



Case Study: School-based In-service Teacher Professional Development

Deepening understanding and collaboration in rural primary classrooms

Context:

Two SEF-appointed teacher coaches engage in classroom demonstrations, co-planning, and debrief conversations on a weekly basis with 9 government school teachers and 5 SEF-appointed community assistant teachers across 5 schools to introduce high-impact pedagogical and content strategies and support teachers in building proficiency with these strategies over time. These schools are located in hilly and remote rural regions of the state and are characterised by multi-grade classrooms owing to low student enrolment and teacher recruitment.

Guide and Strategy Used:

Instructional Approach to Numeracy:

Tier 2 Strategy: Using Modeling and Questioning to Deepen Understanding

Student Engagement:

Tier 3 Strategy 6: Organizing Collaborative Learning Activities in Mixed-Level Groups

(Heterogeneous Groups)

Guide Sections Used:

Domain and Benefits, Decision Tree, Tiered Strategies for Promoting Student Engagement

Format:

Classroom Demonstration, Debriefs, Training session

Audience:

3 school teachers
4 community assistant teachers

Objectives of the Demonstration and Debrief Sessions:

1. Teachers will gain clarity on the 'why' and 'how' of effective questioning and modeling strategies in numeracy classrooms.
2. Teachers will engage with exemplar lesson plans to internalize the step-by-step application of these strategies.
3. Community Assistant teachers and teachers will practice effective modeling techniques and receive feedback on their classroom implementation.
4. Sessions will serve as a space for deep reflection on instructional choices and challenges in actual teaching practice.



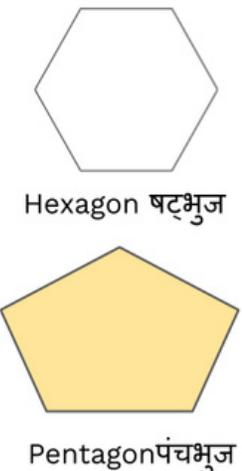
Design

- 💡 SEF coaches designed lesson plans, classroom activities, and a training session to introduce and demonstrate the strategies
- 💡 Practice cards were developed to highlight the strategy and exemplar lessons served as anchor points.
- 💡 Structured debrief sessions using the questions in the decision tree were planned to gauge teachers' current practices, as well as on key takeaways, challenges, and possible next steps for classroom application.
- 💡 With Community Assistant teachers, observation notes, structured questions, and peer conversations were designed to enable reflections on their own approaches to modeling: **Did they break concepts down step-by-step? Did they make thinking visible to children? Did they offer multiple representations and scaffold independent practice?**

Implementation

1

Example 2 – Properties of Shapes-Today we are going to compare these shapes to find out which shape has more sides and which shape has more corners.



What are sides and corners?

How many sides does the second shape have?
1,2,3,4,5... There are five sides and 5 corners.

How many sides does the second shape have?
1,2,3,4,5... There are five sides and 5 corners.

The first shape (hexagon) has 1 more corner and side than the second shape (pentagon).



The guide's description of strong instructional modeling was translated into step-by-step plans for a training session. For e.g., it nudged teachers to demonstrate solving math problems by explicitly narrating their thought process ("First I will..."), using visuals and verbal cues. (Fig.1)

2

Observation Feedback Prompts

1. Was the thinking process clear?
2. Was the language simple and according to the level of the children?
3. Was the step-by-step solution shown properly?
4. Did the teacher ask the children short questions?
5. Were visual aids (pictures, fingers, board) used?
6. How was the tone and energy?

Teachers practiced the strategy themselves, either through mini-lesson planning, peer modeling, or feedback exercises. Question prompts were designed to discuss the teacher actions demonstrated while implementing the strategy. (Fig.2)

Implementation

User Experience

3

1 Modeling and Practice

WHY?

- Students need clear direction and examples to understand new concepts.
- When teachers talk about thinking processes out loud (think aloud), students learn problem-solving strategies.
- Modeling followed by practice time strengthens both students' confidence and understanding.
- Especially helpful for students who are learning new or complex concepts.

HOW?

➤ **Do clear modeling:**
Write the example on the board. Say the thinking process out loud.
Example: "I'm looking at breaking down 25 – there are 2 bundles, which is 20, and 5 sticks, which is 5 units."

➤ **Give a similar example:**
Explain again while solving the second problem. This time let the student think.
Example: "Let's break down 42. How many bundles and how many units will there be?"

➤ **Give students practice:**
Give 3-5 practice questions and let students solve them on their own. Then discuss the answers.

Practice cards, as shown above, served as a key resource in highlighting the key benefits of the strategy and how it can be implemented in classrooms. (Fig. 3)

 Educators were already able to see the benefits of integrating the strategy - 'While doing this step by step I saw that the children were telling another person that the way ma'am did it, we have to do it the same way.'

 The guides also served as a strong anchor for SEF coaches - 'The guides were informative and helped me understand the concept of high impact strategies in these domains and visualise their applicability in the classroom. The questions in the decision tree and the lesson plans enabled me to plan for my demonstrations and debriefs.'

We look forward to seeing the teachers continue using modeling, questioning, and collaborative learning activities in their classrooms!



 **Additional resources:**
[Link to adapted Student Engagement Guide](#)
[Link to adapted Instructional Approach to Numeracy Guide](#)