

Learning from Artefacts of Teaching

Shweta Shripad Naik

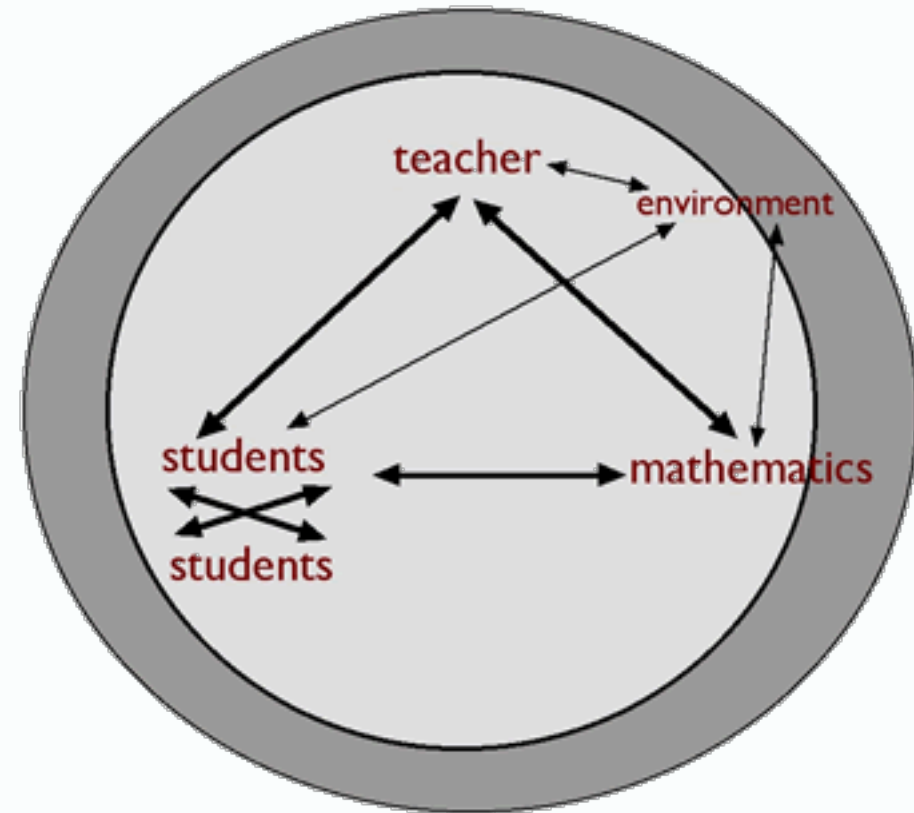
Homi Bhabha Centre for Science
Education, TIFR

What is Mathematics Teaching?

Requesting or Telling Students
≠ Teaching

and similarly

Requesting or Telling Teachers
≠ Supporting teachers



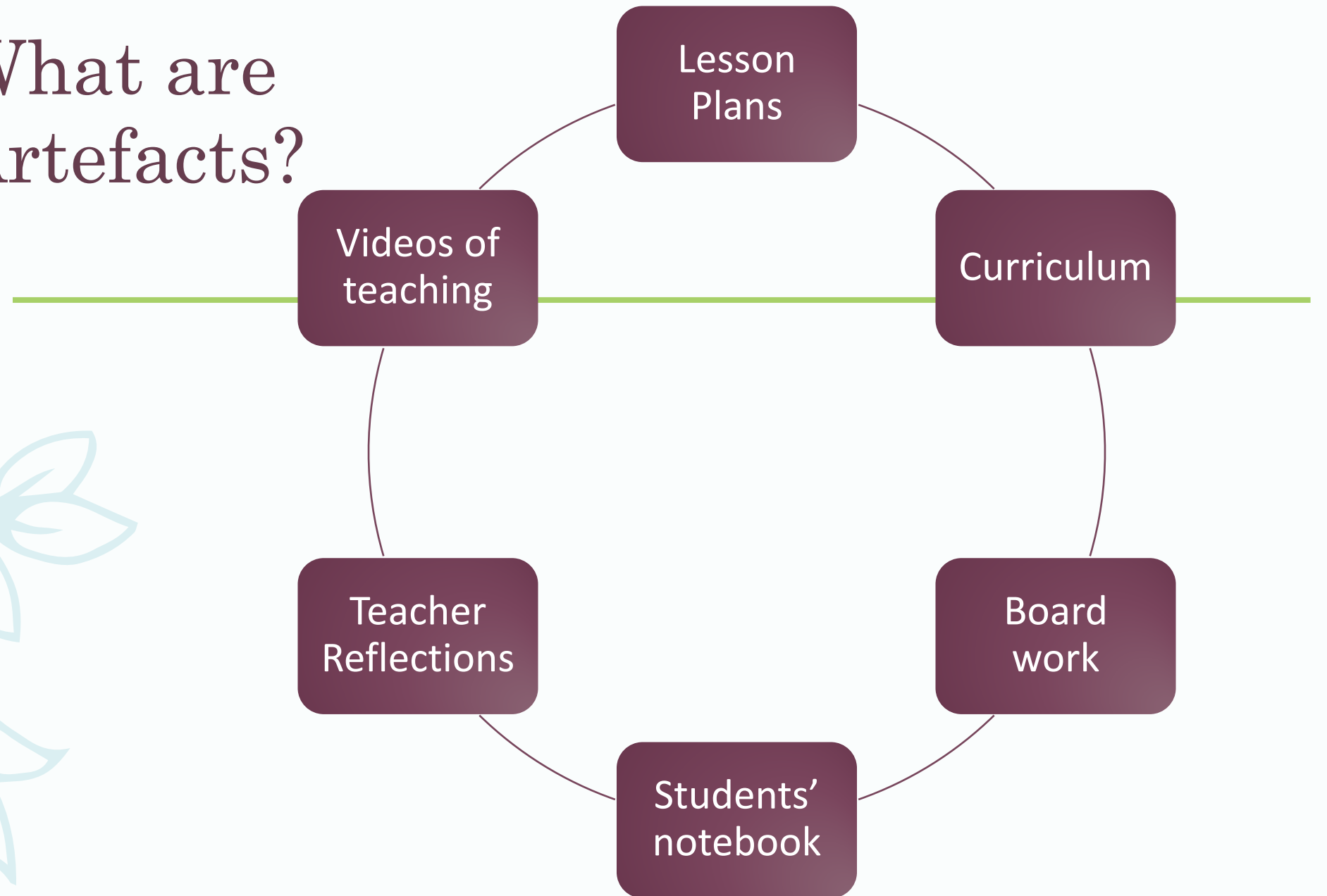
What are Artefacts?

The process of teaching and learning produces artefacts...

Let us list some artefacts...



What are Artefacts?



Videos of teaching...

As artefacts that unpack the complexity of
the classroom

What do
we
notice?

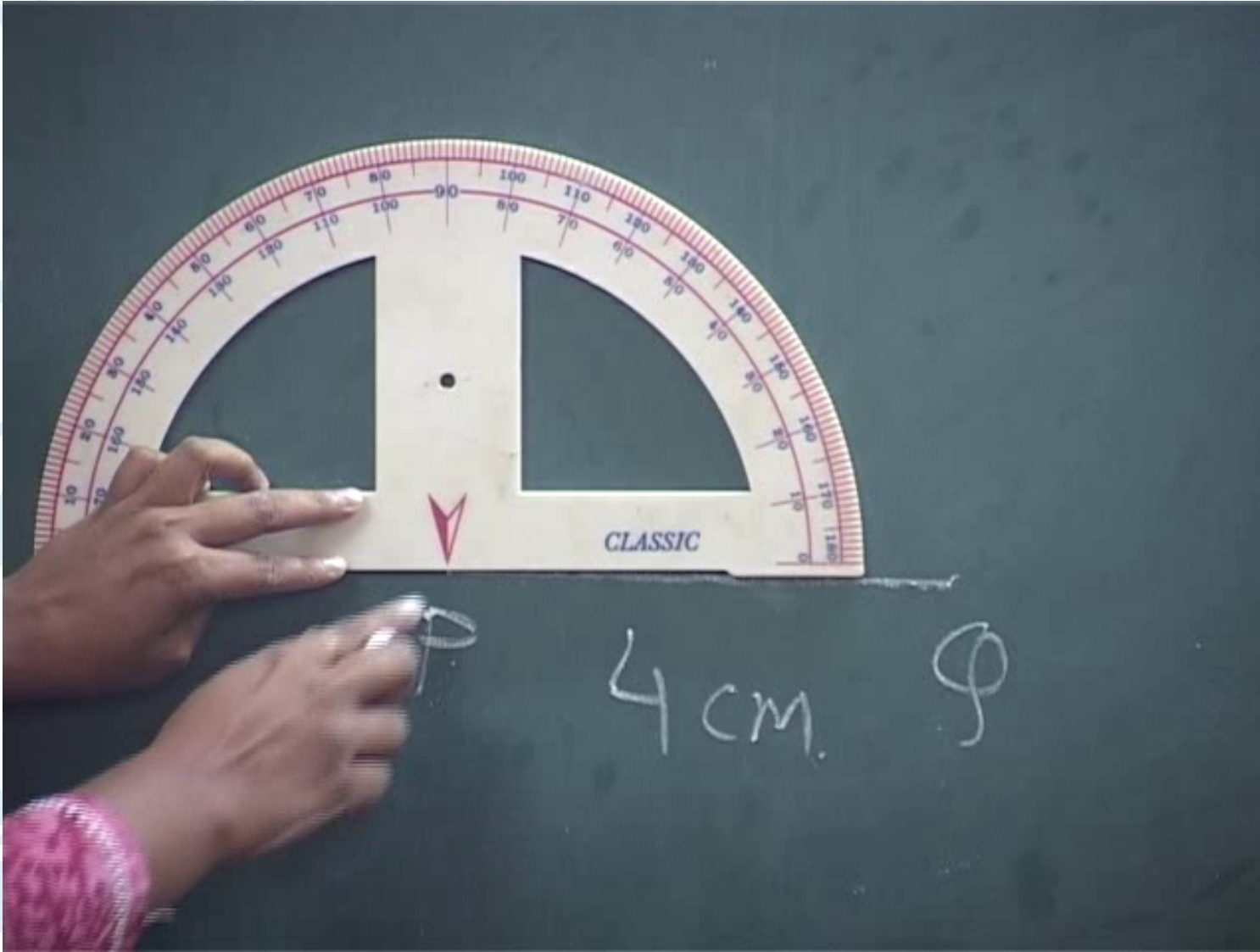


Noticing...

-
- What we notice has a cue to what we understand
 - Noticing depends upon what we believe
 - is teaching
 - is mathematics
 - is learning



Learning to Notice



Ability to perceive meaningful structure in one's practice (Goodwin, 1994)

- Know what to attend to
- Know how to interpret what is observed



Learning from Noticing

Students' thinking

Mathematical work

Teacher's decision making

Re-noticing with a lens!



What is work of
teaching Mathematics?

Anticipate students responses

Watch from 1:44 to 2:19

Anticipate Students' Responses

- What do you think the students will say after this?
- What do you think the teacher will do after that?

How to write
half of 100
is 50?



What is the mathematical difference?

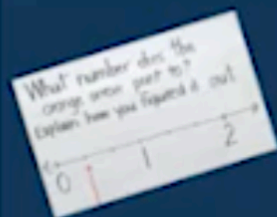
$$100 - 50 = 50$$

$$100 \times \frac{1}{2} = 50$$

Goal of the lesson!

Based on the clip you watched what is the goal of the lesson? (3:42 to 4:02)

How distribution of calculator can help in that goal?



UNCOVERING THE SPECIAL MATHEMATICAL WORK OF TEACHING*

Deborah Löwenberg Ball
University of Michigan USA

dball@umich.edu • @deborah_ball

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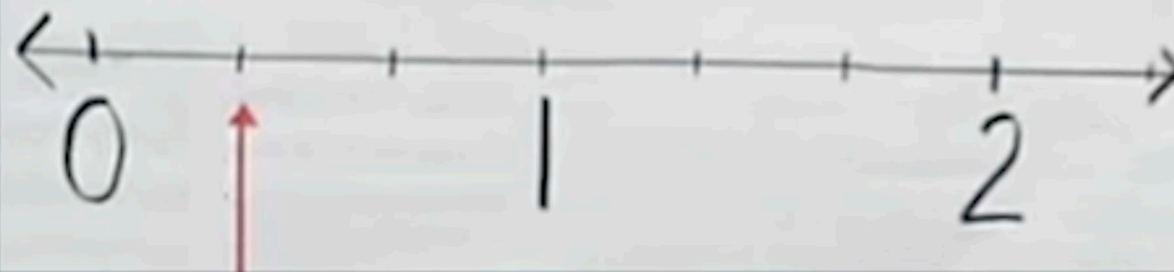
**My slides will be posted on my website.*



Mathematical task in the video

THE WORK OF USING A MATHS PROBLEM

What number does the orange arrow point to?
Explain how you figured it out.



Watch the video

Notice work of teaching: the noticing that the teacher has to do in the moment

Watch Aniyah and Toni, to see what is work of noticing for the teacher and therefore work of teaching



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What is work of
teaching Mathematics?

What do you Notice?




What is work of
teaching Mathematics?



Work of Teaching Mathematics

- Attending to students' mathematics
- Attending to the curriculum
- Attending to the goal of the day
- Attending to social, gender and racial factors in the class
- Attending to learning of concepts
- Attending to representations, contexts and models that are used or could be used in the classroom



Noticing Improves Students Learning!

- Video Club Studies (USA)
- Demonstration Class studies (Australia, India)
- Teacher TV (Europe)
- Teacher Pages (India)

What we did today?

- We looked at one of the artefacts – videos of teaching
- Zoomed in it
- Unpacked the work of teaching and the mathematical knowledge encapsulated in it

A decorative pattern of teal-colored leaves and branches is located on the left side of the slide, extending from the top to the bottom.

What this viewing has done to you?

- Your noticing has already altered
- And now you can't help but notice more!

Thank You!

To all those
students and
teachers,
whom I have
noticed and
learned a lot.

