

OFFICE OF INSTRUCTION NEWSLETTER

Dennis-Yarmouth Regional School District
April 2022

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Important Dates

April 1	April Fools' Day
April 2	Ramadan (begins at sundown)
April 10	Palm Sunday
April 15	Good Friday Passover (begins at sundown)
April 17	Easter
April 22	Earth Day
April 24	Orthodox Easter
April 27	Community Forum with Dr. Wornum: Defining and Understanding Implicit Bias and Microaggressions, 6:30-8:00pm @ DYH Auditorium

April (15 days)						
S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

by Tiffini Pruitt-Britton, Anne Garrison Wilhelm, and Jonee Wilson in *Phi Delta Kappan*, February 2022 (Vol. 103, #5, pp. 18-23); the authors can be reached at tp Pruittbritton@smu.edu, awilhelm@smu.edu, and jwilson9@ncsu.edu.

To test this hypothesis, Pruitt-Britton, Wilhelm, and Wilson studied teachers implementing a high-quality standards-based math curriculum, and whose African-American students were showing significant improvement on state standardized tests. What were these teachers doing above and beyond good math instruction? They noticed four teacher “moves” that built positive relationships and fostered high achievement – not just for black students but for other students of color and English learners:

- Admitting mistakes – “When teachers are transparent about things that do not go as planned,” say the authors, “or about the errors they make in class, they appear more human and relatable, while serving as a model for how students can learn from their own errors.” The authors observed a teacher at the board getting lost in the middle of a long division problem. “You know what,” she said, “I think I’m confused, and I think I’m confusing you all. Let’s go back, and I’ll retrace my steps. If at any point, anyone sees where I went wrong, shout it out.”

How Successful Teachers Create a Nurturing Classroom Culture(Cont.)

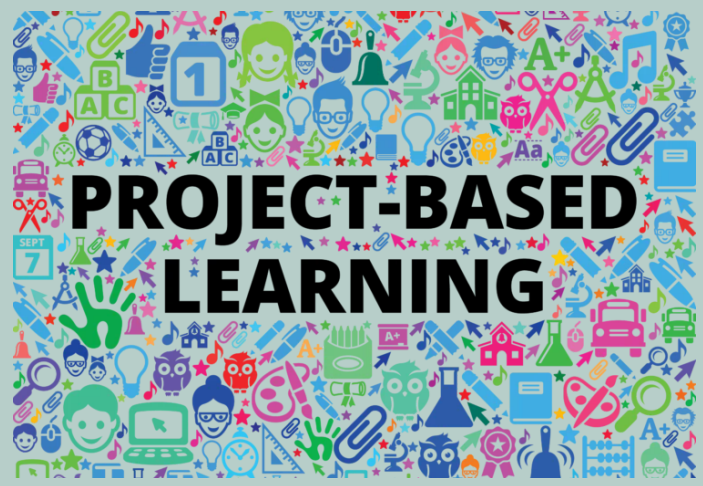
- Seeking and sharing personal information – “While we understand that it’s important for teachers to set clear personal and professional boundaries,” say Pruitt-Britton, Wilhelm, and Wilson, “we’ve seen again and again how much it matters to students to know that their teachers care about them as individuals. Simply by remembering what students have shared about themselves, and by showing concern and interest over time, they can nurture the sort of positive, trusting relationship that encourages students to stay engaged and motivated in class.” This kind of information can be gathered in surveys, casual conversations, and showing up at community events. It might be a shared hobby, the number of pets a student has, or a flavor of ice cream the teacher also loves.

- Explaining decisions – This is especially important with everyday routines (why are we doing it this way?) and unpopular decisions – like spending an additional week on fractions. Taking the time to spell out the rationale shows respect for students’ intelligence, their time, and their investment in learning, versus coming across as a dictator. “It demands very little from teachers to give such explanations,” say the authors, “but the effects on classroom relationships can be powerful, showing students that their teacher is alert to problems in the classrooms, looks for solutions, and wants them to understand what’s going on, rather than making them anxious and uncertain.”



What is Project-Based Learning – and Does It Work?

[“A New Research Base for Rigorous Project-Based Learning”](#) by Kristin De Vivo in Phi Delta Kappan, February 2022 (Vol. 103, #5, pp. 36-41); De Vivo can be reached at kristin.devivo@glef.org.



In this Phi Delta Kappan article, Kristin De Vivo (Lucas Education Foundation) says three concerns have prevented project-based learning from being adopted more widely: confusion about what exactly it involves; the perception that it works only for advantaged students; and the belief that it's too labor-intensive and challenging for many teachers to implement. De Vivo reports that several "gold standard" studies released in 2021 have good news on all three fronts:

- **Definition** – Some educators believe that a shoebox diorama, an experiment, or a poster consolidating learning at the end of a curriculum unit is project-based learning. Some believe it's synonymous with any type of active, student-centered learning. Others insist that students must drive their learning 100 percent of the time for it to be truly project-based. In the studies De Vivo cites, project-based learning was defined as having the following characteristics:
 - Project-based units involve rigorous content standards and deepen students' knowledge of core subjects and disciplinary practices – often across more than one subject area.
 - Lessons are rooted in purposeful and authentic experiences generated by students asking relevant questions.
 - Driving questions that lend themselves to exploration (and others stemming from them) are used to anchor projects, with students exploring issues beyond the four walls of the classroom.

There might be some direct and text-based instruction in a unit, but students working on their project remains central throughout.

- **Equity** – There's a widespread belief that students with learning problems, language deficits, and other disadvantages can't handle complex projects and need basic content and traditional instruction. The studies De Vito describes found that when project-based learning was implemented well, it produced impressive academic and social-emotional gains for all students, regardless of reading level, socio-economic status, and learning difficulties. In fact, those students did better when they learned with project-based instruction than with conventional pedagogy.
- **Implementation** – The studies showcased by De Vivo revealed that the key variable was teacher learning opportunities linked to high-quality curriculum materials and effective pedagogy. "These practices," she says, "include providing feedback to students in a strategic and timely manner, creating opportunities for students to reflect on and revise their own work, and empowering students to share their learning with others through the presentation of products they create and public performances."

Orchestrating Equitable – Not Equal – Participation in Class Discussions

(Originally titled “Balancing Participation”)

[“Balancing Participation”](#) by Matthew Kay in Educational Leadership, February 2022 (Vol. 79, #5, pp. 82-83); Kay can be reached at mrkay@notlight.com.



“Equity doesn’t always mean all students should get equal speaking time,” says Philadelphia high-school teacher Matthew Kay in this Educational Leadership article. In a discussion about immigration enforcement, should students who have no direct experience with this get as much air time as those who do? Definitely not, says Kay. “Certain voices, representing certain lived experiences, need to be actively ‘centered’ in certain class conversations,” he argues.

This doesn’t mean other students don’t participate; it means that some students’ lived experience “makes their story, their perspective, and yes, their opinion, matter more to the discourse than those of their classmates without the relevant background. Classmates can pontificate and theorize, but when a student comes to a conversation with deeper, experience-based knowledge, their voice is most important.”

Kay suggests several ways teachers can ensure that the right voices are heard at the right time:

- Encourage all students to be succinct and not ramble at the expense of other classmates’ air time.
- Promote and model humility, being honest about what we don’t know. Kay suggests teaching sentence starters like, “I know that since I grew up ----, I might not know much about this...”
- Pull certain students aside before a lesson in which their viewpoint will be particularly important and prompt them to chime in at strategic points, perhaps leading a discussion.
- Give these students additional focus after they speak. Kay calls it “sitting with” their comments – pausing, validating, jotting a note on the board, asking follow-up questions, encouraging other students to react.
- He stresses that this is not the same as the awkward practice of asking students of color to speak for their group. Rather, “it means that every student’s contribution gets every bit of the encouragement, for each particular conversation, that it deserves.”

Downsides with Popsicle-Stick Cold Calling

(Originally titled “Why Classroom Equity Strategies Aren’t Always Equal”)

[“Why Classroom Equity Strategies Aren’t Always Equal”](#) by Martha Curren-Preis, Nicole Garcia, and Meghan Shaughnessy in *Educational Leadership*, February 2022 (Vol. 79, #5, pp. 55-59); the authors can be reached at marthacp@umich.edu, nmgarcia@umich.edu, and mshaugh@bu.edu.



In this *Educational Leadership* article, Martha Curren-Preis and Nicole Garcia (University of Michigan) and Meghan Shaughnessy (Boston University/Wheelock College) say that classroom discussions, when handled well, can make students feel competent and move the whole class’s learning forward. The tricky part for teachers is deciding who to call on and what kinds of questions to ask; teachers’ choices can send unintended messages about which answer is “right,” who is smartest, and who the teacher likes.

Many teachers are using popsicle sticks to randomize who’s called on, ensure equitable participation, and manage any biases they may have about students’ abilities. This and other cold-calling strategies are a valuable part of an instructional repertoire, say Curren-Preis, Garcia, and Shaughnessy, but they can have unintended consequences. That can be true in all-class discussions, sentence-stem activities when students are working in pairs, and small groups in which students are assigned specific roles. Ironically, equity strategies can hamper teacher-student interactions and even increase inequity.

The authors describe the following classroom interaction. The teacher pulled one student’s popsicle stick and asked what she thought was the “big idea” of the story they’d just read. The girl gave her opinion and the teacher pulled another popsicle stick and asked a boy to give evidence for his classmate’s answer. He said he had a different opinion on the story’s big idea, but the teacher said his job was to provide evidence and gently chided him for not being ready with a correct answer when he was called on.

This wasn’t the best way to handle the situation, say the authors: “By tightly following the protocol of equity sticks in terms of who talked, when, and about what, the teacher did not allow the discussion to build naturally and fluidly. The structure and flow were dictated by the system, rather than by the content or quality of the ideas shared. Students may have walked away with the idea that the content of their talk and the ways they listened and responded to one another’s ideas mattered much less than whether they followed the rules and procedures for when to talk.” In addition, the boy may have gotten the message that his original ideas were not valued, which would be especially unfortunate if he was a member of a marginalized group.

The key to implementing equity strategies, say Curren-Preis, Garcia, and Shaughnessy, is knowing when, why, and with whom to apply them, and doing so flexibly and in ways that are responsive to students and the instructional context. In the vignette above, a better teaching move, after the first student’s answer, would have been to put down the popsicle sticks, have all students write their reactions to her idea, or turn and talk, and for the teacher to notice and affirm divergent answers and get students sharing and discussing them. Alternatively, the teacher could have asked the boy to share his different “big idea” about the story, have him make connections to the girl’s idea, and started an all-class discussion about the differences – using evidence from the story.

Intervening Early to Improve Students' Math Self-Efficacy

[“Boosting Children’s Math Self-Efficacy by Enriching Their Growth Mindsets and Gender-Fair Beliefs”](#) by

Jeesoo Lee, Hyun Ji Lee, and Mimi Bong in Theory Into Practice, Winter 2022 (Vol. 61, #1, pp. 35-48); Bong can be reached at mimibong@korea.ac.kr.

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In this article in Theory Into Practice, Jeesoo Lee, Hyun Ji Lee, and Mimi Bong (Korea University) say that self-efficacy “is arguably the most powerful motivational resource that drives individuals to engage, persevere, and accomplish goals in various domains.” In classrooms, self-efficacy is “the strongest predictor of students’ academic achievement.”

But self-efficacy in math – students’ belief that their efforts will produce success – declines during the elementary grades. Lee, Lee, and Bong suggest the following causes:

- There’s a shift from a mastery orientation toward math in the lower elementary grades to a performance orientation in the upper grades, with increasing emphasis on demonstrating one’s ability, outperforming peers, and getting high test scores.
- As they encounter frustration in math, many students adopt a fixed mindset about math ability – that it’s innate, you either have it or you don’t – versus a growth mindset – that ability can be developed.
- Young children initially believe that peers who work hard at math have high ability, but they gradually shift to believing that having to put in a lot of effort for the same result is a sign of less ability.
- Students are exposed to the belief that boys are naturally better at math than girls, triggering stereotype threat – this despite the fact that in the elementary grades, girls do as well as, or better than, boys.

These factors undermine elementary students’ self-efficacy in math – especially girls’. The authors say it’s urgent to counteract this negative trend before students reach adolescence, and suggest communicating these core messages to all students:

- Anyone can get smart and do well at math. Students need to hear loud and clear that math ability improves with effort and practice. A growth mindset message should be conveyed without referring to the opposite mindset, say the authors, because that “could inadvertently strengthen the fixed mindset of children who already hold this undesirable belief.”
- My brain is like a muscle, and I can train my math muscles. Giving students vivid examples of neural plasticity – for example, how aspiring London cabbies’ brains change as they study for The Knowledge (the extraordinarily difficult test to get a London taxi license) – and making an explicit link to math ability.
- I can do math better by working hard, using good strategies, and getting help. Studies have shown the efficacy of students embracing this three-part belief.

Intervening Early to Improve Students' Math Self-Efficacy (Cont.)

- Overcoming difficulty is part of doing well in math. It's helpful to tell analogous stories of athletes and musicians who overcame handicaps and challenges to master their skills.
- Girls can perform just as well at math as boys. The authors suggest classroom activities such as Draw a Mathematician and tabulating responses, or guessing the occupation of a series of photos of people who turn out to have counter-stereotypical jobs (e.g., a male nurse, female mathematician), and then following up by eliciting from students the negative consequences of holding gender stereotypes. Again, the authors say that "it is essential not to explicitly inform children of the stereotype because direct messaging can trigger the stereotype threat effect." Conveying these messages well can change students' fixed mindsets and gender stereotypical beliefs. The messages are most effective if they are presented in engaging classroom activities that make good use of the following processes:
 - Internalization – Students might be asked to write a letter to a friend or a struggling student, explaining what they've learned about brain plasticity or gender stereotypes.
 - Modeling – "Involving successful figures or influential role models in the intervention makes the delivery of messages more effective," say the authors – another student, a cartoon character, or a story to which students can relate.
 - Attributional feedback and strategy – Students might be presented with the story of two people who tried hard: one succeeded, the other didn't – the difference was strategies.
 - Goal-setting – If targets are specific, short-term, and seem attainable, they can increase self-efficacy and allow students to measure progress on the road to mastery.
 - Interest – The concept of neural plasticity is not easy for young children to grasp, say the authors, so it needs to be embedded in a variety of fun activities – for example, after learning about the parts of the brain, coloring in areas used by a pianist or someone solving a math puzzle.
 - Surprise – A good example is students guessing wrong about the professions of people working outside stereotypical occupations.

The authors say it's better to conduct these activities with a classroom of students rather than individually, because some of the beliefs being counteracted are social in nature. It's also important that teachers and parents be included in the interventions, since these adults have a major impact on the way children think about their math ability.

If this intervention is handled well, conclude the authors, children's math self-efficacy will improve markedly and they "can face math with stronger convictions in their abilities to succeed and greater tenacity to overcome challenges and setbacks."