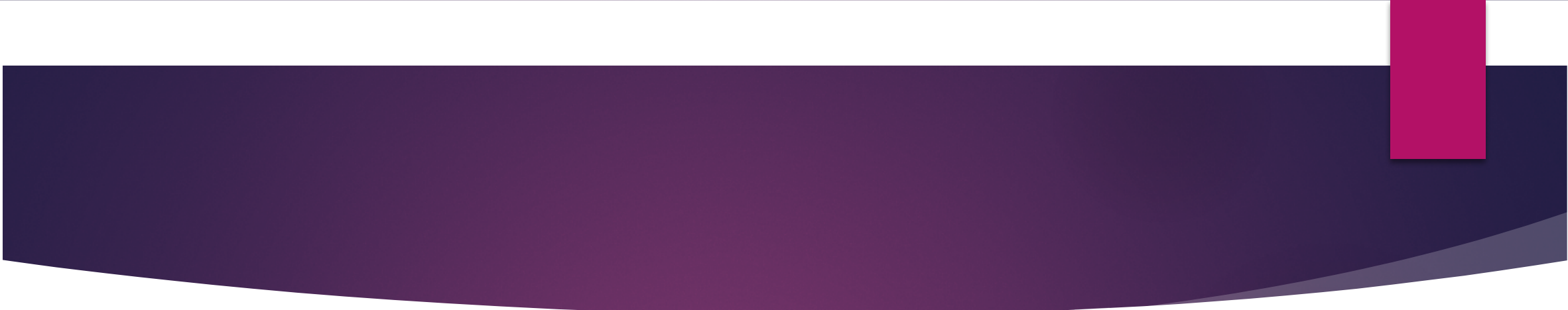




Complex Instruction: A Necessary Pedagogy for Equity

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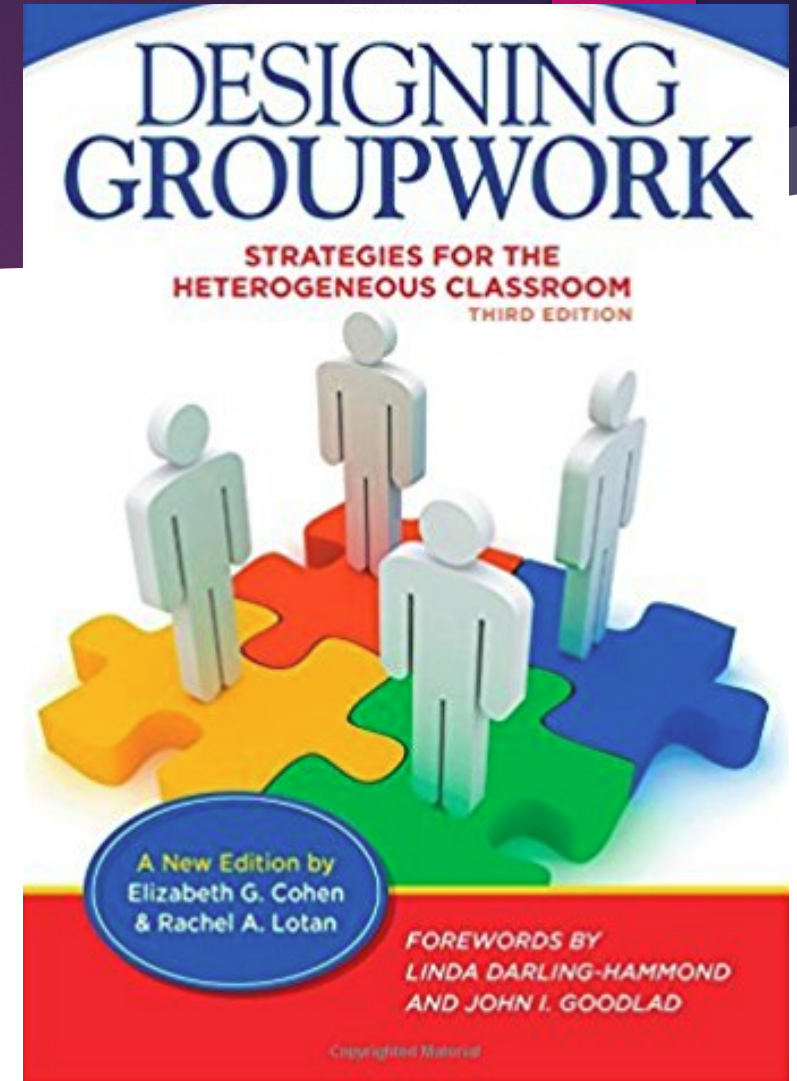


*“Without careful attention,
cooperative learning can recreate
the status inequalities of the larger
society.”*

~ Elizabeth Cohen

Complex Instruction

- ▶ Created by Stanford sociologists Elizabeth Cohen and Rachel Lotan
- ▶ They examined social dynamics, especially groupwork in grades K-12 classrooms for 30+ years
- ▶ Theorized **Complex Instruction (CI)** as an instructional strategy to overcome status issues that can exclude some students from discourse



Expectation States Theory

Expectation States Theory is an approach to understanding how people evaluate other people's competence in small groups and the amount of credibility and influence they give them as a result. Central to this theory is the idea that we evaluate people based on two criteria.

1. The **perception of competence** people have for one another based on the abilities they feel are needed for the task at hand.
2. **Status characteristics** such as gender, age, race, attractiveness, etc. that lead people to believe that some participants are superior to others (even though those characteristics have nothing to do with the task at hand).

The teacher can act to change these expectations for competence

Core Elements of Complex Instruction

1. **Rich, Group-Worthy Tasks**
2. **Multiple Ability Treatments**



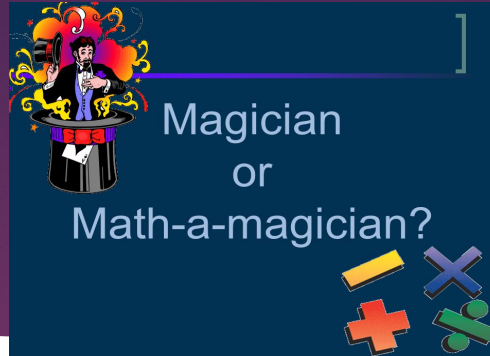
Teacher must use to build a classroom where many different strengths are recognized and what is counted as smart is broadened

3. **Status Treatments**

Teacher must catch scholars being brilliant and publicly assign competence to enhance expectations that others have for them

Importance of Task

- ▶ Read and work through the book problems that we've handed out.
- ▶ As you work through, decide How would you teach this? What changes might you make?



A magician chooses a volunteer from the audience and says, “Pick a number, but don’t tell me what it is. Add 5 to it. Multiple your answers by 6. Divide that number by 3. Subtract 9. Now tell me your answer.”

“Twenty-seven” replies the volunteer.

The magician *immediately* guesses the volunteer’s number.

1. What was the volunteer’s number?
2. The magician couldn’t possibly have worked backward that fast. How did the magician find the answer so quickly?
3. With your group, create a method that will allow you to quickly determine the starting number for any ending number.

Importance of Task



- ▶ Puzzle
- ▶ Engaging context
- ▶ Sense making (not answer driven)
- ▶ Autonomy for scholars (learning ownership led by them)
- ▶ Multiple ways to do
- ▶ Accessible

Multiple Ability Treatments

- ▶ Are there many different ways to be smart in mathematics?
- ▶ Do all kids express strengths in some abilities, but no kids excel at all?



Multiple Ability Treatment (Why?)

Pygmalion Effect: higher expectations → increase in performance

Golem Effect: lower expectations → decrease in performance

Expectation States Theory: scholars' expectations of one another regarding competence (status) greatly explains unequal distribution of participation and influence.

Non participation \neq Refusal

Teacher can help change status in classroom

Multiple Ability Treatments

- ▶ Brainstorm a list of mathematical abilities that are necessary for this number trick task.
- ▶ Consider those abilities of your brilliant scholars who aren't often recognized as 'smart,' but that are also necessary and equally important.

Your group will be successful today if you have someone who's good at...

- ▶ Working backwards (Doing and undoing)
- ▶ Pattern Recognition
- ▶ Being a skeptic (Are you sure? Will it always be true?)
- ▶ Asking questions of everyone in group to get all ideas out
- ▶ Writing algebraic expressions to represent situations
- ▶ Manipulating algebraic expressions
- ▶ Organizing information
- ▶ Making connections between different methods
- ▶ Coming up with convincing arguments to explain why something is true

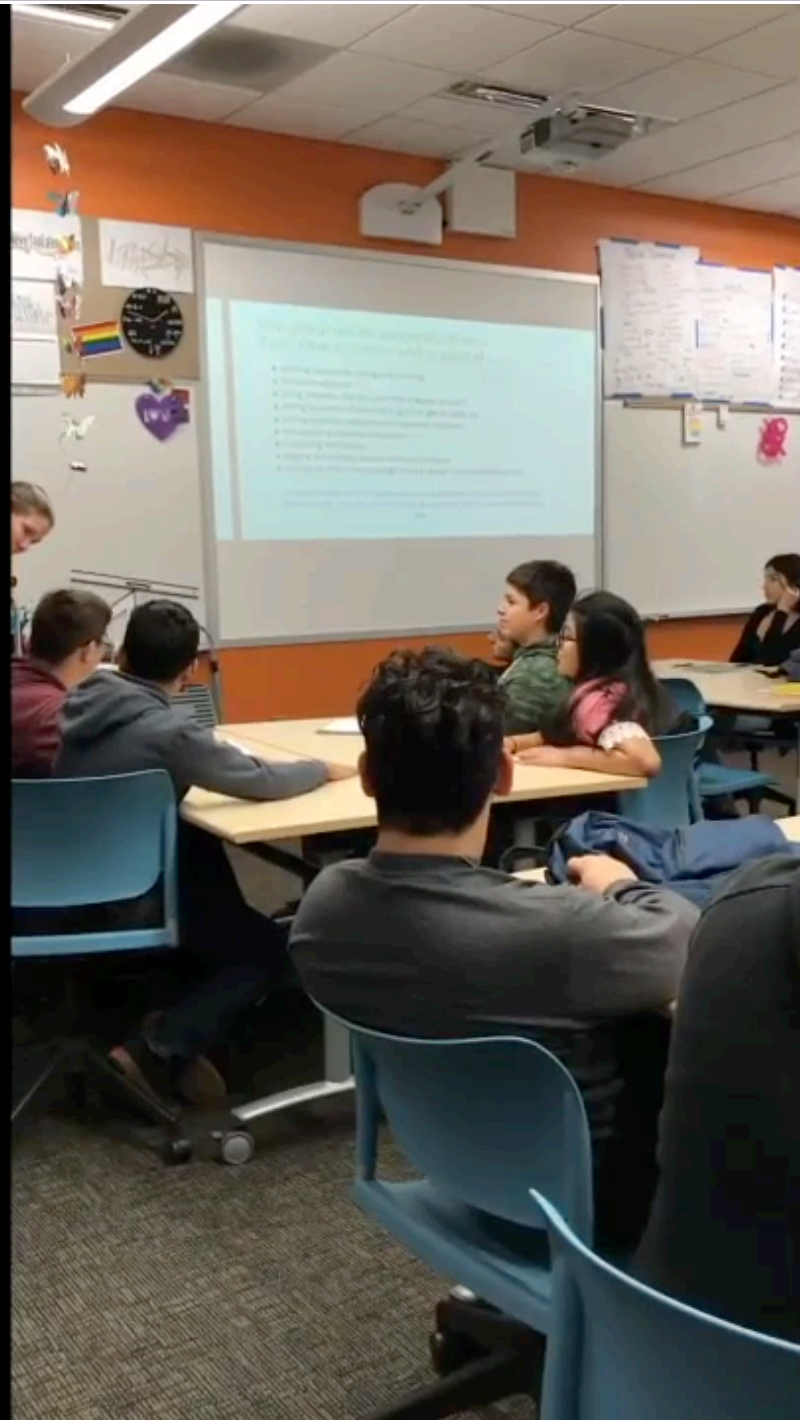
No one is great at all of these mathematical abilities, but everyone is good at some of them. You will need all of your group members to be successful at this task.

Classroom Video

► Classroom Group Investigating Task

While watching:

Write down noticings of scholars' contributions
and especially body language



Video: Notice and Wonder

What did you notice in terms of scholar behavior/body language/status during the group work?

What wonderings do you have?

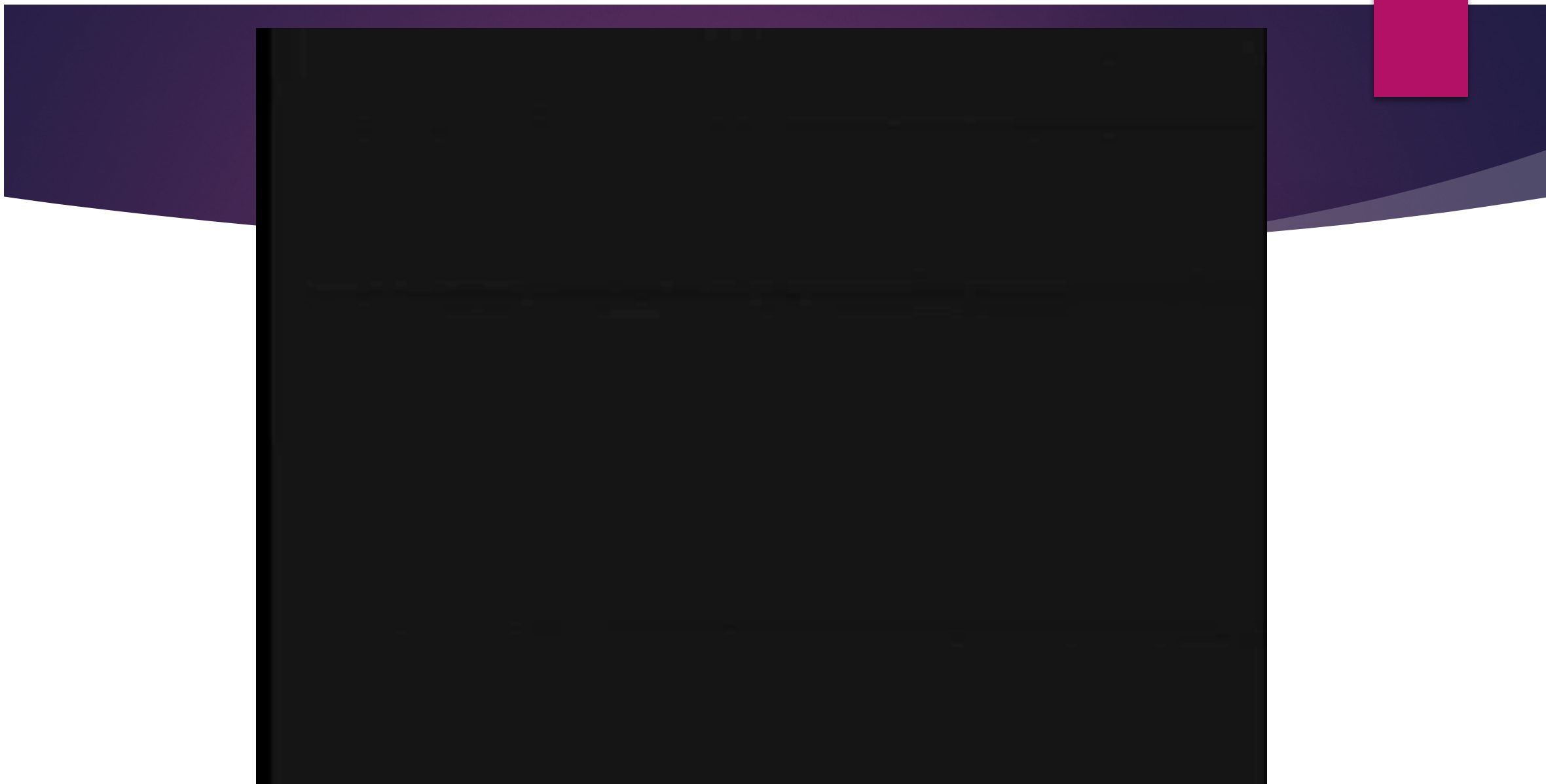
Status Issues Exist in the Classroom

- ▶ So what do we do?
- ▶ → Status Treatments
 - ▶ As a teacher, be an observer
 - ▶ Look for opportunities to elevate scholars' status by genuinely pointing out their successes publicly
 - ▶ Clipboard: Carry to record notes about scholar strengths



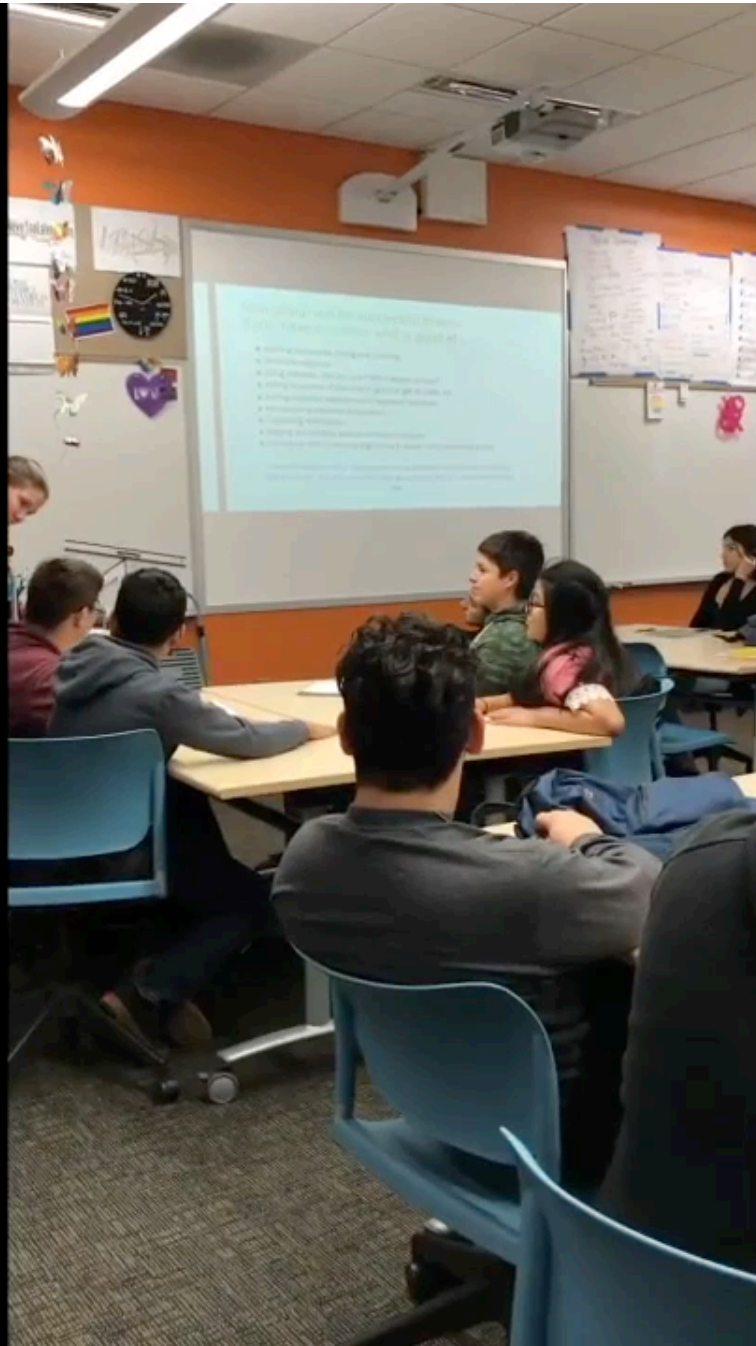
Video: Status Treatments for the Heterogenous Classroom

- ▶ Elizabeth Cohen video about Complex Instruction
- ▶ We will be viewing the section showing teachers using status treatments to raise scholars' status
- ▶ While watching
 - ▶ What do you notice?



Now You Practice Assigning Competence

- ▶ While watching the status issue in the following video, plan what you would say to this group.
- ▶ It was smart when Scholar __ said
“_____” because _____



It was smart
when Scholar ____
said

“ ”

because

Lessons Learned

- ▶ Importance of task
- ▶ List of abilities
- ▶ Identifying student strengths
- ▶ Belief in the process!



Importance of Task

- ▶ Task Worthy
 - ▶ Little prior knowledge so accessible
 - ▶ Many different abilities required
 - ▶ No one right way to do and perhaps no one right answers
- ▶ Not Task Worthy
 - ▶ Ideas in which a percentage of class have access while others are not there yet
 - ▶ New language, definitions or processes that are formulaic
 - ▶ Too many individual questions (instead of one big idea)

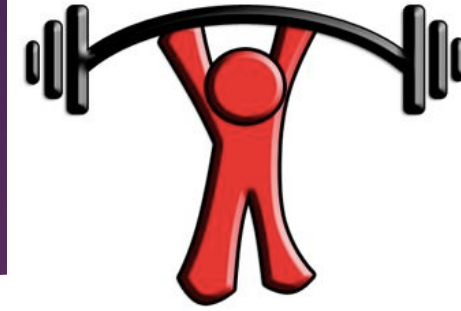


List of Abilities

- ▶ Best not to pick from a list that others have created
- ▶ Complete the task, ideally with someone else and as you work, write down all of the abilities that you know will be required
- ▶ List of abilities is critical in order for statements to be believable



Identifying Scholar Strengths



- ▶ No table hopping
 - ▶ If you spend the class 'helping', you are not observing the scholars for their own smarts.
 - ▶ Step back and observe. Tell scholars you are unavailable to help.
- ▶ Carry clipboard
 - ▶ In order to write down and keep track of your scholars' brilliance, write down strengths observed as they happen.
 - ▶ Keep track over time of different strengths each of your scholars have – this will help you to believe in their abilities.

Believe in It!

- ▶ If the task does not truly require multiple different strengths or you try to make up something to do a status treatment, the scholars will know.
- ▶ This HAS to be genuine and you have to believe that ALL students have strengths to help in the tasks.

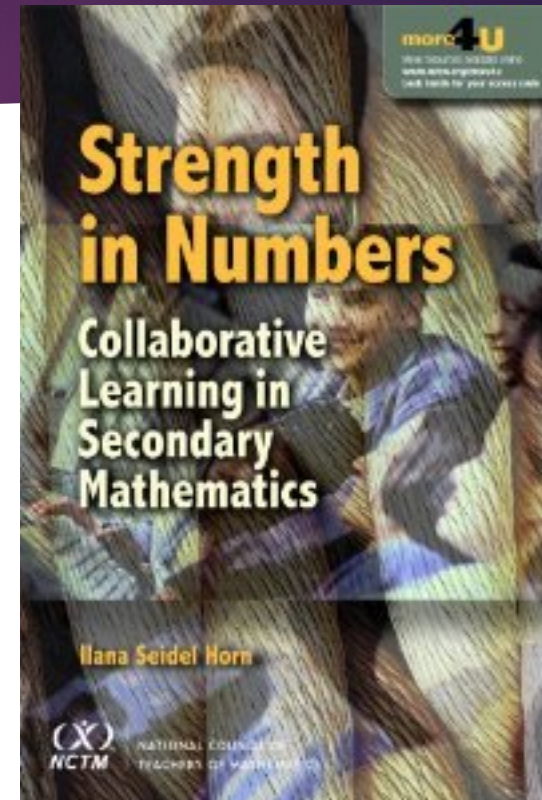
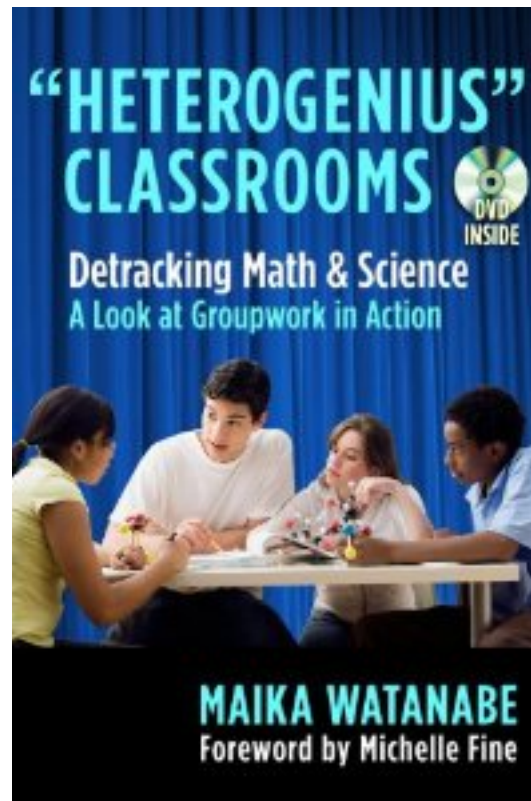
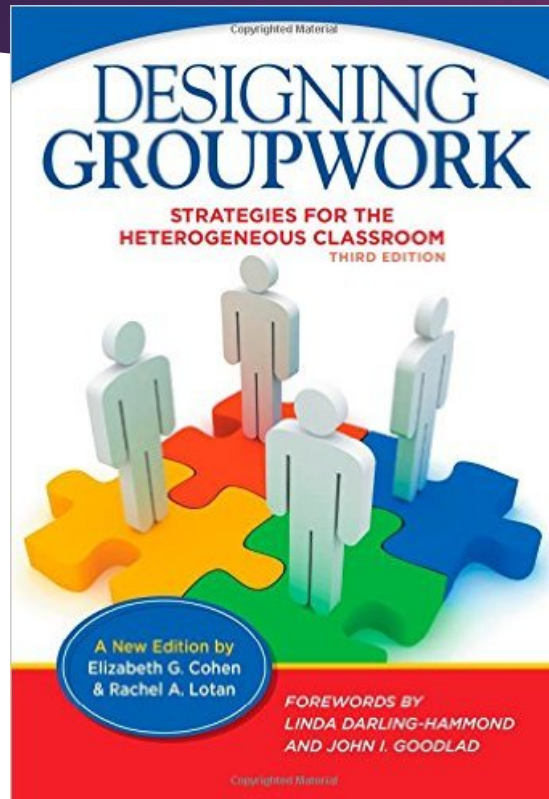
Call to Action



Choose a class for which to assign competence to every scholar. Print out a class roster and identify one mathematical strength for each and every scholar.

Try a few multiple ability treatments – it gets easier and more natural with time!

Resources



Thank you!



- ▶ Tiffany O'Brien: tobrien@euhsd.org
- ▶ Alyse Hamilton: ahamilton@euhsd.org
- ▶ Please contact us and share questions, successes, etc.!

Teaching Behaviors

“It is a great mistake to assume that children (or adults) know how to work with each other in a constructive collegial fashion...

...If teachers want more articulate and abstract discourse, the students will need to be taught specific skills for discussion and for dealing with each other. These are not an automatic consequence of cooperative learning.”

Teaching Behaviors

- ▶ ENGAGE – involve students in group worthy activity or skillbuilder
- ▶ NAME THE BEHAVIOR – have students name the group behaviors that are productive
- ▶ REINFORCE – catch students in the behavior and praise/reinforce the behavior