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Disrupting Injustice Through Mathematics Teaching: Learning to See, Connect With, and Build Students' Resources

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This Session

1. What does it mean to “disrupt injustice” and why is this so important for students’ mathematics learning?
2. How can mathematics and teaching practice disrupt patterns of harm and injustice?
3. Acknowledging competence

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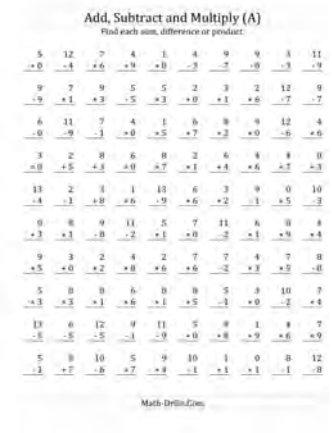
1. What is “normalized teaching practice”?



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Math is an individual activity.

Being good at math is about getting right answers.

Some people are good at math and others are not.

During math, sit still and pay attention quietly.

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Normalized practice is familiar

But we can also be fooled into not seeing normalized practice even in "reform."

Norms are often invisible, precisely because they are "normal."

Their harms, and how they contribute to harm, are often not noticed.

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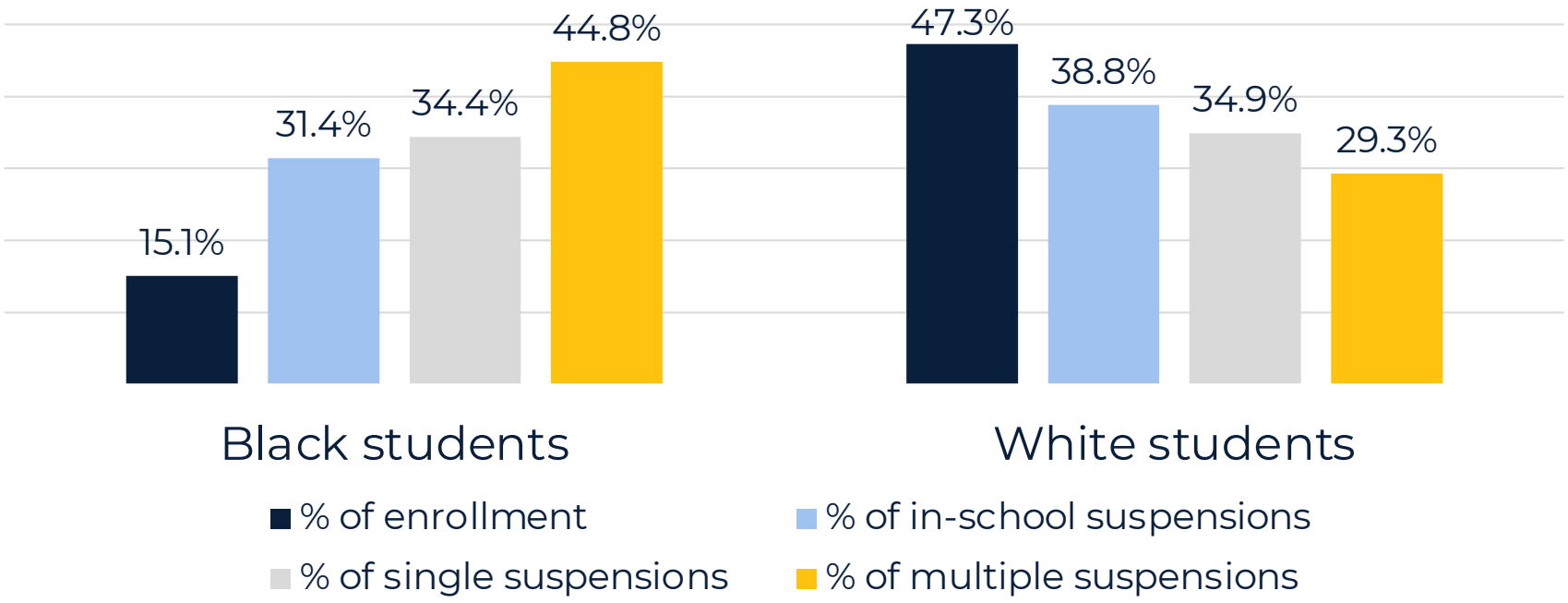
Everyday classroom interactions are connected to larger systemic patterns



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2. How can mathematics and teaching practice disrupt patterns of harm and injustice?

1. Broadening what it means to “participate”
2. Reframing “error”
3. Acknowledging competence

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Disrupting patterns of injustice through careful mathematics teaching

1. Broadening what it means to "participate"
   - How turns are distributed beyond volunteering and pulling sticks
   - Participating includes more: listening, revoicing, drawing, showing, writing, representing, collaborating
2. Reframing "error"
   - Things we hear as error or misconceptions can be several other things: answering a different question, a novel and correct mathematical idea or answer, a minor misstep
   - Representing mathematics as about thinking requires closer listening
3. Acknowledging competence

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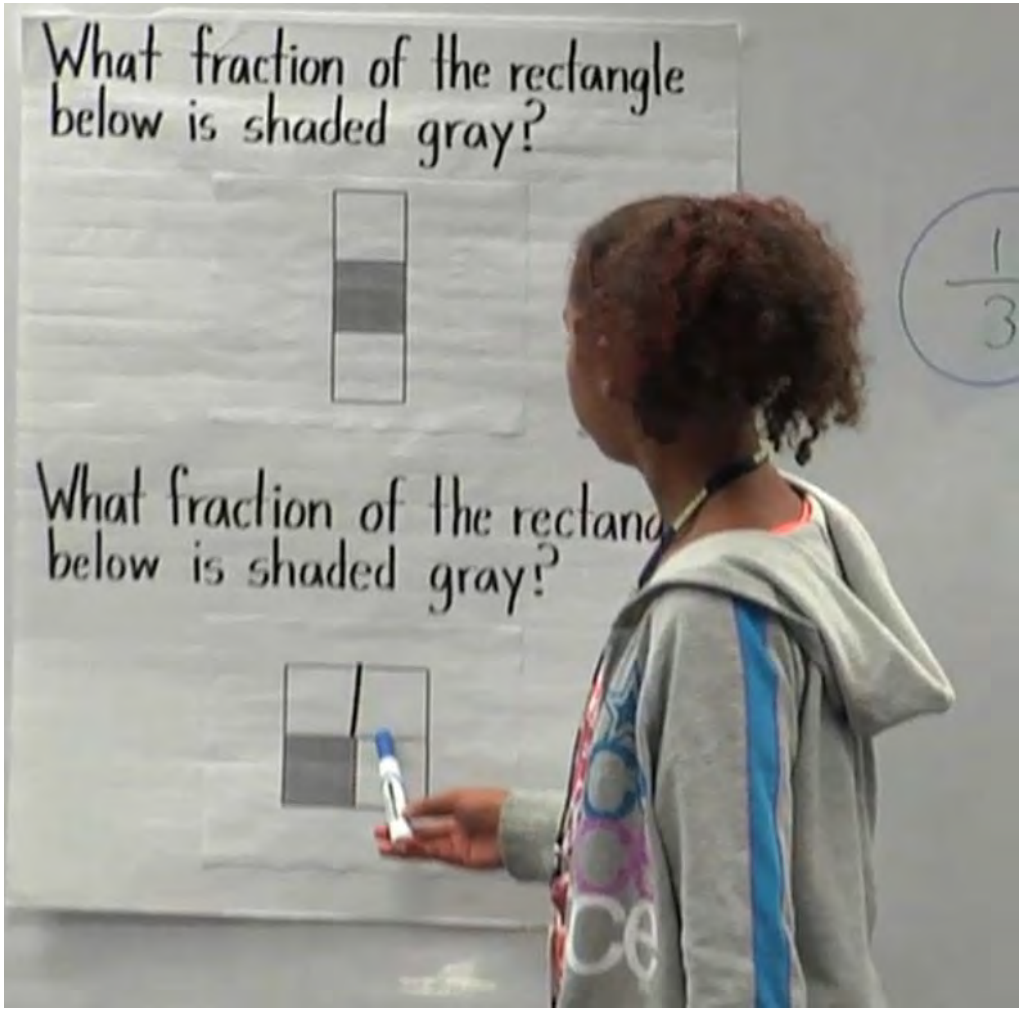
3. Acknowledging competence



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"Positioning" theory

A theory from social psychology, originated by Bronwyn Davies and Rom Harré

Focuses on how discursive and other moves in social interactions and situations set up how people are seen, interpreted, and how people experience and feel themselves to be seen interpreted, and how they experience their sense of self in that context.

Davies, B. & Harré, R. (1990). Positioning: The discursive production of selves. *The Journal of Social Behavior*, *20*(1) 43–63.

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Acknowledging competence

Deliberately deploying power to:

1. Broaden and label what being competent ("smart") in a given context means
2. Intervene to position who (and what) is seen as competent in that context
3. Support positive individual identities and self-positioning

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)

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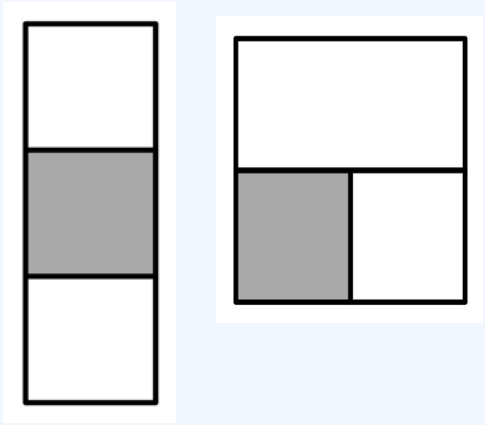
What does “acknowledging competence” require?

1. Having a broad understanding of the content or domain oneself
2. Using the concept of “positioning” to intervene to influence who (and what) is seen as competent
3. Strategically making these moves in authentic and well-timed ways; having ways to do that that are sensitive

The mathematics task

What fraction of each rectangle below is shaded gray?

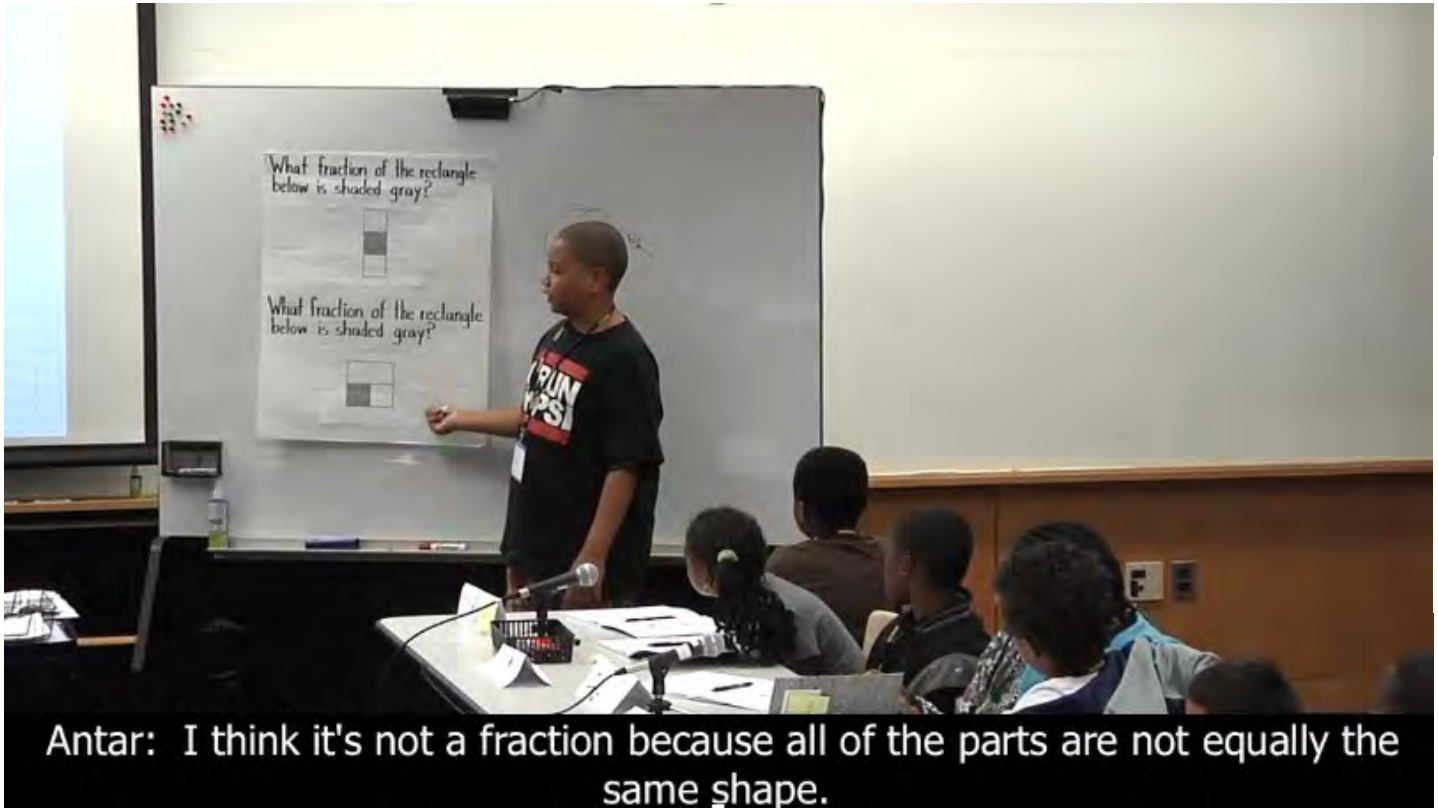


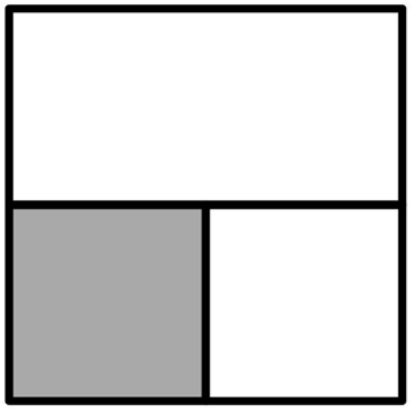
Viewing focus

Antar, Gabrielle, Gabi, Virshawn, Marquis, Kassie

1. What kinds of competence do you notice?
2. What competences are acknowledged, whose competence is acknowledged, and how?
3. Do you see missed opportunities to acknowledge competence? What is the competence and who displays it, and what is important about it?

Video: Antar, Gabrielle, Gabi, Virshawn, Marquis, Kassie





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Distinguishing acknowledging competence from praise

Praise

- "Good job!"
- "You're working so well today."
- "Nice work!"
- "I am proud of you."
- "You're working like such good mathematicians."
- "You made so much progress on the problems today."

Praise – verbal feedback with the purpose of evaluating what a student says or does
Acknowledging competence – intentional identifying, naming, and highlighting specific mathematical or learning competencies of what a student says or does

Acknowledging competence

★ "It was particularly clear how you used your drawing to explain your thinking."

★ "Belin gave a clear and specific mathematical explanation."

★ "You solved that in a really interesting way. Can you tell us more about your thinking?"

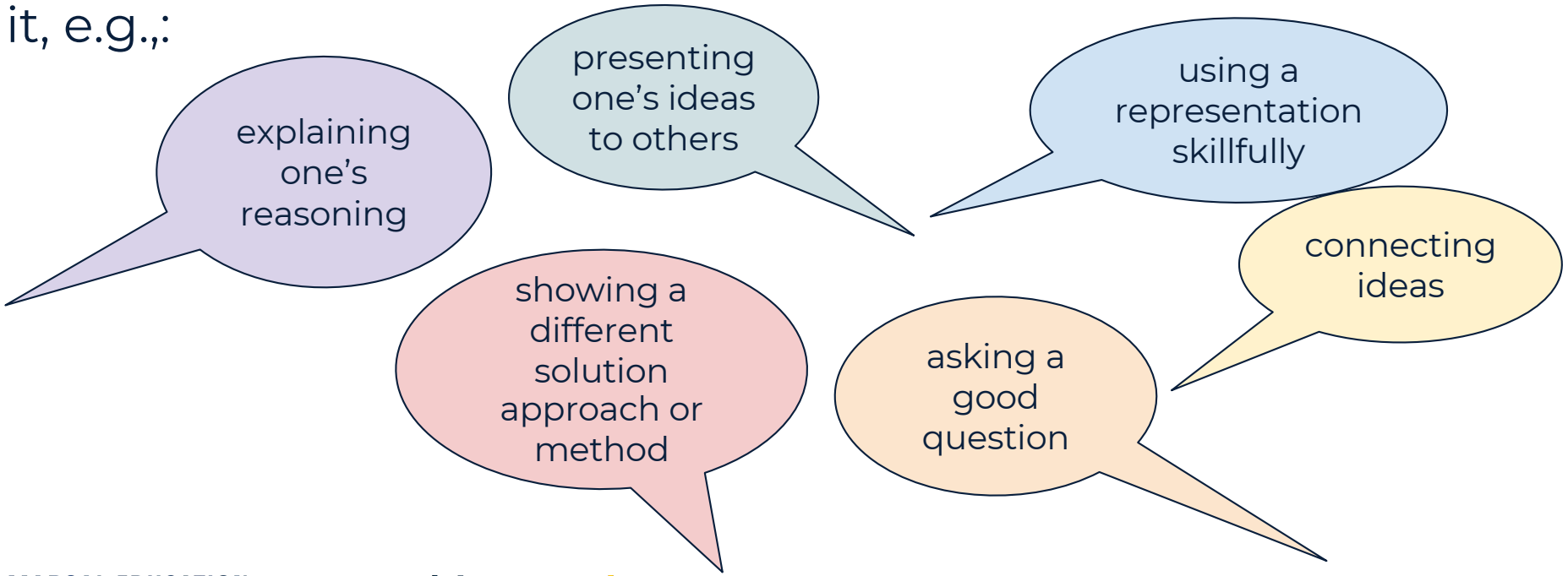
★ "Ibn used a very interesting method to show that there are no more solutions. Who can say what Ibn did?

★ "It is clear how closely you are following other people's thinking and connecting it to the idea you had."

★ "One thing that was really important about what Laken did was to use the definition we developed."

Practicing acknowledging competence

Identify **specific examples** of mathematics learning competence and **what you might say** to acknowledge it, e.g.,:



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Acknowledging competence is a disruptive practice

Disrupting patterns:

- Narrow, reductive, and distorted views of mathematics
- Who is seen as mathematically competent
- Negative and deficit views students carry of themselves

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What is involved in acknowledging competence?

1. Recognizing and broadening conceptions of what comprises mathematics and mathematical competence, and seeing that in children
2. Understanding the broader systemic factors that shape everyday micro-interactions related to racism and other forms of oppression (sexism, linguicism, ableism, classism) and seeing risks and status hierarchies in your own class.
3. **Based on #1 and #2, intervening explicitly to acknowledge particular students' competence.**

Two possible ways to acknowledge competence

1. You could name a specific competence that a particular student displayed in something they did or said and why that is important in doing math.
2. You could ask the class what a particular student did that is a really important thing to do in doing math and what is valuable about that.

Remember to be broadening conceptions of math and mathematical competence.

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Practice

Antar, Gabrielle, Gabi, Virshawn, Marquis, Kassie

1. What competences would you acknowledge here?
2. Whom would you choose to acknowledge and why?
3. What would you actually say?

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Acknowledging competence in this episode

Antar: "Antar contributed something very important here. He pointed out that the parts are not equal. Can someone say what was so important about this?"

Gabriella: "Gabriella, you were listening closely to Antar's explanation. This is so important for learning and developing ideas in math."

Gabi: "Gabi, you built on what Antar said. You showed a way to make the parts equal and name the fraction."

Virshawn: "Virshawn, you were willing to say you weren't ready to say what Gabi said. That is an important part of learning to pay attention to your own thinking."

Marquis: "Marquis, you were keeping notes on what other people have contributed. Keeping records is really helpful for learning math. Do you want to show everyone what you have recorded in your notebook?"

Kassie: "Kassie, you were looking at the rectangle in a different way. That is really interesting and tomorrow you can show us what you are seeing and we can think how it is connected to the idea of naming the whole and equal parts in naming fractions."

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Breaking habits in acknowledging competence

- Orienting the comment to yourself (e.g., “you helped me see your thinking”) instead of to the class
- Thanking the student (e.g., “Thank you for sharing your idea”) instead of highlighting the mathematical value
- Still correcting something at the same time (e.g., “but remember that we are talking about the whole for this problem”) instead of authentically naming the mathematical contribution
- Saying “good job” instead of being specific about the mathematical idea or practice

What will be valued in one's own context and not inadvertently cause harm? What could land in ways that reinforce instead of disrupt patterns of racism and other forms of oppression?

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THANK YOU!


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Photo from “Cause for Alarm: Addressing North Carolina Early Childhood Suspension and Expulsion Rates,” by Ebonyse Mead, MA, MS, CFLE and Kara Lehnhardt, MBA
Retrieved from https://www.smartstart.org/cause-for-alarm-addressing-north-carolina-early-childhood-suspension-and-expulsion-rates/

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Image from “Rug Rules. Carpet Time,” by elaulaconbotas
Retrieved from https://elaulaconbotas.wordpress.com/2015/12/21/rug-rules-carpet-time/

Image on slide 3:
Photo from “Great classrooms have 6 things in common: What to look for” by Nancy Kaffer, Detroit Free Press.
Retrieved from https://www.freep.com/story/opinion/columnists/nancy-kaffer/2019/09/03/signs-successful-classroom/2162878001/

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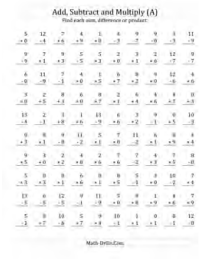

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“The Adding, Subtracting and Multiplying with Facts From 0 to 9 (A) Math Worksheet Page 1”
Retrieved from https://www.math-drills.com/multiop/mixed_operations_asm_vertical_100_0009_0009_001.php

Image on slide 4:
“Group of Kids Taking Test in School”
Retrieved from https://www.istockphoto.com/photo/group-of-kids-taking-test-in-school-gm1215734203-354211797

Image on slide 4:
“Woman stands at blackboard in classroom with children sit at desks cartoon style”
Retrieved from https://stock.adobe.com/images/woman-stands-at-blackboard-in-classroom-with-children-sit-at-desks-cartoon-style/276707990

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"Child time out corner"
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Retrieved from https://www.oxfordlearning.com/what-is-math-anxiety/

Image on slide 5:
Photo from "Cooperative Learning," Kids are Special
Retrieved http://raising-teaching-children.blogspot.com/2017/02/cooperative-learning.html

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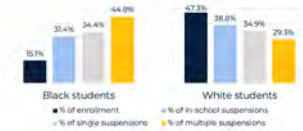

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U.S. Department of Education Office for Civil Rights. (2021). 2017–18 State and National Estimations. [Data spreadhseets]. Retrieved from https://ocrdata.ed.gov/estimations/2017-2018

Image on slide 10:
Photo of Bronwyn Davies.
Retrieved from http://bronwyndavies.com.au/about-bronwyn

Image on slide 10:
Photo of Rom Harré.
Retrieved from https://dailynous.com/2019/10/18/rom-harre-1927-2019/

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