BOLD LEADERSHIP IN MATHEMATICS EDUCATION

NCSM Inspiration!

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from the NCSM President... GUARDIANS OF EQUITY

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Mona Toncheff

"... Equity in mathematics education is defined as creating the conditions, structures, and policies necessary to ensure that all students have relevant, meaningful, and high-quality sets of mathematics experiences ... (adapted from NCTM, 2018)"

—NCSM Essential Actions: Coaching in Mathematics Education (NCSM, 2019). p. 29

AFTER READING THE DEFINITION OF EQUITY IN THE *NCSM ESSENTIAL ACTION SERIES* RECENTLY, it left me wondering if mathematics education is any closer to equity. This past school year has emerged as a defining moment on many levels. We have planned, created, designed, monitored, and then pivoted more times than we can count. We also had an opportunity, a possible inflection point, for addressing inequity in education in a purposeful manner.

When we, as mathematics leaders, reflect on the 2020–2021 school year, one question that emerges is, *how close are we to meeting the vision of students engaged in meaningful and relevant mathematics in every grade level and course*? To answer this question, other questions surface. When analyzing equity in our schools and districts, consider answers to questions such as those posed below.

- What conditions have been created to ensure that all students have relevant, meaningful, and high-quality mathematical experiences?
- Can you name the conditions for equitable instruction that were made stronger this year?
- What practices, policies, and/or procedures are necessary to guarantee equal access to content?
- What supportive conditions have been created during the 2020–2021 school year to support increased learning?

We know that every mathematics leader is charged with forging a path leading to improved student learning, and we do this through the meaningful

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commitments to those we serve—this means every student, every teacher, and every leader. So, regardless of race, ethnicity, gender, sexual orientation, or other possible diverse characteristics and regardless of current strengths as a mathematician or educator, our job is to lead and support both students and adults.

In the past, mathematics teachers' and leaders' approaches to teaching and learning mathematics were most likely removed from issues of race and cultural proficiency. We thought we could bury our heads in the sand and leave such issues to others.

However, we know that there are unfortunately systems in mathematics education that are stuck in patterns that perpetuate inequities. The pandemic has highlighted systemic racism that occurs in schools across the continent. Inequities are no longer hidden under the surface. Anthony Muhammad (2020) states that, "Equity can never become a reality in education, if it is viewed as charity, instead of our professional obligation." If our vision for mathematics instruction includes equity, then we need to lead with equity. We need a hyper-focus on establishing systems in mathematics education that do not reproduce inequities. Meaning, we need to keep equity at the forefront of all of our decisions and planning, not as an afterthought. We need to be equity-centered mathematics leaders.

For transformative change to occur, mathematics leaders must be equity-centered, or what Pedro Noguera calls "guardians of equity" (Rebora, 2013). In other words, equity is at the core of all of our work.

Start from Within

So where is the best starting point to make sure our leadership actions have equity at the core? James Baldwin (n.d.) said, "Not everything that is faced can be changed, but nothing can be changed until it is faced." We have to start by looking in the mirror. As mathematics leaders, we always answer to those we serve. However, we first have to answer to ourselves. We need to be willing to examine our instructional practices, beliefs, mindsets, and behaviors to see if they might be perpetuating systemic inequities. What will the mirror reveal? How might our reflected actions and beliefs provide us with a new perspective?

Mathematics leaders can shift perspectives by continuously engaging in reflection. Start by reflecting on your individual identity. Your identity is a collection of your experiences including your values, upbringing, race, ethnicity, cultural and religious background, family, and socio-political identities (Aguirre et al., 2013). Once you are able to clarify your identity, you are able to reflect on possible biases or inequities that may have been perpetuated. As we examine our own biases as leaders, we also grow in our own capacity to engage and lead others in discussions of equity and race.

A note of caution. Typically, we anticipate conversations about systematic racism and equity as difficult conversations. However, we should reframe our thinking. Elena Aguilar (2020) shares that when we call conversations about anti-racism challenging or hard, "… the phrasing locks us into a mental model in which we expect them to be challenging" (p.118). Instead of calling the conversations difficult, think about them as healing conversations. A healing conversation is an opportunity for growth, an opportunity to face our reality to change the status quo (Aguilar, 2020). Instead of calling conversations about race or inequities difficult, call them what they are—a necessity to identify productive beliefs to meet the learning needs of each and every student. By engaging in conversations about biases, mathematics leaders can identify beliefs or mindsets that are hindering change and creating unjust systems.

Equity-Centered Collective Inquiry

Change doesn't occur with one individual or one conversation. Change occurs when mathematics leaders engage in multiple conversations and create continuous cycles of collective inquiry and action

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research with those we serve. Equity-centered mathematics leadership focuses on promoting opportunities for such cycles. Collective inquiry begins with reflection, refinement, and action (Kanold, et al., 2018).

Reflection: When we collectively engage in deep personal reflection, the process can help us see the role we've played in creating an unjust system. Through collective reflection, we can also identify any patterns of reproducing inequities and identify what we need to do to lead with equity. During any reflective conversation, look for multiple entry points into the conversation and ask questions that are inclusive. This is where we can share stories to learn from each other.

Working with those you serve, reflection on current reality is the first step to identify beliefs or actions that hinder student learning. By collectively identifying potential biases, mathematics teachers and leaders can plan next steps and monitor team progress.

Refinement: It is equally important when engaging in healing conversations to be clear about the purpose of the conversations. When we reflect on our experiences, it is not a time for blame or shame. Just calling out others for racism or inequitable practices will not work as "… shame is not an effective tool for transformation." (Aguilar, 2020, p. 121). We have to recognize the impact of the beliefs or actions that are not equity-centered. We need to empower those we serve to make connections between unproductive beliefs/actions and how they impact student learning.

Recently, I had an opportunity to work with an 8th-grade team. One of the teachers on the team used words peppered with deficit thinking. For example, the team member stated that the students were 8th-grade students with 3rd-grade brains. Additionally, there were two students sitting in the room when the comment was made. I had two choices, I could shrug off the comment and hope the students did not hear the comment or stop the meeting and have a "healing" conversation. I chose the latter. After the students were asked to step outside for a few moments, the team was able to discuss and reflect on the comment and identify the root cause of the comment. The team member did not know how to identify students' strengths or identify strategies to tap into prior knowledge. By addressing the comment, the team was empowered to identify the unproductive belief and support the team member with strategies to better support diverse learners.

For this healing conversation to occur, we needed a safe space to be vulnerable, discuss, and challenge the unproductive belief and how the statement did not align with the vision of the team. The team member needed to know that we valued his/her perspective and that we were there to support each other through the process.

When mathematics leaders are aiming for more equitable systems, it is important to create a community where there is a strong sense of belonging. Floyd Cobb and John Krownapple (2019) state that equity can be defined as a sense of belonging. One of the strategies to foster belonging is through the examination of each and every policy, practice, and behavior. The teacher team I was working with was a strong community where we could examine the practices so we could continue to grow. When we have a strong sense of belonging, we can focus on strengths as well as opportunities for growth in mathematics teaching and learning.

Teams, schools, districts, and provinces can set goals to empower teams on how to accomplish goals to improve systems. When we empower those we serve, we create feelings of ownership and accountability, engagement, and belonging (NCSM, 2020).

Action: Through reflection and refinement, equity-centered leadership requires a commitment to continually pursuing equitable systems and structures designed to support all learners. When teachers and leaders collectively engage in collaborative inquiry and discover patterns of inequity that persist across classrooms, they are empowered to think even more

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deeply about the routines and policies that enable those patterns.

When mathematics leaders are *guardians of equity,* they take action when inequities exist and are no longer quiet when inequitable practices, policies, or actions are noticed. They continuously ask questions to reflect on beliefs and mindsets so that they empower those that they serve.

If it is important for individual mathematics leaders to engage in reflection on equity-centered leadership, it is equally important to engage in these conversations as a board.

For many years, NCSM has made equity and access a top priority for our organization. In 2020, the NCSM Board of Directors renewed our commitment to diversity, equity, and inclusion in several ways, including using book studies and deep discussions in order to make equity, social justice, and antiracism a part of our organizational culture. We continue to actively work on ways to ensure that a variety of perspectives are represented, not only in operational committees but in leadership and decision-making spaces.

As we close the 2020–2021 school year, what might be your first step to deepen your understanding of equity-centered mathematics leadership? What bold actions will you take to be the guardians of equity?

The 2021–2022 school year is rapidly approaching and will bring new challenges related to student learning of mathematics. Planning now for equity means every student can be successful and thrive in a healthy mathematics program in the future.

Aguilar, E. (2020). *Coaching for equity: Conversations that change practice*. Hoboken, NJ: Jossey-Bass.

Aguirre, J., Martin, D., & Mayfield-Ingram, K. (2013). *The impact of identity in K–8 mathematics learning and teaching: Rethinking equity-based practices*. Reston, VA: NCTM.

Cobb, F., & Krownapple, J. (2019). *Belonging through a culture of dignity: The keys to successful equity implementation*. San Diego, CA: Mimi & Todd Press.

Kanold, T. D., Toncheff, M., Larson, M., Barnes, B., Kanold-McIntyre, J., & Schuhl, S. (2018). *Mathematics coaching and collaboration in a PLC at work*. Bloomington, IN: Solution Tree Press.

NCSM (2019). *NCSM Essential Actions: Coaching in Mathematics Education*. Englewood, CO: NCSM.

NCSM (2020). *NCSM Essential Actions: Framework for Leadership in Mathematics Education*. Englewood, CO: NCSM.

Muhammed, A.M. [@newfrontier21]. (2020, September 1). Equity can never become a reality in education, if it is viewed as charity, instead of our professional obligation. [Tweet] Twitter. https://twitter.com/newfrontier21/status/1300992053036216320

Rebora, A. (2013, December 11). Noguera: Educators must be "guardians of equity." Retrieved February 25, 2021, from https://www.edweek.org/leadership/noguera-educators-must-be-guardians-of-equity/2013/12

CALL FOR REVIEWERS FOR *NCSM JOURNAL OF MATHEMATICS EDUCATION LEADERSHIP (JMEL)*

DID YOU KNOW THAT PRIOR TO PUBLICATION, each article in the *Journal of Mathematics Education Leadership (JMEL)* has been reviewed by at least two volunteer reviewers and a member of the editorial panel? Reviewers are a vital part in the process of transforming a manuscript into an article and furthering the mission of NCSM.

JMEL is currently seeking reviewers to review manuscripts for tentative publication in an upcoming issue. Reviewers will be given a reviewer's guide to help structure their feedback and exemplars of previous reviews to guide their work. If you're interested in serving the mathematics education leadership community by becoming a reviewer for *JMEL*, contact the journal editors at ncsmJMEL@mathedleadership.org.

PREPARING FOR DIFFICULT CONVERSATIONS

By Jenny Novak and Georgina Rivera | NCSM Professional Learning Directors

Jenny Novak

Georgina Rivera

"I want to confront this issue … but I don't want to ruin our professional relationship."

AS WE ENGAGE MATHEMATICS LEADERS IN DISCUSSIONS OF EQUITY IN MATHEMATICS TEACHING AND LEARNING, we watch leaders grapple with the current realities in their school, district, state, or province. Similar to our own experiences, leaders share situations with us which uncover inequitable practices while simultaneously providing reasons for avoiding difficult conversations.

Often, the reasons with which we grapple are a result of one or more of the following underlying fears:

- The relationship with the other person will be irreparably damaged as a result of a difficult conversation;
- There would be repercussions for disrupting current practice; and/or
- The conversation will not have a positive outcome because the leader is underprepared to engage in the conversation.

When our fears are left unattended, they debilitate us from making the necessary progress to support effective mathematics teaching while disrupting inequitable practices. As a direct result, our student outcomes remain the same resulting in an inequitable education for each and every learner. As leaders, we make the choice of either engaging or not in difficult conversations every day. Inaction is a conscious decision, and the ramifications result in keeping the status quo versus disrupting ineffective systems.

"Inaction is a conscious decision."

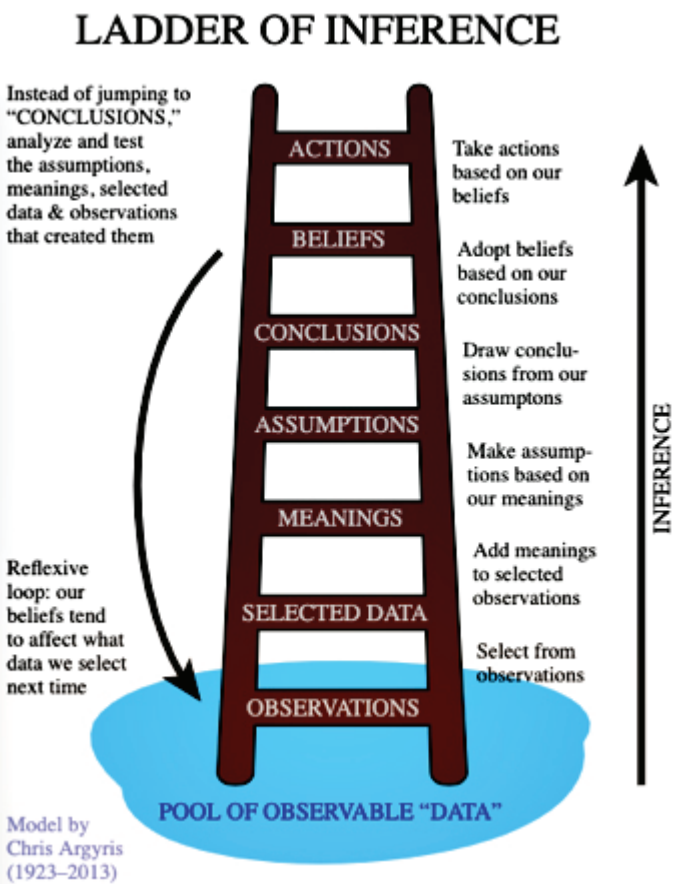
—Kanold, 2011

What can we do to overcome our fears to engage in a difficult conversation with a productive result? We need to prepare for the conversation and then practice them. According to Judy Ringer, "You have more power than you think if you practice" (2019). To improve our conversations, it is important we first reflect on the situation from both our own point of view and from the other person's point of view. This includes practicing the conversation, paying attention to questions we ask, our tone and body language, and anticipating reactions to the conversation.

Look Inward to Prepare for the Conversation

An important first step is to reflect on the conversation that needs to happen in order to understand yourself and the assumptions you may be making. Here are some questions to ask yourself:

- What hesitation am I feeling and why?
- What assumptions am I making about the situation? *[See "Ladder of Inference" below]*
- What might the other person be thinking about the situation?
- What is the ideal outcome?



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Practice the Conversation

Once we have reflected on the needed conversation, it is important to engage in strategic preparation for the conversation. This can be done individually or in a role-play with a trusted individual.

Rehearsals and role plays can also be an effective way to practice the difficult conversation in a safe space. The rehearsal process will help us as coaches build a toolbox of strategies to support an honest and productive conversation. It also provides us a way to get feedback on the questions we are asking, our listening skills, and our body language. The rehearsal will also serve as a means to build our confidence to prevent a potential self-fulfilling prophecy of a failed conversation.

Engage in the Conversation

When we are ready to engage in the difficult conversation, Ringer (2019) recommends the following strategies:

1. ***Take an inquiry stance.*** Listening and asking open-ended questions are the best skills we can utilize in a difficult conversation. Taking an inquiry stance allows the other person the opportunity to reflect on the situation and to share perspectives.
2. ***Acknowledge what the other person shares.*** Maintaining trust is imperative in a difficult conversation because the person is being vulnerable in sharing their story along with beliefs. Acknowledgment is a critical step for maintaining a positive professional relationship with the other person.
3. ***Advocate.*** This strategy affords us, as leaders, the opportunity to share the long-term goal, clarify the expectation, and/or communicate a vision. Advocacy provides the chance to build a shared vision.
4. ***Problem-solve.*** This may include brainstorming possibilities, identifying potential barriers, and/or setting short-term goals that align with the vision. Problem-solving allows us and the other person the opportunity to work collaboratively towards a common goal.

It is important to acknowledge that the situation may not resolve itself in one conversation. However, once the issue is heard, it cannot be unheard and can open doors to further discussions to work towards a positive outcome. Engaging in the difficult conversation in a productive way is a critical step towards attaining equitable mathematics instruction and attaining a shared vision for instruction. What is a difficult conversation you need to have?

For more coaching resources, visit https://www.mathedleadership.org/coaching-corner/. If you want to learn more strategies to support equity in mathematics teaching and learning, join us for the Summer Leadership Academy. Watch NCSM's website for more information as it becomes available.

Kanold, T. (2011). *The five disciplines of PLC leaders.* Solution Tree Press.

Ringer, J. (2019). *We Have to Talk: A Step-By-Step Checklist for Difficult Conversations*. https://www.judyringer.com/resources/articles/we-have-to-talk-a-stepbystep-checklist-for-difficult-conversations.php

IT'S TIME FOR DETRACKING

By Paul Gray, Jr. | *NCSM President Elect (2020–2021) (@Dr_PaulGray)*

Paul Gray, Jr.

NCSM HAS LONG ESPOUSED A PRIORITY OF EQUITABLE ACCESS TO HIGH-QUALITY MATHEMATICS FOR ALL CHILDREN. It's front and center in our mission and vision statements. In 2016, we worked with TODOS: Mathematics for ALL to write the position paper, *Mathematics Education Through the Lens of Social Justice: Acknowledgment, Actions, and Accountability*.

> *The National Council of Supervisors of Mathematics (NCSM) and TODOS: Mathematics for ALL (TODOS) ratify social justice as a key priority in the access to, engagement with, and advancement in mathematics education for our country's youth. A social justice stance requires a systemic approach that includes fair and equitable teaching practices, high expectations for all students, access to rich, rigorous, and relevant mathematics, and strong family/community relationships to promote positive mathematics learning and achievement. Equally important, a social justice stance interrogates and challenges the roles power, privilege, and oppression play in the current unjust system of mathematics education—and in society as a whole* (p. 1).

As a particular way of enacting this position, in spring 2020, NCSM published our position paper, *Closing the Opportunity Gap: A Call for Detracking Mathematics*. In this paper, we define what tracking is, describe how it harms children, issue a call to action for schools to cease the practice of tracking and provide ideas for alternative structures. I was on the NCSM Board of Directors, serving as the Southern 2 Regional Director, while we developed this paper under the leadership of Dr. Shelly Jones, NCSM Position Papers Editor (2019–2021). I had no idea how timely this paper would become.

I don't have to tell you how unique the year 2020 was in our historical timeline. I can't speak for all white Americans, but for me, the murder of George Floyd, one of my fellow Houstonians, was a turning point that sparked me to learn more about racism, structural racism, and antiracism. And y'all, I was horrified at what I learned.

I didn't think I was that naïve. Early in my teaching career, I had a transformative moment when I experienced the Anti-Defamation League's "A Classroom of Difference" institute in the late 1990s. Here was where I learned that "not seeing color" is detrimental to understanding racism and race relations because it invalidates a key component of many people's identity. I learned about racism and structural racism. Yet, "white supremacy" remained, in my mind at least, something limited to certain parts of the country where men donned their white hoods and rode around on horses in the dark of night. "Good people" couldn't possibly espouse racism and white supremacy.

Like many organizations around the country, the NCSM Board of Directors engaged in a book study of Robin DiAngelo's *White Fragility* during the summer and fall of 2020. This helped us develop a common frame of understanding racism and structural racism, as well as white people's general reluctance to engage in work that confronts racism. I learned that in order to morally and intellectually defend the reality of slavery against the backdrop of "all men are created equal," our American culture was built on a foundation that held Black people to be inferior to white people (hence the term, "white supremacy") and that societal order must be constructed to reinforce that notion. Over time, that thinking became so embedded in how we do things that white people just stopped thinking about it and simply followed the structures that we inherited from our forefathers and foremothers. Even structures that seem benign, like public schooling, are built from this foundational belief that white people are more deserving than Black people, a white supremacy foundation.

In 1954, the United States Supreme Court ruled in *Brown v. Board of Education of Topeka, Kansas*, that segregated schools were not constitutional. It took some states 20 years or more to desegregate their schools afterward. However, the ingrained belief in white supremacy didn't go away. Initially, many U.S. cities experienced the geographic segregation of *white flight* to the suburbs. Inside integrated schools and systems, white people learned how to segregate within schools. Hence, the birth of tracking.

Bringing this full circle, I believe that tracking structures we see in our schools today are racist structures that must be dismantled and eliminated.

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When I say "racist structures," I am using the term "racist," as Ibram X. Kendi defines it in *How To Be An Antiracist*. Racist policies are those which "produce or sustain racial inequity between racial groups" (p. 20). We know darn well that tracking produces disparities among racial groups. Thus, it is a racist policy, and structures that create tracking are also racist.

Let's unpack some evidence supporting my claim. At the NCTM 2021 Virtual Conference in February, I sat in a session where a secondary mathematics coordinator spoke about the beginning of his district's journey into detracking which was motivated when he and some colleagues visited the school's "advanced" classes. They noticed that these classes' student population did not reflect the district's student population's racial diversity. His observation resonated with my experience as a classroom teacher. At my high school, which was majority Black with a sizable plurality of Hispanic students when I taught there, I didn't need to look up anyone's schedule on the computer to find the white and Asian students. I could go to the "advanced" classes and look in the window. You may have noticed that in your school as well. Pull up the data from your school's student data management system, and you're likely to find that the sample of students in "advanced classes" isn't representative of the population of students in your district.

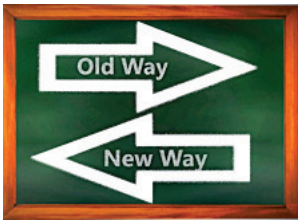
As white people, we tell ourselves that this is a coincidence. We pat ourselves on the back because our school or district has an open-enrollment policy for advanced classes, and all of our students, regardless of race, have the opportunity to enroll. We lament that we can't help what courses high school students choose to enroll in; after all, they'll have to make those choices on their own anyway when they get to college. We soothe our discomfort at the obvious inequality of student enrollment in "advanced" courses with the pseudo-knowledge that students choose their own course pathways to prepare them for post-secondary careers or college.

But we now know better. And as Maya Angelou said, once we know better, we must do better.

We now know that tracking systems are racist systems. They are rooted in structures that elevate white people over people of color. So even if that is no longer the intention of tracking, we must look at the disparate impact of tracking on students of color. The inequity is no longer tenable.

So, What Can We Do?

There are well-known cases from school systems, such as San Francisco Unified School District, that have successfully detracked their mathematics programs. We have promising stories emerging from states like Oregon and Virginia and districts in places like New York, Texas, and Delaware following in their footsteps. And there seems to be a theme emerging.



- ***Identify that there is a problem. Use data and observation***s to build the case that tracking is present and harming children.
- ***Build a shared vision for solving the problem.*** All stakeholders, including community members, parents, teachers, and administrators, must develop the shared vision together. Research, data, and book studies are useful for helping all stakeholders better understand the problem, how it impacts all of our children, and why we must all work together to make it better.
- ***Develop a phased-in plan*** that involves teacher professional learning, school leader professional learning, and community learning. Beliefs and attitudes will need to change as parents realize that opportunities will not be taken from their children. Teachers will need support from school leaders as they learn to teach in a heterogeneous environment, including better differentiation skills and strategies. School leaders will need to learn together as they build a common understanding of how to support teachers and parents.
- ***Implement a common pathway*** from elementary school through high school, then customized course options for the last few years in high schools. A common approach is that from Kindergarten through 10th grade, all students take the same courses. Then after 10th grade, graduation pathways diverge based on the student's intended post-secondary goals.

Our NCSM position paper, *Closing the Opportunity Gap: A Call for Detracking Mathematics* (2020), contains some key recommendations that mathematics leaders can use to implement our position that tracking must cease. To get started in that work, consider joining up with some colleagues to answer,

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IT'S TIME FOR DETRACKING *(continued from previous page)*

both individually and collectively, some reflective questions.

- What supports do we provide all students so that they can be successful in detracked classes?
- Are all students, regardless of their demonstrated mathematical performance, equally likely to be placed in a class with an experienced teacher?
- How well do we support our teachers' use of differentiated instruction?
- What is our vision for a high-quality mathematics program?
- How well do we focus on equity-based teaching practices, such as culturally relevant teaching or teaching mathematics for social justice?
- What kinds of deficit language permeate our school culture? (Deficit language frames teachers and students in terms of what they lack or cannot do rather than looking at them in terms of what they do know and can do.)

An old adage tells us that the first step to solving a problem is realizing that you have one. Tracking structures are problematic because while they privilege some students, they actually do harm others. Moving into the 2021–22 school year in what we hope will be the beginnings of a post-COVID world is an exceptionally opportune time to begin making these changes. After the disrupted 2019–20 and 2020–21 school years, we have an excellent chance to rebuild some structures to support the learning opportunities that students have missed through no fault of their own. When we do so, we must be intentional about equity and removing any purposeful or inadvertent racism from those structures.

DiAngelo, Robin (2018). *White fragility: Why it's so hard for white people to talk about racism*. Boston, MA: Beacon Press.

Kendi, Ibram X. (2019). *How to be an antiracist*. New York: One World.

NCSM (2020). *Closing the opportunity gap: A call for detracking mathematics*. [Position Paper]. Retrieved March 13, 2021 from https://www.mathedleadership.org/docs/resources/positionpapers/NCSMPositionPaper19.pdf

YOU'RE MUTED: THE TRUE IMPORTANCE OF PROFESSIONAL DEVELOPMENT IN THE MIDST OF A PANDEMIC

By Sean Nank and Jackie Murawska

Sean Nank

Jackie Murawska

Pause for a moment, take a breath, feel the air fill your lungs so you can make space in these hectic times to fill your mind with clarity, and think about what we have all lost in 2020, cocooned in a pandemic of isolation. Now let us use this reflective pause to finally feel what has been beneath the surface for so long, to emerge with a passionate sense of why we do what we do because "when you know your why your what becomes more impactful because you're walking towards or in your purpose" (Michael Jr., 2017). Let us take a moment to ensure we are walking wrapped in our purpose.

Since COVID-19 emerged, enveloping us in our homes, isolating us from our friends, family, and colleagues, and introducing us to terms such as "you're muted," a steady stream of invaluable articles have emerged telling us how to effectively conduct professional development and teach remotely in our institutions while continuing critical conversations and actions without being physically present in the same room with each other (e.g., Gaudet & Rivera, 2021; Reinen, 2020; Rivera & Novak, 2020). These articles concentrate on what to do and how to offer high-quality professional development (PD), but let us use this moment also to consider and remember why we offer PD (Boutin, 2021). Initially, we were only going to share with you examples of productive and unproductive PD for virtual and face-to-face sessions (which we still included in the table on page 11). But first, let us figure out and embrace your *why* so you can make the most of the table, other articles, and resources by aligning what you choose to do with your *why*.

Sarason (1971) suggests that the more things change the more they stay the same. Many people have literally had their voices blocked during virtual PD sessions because "you're muted," but consider how many educators and students have been perpetually and metaphorically muted for generations. The pandemic has created some problems. It has also highlighted other problems that have always been there for certain students and educators. How can we use this moment to fundamentally change the look and

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feel of PD sessions, address implicit bias and do all we can to ensure that educators who have experienced any of the "-isms" (e.g., racism, sexism) are no longer muted in any realm of life, society, and education? Let us take the problems the pandemic highlights and turn these trying times into opportunities to do and be better (Nank & Murawska, 2020). For the authors, there are three fundamental thoughts driving our current *why*.

Three *Whys*

Why #1: *Every single educator's voice matters, and we will not fix any problem without valuing and providing equality of space for all voices.* Dominant personalities and groups of people have been afforded a disproportionate voice in PD sessions since all interactions are socially constructed, and we have for too long accepted and endorsed this construction. The past year's danger is that these dominant voices have had the potential to usurp the conversation more easily and more effectively in a virtual PD environment, relegating more amiable personalities and underrepresented teachers to footnotes of faded voices in the background. More now than ever before, we are dangerously close to forever losing the richness of diverse voices and perspectives that are critically needed.

Why #2: *If we value voice and wish to capture the true power of equality of voice, then we need to capture and preserve all voices as we make meaning in PD sessions.* Whether it is a face-to-face or virtual PD session, there needs to be consistent and reliable methods for capturing all attendees' thoughts, displaying such thoughts with equality, and affording time and space for all to reflect on others' thoughts. Sometimes, people whose voices are not historically valued slip so far into the background that profoundly enlightening thoughts are barely a whisper. We need to capture these thoughts and preserve the intricate ways we collectively negotiate and support the meaning of the thoughts. We need to safeguard, revisit, and afford equal status of ideas brought up in PD sessions. In this way, facilitators of PD can value participants' voices, thus informing the current PD in the moment and also creating more effective PD in the future.

Why #3: *We are all simply, beautifully, complexly rich people who understand, now more than ever, that it is all about relationships.* So let us place relationships above all else in every PD session. In this virtual pandemic environment of PD sessions, it is the subtleties we miss. The change in the cadence of one's breath as they pause to say something profoundly important to them. The slight shift in their body language that tells us they are in that sweet spot of productive struggle, but if the PD is pushed much farther, then they would step over that precarious precipice to destructive struggle. The subtly profound slight smile of a colleague as you walk into a room that lets you know that you are safe and welcome in this PD session.

Why do we miss these subtleties so much? Because at the core of all our being is a desire to different extents for people to be connected to each other—to feel like we belong. At the heart of education is the belief we can make a difference in others' lives, and to do so, we need to feel connected to others' lives. Relationships are what connect us. This is what we are missing. So, this is why we need to ensure we build in opportunities to feel connected to others because we are all in desperate need of this now. We need to feel connected to people, experience the emotions of being in a room with each other, feel the sense of belonging we crave, try as much as possible to help others feel what we felt when we went to a recent NCSM Networking Night (Toncheff, Novak, & Rivera, 2020). Attendees of this event instantly felt like we were "home" and valued, engulfed with a sense of belonging—even though most of the attendees may not have known each other. In this sense, a corollary *why* is to ensure every attendee knows they are valued and that they should be in this PD session, that there is a purpose for their presence.

Finding Your *Why*

The universe puts you exactly where you need to be, exactly when you need to be there, exactly with the people with whom you need to be. It is much easier to figure out why we are attending a PD session if the facilitator(s) intentionally highlight the purpose of the PD session. Some PD sessions are by design more utilitarian in nature, but we can still link these to our *why*. Other PD sessions move you through an understanding that although we are here to learn finite goals, we are all desperately falling into each other, trying to regain that connection we long for in our social isolation so we can feel valued, understood, welcomed, and loved. We want to feel connected to something bigger than ourselves.

To varying degrees, we are more isolated than in pre-COVID times, and we are passionate about education. Yet we feel like we are stuck in a small bottle with the cork on, just waiting for someone to shatter the confines

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of where we find ourselves. In times such as these, we long to feel that what we do matters. Therefore, our call to action for anyone organizing any PD, workshop, or get-together for educators is to pause, think of what you are missing most, and help educators remember what they do matters so they can help their students remember that what they do matters—because whatever we are going through as educators, it is exponentially worse for many of our students.

Now that we have contemplated the *why,* we will not just say, "Okay, now go engage your attendees." Instead, we provide you with a list of concrete suggestions—the what and the how one can plan and implement effective virtual or face-to-face PD during the pandemic. So, we encourage you to use the strategies in the table "Productive and Unproductive PD" on this and the following pages. The table is organized into four themes: 1) structure/plan; 2) interactions; 3) caring, belonging, and honesty; and 4) technology. Embrace the virtual dance of PD, but pause as you plan, so you remember your *why*.

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Jackie Murawska is a STEM Instructional Coach in a K–8 school district north of Chicago. She is an NCTM MARC representative and the past president of the Illinois Council of Teachers of Mathematics. In her research, Jackie is passionate about exploring ways to develop teachers' mathematical knowledge for teaching and equitable student discourse structures.

PRODUCTIVE AND UNPRODUCTIVE PD

THEME: STRUCTURE/PLAN			
Productive PD	**Unproductive PD**	**How[1]**	
		Face-to-Face	**Virtual**
1. Immediate Interactions I have planned to put participants in groups in the first 5–10% of the time allotted for the PD session. Their first prompts/questions are light but reflective and will connect the participants in a fundamental and meaningful way so they can feel safe and comfortable to say what they need to say and feel their voice and perspectives are welcome, wanted, and valued (Rivera & Nowak, 2020). I planned a debrief for when the groups are done sharing.	I plan to begin the session with an overview of my background and credentials (like a mini-resume), then spend time laboring over the goals and objectives for the day. The participants will not exist in these introductory moments.	Use turn-and-talk questions such as: How are you feeling today? (Use a visual with multiple image options denoting emotions.) If you were a superhero, what would your name be? If you could only listen to one song for the rest of your life, what would it be? What would your walk-on song be? Talk about a time you were or were not comfortable learning something. How does this connect to our goals for the day? After group time, two to three people share responses.	Use the same types of light prompts/questions, but use breakout rooms of 3–4 participants. After the breakout groups return to the main room, use a strategy for people to share their responses. One strategy could be "chat 3, 2, 1" where every participant types their response into the chat box. Then on the count of three, everyone presses enter at the same time and their responses come flooding in.
2. Pacing I have paced the PD session so the participants have time to process and internalize the goals while making their own meaning of the learning objectives. When in doubt, I will take my time so the participants can take their time. I built in times to be able to adjust the pacing of the PD if we need to have conversations and linger in moments.	I assume the participants have sufficient background knowledge. I know this because our experiences are common. So as a facilitator, I can move through pretty fast. I have a lot of goals so I will be sure to keep up the pace to cover them all. I will stick to the plan and the pacing no matter what.	Pace the PD to cover depth over breadth with time for the participants to discuss in groups. Place approximate time stamps in the notes of the slide deck. Create a separate document denoting the intentions for each facilitation slide or moment in the session that is detailed but flexible. Use a timer when presenting or using groups to monitor your pacing.	If the PD session was originally face-to-face, scale the PD back because everything takes 1.5 to 3 times as long in virtual PD. Transition the face-to-face plans to a virtual environment but let go of what cannot be done effectively in virtual PD.

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[1] The virtual and face-to-face tools and strategies are not mutually exclusive—many of them can be used in both milieus.

THEME: STRUCTURE/PLAN			
Productive PD	**Unproductive PD**	**How**	
		Face-to-Face	**Virtual**
3. Title and Description The title and description of this PD session is spot on. It matches the goals and aligns perfectly. The participants know what to expect based on the title and description.	No one is going to remember what the title and description stated, and I really did not look at them while I planned the PD. So it is a bit of a bait and switch. I used a catchy title with popular buzzwords even though the PD really does not focus on that topic. Also, I am aware that I am going to make the PD session applicable only to a small subset of the participants, but that's because I am presenting on what I am familiar with (such as a particular curriculum for a specific grade).	Before, during, and after planning each segment of the PD session, read the title and description, checking for alignment. Break the description into sections to determine which aspect of the description is covered in-depth at different times during the PD session.	Determine if the title and/or description should be reworked in light of the PD being virtual.
4. Handouts I thoughtfully have a purpose for all of my handouts. They are chronologically organized according to how we will use them in the PD Session. Each resource is titled or numbered for easy identification and communication.	I think I might use some of this but I am not sure exactly where or when, so I will arbitrarily gather these resources together.	Make a Google Doc and use it as a main guide or table of contents. Link each resource to the Google Doc and organize it chronologically. Share the Google Doc with the participants. Provide a hard copy of the Google Doc.	Make a Google Doc similar to the face-to-face session (minus the handout and modify it for the virtual PD). Share your screen and explicitly demonstrate where and how to access the materials as they are needed. A great example of this is a participants' Interactive Agenda (Toncheff, Novak, & Rivera, 2020).
5. Roles We have planned and written down what we will cover and say and my co-facilitators have done the same. I know when I am going to lead. They know when they are going to lead, and we know when we are going to co-facilitate.	We are not really sure who is going to say what and when, but we will figure it out as we go because I work really well with the person I am facilitating. However, if we sometimes show our frustration with each other due to overstepping our perceived roles, no one will be able to tell.	Assign detailed roles with norms in advance and keep to them. Allow for impromptu adjustments in the roles, and let the PD be somewhat organic. Create and use an Insider's Agenda (Toncheff, Novak, & Rivera, 2020) for presenters to keep track of all details, including who says what (Rivera & Novak, 2020). For example, we identify who explains to groups what they will do and who debriefs when the groups come back together.	Still assign the roles but transition the roles for virtual PD. Determine who is facilitating the chat, setting up breakout rooms, pasting the materials and instructions into the chat box before going into the breakout rooms, sharing their screen, monitoring the waiting room, etc. (Rivera & Novak, 2020; Toncheff, Novak, & Rivera, 2020)
6. Goals I know my goals, my sub-goals, and the major take-aways for each section of the PD session, but the take-aways are "loose" enough to allow participants to make their own meaning.	Because I know the content of this PD session very well, I just lightly peruse the agenda the evening before and then go with the flow. I do not need to prepare much, I know this material well.	Similar to the title and description, have goals at the ready, constantly looking at them when planning this PD session. Have the goals with you as you facilitate the PD session as well. This helps to stay on track and interpret questions in light of the goals. Use the goals and your *why* in an intricate way to guide the planning of every moment of this PD session (Boutin, 2021).	Determine if the goals should be reworked in light of the PD being virtual.

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THEME: STRUCTURE/PLAN			
Productive PD	**Unproductive PD**	**How**	
		Face-to-Face	**Virtual**
7. Audience I know the participants. After reviewing background information, I know their curriculum, their district's technology, how they have been teaching and planning, and details about their students. I honor what the participants already bring to the table by doing thorough research prior to the PD session.	I am just going to assume this is X type of teachers with Y type of students and Z types of goals and experiences. For this PD, it does not matter where the teachers are. I just need to get them to where I want them to be.	Create and administer a short survey before the day of the PD session to gather information about your goals for the PD. (Rivera & Novak, 2020). If appropriate, anonymously share the results. As the PD session starts for the day, have pre-selected questions to clarify the participants' goals and provide an accurate account of the demographics of the audience.	Choose and use technology purposefully to capture the answers to these questions to ensure no voices are muted. Examples: Slido, Google Slides, Jamboard, Padlet, Peardeck, Mentimeter, Poll Everywhere, Zoom chat box, Zoom poll, or Zoom annotations on a shared screen using the Stamp feature.
8. Data I have decided exactly when I will need to collect actionable in-the-moment data from the participants so I can adjust the PD based on their feedback. The platform and method of collecting the data aligns with the data themselves and the reason I am collecting the data. The survey is targeted, and the data will be used immediately to inform the PD. I have designed my polls carefully. Examples: choices are exhaustive, radio buttons can be chosen more than once where appropriate (e.g., questions about grade with which participants work), and 1–5 Likert scales are well-defined (is 1 strongly disagree or is 5 strongly disagree?).	To ensure engagement, I made a couple cool surveys though I am not sure when I will use the results. The data should be interesting but I don't really need it; I already know what I will be doing and the data will not change anything about the PD or the conversations.	Ask a question and use: • Thumbs up, thumbs down, thumbs sideways. • Hold up your fingers, on a scale of 1–5 what do you think about … • Stand up. Snap or clap if you agree with a statement. Stomp your feet if you disagree. • Pay attention to the body language, facial expressions, and changes in the inflection of voices.	Use technology that lends itself to a virtual environment purposefully to gather data. Examples: Slido, Google Slides, Jamboard, Padlet, Peardeck, Mentimeter, Poll Everywhere, Zoom chat box, Zoom poll, or Zoom annotations on a shared screen using the Stamp feature.

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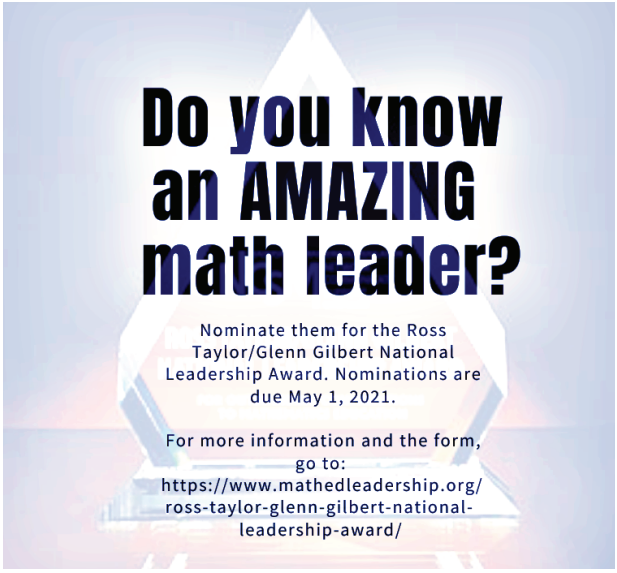

MARK YOUR CALENDARS!

THESE ARE SOME OF THE UPCOMING NCSM EVENTS. Visit the NCSM Website for more details.

DATE	EVENT
Coming Soon!	NCSM Position Paper: *Effective Strategies for Teaching High-Quality Mathematics to Multilingual Learners*
May 1	Nominations for Ross Taylor/Glenn Gilbert Award due
May 1	Iris Carl Travel Grants due
June 28–30	NCSM Virtual Summer Leadership Academy: *Ensuring Equitable Practices Through BOLD Mathematics Leadership*
September 20–22	NCSM Annual Conference in Atlanta, GA
November 1	NCSM/NCTM Teacher Leader Professional Grant due

THEME: INTERACTIONS			
Productive PD	**Unproductive PD**	**How**	
		Face-to-Face	**Virtual**
9. Small Groups I have isolated key moments when participants will thrive in small groups. I planned the groups both to facilitate social construction of knowledge and meaning and also to ensure equality of voice. I have thought a lot about when participants need to be in groups of 2, 3, or 4 (this is not random) and also whether or not the group work will build on itself. That way I know if I can randomize the groups or if I should keep the groups consistent throughout the PD session. I chose thought-provoking questions and activities, have directions ready to go, and also know exactly what routine the groups will use. I even have something for the participants to record and organize their thoughts and work. They will also know if and how to share out before they start working in their groups.	I think I need a couple places in this PD where the participants will engage in small group work, but I may play it by ear. I will just verbalize the question or directions and send them into groups. The participants will know what to do.	In advance, be intentional with every detail: thoughtful questions, number of people in each group, group composition, time allotted, directions, routine, recording mechanism, share-out. Create pre-planned moments for group work and place the details in your insider's document and in your notes on your slide deck so you remember the routines and number of participants for each group time. Display and say verbally the directions and how the group will share when you return to whole-group time (if they will share out).	Post questions and/or directions in the chat prior to placing participants in breakout rooms. Determine in advance if the breakout rooms will be random, assigned, or self-selected. When assigning participants yourself, have them rename themselves with a number denoting the group they wish to be in. For example, names would be "1—Sean Nank" and "2—Jackie Murawska"
10. Questioning Every question and statement was thoughtfully constructed and aligns with my *why* while helping the participants to figure out their *why*. I have thought through questions about my questions such as: Why am I asking these questions/having these discussions? How will I use the answers to the questions/outcome of the discussions in real time and/or later? How does this frame the next task(s)?	I know the answers to the questions I will ask, but I will let the participants talk about it anyway and then have the right answer (my answer) on the next slide. I really do not need the participants' answers to the questions in order to move on, but I want to make sure they stay engaged. I may just ask the question and let them chat, although I know there won't be time to acknowledge their responses.	Create questions that require higher-order thinking and values the participants' perspective and expertise. Check the questions with your title, description, and goals to be sure they align. After asking your thoughtfully constructed question, immediately and intentionally use participants' responses.	If a question is intended to be used in a breakout room, place the question in the chat box before assigning the rooms.
11. If You Can Send It in an Email … Any information that participants do not need to be with me and/or each other to process and make meaning of was provided to them before or after the PD session. I am capitalizing on time together (Aguilar, 2016). Our time is valuable, we are valuable, and everything we do together is meant to be done together.	"I was going to email all of this to you or write it down but I thought it would be better if you sit and I basically 'read' this to you, filling the time with my voice and not providing space for your voice." Implicit in this is the assumption that if I put this PD topic in an email, you would not understand it by merely reading it, or you may not read it at all.	Look through the PD session and ask if the participants need to be with you or each other to process and understand. If not, send it in an email, document, or asynchronous session. Determine which email/document should be provided before the PD and which is best sent after the PD.	Determine which portion of the PD session needs to be conducted synchronously and which aspect can be moved to an asynchronous session.

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THEME: INTERACTIONS			
Productive PD	**Unproductive PD**	**How**	
		Face-to-Face	**Virtual**
12. Whole Groups I thought about how participants will interact during whole group discussions, have aligned it to the goals of the PD session, and feel it also embraces my *why*. I am using resources to provide equality of voice during the PD while also capturing data from the participants to inform the current discussion and reflect over later to make the PD better.	The participants came to the PD session to hear what I have to say and avail themselves of my expertise. Therefore, I have not systematically structured points in the PD where I am eliciting their voice in an equitable fashion. For this PD, they'll learn more from me than each other.	Similar to data collection strategies in #7, the following affords the whole group to answer simultaneously. Ask a question and use: Thumbs up, thumbs down, thumbs sideways. Hold up your fingers, on a scale of 1–5 what do you think about... Stand up. Snap or clap if you agree with a statement. Stomp your feet if you disagree.	Use technology that allows all participants to contribute to the whole-group interaction with each other as well as with the speaker. Examples: Slido, Google Slides, Jamboard, Padlet, Peardeck, Mentimeter, Poll Everywhere, Zoom chat box, Zoom poll, or Zoom annotations on a shared screen using the Stamp feature.

THEME: CARING, BELONGING, AND HONESTY			
Productive PD	**Unproductive PD**	**How**	
		Face-to-Face	**Virtual**
13. "Are you not entertained?" (Scott, 2000) I am not here to entertain the participants, but it does not hurt the learning process if they are having fun. I have looked through the PD session to see where participants might get a little "bored" and have spiced it up a bit in those moments with humor, a brain break, or something that fits with my facilitation style. I also embrace my personality so I can be more engaging (since I like humor, I use humor). I realize that sometimes topics engage people but when it comes down to it, people engage people.	I am not really comfortable with showing my personality so I am choosing to fake it to a certain extent. (I generally do not use humor, but I figure it works for some so I will do it here.) The participants will not be able to tell I am not authentically being myself, and this will not affect my credibility on an implicit level.	Think of moments you can fit your personality into the PD. Monitor participants for destructive struggle or signs of needing a break. Be authentically yourself. You *and* your participants will feel this energy!	Periodically build in checks like the examples in #1). It is harder to see visual cues for disengagement online so monitor closely and check more explicitly. Even more so in virtual environments, allow yourself to be *you* so you can break out of that small monitor the participants are watching.
14. Oops! If it can go wrong, it will go wrong … well, I am not a pessimist but I know that if something goes wrong, then I am prepared to speak my truth and speak from the heart. My slides and technology are wonderful, but they are not the message. They are just a vessel to convey the message more effectively. If my slides freeze or a bit.ly does not work, I will not waste the participants' time, but instead I can still talk about the points on the slide and engage the participants without the technology. I can stay on track, move to a small group activity, or otherwise engage the participants if things go wrong.	Nothing is going to go wrong and if it does, then the participants will patiently wait in silence as I fix whatever is the problem—be it the slides, video, volume, or something else. Then I will just speed through to catch up and the participants will follow along.	If something goes wrong, improvise with a small group activity to buy you a couple minutes to fix the technology. If you can fix it, wonderful. If not, remember they are here for you and each other, not the technology.	Print a hard copy of your notes to ensure that you can still proceed in the event of a glitch. Device and internet failure or instability is another story. Have a second laptop ready to go in case. If this is not possible, stay calm and reboot the computer or reconnect. The participants understand as we have all been there. If you are co-facilitating, have a plan for your partner to take over in case there is a connectivity problem. You should know each other's roles just in case.

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THEME: CARING, BELONGING, AND HONESTY			
Productive PD	**Unproductive PD**	**How**	
		Face-to-Face	**Virtual**
15. Equality of Voice Equality of voice is important to me so I have used technology as well as pedagogical moves to ensure all participants have a voice. I am also ready to monitor for dominant and submissive voices so I can create time and space for everyone to be heard. If a select number of participants dominate, I have plans to take care of the situation rather than ignoring the situation. Be "curious by talking less and asking more questions so more voices are heard" (Gaudet & Rivera, 2020, p. 12).	There really is no reason for anyone to not speak up. I do value equality of voice but if someone does not have their voice heard, it really is their responsibility to be more proactive. The dominant personalities cannot help it so I will not ask them to make time and space for others' voices. Besides, if I try, it might create conflict with the dominant personalities. To make sure all groups have shared out, I just ask, "Did everyone go?" because I'm sure that people will speak up.	Monitor for dominant voices and help those that typically withdraw to contribute to group discussions. The onus is on the strong ones, but the facilitator can help identify when this happens. For example, create a system or checklist to keep track of people who have talked or groups who have shared out.	Be intentional in not favoring certain participants over others. If you notice someone has unmuted themselves, be sure to call on them immediately to ask their contribution. Be equally polite with all participants.
16. Implicit Bias I have done sustained work to identify and monitor for my own implicit biases as much as possible. Whether it is subject-based or person-based, I want to know if implicit biases are making their way into the PD session. I know identifying and addressing implicit bias is a life-long process and my work is never "done."	Everyone has implicit biases and there is really not a lot we can do when they come up. I plan to sidestep and ignore these biases in myself and others. After all, this PD is not even about biases so there is not a need to address it.	Avoid gender-based salutations to all. Example, addressing the participants as you guys vs. y'all vs. everyone. Survey the participants and use the data to uncover patterns within yourself. Monitor for participant biases to facilitate conversations about such things if need be. Do not stereotypically generalize with comments like "boys really like this activity because it is physical and visual."	When beginning a meeting, do not say hello to any one person in the whole group, as this could make others feel less important because this act feels different in a virtual environment. Instead, say hello via private chat. Pay close attention to subtle cues since virtual PD reduces the number of face-to-face subtle messages we receive. When in doubt, ask. For example, if a subset of participants are not interacting, do not assume. Instead, talk with them in a private environment.
17. Engage All I monitor for engagement and interactions of all participants. If I sense someone is not interacting, I will first look to myself and my design of the PD session to see if anything can be changed in the moment and later. I will also encourage interactions while realizing it is good when someone "spaces out" for a moment because that might be exactly what they need to re-engage purposefully.	The participants who want to be engaged and interact will be engaged and interact. Those are the people I am here for. Everyone else who is disengaged, it is really their responsibility and I am not going to fight with them to pay attention or care.	Identify points where there was a lull in past PD sessions and try something different from what was done previously. It is worth saying again: pay close attention to the body language, facial expressions, voice, and other subtle shifts possibly denoting disengagement. Take mini-breaks. Sometimes all people need is to look away for a minute in order to re-engage.	Instead of creating a dichotomous situation where all cameras have to be on or off, ask what you have or have not done to engage participants. Be sympathetic to those who have cameras off and never assume the reason(s) why. Instead, ask them in a private environment. Use breakout rooms or technology to engage participants in thought with an avenue to share their discoveries. Examples: Slido, Google Slides, Jamboard, Padlet, Peardeck, Mentimeter, Poll Everywhere, Zoom chat box, Zoom poll, or Zoom annotations on a shared screen using the Stamp feature. Align the virtual platform with the structure of the PD. For example, if you want to use breakout rooms, make sure it's a meeting not a webinar.

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THEME: CARING, BELONGING, AND HONESTY			
Productive PD	Unproductive PD	How	
		Face-to-Face	Virtual
18. Bridging Personal Stories I embrace that the participants are not here for me. I am here for the participants. Any story I use about myself is a bridge or gateway to get the participants to generalize to their stories and their experiences. I hand-pick and use my experiences to bridge to their experiences and to accentuate points. When I briefly make it about me, it is only so we can then make it about the participants. I understand if I do not make the PD about the participants, then there is little chance they will be able to enact the goals of this PD. If they want to know my life story, they can Google me!	These participants really want to know my life story and everything about me. Their stories are not as rich as mine. In fact, they already know and understand their stories so why wouldn't they want to hear mine? I will share my experiences, and the participants will figure out on their own what this means to them, because for this session I know that they just need to be "trained."	Remember the PD is not about you. Lean on the expertise of the participants (Korthagen, 2017) and acknowledge their value and voice by relating all of your stories directly to the participants' experiences and the goals of the PD. Tell your stories in a way that participants can relate to and generalize through analogy (Wehlage, 1981). If your story is not about them in some way, your vision and goals of the PD will not resonate as much.	Be prepared to tell your stories and connect it to the participants' experiences without the same immediate feedback you receive when storytelling face-to-face. Hold to the passion of the story even if the virtual environment does not allow you to feel the energy.
19. Safe Spaces I realize that in order to enact true and meaningful change, a culture of safety where we can have courageously real conversations in order to promote courageous actions needs to be set up and consistently maintained. I have built in a disclaimer at the beginning of the PD session and have specific activities that implicitly foster such an environment.	It really does not matter if the participants feel safe or comfortable, we will still be able to chat. If someone feels uncomfortable, I will just address it as it comes up.	Use activities that align with culturally proficient strategies to explicitly value every person's epistemologically privileged position and uniqueness of their individual thoughts and feelings.	Be aware that if you record a PD, this may inhibit people from sharing true concerns. If you choose to record, understand that breakout rooms may be the only space people can truly share, knowing that breakout rooms are not recorded. Establish "safe spaces for people to share concerns (shared documents or in a private chat bar)" (Gaudet & Rivera, 2020, p. 12).
20. Connections I have purposefully integrated social-emotional check-ins throughout the PD session (Aguilar, 2016; Gaudet & Rivera, 2020), starting with an ice-breaker and easing into more serious questions as the PD moves along. I also have anticipated times where I will ask the participants how they are doing, asking them if they need a break, and building in breaks as well.	The participants are adults so they can take care of themselves. Any check-ins might feel like I am holding their hand or demeaning them. The participants are not overwhelmed and are ready for the PD, feeling no stress at all before, during, or after the session.	Embrace who you are as a person and as a facilitator. If you are true to your personality, the participants will respond and connect with you. Ask questions such as, "How are you feeling?" "Need a break?" Begin with light ice breaker questions before the more serious questions. Play music during any break time.	Virtual PD can be more stressful and takes more energy than face-to-face PD. Therefore, build in more check points to determine how the participants are doing. Allow participants to get "off track" from time to time in a breakout room. Sometimes this mini-break is exactly what they need. Ask participants how they are doing whenever they come back from a breakout room.

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THEME: TECHNOLOGY			
Productive PD	**Unproductive PD**	**How**	
		Face-to-Face	**Virtual**
21. Test the Technology I used my incognito tab and checked every piece of technology (hardware and software). Every shared doc or bit.ly works. My editing, viewing, copying privileges are correct. I am certain nothing will go wrong with the technology, but I am ready if it does!	Technology is reliable. I made the links, and they work for me so everything is ready to go. Technology is our savior, and it will not forsake me.	In advance of the PD, visit your presentation room to ensure all AV equipment is set up and functional, including laptop connection, projector, document camera, etc. Test the sound in advance. Double-check *all* the links you will share (e.g., documents, slide decks, bit.lys, etc.) to be sure they are functional and the sharing privileges are accurate. Ask a friend to use their computer to check links.	Power down your computer completely and power it back up before the PD to avoid crashes, updates, or other glitches to the hardware. When creating the virtual platform link for participants, check all pre-set conditions such as waiting rooms, screen sharing capabilities, private chats, breakout rooms enabled, etc. Check that the host and co-host roles are assigned and that the host has the access and control to what they need. Double-check *all* the links you will share (e.g., documents, slide decks, bit.lys, etc.) to be sure they are functional and the sharing privileges are accurate.
22. Choose the Technology Wisely I took time to think of every aspect of technology and have a reason for using everything I am using as well as not using other aspects of technology. I realize the technology is important but what matters most is how the technology engages the participants. Therefore, my choices are based on this premise.	I make a slide deck each time and use the same apps and technology for every PD session. I use what I am comfortable with and do not deviate toward other technologies.	Decide explicitly if you want to use a slide deck and if so, what type (PowerPoint, Google Slides, Prezi, etc.). Determine the best polling technology given your goals and the way you want the results to be presented to the participants. Think in advance if you need a projector, document camera, or other technology.	Choose the platform wisely if you have the ability to decide. For example, do you want to use Zoom or Google Meets? Do you want a webinar or meeting format? Different types of technology are great but keep it simple. The more technology used, the greater chance something will go wrong and the more time participants need to access the different technologies.

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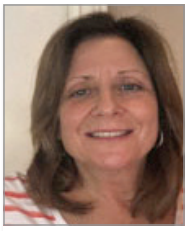
REGIONAL REPORTS

BUILDING AND SUSTAINING LEADERSHIP NETWORKS

NCSM Regional Directors have gathered portraits of the hard work that is being accomplished within their region. Many of the successes and challenges shared are in the voices of those directly involved in the efforts to build and sustain leadership networks.

CATHY BOUTIN, NCSM EASTERN 1 REGIONAL DIRECTOR



Cathy Boutin

For the first time since I started teaching, Rhode Island developed a statewide school calendar and designated statewide professional development days. The two mathematics specialists from the Rhode Island Department of Education are providing a professional learning network for mathematics educators. I would like to thank Susan Pagliaro and Christopher Catilllero for their thoughts on building and sustaining leadership networks. —Cathy Boutin

BUILDING AND SUSTAINING LEADERSHIP NETWORKS

By Susan Pagliaro and Christopher Castillero (Mathematics Specialists for the Rhode Department of Education)

As with most things in teaching and life, nurturing personal relationships has been a key element of success for building and sustaining our PLC network. For us, those relationships often begin in rather impersonal, informational sessions required by our role as state mathematics specialists. We strive to make connections with our participants by thoughtfully responding to their questions, listening to their personal stories of frustration and success, honoring their expertise, learning from them and with them, and when possible, injecting a bit of warmth and humor into our sessions. Most importantly, we work to keep communication channels open by encouraging follow-up conversations and extending professional opportunities to our newly made contacts.

In addition to our access to educators through our state role, we are fortunate enough to serve on the state association's advisory board for teachers of mathematics in Rhode Island (RIMTA). This connection keeps us grounded in the everyday experiences of the hardworking mathematics educators in our state. We get a closer view of the wants, needs, and talents of Rhode Island educators. Relationships established here tend to be more personal and characterized by a give-and-take quality.

These personal and professional relationships have enabled us to create and sustain a distance learning PLC that is teacher-centered. In the spring of 2020, we reached out to several educators who had embraced new technologies to serve their students better in a distance learning environment. They graciously demonstrated how to meaningfully incorporate these technologies into daily instruction, sharing their successes and struggles. Having practicing educators take center stage during the PLC honors their expertise and creates a safe environment where people are willing to ask questions and learn from one another. It is key to having people set aside time in their busy schedules to participate in the PLC.

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CATHY BOUTIN, NCSM EASTERN 1 | CONTINUED FROM PREVIOUS PAGE

Before re-initiating the PLC in the fall of 2020, we sent personal invitations to past participants and then surveyed them to see what topics they were interested in discussing. We are fortunate to have a state school calendar with a number of built-in professional learning days and a mechanism to communicate with all Rhode Island teachers.

We plan to honor teacher time, hold the PLCs on those dedicated days, offer certificates of attendance, and continue to draw on our Rhode Island educators' many talents. There is so much to learn from them and so many wonderful relationships to be had.

Tweet me (@cboutin9)

CHERYL CANTIN, NCSM CANADA REGIONAL DIRECTOR AND
DENISE TRAKAS, NCSM WESTERN 1 REGIONAL DIRECTOR

BUILDING PATHWAYS AND OPPORTUNITIES FOR CLASSROOM TEACHER LEADERS

Cheryl Cantin

Denise Trakas

When thinking of building and sustaining leadership networks, it is vital to re-visit and consider the systems in which we work. When reviewing NCSM's Framework for Leadership in Mathematics Education, it is clear that an essential component of student-focused systems is bold instructional leaders. Typically these leaders are defined as teacher leaders, coaches, site administrators, district leaders, or specialists who "show the ability to take risks."

When reviewing the system in which we work as well as other systems, we have found that there is often an unrecognized type of leader. This is the strong classroom educator who wishes to continue to work with students on a day-to-day basis with close to 100% of the time in direct service to students. These educators are rarely recognized and often fail to fit into typical leadership pathways in many districts. Several of these leaders also struggle to hold this line and remain in the classroom as there are limited opportunities for increased compensation compared to other leadership routes.

Yet, building and sustaining strong classroom teacher leaders has become essential for the health of the instructional system at all levels. Investment in the development of teacher leaders, not only increases the educational experience of all learners, but it also maintains a strong structure or skeleton for mathematics education. Without maintaining and leveraging this strong skeleton, systems will have to recycle often scarce resources, reinvesting in a continual building process at the expense of a process that promotes, supports, and maintains a strong mathematics educational focus.

When we invest in teacher leaders, the system benefits. Here are two examples:

1. One district in the Western U.S. found that novice practitioners were eager to view classrooms in which teachers were willing to open their doors. Yet, these classrooms were not always the strongest mathematical models for these novice practitioners.

In order to confront this dilemma and help build a stronger definition of high-quality mathematics teaching and learning, the district developed a Learning Lab model for each grade level. The Learning Lab model was created in partnership with district coaches and classroom teachers to combine efforts and maximize the cycles of reflection and observation. Classroom teachers would have a district coach as support while leading a session during the actual school day. Teachers would meet prior to the start of the school day, and the teacher would discuss the planning process and the focus of the lesson. The novice teachers would then observe the classroom teachers engage in a lesson with their students. During this portion, the novice teachers would be supported with content-focused coaching, typically supported by a district mathematics coach.

Immediately after the observation, the teacher would meet with the novice teachers and discuss the lesson. In this process, the collaborative group is able to

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discuss the thinking and actions of a particular student observed in the classroom and possible next instructional steps. This model enables the novice teachers to have meaningful conversations with others in the grade level in which they teach with content that was relevant and timely to their own classroom instruction. Additionally, because these are teachers in their own district, the novice practitioners are able to see the possibilities that can happen in their own classroom and see similar patterns in their students.

2. Teachers are often asked to serve on district/state/provincial/national committees to have a "teacher voice." Without a strong understanding of high-quality mathematics instruction and a deep understanding of the content across multiple grade levels, this work can and does become disjointed. Consider building a mathematics classroom teacher leadership team.

Rather than the teacher serving as "one" representative on a committee, build a team of teachers whose focus is on building content knowledge across multiple grades through understanding the mathematical trajectories. This team of active practitioners/classroom teachers becomes a district resource addressing multiple needs by having a shared understanding of high-quality mathematics and an understanding of content across grade levels and curriculum. This approach eliminates non-mathematics educators giving mathematics education feedback. Having this leadership structure in place will also assist in building a tighter alignment between standards, curriculum, instructional materials, and pedagogical practices. It greatly opens up the potential for improvement and provides a platform for professional learning processes that addresses timely instructional needs that are relevant to the current student population the district serves.

Consider the following questions:

- How might we recognize and provide financial security to strong mathematics classroom practitioners?
- What pathways are available to share expertise and experience without leaving the primary role as a classroom teacher?
- How do we support continued growth and reflection for these leaders? How do we support opportunities for growth (e.g., such as attending an NCSM conference or paying for NCSM membership)?
- What opportunities do we provide to allow these leaders to step out of their role and understand how their work integrates with the larger system? Is there space for this work in the current educational leadership policy and practice? Does this require systemic change?

Call to Action

Reflect on the questions above. What successful structures are in place in your school, district, state/province for classroom teacher leaders? Share your story with us: #NCSMClassroomStrong

BERNARD FROST, NCSM SOUTHERN 1 REGIONAL DIRECTOR

BUILDING COLLABORATIVE NETWORKS TO ENSURE SUCCESS FOR ALL THROUGH MULTI-TIERED SUPPORT SYSTEMS (MTSS)

Bernard Frost

By Bernard Frost in collaboration with Frances Metta (Director of Special Services, Spartanburg School District Two) and Gina Skinner (District MTSS Coach, Spartanburg School District Two)

In Spring 2015, NCSM released a position statement, *Improving Student Achievement by Infusing Highly Effective Instructional Strategies into Multi-Tiered Support Systems (MTSS)–Response to Intervention (RtI) Tier 2 Instruction*, to assist schools with improving instruction and providing academic and social-behavioral support to all students. When addressing pandemic learning loss this year, it was vital to revisit the MTSS framework to ensure success for all. The MTSS is a systematic method of identifying, defining, and resolving students' academic and social-behavior difficulties using collaborative, schoolwide, problem-solving approaches. MTSS-RtI is not considered a special education eligibility system to place students in special needs programs; however, it is a comprehensive system designed to identify

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possible solutions to the instructional needs of students before learning gaps become severe.

With revisiting the MTSS and effectiveness in mathematics in Spartanburg School District Two, the collaboration among the leaders of instructional services and special services departments was fundamental in determining what would work best for all students. In the book, *Reduce Change to Increase Improvement*, Robinson (2018) writes, "Leadership is the enabler of improvement, orchestrating the various conditions, such as professional capability, community engagement, and quality instruction that need to be working together if improvement in student outcomes is to be achieved and sustained" (p.9). The district's MTSS framework provides school and teacher leaders the opportunity to implement systemic, evidence-based practices to maximize student achievement in mathematics.

With collaborative efforts, all stakeholders in our district shared expertise and knowledge centered around their specialty area. In connection to *NCSM's Essential Actions: Instructional Leadership in Mathematics Education* (2019), the seven essential actions were utilized to guide MTSS success in the district.

EA1: Designing effective school improvement processes

- Recognizing the schools' need for interventions and supports for students at all levels, not just students with documented IEPs and 504s, was a paradigm shift.

EA2: Leading and managing systems of change

- Expectations for learning mathematics changed for students from procedurally-driven to solution-oriented.

EA3: Developing and activating the school's mission, vision, values, and goals

- Support services were redefined and aligned to students' individual needs and goals.

EA4: Leading through a lens of equity, cultural responsiveness, and social justice

- Monitoring the effective use of and access to evidence-based curriculum, validated instructional practices for all students, and aligned interventions to support students depending on individual needs.

EA5: Creating and sustaining a culture of high expectations for learning

- Flexible time was built into the master schedule to meet the teachers' and students' needs to provide assistance with meeting expectations for student learning of mathematics.

EA6: Building the professional capacity of school staff

- Professional development to build instructional capacity around the MTSS framework and its components was provided for instructional leaders, teachers, and instructional staff.

EA7: Creating and sustaining effective professional communities of reflective practitioners

- Support was provided during the implementation process to check for fidelity. Patience was given knowing that it may take a few years to see big impacts.

Self-Assessment and Next Steps

Leaders are essential in lifting the learning of every member of the school community. Without a collaborative network structure in place, schools may struggle with solving problems. Nevertheless, building and maintaining collaborative networks among leaders designed for sharing as well as creating new knowledge will support student success for all.

As you continue to build collaborative networks to ensure mathematical success for all students, take a moment and complete the school-based mathematics program needs assessment tool [www.mathedleadership.org/resources/summary.html] centered around an area of concern for your school. What would be your next step? What action will you, as a leader, make to ensure meaningful mathematics for all?

For more information on MTSS, checkout NCSM's other position papers here.

Tweet me (@DrBernardEFrost)

Robinson, V. M. (2018). *Reduce change to increase improvement*. Thousand Oaks, CA: Corwin, a SAGE Publishing Company.

Regional Reports continue on next page

KATEY ARRINGTON, NCSM SOUTHERN 2 REGIONAL DIRECTOR

STRONGER TOGETHER

Katey Arrington

By Katey Arrington in collaboration with Shelly LeDoux, EdD (Interim Manager of K-12 Services, Charles A. Dana Center, the University of Texas at Austin; Regional Director, Region D, NSELA National Science Education Leadership Association)

Teaching and learning are complex, as are the education systems in which these actions take place. All educators must work together across levels of the system to make learning meaningful, relevant, and relatable. Leaders must focus their efforts on fostering change in service of increasing equitable, effective teaching. To lead this change at the system level, they must build on the strengths they developed as teachers and grow abilities they likely didn't develop in the classroom. The intersection of teaching proficiency and leadership is commonly known as instructional leadership. Effective instructional leaders leverage their foundational teaching expertise and learn how to move an organization and build structures needed for continuous improvement for student learning. The system gets better when teachers and leaders grow in their roles in intentional ways to contribute to student learning. *We are stronger together*.

We posit that, as the system improves with the alignment of teaching and leading, mathematics and science learning are stronger together as well. Traditionally, mathematics and science have been viewed as subjects for only some and taught as separate content that might occasionally be related to each other. Leaders in mathematics and science education work hard to change mindsets and systems and ensure student success in both disciplines. The path to responsible and informed citizenship through mathematics and science literacy is for the betterment of our society. In a joint position paper, NCSM and the National Council of Teachers of Mathematics (NCTM) state, "All members of society, if they are to make informed choices for themselves, their families, and their communities, need to be quantitatively literate and to have an understanding of quantitative, scientific, and technological issues far beyond what was once adequate" (NCSM & NCTM, 2018). We, as leaders in that work, should consider that mathematics and science are interrelated and meaningful tools for understanding and modeling real-life phenomena. Moreover, teaching them in integrated ways helps students to realize their significance and worth. It is imperative that leaders in mathematics and science work together to improve the way students learn and engage with these disciplines in ways that nurture appreciation and recognition of the relevance of mathematics and science to the world around them, including future career opportunities and informed citizenship.

Teaching and Leading

Thriving schools rely on strong teacher leaders—both formal and informal—who mobilize and empower fellow teachers to collaborate and improve. The path to teacher leadership can be formal when teachers are designated as department chairs, learning community leaders, mentors, and coaches. It can also be more organic when natural leaders emerge who inspire others to engage in collaborative, complex work. No matter the circumstances. Leveraging the teacher leader mindset can lead to improved instructional practices and student outcomes.

Teachers have the experience and expertise in content and pedagogy to make good decisions for students in their classrooms. Their unique perspective is a necessity as a strong foundation for strong educational leaders. However, working to build equitable and effective structures in schools, and leading within a group of colleagues takes an entirely different skill set than teaching. Unfortunately, professional learning for teachers to develop strong leadership skills is rarely available. In a study conducted by the Center for Teacher Leadership at the Virginia Commonwealth University School of Education, 82% of instructional leaders reported having no training for leadership roles they had been asked to take on (Dozier, 2007).

Leaders in schools need to communicate effectively across multiple groups of stakeholders, including but not limited to students, parents, teachers, leadership at school, district, and state levels, and policymakers. They need to understand and lead change processes to be effective at transforming their systems for better outcomes for all students, often under tough conditions and with few resources. They need to understand policy, how it is created, and the impact it will have on their systems, as well as how to respond proactively. They need to use their spheres of influence and create networks to share their clearly articulated vision for the system, create focused plans in which all stakeholders can see themselves as contributors, and then guide others in action steps that generate real impact for students. While teachers are fully capable of learning these skills as they move, they do not

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encounter explicit training in them and are unlikely to develop the skills on their own within the isolation of a classroom. Teachers have a profound need for training and opportunities to collaborate with other leaders to grow their skills when they move into instructional leadership, so all educators feel they have the best guidance and students are successful.

Mathematics and Science

Schools are charged with preparing students for the future, and today's students will inherit a world in which the most complex and urgent dilemmas are, at their core, science issues. However, science classrooms cannot take sole responsibility for instilling the content knowledge and critical thinking skills required to tackle these problems. As evidenced by the current pandemic, understanding and responding to science-based problems also requires mathematical reasoning and modeling. Mathematics and science classrooms are places where educators can cultivate students' curiosity about the real world and where students can apply their learning in both disciplines to develop the sense-making skills needed for success.

In an environment where science education funding is often overshadowed by mathematics, leaders from both disciplines can work together to establish a relationship between them and improve outcomes in both. Leveraging the interrelatedness of mathematics and science gives students opportunities to apply the knowledge and skills learned in flexible, innovative, and powerful ways to work on real-life local, national and global issues. This kind of integrated work promotes relevance, development of iterative problem-solving skills, student-motivated and cooperative learning, and strategies for meaningful communication and teamwork (Maiorca & Stohlmann, 2016). Accomplishing this kind of innovative change will require mathematics and science leaders to join forces and learn from each other.

Real-Life Example of Being Stronger Together

The global pandemic has meant changes for teaching and leading. As leaders seeing inequities that were already exacerbating disparity of outcomes in our education system, you were probably forced to make decisions that you never expected about how to support your staff and students. You would not be alone in feeling isolated and pressured by the need to innovate and grow in a very stressful context, both personally and professionally. Education will likely never be the same, and there are examples of excellence and lessons learned that could be leveraged to inform teaching and to lead in challenges that lay ahead. The need for collaboration and networking is greater than ever before.

Let us use this opportunity to put science and mathematics at the forefront—teaching critical thinking, mathematical modeling, and scientific reasoning in relevant and real-world contexts. In a society where science is being deprioritized and even disrespected in some cases, leaders need to advocate for the interconnected approach. Leaders, teachers, and students must all grow in their ability to make sense of the world with mathematics and science.

Reflections: Stronger Together

- How will you grow your leadership skills through connections with colleagues to be a more effective support for the teachers in your system?
- What steps will you take to strengthen both your mathematics and science programs by joining with your colleagues to plan for powerful integrated instruction? Who can help you make a plan?

NCSM Leadership in Mathematics Education and the National Science Education Leadership Association (NSELA) provide needed opportunities and structures to foster growth of leadership skills. Through these professional networks and resources, members can learn about relevant and engaging mathematics and science content and instruction while they grow in their role as a leader.

Please visit the websites for resources, tools, and learning, and start networking today! [https://www.nsela.org/ https://www.mathedleadership.org/]

Tweet me @ArringtonKatey

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PUSHING THE "SAVE BUTTON"— LEADERSHIP LESSONS THAT WILL ENDURE BEYOND COVID-19

Bill Barnes

By Bill Barnes | NCSM Historian (@billjbarnes)

I HOPE THIS *INSPIRATION!* ARTICLE FINDS YOU AND YOUR LOVED ONES WELL.

Over the past year, we have all experienced a bit of a reality check as it pertains to "what really matters" in our lives. Personally, and professionally, we are experiencing the trauma and grief associated with the sudden shift to our daily routines and practices. And, yet, there have been many moments of brilliance and inspiration that have served to tighten and strengthen our community. In this article, I want to challenge mathematics leaders to reflect on the moments of brilliance and inspiration that have transformed your professional practice. Which new routines, habits, and professional practices will you push the "save button" on so that they are part of the way you work and lead in the future.

Before you begin your reflection, consider these anecdotes that describe how a few mathematics leaders have transformed their practice through these save button practices.

- Mathematics leaders in a Maryland school district have taken advantage of the weekly asynchronous learning day to expand professional learning experience for mathematics educators. The learning has focused on how to leverage mathematics teaching practices, especially the elicitation of student learning, while engaged in virtual learning. These leaders have capitalized on the opportunity to provide over 30 hours of meaningful, job-embedded learning for educators since September. This is two and a half times more professional learning than educators receive in a typical year. (Push the *save button* on virtual professional learning opportunities!)
- NCSM and NCTM were weeks away from hosting their annual conference in Chicago when the pandemic shut down our world in March, 2020. The associations were devastated by the missed opportunity to connect with and learn from its members. But both quickly pivoted and began offering virtual learning experiences that have engaged far more mathematics educators, far more frequently than is typical for a given year. Events such as ***Networking Nights with NCSM*** have exploded with popularity, selling out within hours of being announced. Kudos to NCSM and NCTM for delivering high-quality experiences to thousands of educators across North America seemingly every week. (Push the *save button* on frequent mathematics education touchpoints throughout the year!)
- Finally, I want to share my own personal *save button* moment. I provide leadership for a large division of educators in my district. Prior to COVID-19, I would connect with the various offices and programs on a rotational schedule that afforded me the opportunity to connect with each member of our division at least one time per year. Last spring, I began hosting weekly, virtual office hours for every team member. These check-ins provide me with an opportunity to connect directly with hundreds of staff to share up-to-date information from the Superintendent or Board of Education, receive feedback directly from staff including concerns or sensitive questions, and to engage in meaningful celebrations, taking time to highlight the inspirational efforts of teams or individuals. I have received dozens of emails from team members expressing their appreciation for the time to connect and feel valued. (Push the *save button* on prioritizing connection, belonging, professional family, and celebration!)

These are just a few examples that I have observed over the past 12 months. There are many, many more. I challenge you to reflect and engage your team(s) in a discussion about which professional practices will continue long after COVID-19. Which will you push the *save button* on? I encourage you to share your save button ideas using social media, the NCSM Facebook page, or by tagging #NCSMFuturespast, @mathedleadership, and @billjbarnes so that we may all benefit from the collective insights of our membership!

As always, thank you for your thoughtful leadership during these unprecedented times. And remember, it is not just about WHAT you are doing as a leader, it is also about HOW you are doing it? Take care.

NCSM ANNUAL CONFERENCE—ATLANTA, GEORGIA

MONDAY, SEPTEMBER 20–WEDNESDAY, SEPTEMBER 22, 2021

The 53rd NCSM Annual Conference at the Atlanta Marriott Marquis is a gathering of like-minded mathematics leaders with common interests and backgrounds, including teachers, coaches, supervisors, administrators, consultants, publishers, and university professors. Obviously, we each have our own reasons for attending conferences, but generally conference attendance dramatically enhances both our professional and personal development, as well as providing us the knowledge we cannot learn solely through a webinar or online. Learning at our conference will allow us to acquire new knowledge via these conference strands: (1) aspiring to bold leadership, (2) activating leadership for access and equity, (3) activating teachers as leaders, (4) activating and empowering others through mathematics coaching, and (5) amplifying mathematics leadership.

Conference goals are to meet and network with one another, exchange views, learn about the latest research from some of the biggest names in mathematics leadership, share our work challenges and successes, and discuss relevant issues. We will provide you with the opportunity to hear from a variety of speakers, and in many sessions, participants can ask presenters questions about their work and the rationale behind it—something we cannot do when reading journal articles.

These distinguished speakers will be featured throughout our three-day conference. Each will address important issues in mathematics education and leadership. Our Monday morning **keynote** presenter is ***Dr. Gloria Ladson-Billings.***

Major speakers for each day include the following:

MONDAY
- Javier Garcia
- Mary Kemper
- Peter Liljedahl
- Janice Novakowski
- Cathery Yeh

TUESDAY
- Marian Dingle
- Tim Kanold
- Mona Toncheff
- Lisa Williams

WEDNESDAY
- Marian Small
- James Tanton

This year's **Spotlight** speakers are:

- Jenny Bay-Williams
- Jo Boaler
- Lisa Brown
- Brian Buckhalter
- Gail Burrill
- Juli Dixon
- Barb Dougherty
- Mike Flynn
- Pamela Harris
- Karen Karp
- Steve Leinwand
- Christina Lincoln-Moore
- Brea Ratliff
- Susan Jo Russell
- Sunil Singh
- John Staley

We have a lineup of renowned expert speakers that will inspire us!

Enhance your NCSM conference learning experience by registering to attend one of our special Sunday afternoon pre-conference sessions for leaders.

SESSION 1: *Amplify Bold Mathematics Leaders: Coaching as a Vehicle to Influence Change*
Presented by: Georgina Rivera and Jenny Novak, NCSM Professional Learning Directors

SESSION 2: *NCSM Essential Actions for Site-based Leaders*
Presented by: Bill Barnes, Erin Lehmann, Denise Trakas, and Gwen Zimmermann

These pre-conference sessions are a great way to kick off your conference experience and take a deeper dive into our recent work and Essential Actions Series from NCSM. They will be held on Sunday, September 19, 2021, from 1–4 pm EST.

In addition to our incredible program, we will give you an experience you will not find anywhere else. You will have opportunities for networking, volunteering,

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participating in a regional caucus, enjoying meal functions and special events, meeting with our sponsors and vendors at Exhibit Breaks, and engaging in Leadership Exchanges.

As of April 1, our conference program includes a plan for social distancing. We are working with the hotel to follow local and federal guidelines. We plan on having a hybrid version of the event so if you are not able to attend in person, you will still be able to participate virtually.

Online registration is now open.

Onsite registration will be available starting on Sunday, September 19, at 2 pm at the Atlanta Marriott Marquis.

Visit our website [https://www.mathedleadership.org/pl/conference-atlanta-2021/] for the most updated information including our conference program, registration, and hotel links along with information about our special pre-conference sessions on Sunday afternoon, September 19.

Cancellation and Refund Policy

If you must cancel your conference registration, please notify the NCSM office immediately [office@mathedleadership.org]. Cancellations must be made in writing (either electronically or by mail) and must be received no later than September 8, 2021. NCSM will refund 75% of registration fees for registrations canceled by September 8.

Early Bird Rate: 2/1–5/15/2021 Regular Rate: 5/16–9/18/2021 Onsite Rate: 9/19–9/22/2021		
	Early Bird Member	**Early Bird Non-Member**
Full Conference Registration	$385.00	$495.00
1-Day Registration	$255.00	$325.00
	Regular Member	**Regular Non-Member**
Full Conference Registration	$415.00	$525.00
1-Day Registration	$285.00	$355.00
	Onsite Member	**Onsite Non-Member**
Full Conference Registration	$455.00	$565.00
1-Day Registration	$325.00	$395.00
Pre-Conference 1/2-Day Workshops	**Member**	**Non-Member**
Early Bird Rate	$125.00	$165.00
Regular Rate	$145.00	$185.00
Onsite Rate	$165.00	$205.00

By Ruth Harbin Miles | NCSM Atlanta Conference Chair and Shawn Towle | NCSM Atlanta 1st VP and Atlanta Program Chair

SHINING THE LIMELIGHT ON NCSM AFFILIATE: AMLA

By Jacob Sisson | NCSM Affiliate Coordinator (@mathspec_is)

Jacob Sisson

ONE OF THE BIGGEST INSPIRATIONS OF NCSM IS THE LEADERSHIP REFLECTED IN THE WORK OF OUR 41 AFFILIATES. Each year NCSM looks to charter new affiliates in networking together to grow as mathematics leaders. Each affiliate story is unique and empowering. This edition features one of our newest affiliates: Alabama Mathematics Leadership Alliance (AMLA).

It is always unique how initial conversations can grow into great outcomes. Representing as a Southern 2 NCSM Affiliate, AMLA began as an initial conversation among several mathematics leaders who felt a need for stronger mathematics leadership within the state. After four years of building pathways for mathematics coaches, as well as political interest growing within the state of Alabama to improve mathematics education, leaders began to research how they could come together as a professional mathematics leadership organization. Establishing themselves in November 2019, AMLA is chartering as a new NCSM affiliate currently supporting over 74 mathematics leaders.

What is the purpose of your organization?

The Alabama Mathematics Leadership Alliance (AMLA) is a leadership organization established to support, sustain, and inspire high-quality mathematics instruction. Its purpose is to:

- inspire and diversify leadership in mathematics instruction and teacher education;
- support and advance rigorous mathematics instruction aligned to research-based practices;
- promote culturally responsive pedagogy and equal access for all students to quality mathematics instruction to ensure mathematics proficiency and college and career readiness; and

continued on next page

SHINING THE LIMELIGHT ON NCSM AFFILIATE: AMLA *(continued from previous page)*

- partner with educators, families, policymakers, and other stakeholders to strengthen the state of mathematics in Alabama.

How does your affiliate support BOLD mathematics leadership?

- AMLA debuted at the 2019 A*labama Council of Teachers of Mathematics Fall Forum* and currently serves as partners with this annual state conference.
- AMLA recently provided professional growth to Alabama mathematics leaders through a book study on *Limitless Mind: Learn, Lead, and Live Without Barriers* by Jo Boaler. The book study extended to both members and non-members of the affiliate. AMLA board members each led a section of the book study engaging both members of the local mathematics community, legislators, and a member of the Alabama State Board of Education.
- *AMLA* organized a virtual summit, *Levels of Leadership: Local to National,* to discuss developing mathematics leaders at all levels. The virtual summit included speakers such as Dr. Mike Flynn and other state leaders.
- In 2019, AMLA coordinated with an Alabama state representative to hold a forum with policymakers, stakeholders, and mathematics leaders to discuss Alabama's mathematics proficiency. A state panel of mathematics leaders discussed insights regarding current practices to improve classroom mathematical discourse. Joining the discussion was a panel of national mathematics leaders (Dr. Connie Schrock, Dr. Skip Fennell, and Dr. Robert Berry) who answered questions for legislators, the Alabama Governor's office and State Department of Education.

AMLA leadership maintains a key message: "over-communicate everything you do!"

This communication has led to building relationships with stakeholders such as Alabama business partners, state board members, the Governor's office, and state legislators. When questions arose about the Alabama Mathematics Course of Study, stakeholders began to reach out with many questions. AMLA leaders shared their expertise in answering these questions with the local community by speaking publicly with the local news station. Through these experiences, AMLA has built a strong reputation and relationship as a mathematical voice among Alabama leaders, stakeholders, and the community.

What success/challenges are you building on for the future?

In building on the success of the recent mathematics forum, AMLA plans to continue having yearly forums to provide conversations and collaboration with all stakeholders to improve mathematics in the state of Alabama. AMLA maintains BOLD leadership in facing the challenges of preconceptions and misconceptions many educators have about mathematics learning. AMLA, through virtual learning opportunities, hopes to impress upon educators the value of being open to what the research tells us about effective mathematics instruction. AMLA extends an invitation to meet with other NCSM affiliates to collaborate and share ideas to improve mathematics leadership.

If you were a part of the 2021 January NCSM Networking night, you saw several NCSM affiliate groups. Among those affiliate groups was AMLA reflecting on the power of networking with other leaders.

We are grateful to have AMLA as a new NCSM Affiliate! Special thanks to Le Shell Smith (AMLA President) and Sheila Holt (AMLA National Representative) for sharing about the Alabama Mathematics Leadership Alliance. Follow AMLA on Twitter: @AlabamaMathema1

Perhaps you know of a local mathematical leadership organization that wants to become an affiliate of NCSM. Share with them the NCSM Affiliate Application Process information.

AMLA Math Forum 2019 with Alabama state panel and stakeholders

Le Shell Smith, AMLA President, speaking on WAFF News 48 Covering the Classroom

NCSM Leaders and Affiliates virtual NCSM Networking Night January 2021

LEARNINGS FROM LEADERS

As an organization of leaders, we value learning from others. We connect to the stories, the experiences, and the practices of other mathematics education leaders. In this segment, we are honored to be able to share the stories of three NCSM members.

CENTRAL 1

Jennifer D. Banks, PhD is a Consultant in Culturally Responsive Practices.

Jennifer D. Banks

MORE THAN MATHEMATICS

Learning mathematics beyond the procedure was a difficult task, particularly when I had gone through 13 years of schooling and never had to do more than show my steps. In my first year as an engineering student at a Big 10 university, I quickly realized that my understanding of mathematical concepts was limited. I knew the procedures to solve Calculus problems, but my professor wanted more than the answer. He wanted me to explain the *why*. This became a common theme in all of mathematics, science, and engineering coursework. The expectation was to explain my thinking and create models to test my thinking, question, critique, and revise.

As I navigated through this new expectation for academic success, I was also finding my way through classes where I was the only woman and/or the only person of color in the class. I knew gender bias and racism existed and had experienced some discrimination, but college is where those experiences became personal. I began to question why am I the only one? Why is it that in a class of 500 people, there are only five people of color? Why are there significantly more men than women in my engineering coursework? More importantly, why were students' mathematics placements nearly predictable based on their socioeconomic status or race? This was an eye-opening experience and has served as motivation for the work I engage in today as a leader in mathematics education.

There are two major challenges in mathematics education. The first is ensuring equitable access to high-quality mathematics instruction for all students, regardless of their race, ethnicity, nationality, or socioeconomic status. It has been over 20 years since my college experience as an undergraduate engineering student. Yet the underrepresentation of people of color and women in mathematics and STEM fields continues to persist. As a leader in mathematics education, I seek to expand all students' access to high-quality culturally responsive mathematics instruction to ensure that a student's racial, ethnic, or socio-economic background is not a predictor of their mathematics achievement. Furthermore, I want students to understand mathematics is a tool that can be used to analyze, critique, challenge, and change the world.

As a county-level mathematics consultant, I developed the Responsive Mathematics Institute, a professional learning series focused on helping mathematics educators develop culturally responsive teaching practices. Though the series was initially geared towards mathematics educators, there was a recognition that the strategies shared were applicable in all content areas. It also became apparent that the conversations and strategies shared need to take place with various stakeholders and across district lines. As a result, the series evolved to the Responsive Teaching Coalition (RTC). RTC is a network of local districts within our county that work collaboratively to redefine education by inviting school administrators, K–12 teachers, students, and the community to engage in professional learning and conversations around inequities and injustices within our educational system. The coalition consists of four components: the Responsive Teaching Institute (RTI), Responsive Leadership Institute (RLI), Youth Council, and community forums.

Scholars from across the country whose work is complementary and focuses on culturally responsive teaching practices are strategically identified to participate in the professional learning sessions. In the Responsive Teaching Institute, educators have the opportunity to work with the scholars and engage in meaningful conversations about racial literacy, dismantling opportunity gaps, and strategies for developing a culturally responsive practice within their content area. The Responsive Leadership Institute builds on this learning, helping leaders develop

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culturally responsive leadership practices and support teachers in implementing culturally responsive instructional strategies. The Youth Council provides a space for middle and high school students to engage in conversations about the impact of race and racial injustices within their school and the community at large. Similarly, the community forums allow community members and youth to engage in learning as well as voice their concerns and experiences within schools.

The second challenge in mathematics education is creating mathematics classrooms where all students feel a sense of belonging and can relate mathematics to their lives. The mathematics classroom should be a place where students are confident in their abilities as mathematicians, take risks, and persevere through challenging tasks. In my role, I partner with teachers in local districts to create student programs that expand students' view of mathematics and its application to their lives. Programs such as the National STEM League Ten80 Race Car Challenge not only expand students' opportunities but also serve as professional learning for teachers. Teachers that participate in these programs are challenged to reimagine their traditional modes of instruction. In working with students through these programs, teachers begin to recognize and value students' mathematical thinking even if it is different from their thinking.

Focusing on developing culturally responsive educators is not an easy task, but it is a worthwhile effort. The journey to becoming a culturally responsive teacher is ongoing. It is a process that requires continued reflection and adapting. The moment any educator believes they have mastered the skill, it is recognition that there is more work to be done. This work takes time, and there are no quick fixes. Like a challenging mathematics problem, educators have to persevere through the uncomfortable conversations and reflections and push through to change their practice and become better educators that serve the needs of all students.

Interview by Steven Shadel | NCSM Central 1 Regional Director

WESTERN 1

Cory Bennett is a professor of education at Idaho State University specializing in mathematics education.

Cory Bennett

WHILE I TEACH A VARIETY OF CLASSES—such as Mathematics Methods, Mathematics for Teachers, and Educational Research—a great deal of my time is spent working with, learning from, and supporting teachers, teacher leaders, and school/district leadership.

As part of my research, I am often in classrooms or working alongside coaches, curriculum specialists, and administrators trying to understand how best to support these people. Over the last several years, my work with teachers and teacher leaders in Idaho has come to the attention of schools and districts across the globe leading to experiences in wonderfully diverse international contexts. It is so much fun understanding how the challenges and successes from what we do in Idaho can be applied to international schools and how the challenges and successes from internationally diverse contexts can support learning, even in small town Idaho.

One of the best parts of my job is being able to create the work I enjoy doing. When I become curious or interested in an idea, or when I want to try to understand how to help teachers or coaches in a complex situation, or when an issue arises that I do not fully grasp, I get to figure it out as part of the job. Lastly, I get to serve great organizations like NCSM and learn how to better support the current and future leaders of mathematics education. No week is the same, there are never enough hours in the day, and I always feel like I am barely able to stay ahead. The good news is my job rarely feels like work, and I get to work with and learn from some of the best educators across the world.

Interview by Denise Trakas | NCSM Western 1 Regional Director

Learnings from Leaders continue on next page

EASTERN 1

Salvatore Catalano is an Assistant Principal of Art, Computer Science, Mathematics, and Testing.

Salvatore Catalano

ONE DAY AN OLD MAN WAS WALKING ALONG THE BEACH.

It was low tide, and the sand was littered with thousands of stranded starfish … The man knew the starfish would die if left on the beach's dry sand but he reasoned that he could not possibly help them all, so he chose to do nothing … Soon afterward, the man came upon a small child on the beach who was frantically throwing one starfish after another back into the sea. The old man stopped and asked the child, "What are you doing?"

"I'm saving the starfish," the child replied.

"Why waste your time? There are so many you can't save them all so what does it matter?" argued the man.

Without hesitation, the child picked up another starfish and tossed the starfish back into the water … "It matters to this one," the child explained.

—Adapted from The Star Thrower, by Loren Eiseley

I would like to believe this child grew up to be an educator. I take my greatest inspiration from this story, and it is why I became a teacher and then an assistant principal. I take pride in knowing that my priority is making the difference in even just one life for one student.

We are working through the largest disruption to education in modern history. It may seem easy to become overwhelmed with the challenge before us and forget that each individual student, like the starfish, depends on us.

Today, the most important issue we must address is how to help each individual student excel in this new learning environment. The first step is to look at this pandemic as an opportunity to make the changes we have always believed were necessary. For example, we can move towards increasing short written responses through a 3–2–1 protocol or "Daily Take-Away," or we can implement more project-based learning.

As leaders of the mathematical community, we can take this time to create new norms with our teachers and redirect them to new methodologies that embrace those same platforms that have been thrust upon us. Whether we return to our classrooms next month, next term, or next year, we must continue to use, adapt, and evolve these norms. The difficulties of the last year have paved the way to digital curricula and online resources we always read about but never implemented.

If I have one piece of advice to aspiring mathematics leaders, it would be to take this time in your community as an opportunity to bring a fresh take to old norms. Work through the technical difficulties and always keep in mind that behind each one of those video screens is a starfish who is looking to you, who needs your help to keep them swimming in the great big sea.

Interview by Cathy Boutin | NCSM Eastern 1 Regional Director

TECHNOLOGY COUNTS

5 WAYS TO LISTEN TO YOUR FAVORITE NCSM PODCASTS

Charlene Chausis

By Charlene Chausis | NCSM Technology Liaison (@cchausis)

LAST DECEMBER NCSM RESUMED PUBLISHING A MONTHLY PODCAST

featuring bold leadership conversations with presenters from the NCSM *Bold Leadership Summit* in April 2021. Podcasts, which originated in the early 2000s, consists of Internet-hosted channels (content producers) and episodes (periodic series of audio and/or video files) that listeners can play, or choose to subscribe to, like an audio magazine. Once you subscribe, the next time you revisit a channel, the latest episodes are ready for your listening pleasure. NCSM first began publishing podcasts in 2007 to share recorded presentations from the 39th annual conference in Atlanta, Georgia.

continued on next page

As of December 2020, Apple *Podcasts* now reportedly hosts 1.68 million channels with more than 41.9 million episodes.[1] According to *The Infinite Dial 2020,* 75% of people in the U.S. are familiar with the concept of podcasting. However, if you are a bit confused about how best to listen to a podcast, here are several ways to tune in.

Listen on your Smartphone. The phone in your pocket is probably the most convenient way to tune into your favorite podcast, though, you'll need an app for that. Podcast listening apps allow listeners to stream or play content from the Internet or download episodes for later listening if an Internet connection is not available. Most apps provide a selection of suggested podcasts to listen to, whether called featured, popular, trending, or new and noteworthy. Many apps also allow users to control playback speed. So, if you are in a hurry, you can listen to a podcast episode in a fraction of the time.

If you've got an iPhone, Apple includes a podcast app on your home screen. Look for the app named *Podcasts* or swipe down the middle of your home screen to search for it. The Apple *Podcasts* app allows you to search the directory for podcasts and tap to subscribe to your favorite channel. Then, anytime you want to listen, open the app to play your favorite episodes.

Android users have the *Google Podcasts* app built in, which permits listeners to customize their listening experience at faster playback speeds, and also keeps track of listening history, downloads, and subscriptions. The *Google Podcasts* app is also available for iPhone users.

Another popular listening app for both Smartphone platforms is Spotify, which allows listeners to tune into their favorite podcasts, as well as listen to millions of songs**.** To explore additional free or paid podcast apps, visit https://www.podcastinsights.com/best-podcast-apps/.

Listen on your tablet. Similar to your smartphone, the same apps are available on most tablets (e.g., iPad, Fire, Samsung). Remember though, if your tablet does not have a cellular plan, and you haven't downloaded the episodes ahead of time, a wi-fi connection will be required for listening.

Listen in your car. A common car feature is an "aux in" or a "line in" port that looks like a headphone jack, letting you to play your phone's sound output through your car stereo speakers. However, most modern cars let you use your phone for hands-free calling via a Bluetooth connection, and this same connection can play audio from your phone. If your car was built after 2014, your car may have *Apple CarPlay* or *Android Auto* installed in its system making it easier for you to interact with your phone's apps using a screen in your car dashboard.

Listen on a Smart speaker. If you have an Apple HomePod, Google Home, or Amazon Echo, you can ask your virtual assistant (e.g., Siri, Google, Alexa) to play your favorite podcast. For the Amazon Echo you will first need to link to the music service: open the Alexa app on your phone or tablet, then tap the "More" icon in the bottom toolbar and go to "Settings > Music & Podcasts > Link New Service." Finally, tap the "Enable to Use" button, and you will be prompted to sign into the service to link your account with Amazon.

Listen on your computer. Finally, perhaps the easiest and most obvious way to listen to a podcast is to play it directly through your computer. Apple includes the stand-alone *Podcasts* app on the Mac, or you can visit the links in your web browser to listen to your favorite podcasts at Spotify.com, podcasts.apple.com, Stitcher.com or podcasts.google.com. Once you navigate to the podcast page, look for the play button, and listen.

Whatever way you decide to listen, one benefit of subscribing is that the service keeps track of the episodes you have listened to so you can begin in one place, and resume in another. Be sure to subscribe to NCSM's *"Learning with Leaders: The Bold Mathematics Leadership"* podcast channel. New episodes are published on the 11th of each month. Please share the podcast with others, post about it on social media tagging @mathedleaders and #NCSMbold, and leave a rating and review!

[1] https://www.thepodcasthost.com/listening/podcast-industry-stats/#How_Many_Podcast_Episodes_Exist

NCSM MISSION STATEMENT

NCSM is a mathematics education leadership organization that equips and empowers a diverse education community to engage in leadership that supports, sustains, and inspires high-quality mathematics teaching and learning every day for each and every learner.

NCSM VISION STATEMENT

NCSM is the premiere mathematics education leadership organization. Our bold leadership in the mathematics education community develops vision, ensures support, and guarantees that all students engage in equitable, high-quality mathematical experiences that lead to powerful, flexible uses of mathematical understanding to affect their lives and to improve the world.

High-quality leadership is vital to this vision. NCSM is committed to:

Developing and Informing Vision

- Provide leadership to influence issues and policies affecting mathematics education in ways consistent with the mission and vision of NCSM;
- Equip leaders to be critical consumers of educational information, research, and policy to become change agents in their communities;
- Support leaders to develop an actionable vision of mathematics instruction consistent with a view of mathematics as a sense-making endeavor.

Ensuring Support to All Stakeholders

- Develop networking and communication opportunities that connect the mathematics education community, as well as the broader education community;
- Equip leaders with the tools to create and sustain systems that fully align with the vision of mathematics and mathematics instruction promoted by NCSM;
- Equip leaders with the understanding, knowledge, and skills to continue their own personal growth, support emerging leaders, and further develop excellence in mathematics teaching.

Guaranteeing All Students Engage in Equitable, High-Quality Mathematical Experiences

- Provide advocacy and support regarding issues and policies affecting mathematics education in ways consistent with the mission and vision of NCSM;
- Provide resources for implementation of research-informed instruction to ensure students engage in relevant and meaningful learning experiences that promote mathematics as a sense-making endeavor;
- Advocate for each and every student to have access to rigorous mathematics that develops their understanding, skills, and knowledge, along with the confidence to leverage their learning, in order to improve their world.

ABOUT YOUR NCSM *INSPIRATION!*

The purpose of your NCSM *Inspiration!* is to advance the mission and vision of NCSM by informing the membership of the on-going activities of NCSM, by providing up-to-date information about issues, trends, programs, policy, and practice in mathematics education, and by promoting networking and collaboration among NCSM members and other stakeholders in the education community. *Inspiration!* is published electronically four times a year—fall, winter, spring, and summer—and is available to NCSM members only via the NCSM Website, as a benefit of your NCSM membership.

Gwen Zimmermann
NCSM *Inspiration!*
Editor

Inspiration! seeks articles on issues of interest to mathematics educators, especially K–12 classroom teacher leaders. All readers are encouraged to contribute articles.

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