

SUPPORTING TEACHER PROFESSIONAL DEVELOPMENT

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HBCSE
14 SEPT. 2010

Professional Development

- Goes beyond the term 'training'
- Formal and informal means of helping teachers to learn
 - Develop new insights into pedagogy and their own practice
 - Explore new or advanced understandings of content and resources.

The hope of revitalizing school education in India , via an idealistic or ideologically driven attempt at revising curriculum will probabaly meet with little sucess, if the central agency of the *teacher* remains unrecognized.

- National Focus Group on Teacher Education,
(NCERT 2006)

Challenges for Teacher

- Understanding and adopting learner centered (Constructivist) Approach
- Understanding the use of New Textbooks
- Developing content knowledge to support learner centered approach
- Developing beliefs conducive to learner centered approach
- Developing ways to understand students' thinking and planning for further teaching
- Connecting content with students lives

Meanings students bring to classroom

- $\frac{1}{4}$ is half of half (everyday life)
- Use of words like *sawa, adha, pauna* (everyday life)
- *40/100 jab hamare marks aate hai toh jaise 100 me se 40 aate hai toh 40/100 likhte hai*
- *$\frac{1}{5}$ is smaller than $\frac{1}{7}$ because 5 is smaller than 7 (whole number learning)*
- *$\frac{2}{3}$ because 2 is shaded part and 3 are unshaded (making meaning)*

Use of new Textbooks

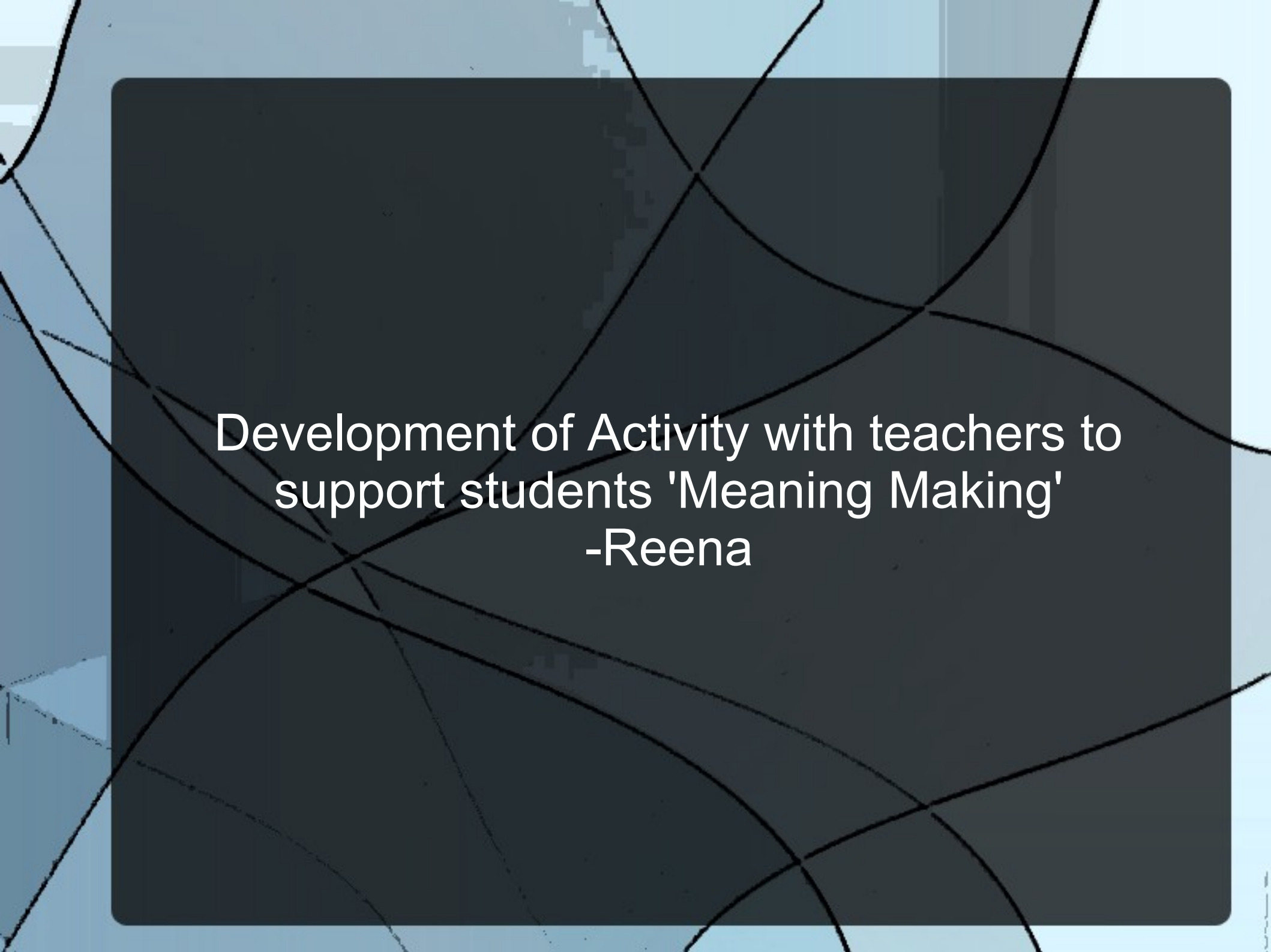
- Activity Based?
- Activity as an opportunity for teachers to connect disciplinary content with students' own understanding
- Discussion after activity is as important as students *exploring* the activity
- Seeing and valuing mathematics hidden in students observations
- Teacher needs to elicit students ideas and observations and work with those ideas

Student Responses : Equivalent fractions to half

- Students were able to draw different representations of $\frac{1}{2}$ on the circle:
 $\frac{2}{4}, \frac{4}{8}, \frac{6}{12} \dots$
- Students observed that denominator is double of numerator
- Some students were able to correspond (match) these different fractions to visual $\frac{1}{2}$ of the circle
- But some students disagreed that $\frac{4}{8} = \frac{1}{2}$ because they had a unique picture of $\frac{1}{2}$ in mind.

Equivalent fractions

- *Teacher's question: $\frac{3}{4} = \frac{6}{8} = \frac{---}{16}$*
- *Responses from students : $\frac{12}{16}$, $\frac{8}{16}$*
- *Both students asked to explain their answer*
- *$\frac{12}{16}$: $8 \times 2 = 16$ isliye $6 \times 2 = 12$*
- *Teacher used the strip (pg 64) to convince second student that his answer is equal to $\frac{1}{2}$ and not $\frac{3}{4}$*



Development of Activity with teachers to
support students 'Meaning Making'
-Reena

Practice Based Professional Develeopment

- Support in the form of communities or networks
- Involving teachers in research
- Reflection by teachers on their own practice
- Activities linked to everyday practice of teachers

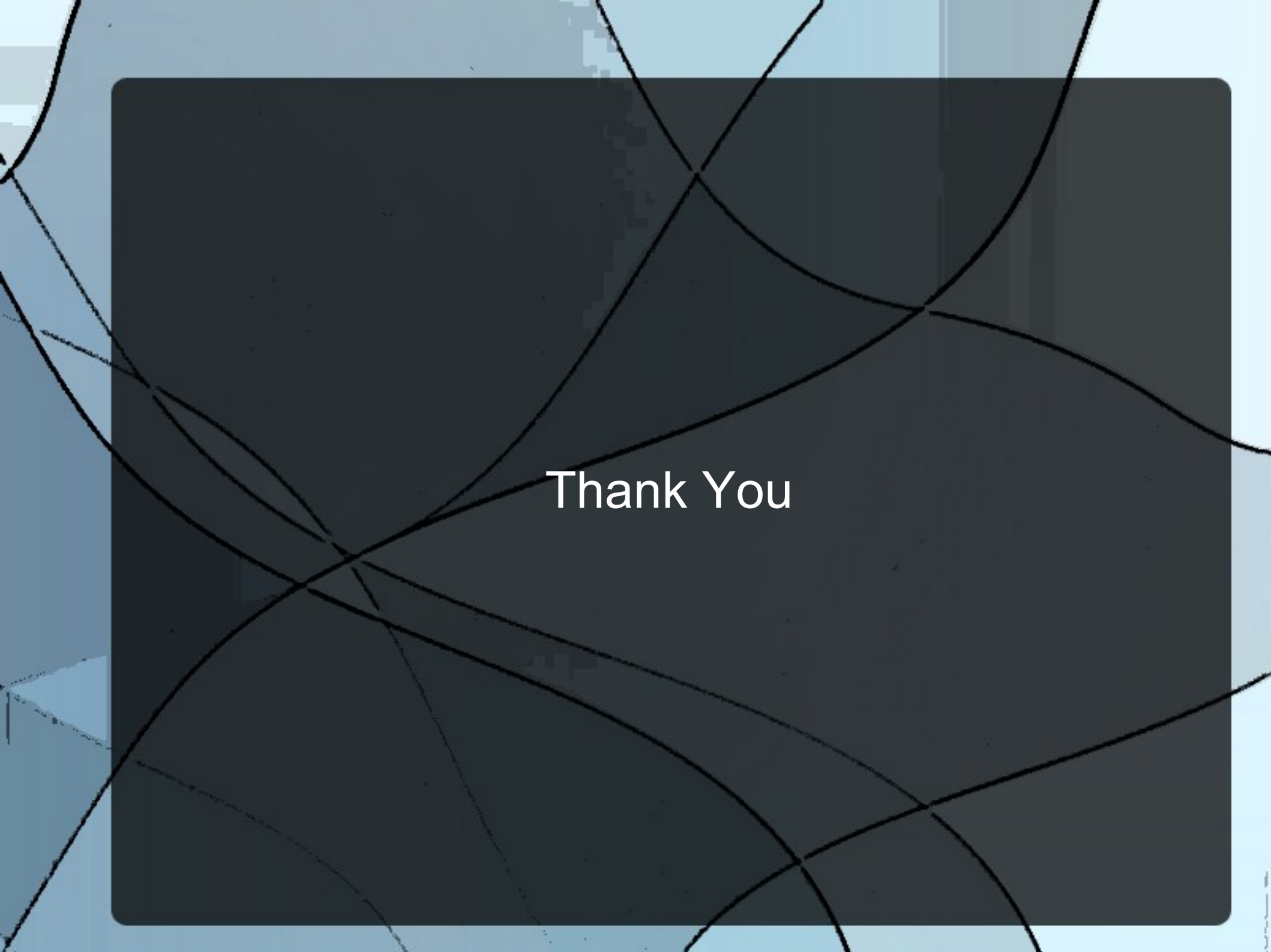
Practice Based Professional Development

Challenging tasks used to promote mathematical thinking

- Including models of teaching expected from teachers
- Use of the expertise of the teacher
- Opportunities for developing beliefs conducive to learner centered teaching through reflection and inquiry.

• Effective teacher development practices

- Collaborative research
- Action research
- Lesson Study
- Inquiry stance with regard to all aspects of teaching



Thank You