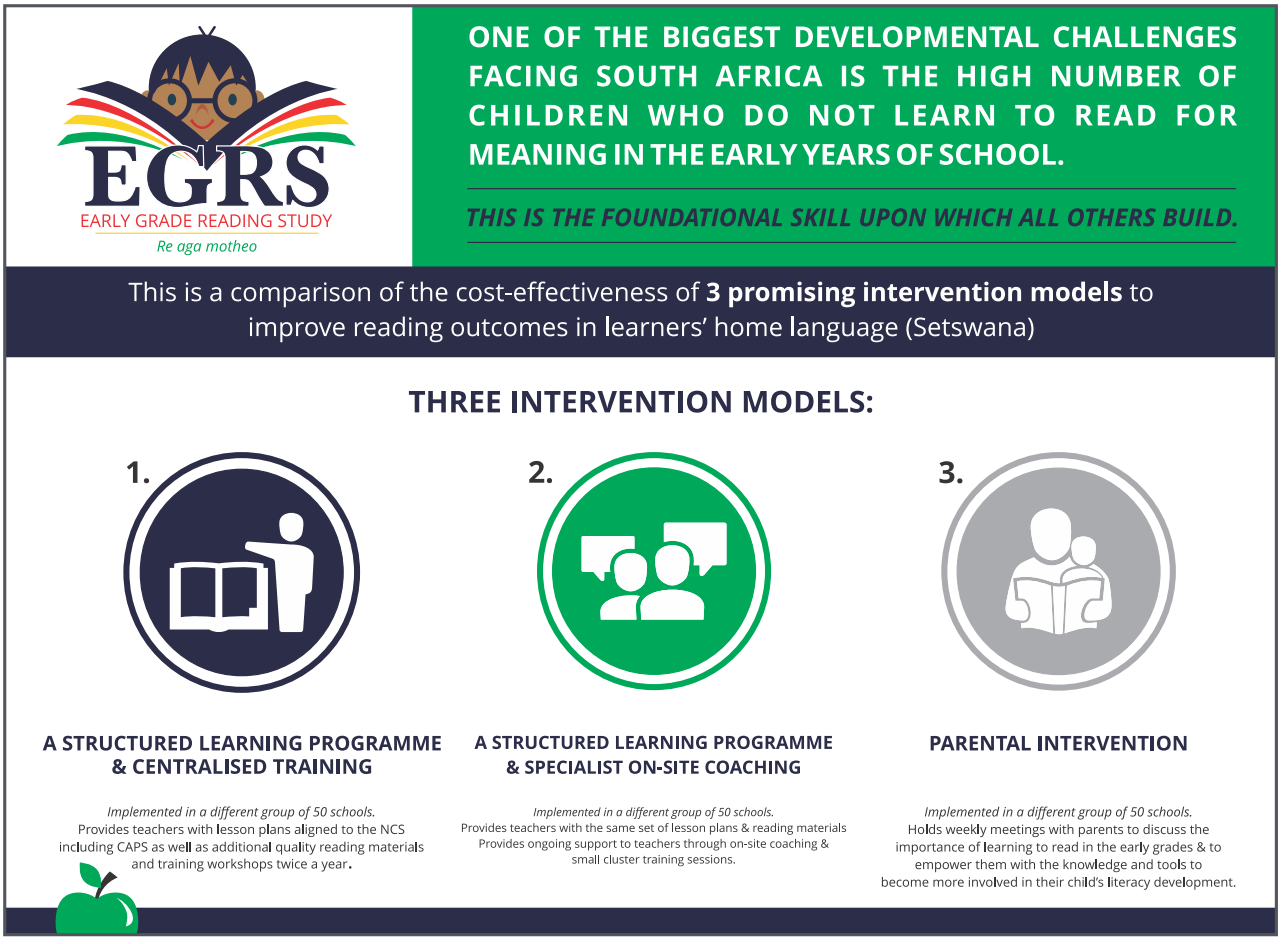
This section presents pilot options tied to how much time is available before large-scale implementation at the beginning of the first academic year. Ideally, one would have 18 months prior to full scale implementation to develop materials and pilot prior to implementation. But how should you respond if preparation time is more limited? Consider the options below for completing several specific activities before program rollout begins. No matter how much time you have, we think that it is essential to be ready to implement with books and materials delivered to schools and teachers trained prior to the beginning of the academic year. Missing the beginning of the academic year can severely reduce program impact over the lifespan of the intervention. Plan for large scale book printing and distribution to take a minimum of six months with training happening concurrently. The sections below describe pilot and testing possibilities depending on how much additional time is available prior to the first academic year.

NO MATTER HOW MUCH TIME YOU HAVE, BE READY TO IMPLEMENT WITH BOOKS AND MATERIALS IN SCHOOLS AND TEACHERS TRAINED AT THE BEGINNING OF THE ACADEMIC YEAR

Pilot with More Than a Year

In addition to planning for the materials distribution and teacher training, design a rapid randomized controlled trial responding to particular research questions of interest to the government and relevant to successful program implementation. This research might resemble the South Africa Department of Education's Early Grade Reading Study, which tested several different policy options, as shown in Figure 2. Use a full year of small-scale pilot implementation to test the key

FIGURE 2. South Africa Early Grade Reading Study: Real-world policy comparisons



Source: Department of Basic Education, Republic of South Africa, 2017.

aspects of the program, including materials design, training modalities, and post-training support. The Kenya PRIMR program used an ingredients method to test whether new training programs, revised student books at a 1:1 ratio, or teachers' guides had the largest impact on learning. The study allowed an analysis of which combination of ingredients were most effective. Including these types of research studies allow for a better designed scaled up program.[7] Other pilot study designs could examine the impact of community based interventions or other key design possibilities.

Pilot with 6 Months to a Year

This time frame will allow for a short pilot implementation period. If the teaching and learning materials are not fully completed at the beginning, use a short-term pilot to test the portion of the materials that is finished. For example, the teachers could implement using one term's worth of completed materials while you finalize the rest of the program content. The focus of this pilot would be on short-term outcomes and teacher implementation. This phased approach would allow a basic analysis of teachers' impressions of the materials, training, and support structures and would produce insights into the pace of student progress in the short term.

Pilot with 3 to 6 Months

This amount of time is not sufficient to solve many of the problems likely inherent in large-scale structured pedagogy implementation, but there are some practical options. First, teachers' views of how the teacher's guides and student textbooks work will inform their use of the materials. Thus, include user testing of various layouts as a formal part of your process. Take several weeks to observe teachers using the materials to determine how they function in classrooms. Note, however, that you will not be able to correlate these user-testing programs with changes in student outcomes, though anecdotal evidence for particular instructional approaches might exist. You will also not be able to observe high quality lessons in this short period of time, as teachers will still be learning the new instructional approach.

Spend time with education officers who could provide coaching within the system, such as head teachers, instructional coaches, or inspectors. Examine these officers' job descriptions. Do they incorporate instructional support and support for communities of learning? (See Guide 6 on ongoing teacher support) Just because these personnel exist in the system does not mean that improvements can be built around them, so test this supposition before the program rolls out fully and with heavy dependence on a particular cadre. Note that before scale-up, the Early Grade Reading Study in South Africa (see Figure 2) pilot tested a program that incorporated specialist, on-site coaches.

CONCLUSION

If the structured program has not yet invested in careful design, piloting and revision, it is suggested that you stop all activities and do these steps immediately. The program will benefit tremendously from time spent learning how to do it well; in fact, these considerations often differentiate a mediocre program from a highly effective one. In summary, we recommend the following steps:

1. **Simplify**. Review your program design and find ways to limit the load on the teachers. In other words, reduce the instructional complexity.
2. **Use existing structures**. To prepare for scale-up, design the program to use existing government structures.
3. **Assess policies**. Build on the existing policy environment and make practical choices to create opportunities for useful piloting. Two example pilot programs to study are the Early Grade Reading Study in South Africa and the Primary Math and Reading Initiative (PRIMR) in Kenya.
4. **Learn and adapt**. Embed opportunities to iterate and revise over the lifespan of the program.

About the symbols in this guide:

Indicates "Red Alert": Something to be aware of and alert to, because it is a common problem

Indicates "Non-negotiable": a must-have

RESOURCES

Key Kenyan Ministry of Education leaders discuss the Tusome literacy program. https://www.youtube.com/watch?v=7ddTK-qDroo&t=10s.

Dr. Stephen Taylor Director-Research Coordination discusses the policy relevance of the Early Grade Reading Study in South Africa, designed to answer questions about how to most effective improve literacy. https://www.education.gov.za/Portals/0/Documents/Publications/EGRS/Stephen%20Taylor%20540p.mp4.

The Uganda LARA program shares the 5 Ts of reading in the Ugandan context. https://youtu.be/DOM9w99Jm_U.

Mary Ann Bates and Rachel Glennerster consider the complexities of understanding what principles from research generalize from one context to another https://ssir.org/articles/entry/the_generalizability_puzzle

This article discusses how to design programs to be effective at scale, written by Gove, Korda Poole and Piper. https://doi.org/10.1002/cad.20195.

Using large scale research from India, Muralidharan and Niehaus discuss the power of using medium to large scale studies to understand how programs work at scale. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3057188.

Karthik Muralidharan discusses the necessity of evaluating programs at scale in Andhra Pradesh India. https://www.youtube.com/watch?v=RTdQ-Pfrt10&ab_channel=J-PAL.

Complete Series of Structured Pedagogy How-To Guides: https://scienceofteaching.site/how-to-guides/

TECHNICAL EXPERTISE NEEDED

Expert in research and structural pedagogy design: to advise on possible piloting options and contribute to designing structured pedagogy pilot research.

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7 Benjamin Piper, Stephanie Zuilkowski, Margaret Dubeck, Evelyn Jepkemei, and Simon King, "Identifying the Essential Ingredients to Literacy and Numeracy Improvement: Teacher Professional Development and Coaching, Student Textbooks, and Structured Teachers' Guides," *World Development* 106(2018): 324–336. https://doi.org/10.1016/j.worlddev.2018.01.018

Guide authored by **Dr. Benjamin Piper** and **Jessica Mejía**