

Coaching for Cognitive Dissonance: Using Video to Promote Change

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Goals for this session

- Explore tasks as a catalyst to create dissonance.
- Examine four cues for coaching to create change.
- Develop a shared image of how classroom videos can be used to create coaching opportunities.

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What Do We Know?

U.S. teachers' belief structures support reducing confusion and minimizing barriers (Stigler et al., *The TIMSS Videotape Classroom Study*, 1999).

Teachers provide procedures too early.

How can we coach them to focus on conceptual understanding first?

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We Need to Find a True Impetus for Change

If we provide examples that cause disequilibrium, teachers will be more likely to adjust their practice.

The goal, then, is to create cognitive dissonance.

(Festinger, *A Theory of Cognitive Dissonance*, 1957;
Zaslavsky, "Seizing the Opportunity to Create
Uncertainty in Learning Mathematics,"
Educational Studies in Mathematics, 2005)

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We Need to Find a True Impetus for Change

We need to find just the right problems we know teachers will get wrong.


Fractions come to mind ...

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Solve this:


Lexi and Louise decided to volunteer to clean up a hiking trail. Each of the volunteers was asked to bring a snack for the group. Lexi made a large pan of brownies, but her brother ate $\frac{1}{4}$ of the pan before she left for the trail. Lexi brought all of the remaining brownies and $\frac{2}{3}$ of what she brought was eaten by the volunteers. How much of the large pan of brownies did the volunteers eat?

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How might you expect fifth grade students to solve this problem?


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How might you expect fifth grade students to solve this problem?

What would your teachers think?

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Four Cues for Coaching:

1. Teach students not tasks.
2. Know the math.
3. Get out of the way.
4. Teach don't tell.

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What does it mean to know the math?

"A lack of understanding [of mathematical content] effectively prevents a student from engaging in the mathematical practices" (CCSS, 2010, p. 8).

For teachers, however, what they think they know best might be the most difficult to change.

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Videos in Coaching Change

How might videos provide a "safe" place to address the need for changes in teaching practice?

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Graph this:

The entrance fee for Mountain World them park is \$20. Visitors purchase additional \$2 tickets for rides, games, and food. The equation $y = 2x + 20$ gives the total cost, y , to visit the park, including purchasing x tickets.

Make a graph to represent this situation.

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Videos in Coaching Change

How might videos provide a "safe" place to address the need for changes in teaching practice?

Consider this eighth grade class as they discuss graphs to represent contexts.

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Solve this:

Name _____

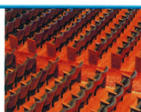
Multiply Using Mental Math

Essential Question How can you use mental math and properties to help you multiply numbers?

Lesson 2.8

COMMON CORE STANDARD: CC.4.NBT.5
Use place value understanding and properties of operations to perform multi-digit arithmetic.

UNLOCK the Problem **REAL WORLD**
Properties of Multiplication can make multiplication easier.
There are 4 sections of seats in the Playhouse Theater. Each section has 7 groups of seats. Each group has 25 seats. How many seats are there in the theater?




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What would your teachers expect of fourth grade students?

How might teachers envision students solving $4 \times 7 \times 25$?


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Are you observing this sort of mathematics talk in classrooms?

How might you help teachers see the value of this type of math talk?

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Classroom Norms:

Suggest that teachers use norms supportive of student engagement in the Practices. Try these ...

- Provide explanations and justifications with all answers.
- Make sense of each other's solutions.
- Say when you don't understand or don't agree.

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Where are you now?

Indicate one thing you will begin to do based on our conversations today.

Indicate one thing you will continue to do based on our conversations.

Indicate one thing you will stop doing because of our conversations.

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