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

Deborah Loewenberg Ball
@deborah_ball
Monday, June 19, 2017
Summer Institutes • Education to Develop the Whole Student Conference • Okemos, MI
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
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?
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?

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.

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.
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
- Situated in the case of school mathematics
WHY MATHEMATICS IN THIS SESSION?

- 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

THEREFORE—
WHY MATHEMATICS IN THIS SESSION?

- 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

- 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 . . .
WHAT DO YOU NOTICE?

About:

- the mathematical ideas and ways of reasoning that children are learning and doing?
- the work of teaching?
- teaching in ways that educate children for justice, for a civilized world, and for democracy?
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, these two.
What are the children learning and doing?
What are the children learning and doing?

6, 7, 8
678
687
786
768
867
876

3! = 3 x 2 x 1
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?

How can teachers learn to do this work?

What would policymakers need to do (and not do)?

What are the children learning and doing?
INTERMEDIA

HOW DO WE SHIFT OUR ORIENTATION TO YOUNG PEOPLE IN ORDER TO HELP THEM GROW?
WHAT IS INSTRUCTION?

Instruction is co-constructed

- . . . in broad socio-political, historical, economic, cultural, community, family environments
- . . . through the interpretations and interactions of teachers, students, and “content”

Cohen, Raudenbush, and Ball (2003)
WHAT IS THE WORK OF TEACHING?

Taking responsibility for deliberately maximizing the quality of these interactions . . .

- . . . in ways that maximize the probability that students learn
- . . . worthwhile content and skills
- . . . and that advance a just society

Cohen, Raudenbush, and Ball (2003)
WHY “WORK” OF TEACHING”?

1. To focus our attention on what teachers DO and to distinguish this from other features of classrooms, such as instructional formats, classroom culture and norms, what students are doing, how the curriculum is designed.

But what about small group work, open-ended problems, “grit,” etc.? Aren’t those what teachers DO?
WHY “WORK” OF TEACHING”?

1. To focus our attention on what teachers DO and to distinguish this from other features of classrooms, such as instructional formats, classroom culture and norms, what students are doing, how the curriculum is designed

2. To honor the effortful and deliberate nature of teaching and not to leave it invisible, implicit, and taken for granted
“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
A MATHEMATICAL TASK

What does this task demand of children?

What number does the orange arrow point to? Explain how you figured it out.
VIDEO: ANIYAH AND TONI

Teacher: Listen closely and see what you think about her reasoning and her answer.

This video and additional supporting materials are available online [here].
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 CALLING OUT CHILDREN’S 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
NEXT STEPS
LEARN TO SEE AND BUILD ON CHILDREN’S RESOURCES AND INTERVENE ON INEQUITIES THROUGH THE PRACTICE OF CALLING OUT CHILDREN’S 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
THANK YOU!

dball@umich.edu
@deborah_ball
deborahloewenberngball.com
(Google Deborah Ball)
CREDITS

Graphic on slides 19 and 20: