ADDRESSING SOCIAL JUSTICE AND CONTENT LEARNING THROUGH THE PRACTICE OF ASSIGNING COMPETENCE

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Tuesday, June 27, 2017
Carnegie Learning MathCounts 2017 Summer Institute • Philadelphia, PA
OUR NATION, AND OUR FUTURE

- There are 78,000,000 people under the age of 18 in our country.
- Almost 25% of the nation’s population.
- 50,000,000 are in schools (1.3 million homeless).

How can we teach mathematics so that people stop hating and killing one another?

- Adapted from Maisha Winn, inspired by Ihab Hassan
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1. Learning occurs through a process of building on prior knowledge and experience.
2. Strong academic identities are a means to developing competence. They are also instructional goals.
3. For children of historically marginalized groups, stereotype threat and other biases interfere with and impede children’s performance.
All this talk about not focusing on children’s deficits—why does this matter so much? Isn’t our job to figure out what children don’t know and help them grow?

So—focusing on children’s strengths is crucial for effective and equitable instruction and for advancing social justice.

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Okay, I see why this is important. But it isn’t easy. How do I learn to be more skillful at recognizing and using children’s strengths?
MY CHOICE OF VIDEO SEGMENTS FOR THIS SESSION

- My own teaching from a summer mathematics program
- Diverse classrooms: race, ethnicity, language, SES
- Useful for the specific goals of this session: to learn to see and use children’s resources
MATHEMATICS AS A RICH CONTEXT FOR SOCIAL JUSTICE WORK

- Mathematics is a domain that has historically excluded groups of people, disproportionately people of color and women.
- This has left these people:
  - feeling “not good at math” and even “not smart”
  - without access to experience the beauty and power of mathematics
  - outside the construction and development of the field
  - barred from their desired fields and paths
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- Mathematics is also a domain ripe for disrupting marginalization, and what it means to be “smart” and who is smart.
- Mathematics can be a highly democratic domain with broad free access.
- Mathematics would expand and change if currently marginalized groups were actively participating in it as a field.
STORY #1
MIAH’S PROOF
PERMUTATIONS, AND PROOF

Find all the ways to arrange the light green, purple, and yellow rods into three-car trains, using exactly one of each rod.

How are you sure you have found ALL the ways?

Prove that you have all the possible ways to arrange the light green, purple, and yellow rods into three-car trains.
PRIOR TO THIS

1) How many different three-digit numbers can you make using the digits 3, 4, and 5, and using each digit only once? Show all the three-digit numbers that you found. How do you know that you found them all? 123 231 . . .

2) In how many orders can you arrange the letters D, F, and J, using each letter exactly once in each combination? DFJ, DJF . . .
VIDEO: MIAH, DEEDRAH, MICHIO, ARIANNA

When you - I drew the first part, the first colors first - at first, and then I just mixed the bottom next to them, those two.
What are the children learning and doing?
What are the children learning and doing?
What are the children learning and doing?

What is the teacher doing?

What is the teacher not doing?

How is this work tied to justice?
“ASSIGNING” COMPETENCE

A set of practices that deliberately deploy the power of teaching to:

1. Broaden and label what being competent in a given area means
2. Intervene to position who (and what) is seen as competent in class
3. Support individual children to develop their academic identities and competence

Sources: E. Cohen and R. Lotan, complex instruction; J. Boaler’s work; Smarter Together: Collaboration and Equity in the Elementary Mathematics Classroom (Featherstone, Crespo, et al., 2011)
WHAT DOES “ASSIGNING COMPETENCE” REQUIRE IN TEACHING?

IN GENERAL
1. Broaden and label what being competent in a given area means
2. Intervene to position who (and what) is seen as competent in class
3. Support individual children to develop their academic identities and competence

IN MATHEMATICS
1. Be able to see what is “mathematical” and what is “competent”
2. Have techniques for making these moves to intervene in ways that are sensitive to children
3. Strategically using these techniques with particular children in authentic and well-timed ways
STORY #2
SEEING AND BUILDING ON ANIYAH’S AND TONI’S STRENGTHS
What number does the orange arrow point to? Explain how you figured it out.
VIDEO: ANIYAH AND TONI

This video and additional supporting materials are available online here.

Flickr User Learning Together School of Education, University of Michigan
Education TeachingWorks
What does Aniyah know and what can she do?
What does Toni know and what is she able to do?
WHAT DO MANY “HEAR” IN ANIYAH AND TONI?

ANIYAH

- She has the wrong answer: 1/7

TONI

- She is playing with her hair and trying to get attention
- She is trying to embarrass Aniyah
WHAT DO ANIYAH AND TONI KNOW AND WHAT CAN EACH DO?

ANIYAH

- Uses the definition for a fraction to explain
  - She identifies the “whole”
  - She makes sure the intervals are equal
  - She counts intervals and not tick marks
  - She knows how to write “one-seventh”

- Produces a mathematically well-structured explanation

- Presents her ideas clearly

TONI

- Listens closely to a classmate’s presentation

- Uses the definition for a fraction to ask
  - How Aniyah decided on 7 parts

- Asks a pointed mathematical question
USING TECHNIQUES AND STRATEGIES FOR ASSIGNING COMPETENCE

Identify the competence to be highlighted. Consider how to disrupt hierarchies of status in class by which child is to be “called out” as competent.

- Call out an individual child’s competent move or contribution publicly (“___ just shared a very important idea”)
- Ask a child to explain another child’s contribution that the teacher highlights
- Ask the class to identify things that were part of an important contribution by one of the children
- Write something publicly that a child or children came up with or contributed that is important
- Accord expertise to children through assigning roles explicitly in a group
PRAISE AND AFFIRMATION: WHAT IS THE DIFFERENCE?

- Praise – verbal feedback with the only purpose of evaluating what a student says or does.
- Affirmation – intentional verbal feedback with a purpose of highlighting/affirming what a student says or does.
COMPARING PRAISE WITH AFFIRMING STATEMENTS

PRAISE
- “Good work!”
- “You are really smart at math”
- “Yes, that’s correct”
- “Yes, that’s the right way”

AFFIRMATION
- “It was really helpful how you used your drawing to explain your thinking.”
- “You are writing such clear and specific mathematical explanations.”
- “You solved that in a really interesting way. Can you tell me more about your thinking?”
- “That’s the right answer. Why does that make sense?”
- “You said that this piece is ¼ because it is one of four equal parts in the whole. I agree, that makes sense.”
NEXT STEPS
LEARN TO SEE AND BUILD ON CHILDREN’S RESOURCES AND INTERVENE ON INEQUITIES THROUGH THE PRACTICE OF ASSIGNING COMPETENCE
MAKING THE SHIFT FROM A PREOCCUPATION WITH DEFICITS TO A FOCUS ON STRENGTHS

- Seeing past “distractions” or non-mathematical issues
  - Behavior that distracts the teacher, but not the child or the other children (Noel, 2014)
  - How children talk (as they are learning; and when they are speaking academic language, or in English when that is not their first language)
- Pausing on “apparently incorrect” answers
  - Actually not incorrect
  - Answer to a different (and reasonable) question
  - More correct than incorrect
DILEMMAS OF LEARNING TO SEE AND HEAR CHILDREN’S RESOURCES

1. Feeling committed to children as sense-makers who bring many strengths and feeling pressure to make sure children get it “right”

2. Using yourself yet also suspending assumptions based on what you would mean or feel

3. Knowing mathematics well enough to see “mathematics” in children’s talk, representations, etc. while also not letting your own mathematical knowledge overtake your capacity to see and hear what they are saying or showing
WHAT IS INVOLVED FOR THE TEACHER IN SEEING AND BUILDING ON CHILDREN’S STRENGTHS?

- Listening carefully to what they say, reading attentively what they write
- Making deliberate choices about how to see and interpret
- Both of these involve using what you know, but also suspending what you assume (knowing mathematics for teaching)
OPPORTUNITIES TO LEARN TO BUILD SKILLS IN SEEING, HEARING, AND BUILDING ON CHILDREN'S RESOURCES

- Examining challenging video clips with others
- Looking at children’s written work and drawings
- Doing the mathematics that children are doing
- Seeing children outside of school, in community settings: look not just for mathematical content but also practices
JOIN US FOR THE 2017 EML!

Observation will take place in Ann Arbor, Michigan from July 31 to August 4, 2017.

Accompanying professional learning opportunities include:

- Leading mathematically productive discussions
- Examining children’s mathematical understanding
- Examining teacher and student questioning practices in the EML
- Instructional leadership through the examination of high-leverage practices
- Making mathematical connections

For more information or to register, visit www.teachingworks.org