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The Mo(ve)ment to Prioritize Antiracist Mathematics: Planning for This and Every School Year

A Position of
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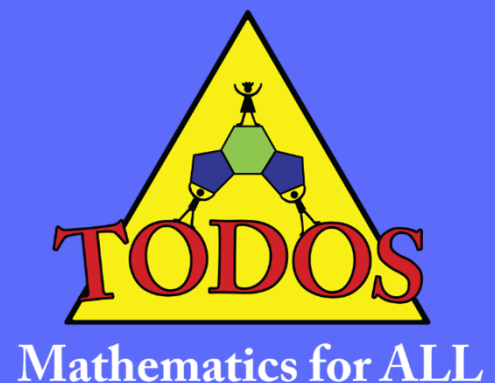


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Use and Design of Technologies
for Teaching Mathematics**



February 2021

Dear Colleague,

TODOS: Mathematics for ALL is proud of its almost two decades of advocacy for equity and excellence for all children in mathematics education, specifically Latina/o children. Over the years, TODOS has delivered webinars, podcasts, blogs, conferences, and resources for educators, families, and children to address and provide tools to eliminate the harmful practices too many children and families experience in school and in life. This position statement, *The Mo(ve)ment to Prioritize Antiracist Mathematics: Planning for This and Every School Year*, and supporting commentaries, including one commentary in Spanish - place the essential actions of the 2016 NCSM - TODOS joint social justice position statement, *Mathematics Education Through the Lens of Social Justice: Acknowledgment, Actions, and Accountability*, into new contexts as a response to our nation's inequities and injustices made visible by COVID-19 and the tragic murders of George Floyd, Brianna Taylor, and other unarmed Black and Brown citizens. No longer could a focus on curriculum, assessment, and instruction alone be enough for children to survive in today's world. It was time to step up, find strength, move beyond hurt, fear, and usual conversations to take leadership in the fight for antiracism.

I am immensely grateful to the writing team for pouring their hearts and souls into this project without hesitation. What began as a conversation of, "We have to do something to support educators and parents with school closures, distance learning, and school re-openings" turned into this document, one position paper, and four commentaries. Additionally, I would like to extend gratitude to the many reviewers who provided critical suggestions at various stages of each draft—finally, many thanks to the outstanding TODOS Board for their support throughout and for granting final approval.

There are many ways to join the mo(ve)ment to prioritize antiracism in mathematics education. Some will start by building self-knowledge, individually or in collaboration with others, before taking leadership with colleagues and families. Others may already be in leadership roles within professional work or civic organizations. TODOS strongly encourages this work's influence on new vision statements, classroom practice, school environment, wellness of educators, families, students, professional learning ideas, and after school and summer programs. The goal is action and transformation in how to do school in better ways.

Best regards,

Linda M. Fulmore, President
TODOS: Mathematics For ALL
(2020-2022)



The Mo(ve)ment to Prioritize Antiracist Mathematics: Planning for This and Every School Year

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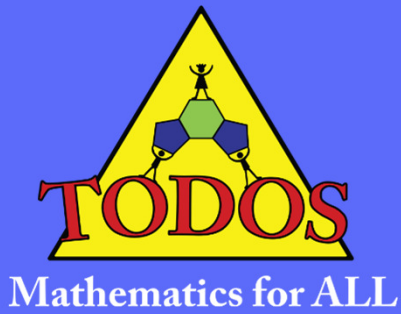
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The mission of *TODOS: Mathematics for All* is to advocate for equity and high quality mathematics education for all students — in particular, Latina/o students.

**The
Mo(ve)ment
to Prioritize
Antiracist
Mathematics:
Planning for
This and
Every School
Year**

Eva Hernandez | Grade 4 | The Streets of a City
Forest Hill Elementary School | Campbell Union School District



There are only two choices: racist or anti-racist.”
-Ibram X. Kendi

Our Current Mo(ve)ment

Dubbed "crisis teaching," "distance learning," "emergency instruction," we have come to know the last few months of the 2019 to 2020 school year by many names. The current health pandemic has brought new equity considerations to the fore, such as lack of access to online learning, challenges to teaching multilingual/EL students online, and the sudden halt of services usually provided by individual education plans. However, it has most successfully brought entrenched inequities that existed prior to the school closures into sharp focus. Wealthy families were more prepared and more protected under shelter-in-place orders, while low-income families, mostly Black, Indigenous, and People of Color (BIPOC), continue to risk their lives as essential workers whose jobs cannot be completed from home¹. Without access to necessary services provided through schools, some parents of students with IEPs saw their child's education suddenly halt, while teachers of these students dealt with the pain of the sudden loss of in-person connections with their students. The mental and physical burden of the COVID-19 pandemic has landed on the communities who were most in need of resources prior to the pandemic.

We began writing our position statement in response to concerns about the lack of attention to equity considerations that we saw as schools prepared for long-term closures. However, we found we could not respond to the current health pandemic of COVID-19 without also considering its predecessor: racism (Kendi, 2020). As we write this statement, hoping to reflect and prepare for the next school year, we are in pain and angered by the continued racial violence, the murder of Black and brown people by police, and the continued state-sanctioned violence against protesters. We are mathematics educators. We cannot look away or claim a privileged stance because we might prefer to believe mathematics is a culturally or politically neutral subject². All levels of teaching mathematics are imbued with the same racism and violence that permeates all schooling. To quote our TODOS President Linda Fulmore, in [her message from June 2, 2020](#), "We can no longer believe that a focus on curriculum, instruction, and assessment alone will be enough to prepare our children for survival in the world. We need antiracist conversations for ourselves and for our children."

In light of reverberations through the education world due to the myriad of issues spurred on by the twin pandemics of racism and COVID-19, we reassert our guiding principles and pledge ourselves anew to social justice in mathematics education. Our position is to prioritize antiracist mathematics education for all students as we prepare to return to school this fall and the years to come. An antiracist position in mathematics education is a pledge to dismantle systems and structures that maintain racism within teaching and learning mathematics from challenging belief systems that perpetuate microaggressions to disrupting the role mathematics classes play in pushing students out of schooling. We pledge to more thoroughly develop and lead the way with frameworks for antiracist mathematics classrooms.

¹ In this paper we use Black, Indigenous, and People of Color or BIPOC, which helps reframe racism from a black-white binary to include acknowledging native-invisibility and anti-blackness as key tenets of white supremacy. For more on this term, see <https://www.thebipocproject.org/>

² For a more in depth discussion on the cultural and political aspects of mathematics see our TODOS blog on ethnomathematics: https://www.todos-math.org/index.php?option=com_dailyplanetblog&view=entry&year=2019&month=05&day=22&id=11:ethnomathematics-mathematics-de-todos

Recommitting to Our Essential Actions

In 2016, TODOS [authored a joint position statement with NCSM](#) in which we outlined the meaning of and need for a commitment to social justice in mathematics education. At the time, we could not have foreseen the crisis brought on by the current pandemic and the concurrent civic action around our country's deep racial wounds. While the former's large-scale dangers necessitate distance and isolation, the individual and moral tragedy of the latter implore immediate and collective action. In the sections below, we revisit our 4 Essential Actions and filter them through our current moment to guide as schools prepare for the 2020-2021 school year.

1. Eliminating deficit views of mathematics learning

Following school closure due to COVID-19, we have noted a resurgence of deficit views of students when they are described as "behind" or "unable to catch up since they missed so much school." We believe this description of students is harmful. It frames students as individually responsible for a loss of learning and detracts from the broader issues of students and families surviving through a pandemic. Mathematics learning is a messy web of interconnected concepts. So we assert that instead of being distracted by framing students as lacking skills, we use the fall to start anew from an asset-based perspective. We urge policymakers, school district administrators, teachers, curriculum developers, and software developers to avoid playing into the fear-inciting discourses of students falling behind and ranking them by perceived ability.

To take it a step further, in this moment we must rethink what counts as valid mathematical knowledge. Bettina Love (2019) describes schools as sites of pain and violence for Black and brown students, which she calls *dark suffering*: "To understand schools as sites of dark suffering is to understand how antidarkness works in the day-to-day lives of both dark and White children" (p. 15). We are complicit in dark suffering in our mathematics classroom in many ways. Ignoring racism, making excuses for why we aren't expecting some students to be good at mathematics, and treating BIPOC children as devoid of knowledge that is valuable for learning mathematics are examples of complicity. If we truly believe that we are moving towards assets-based views of students, we must expand our understanding of what it means to be good at mathematics, make space for alternative ways of knowing and doing mathematics based in the community, and acknowledge the brilliance, both in mathematics and beyond, of BIPOC in our classrooms. We must be explicitly antiracist.

2. Eradicating mathematics as gatekeeper

Teachers have long lamented the variability of skills students bring to the classroom, which reinforced a narrative that what is most important is what students do not know versus what they do. We have noted genuine concern from teachers who are worried that due to the interrupted education caused by schools shutting down that their most vulnerable students are not ready to learn new concepts or advance to particular mathematics classes (e.g., do not know their math facts, are not ready for calculus). However, we reassert a position that we have held for quite some time, which is that systems that sort students on perceptions of "mathematical readiness" contain hidden racial and ability biases. There is a difference between assessment systems designed to provide teachers with information on how to work from students' understanding of new mathematical ideas, and assessment systems used to sort students based on perceived readiness. The latter has no place in mathematics education.

We have to break from the notion that learning mathematics must be a linear and procedural endeavor mastered through rote practice and memorization. Instead, we must recognize and emphasize that interconnected concepts lead to stronger foundations in mathematics and stronger personal and mathematical identities.

Leadership can prioritize supporting teachers to draw on the knowledge of students to develop key mathematical ideas. Some of the powerful schemas students bring to understanding school mathematics are not from school but from their lived experiences, which can serve as anchors into formal school mathematics (Gonzalez, Andrade, Civil & Moll, 2001).

Similar to our argument about eliminating deficit views of students through assets-based perspectives, we again assert that the gatekeeping nature of mathematics must be eradicated. We see progress towards this when schools are detracked, when college-credit earning courses such as AP and IB are open to all high school students who choose to enroll, and when prerequisite courses are no longer required for undergraduate students to access college-level mathematics courses.

3. Engaging the sociopolitical turn of mathematics education

Instead of shying away from the political nature of mathematics and mathematics education, we instead assert a need to understand their dynamic, political, historical, relational, and cultural interplay (Gutiérrez, 2013). We committed ourselves to this understanding of the sociopolitical turn in mathematics education in our 2016 statement; however, we revisit it through a foundation of antiracism now. We cannot say teaching mathematics in an antiracist classroom is too much to expect of ourselves. The protests in the streets are a call to engage the sociopolitical turn in all aspects of education, including mathematics. We must stay committed to the role that mathematics teaching and learning plays in our current Black Lives Matter mo(ve)ment and an antiracist society.

In part, we call on leaders in mathematics education to rethink collective action. We have to reimagine the role of parents working with teachers and school systems. We have to reimagine how our organizations work with and in school districts. In many ways, the current pandemic has opened up the space for new collaborations. As parents, teachers, and researchers, we have witnessed the deep commitment of parents to their children's education during this crisis as well as before. This is our moment to bring families and schools to new levels of collaboration by explicitly including parents in policy decisions as well as teaching mathematics.

4. Elevating the professional learning of mathematics teachers and leaders with a dual focus on mathematics and social justice

It is our position that professionalization of teachers means humanizing them: they are complex, multi-issue people who care deeply about students and who are capable of engaging with deep work to serve their communities. However, teachers are often both systematically denied autonomy over their own instructional decisions and lack resources to ensure powerful learning happens in their classrooms. This form of deprofessionalization of teachers may be why many teachers think that implementing a curriculum is their primary responsibility. This is a reasonable response to a system that evaluates teacher effectiveness by testing student retention of content, rather than students' confidence with the subject, agency development, or relationship with their teacher. We call on all levels of leadership to support teachers as professionals and provide them with the resources to be antiracist mathematics teachers.

We originally asserted a *dual* commitment to mathematics *and* social justice. TODOS has worked to provide increased access to professional development focused on social justice leadership and teaching, as well as made resources available for members and non-members alike (e.g., video recordings of recent sessions of [TODOS Live](#)).

Frequently it is the labor of BIPOC (teachers and parents) that drives the initial professional development around social justice issues, but follow-through is often not prioritized by administrators and district leadership. This could be because some underlying theories of how one learns to teach and how one should teach are not compatible with social justice frameworks or because many leaders of professional development in mathematics are not themselves fluent in the language of antiracism. For example, many mathematics teachers newly open to taking up teaching for social justice are rushing to try curriculum in their classroom where the students look at racialized violence through a mathematical lens (e.g., activities in [Rethinking Mathematics](#) or [High School Mathematics Lessons to Explore, Understand and Respond to Social Injustice](#)). Mathematics lessons that focus on understanding social and racial injustices are an important piece of the broader struggle for justice. However, if we as teachers simply take an activity and implement it in our classrooms without first doing the self-reflective work to understand how we all are impacted by racial trauma, then we may not be able to engage with the lesson in ways that are positively impactful for students. It takes time to do the hard self-reflective work of understanding how we are all impacted by racial trauma and then take steps to heal from it (Menakem, 2014) – time that our communities need mathematics teachers to take.

Preparing for the Unknown: Four Areas to Weave Together in Mathematics Education

Although we do not know what will happen in the months to come in terms of both the COVID-19 pandemic and global racial trauma, TODOS remains committed to social justice for all students. While we cannot solve all the issues in our schooling system, we can understand how mathematics education plays a role in exacerbating or solving those problems. We can accept our responsibilities to acknowledge the disparities, act, and hold ourselves and each other accountable. In a recent panel, teacher Marylin Zuniga captured a lasting sentiment reflective of our twin pandemics: "You have to make sure that your priorities are with the liberation of Black and brown children."³ In our work as mathematics educators, how do we show every day that our priorities lay with the liberation of Black and brown children?

We have more to say that speaks to the urgency of preparing for distance and hybrid learning this fall. Four key areas appear to us to be most in need of attention as we prepare for mathematics teaching in the coming school year:

- Prioritizing meeting the social and emotional needs of students in mathematics classrooms in light of the historical moment they are living through
- Careful consideration of when and how to assess mathematical knowledge in ways that account for social and emotional needs of students

³ Transcribed from Education for Liberation Network's webinar *Repurposing Our Pedagogies*, streamed live on June 2, 2020, retrieved from <https://youtu.be/39A0qBGb7WM>

- Radically restructuring the parent-school relationship to position parents as central to student learning when schools are closed as well as when they re-open
- Access, evaluation, and design of technology for distance and hybrid learning that accounts for differences in internet access across communities, among other considerations



Picture above: Four Key Areas to Weave Together in Mathematics Education

Shortly, TODOS will release four additional commentaries on these key areas for consideration as we prepare for the 2020-2021 school year. We hope the acknowledgments, recommended actions, and accountability steps will inspire *ánima* in all of us doing the necessary work for lasting change.

In Solidarity,

The Leadership of TODOS Mathematics for All

Sources:

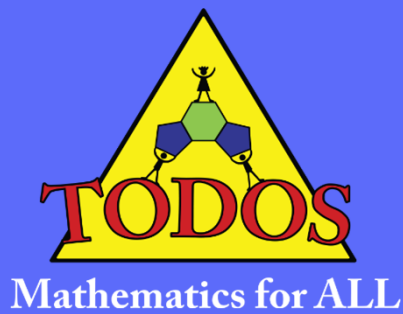
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Menakem, R. (2014). *My Grandmother's Hands: Racialized Trauma and the Pathway to Mending Our Hearts and Bodies*. Central Recovery Press.



The mission of *TODOS: Mathematics for All* is to advocate for equity and high quality mathematics education for all students — in particular, Latina/o students.



Penelope Tai | Grade 1 | Three of Us
Blossom Hill Elementary School | Los Gatos Union School District

Black, Indigenous, and Latinx Parents as Partners in Mathematics Education

Abstract

In this follow up commentary to our position statement, we address the radical restructuring of school-parent relationships. It is well known that parental involvement in schooling is essential for student success, yet in mathematics education, we do not fully **acknowledge** the knowledge Black, Indigenous, and/or Latinx parents bring to their children's schools. In this paper, we first acknowledge that centering on Black, Indigenous, and Latinx parents is a necessary pathway forward into mathematics education during our current COVID-19 crisis and beyond. We suggest **actions** for school leaders, teachers, and parents to take to make a new partnership a reality. Finally, we describe **accountability** measures to ensure that Black, Indigenous, and Latinx parents are brought from the margins to the center in mathematics education policies and pedagogy.

Acknowledging the Need to Redesign Parental Engagement

The COVID-19 pandemic illuminated the inequities that afflict our education systems, particularly for low-income students and students of color. “Teacher” (and librarian, PE coach, etc.) was suddenly added to the list of parental¹ roles. Suddenly schools, which are still held in our country’s ideal as the equalizing places in our American democracy, were not the center of education, community, and social services that they usually are.

We acknowledge that school systems across the country were differently prepared to continue some form of remote crisis teaching² when most of the country moved to shelter-in-place, and that the differences were largely based on the economic situation of the school districts. But we also acknowledge that parents, teachers, and school leaders working together is another formula for weathering violent transitions such as the ones we all faced in March.

Therefore, we acknowledge that the twin pandemics of COVID-19 and racism have exacerbated a need to rethink the relationships of parents to systems of schooling entirely. Teachers do not spend the time that parents do with their own children, in particular now that schools are in distance-learning and hybrid modes. We also acknowledge that this decrease in formal school time has resulted in frustration for some parents, who found that supporting their children to learn mathematics at home was perhaps most particularly challenging of all the content areas.

We also acknowledge that due to patriarchy embedded in our society, mothers or mother-figures, in particular, have taken on most of the burden of constantly being available to their children. This resonates with us viscerally as most of us working on this commentary are mothers. We also acknowledge that Black, Indigenous, Latinx, or families from other economically and educationally oppressed communities may be saying at this moment, “We don’t have time for math. We are trying to survive over here.” We know that all parents fully support their children’s education, yet Black, Indigenous, and Latinx parents disproportionately face barriers to participate as much as they might like.

¹ In this paper we use the word “parent” to mean any and all individuals who are responsible for the care of children, whether the relationship is formal or informal. We recognize there are a variety of ways to parent children, whether or not such relationships are recognized legally.

² More on remote crisis teaching as terminology: <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>

Finally, we acknowledge that parental involvement in school is often depicted as a one-way street, with parents positioned as recipients of knowledge to support children at home to do better at school. Where parents do advocate for their own children, such as attempts to disrupt the school to prison nexus, they may be labeled as troublemakers. Programs on family engagement are often isolated from district initiatives. Staff leading these programs often work in a silo, not in collaboration with other district or



“Shopping with Mama” by Alejandro, age 5

school departments. And in the absence of such infrastructure, educators struggle with building authentic partnerships with parents, guardians, or caregivers, beyond tracking the number of participants attending events. Jaynes (2013) found that programs that ‘fostered increased communication between parents and teachers’ were one of four types of parental involvement models that had statistically significant or positive effects on student outcomes. This research, in part, shows that parents were key in pre-COVID 19 schooling and their meaningful

involvement will play a larger role in their children's education (younger children, in particular) during school closures and within hybrid learning structures.

Actions: Towards Genuine Partnerships with Parents

While we acknowledge that the larger system of schooling is in need of an overhaul in terms of families and school relationships, we will focus our recommendations on those we see as most impactful to the teaching and learning of mathematics. Given the acknowledgments of our current moment above, our overarching action is reshaping the relationship between school and home. We suggest the following actions:

Actions for Educational Leaders

Cultivate Trust, Respect, and Transparency

In the past, *communication* has always been a key factor in bringing teachers and parents together (Westmoreland, Rosenberg, López, & Weiss, 2009). Today, we might say *transparency* is a key factor in parents' understanding of what goes on at school, as well as engagement of parents and families in policy decisions.

In particular, in the context of mathematics, appeals to the culture-free nature of mathematics and its supposed superiority to other ways of knowing can aid in maintaining a system of power in which only school officials (like teachers and administrators) are seen as experts.



“Mi Familia” by Nico, age 7

Often, those school officials are white, serving schools with large populations of Black, Indigenous, and other People of Color who have systematically been excluded from high levels of mathematics. The intersections of these two issues of the assumed neutrality of mathematics and the prevalence of racism cannot be ignored as we move forward in the unknown of the 2020 school year. We will not solve this issue right now. It is bigger than mathematics education itself. We urge all educational leaders and teachers to prioritize doing the self-work of understanding how we are complicit in a system of oppression named schooling, and what our roles are in dismantling and rebuilding this system³, and ultimately moving towards healing deep wounds. This work must be undertaken with parents as partners and parents from historically marginalized groups in particular. A step in this process is valuing the home mathematical practices of parents, in particular BIPOC parents, and finding ways to bridge from home experiences to school knowledge, and not vice versa (see our list of resources for this at the end of the commentary).

Provide Parents and Schools with Resources

Provide resources and support to families during and after school disruption, especially in mathematics, which often show the steepest losses over summer and time outside of school (Quinn & Polikoff, 2017). Resources should include materials, such as the devices mentioned in our opening section, as well as support directed specifically at parents.

Integrate family engagement with each district's learning goals by creating a district-level family engagement team to work with families with explicit attention to mathematics. Promising practices have emphasized the critical role that districts play in efforts to engage families (Westmoreland, Rosenberg, López, & Weiss, 2009), including creating infrastructure for district-wide leadership for family engagement, in particular through allocation of Title I funds, which could involve parent leadership institutes, professional development for supporting family engagement, and accountability measures to evaluate the effectiveness of involving families that reflect the demographics of the school district.

However, few district engagement models focus explicitly on mathematics education, particularly with families from communities of color, especially in ways that position parents from marginalized communities as intellectual resources for teaching mathematics (Civil & Menéndez, 2010; Ishimaru, Barajas-López, & Bang, 2016). One such model is the work of the *Math and Parent Parents* project (MAPPs). Latinx parents were repositioned as resources for mathematics learning, while also developing understanding and navigating the academic mathematics privileged in schools. Programs like MAPPs could lead to families and district/school-level teams working cohesively to plan, implement, evaluate, and continuously improve student outcomes while transforming the culture of whose mathematical knowledge counts within school settings.

³ This reflection from *Embracing Equity* is geared towards white people who are newer to ideas of dismantling systems of oppression
<https://embracingequity.org/blog/2018/11/2/let-us-work-together-the-role-of-white-co-conspirators-in-dismantling-systemic-racism>

Actions for Classroom Teachers

Invite Parents into the Teaching and Learning Process

Given our current expectation of online and hybrid classes, schools might focus on developing an online learning culture leveraging school/home connections that support mathematics identity and agency for students and parents. Research on Latinx parents visiting classrooms suggests that observations and debriefs of classroom visits were one-way parents were able to both reflect on ways to support their students, and develop leadership in mathematics education (Civil & Menéndez, 2012). One way to do this might be to invite parents to sit-in on live online classes regularly or invite them to make videos to share with your classes on relevant topics. Platforms like Slack, WhatsApp, Microsoft TEAMS, and Google Classroom have ways to keep ongoing chats between parents and teachers on topics related to all kinds of mathematical concepts, without requiring membership to online social media, such as Facebook. However, to use such platforms, school districts will need to clarify the privacy issues that may be associated with posting to these formats. The [Julia Robinson Mathematics Festivals](#) that had to move online might also be a model for how to engage the whole family during mathematics instructional time, in ways that build community and utilize virtual spaces for moving between mathematics games and tasks.

Black, Indigenous, and Latinx parents have a lot to offer classrooms; however, they are not always asked to join and be a part of the instruction. Ishimaru, Barajas-López, and Bang (2015) has argued for the involvement of parents from nondominant groups in schooling not as passive recipients of knowledge, but as "expert collaborators and fellow leaders." (p. 14). We also argue that this year of distance and hybrid learning is a chance to restructure assessment and involve parents in assessing aspects of the learning of mathematics, such as students' attitudes towards mathematics, access to materials in the home, and engagement in out-of-school mathematical practices. For more on involving parents in assessment, see our assessment commentary paper [Student and Family-Centered Mathematics Assessment](#). Online and hybrid teaching models may open new opportunities for parents to participate in schooling because of the online nature; however, this cannot be expected as absolute. Schools must lead by reaching out and making space for parents to share their knowledge as well as their hopes, needs, and desires for their children.

Organize with Parents

In some schools, there are formal structures for teachers and parents to build community together and work towards common goals. Parent-Teacher Unions (PTUs) are one such example, as well as Parent-Teacher Associations (PTAs). While umbrella organizations like PTUs and PTAs have their own equity issues (for example, barriers to participation from parents who work during meeting times, or lack of translation services), they can also serve as starting point for parent organizing with teacher's support.

In addition, teachers can seek genuine partnerships with the Black, Indigenous, and Latinx parents in their communities around social justice issues. Melissa Adams-Corral wrote about how, when she was a teacher, she started family meetings with her mostly Latinx parents to make space for community building between parents, and to have space to talk about how their children's (her students') mathematics learning was

progressing. Over time, the parent-teacher meeting space began a tool for organizing against a policy that disproportionately negatively impacted their children: tracking in middle school mathematics classes. ([You can read her full article in Medium here](#)).

Actions for Black, Indigenous and Latinx Parents

Here we would like to speak directly parents-to-parents, especially our parents from marginalized communities, our BIPOC and Latinx parents who are frustrated with a school system that does not reflect their lived realities, and who have experienced frustration with math themselves.



"African Savanna" by Olive, age 12

Trust Yourself

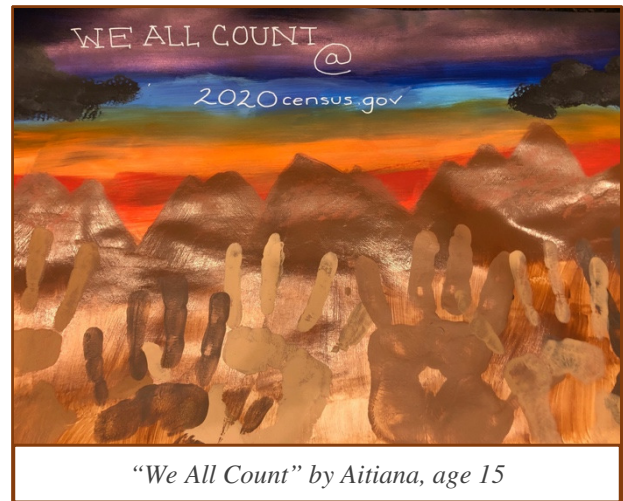
We (the parent-authors of this paper) are struck by how quickly we can doubt ourselves when faced with an issue that impacts our child in school, rather than issues we face in our jobs as educators and teachers. The love and the nature of the relationship between parents and their kids are unique. Thus, we must trust ourselves. Many of us are dealing with our own trauma from past mathematics experiences, including teachers who dehumanized us (e.g., who made us feel small). We might think we do not know mathematics at all.

Granted, there are some ways of teaching mathematics that we might not have experienced as students. However, we parents still know a lot. We have all the ways we learned to do mathematics and the ways we have created as part of our lives. We can help our children develop a love of and curiosity for mathematics. We can genuinely say, "I don't know, let's figure it out" when faced with mathematics we have not thought about in years. We can model problem-solving every day. It is time to re-write our mathematical stories and build the agency and positive identities of our children (Adams, 2018).

Organize and Advocate as a Community

We can also advocate for and organize among ourselves. We do not need to wait for the school to start conversations among us. We can virtually and safely in this time of social distancing meet and talk about our concerns, questions, strategies for supporting mathematical learning, and our needs. We can make a network of support for each other. In schools where there is a lot of economic, linguistic, and racial diversity, equity issues will certainly come up. However, mathematics can be a tool for connecting. Parents can connect and organize around their strengths in learning and teaching mathematics (see, for example, Caspe & López, 2018, on engaging families in STEM learning), and similar experiences with frustration or love of mathematics. Like any community, a parent community will take time, effort, failures, and successes to cultivate. We have a lot to gain by starting conversations among ourselves, especially given the isolation that many parents felt when schools suddenly closed this past spring. We can build the connections we need now so that our community is intact as we get further into a school year with many unknowns.

We encourage each and every parent to cultivate trust in themselves to engage in mathematical thinking and model for their children how to be curious about mathematics to help shift the culture of doing mathematics towards one that values all of us and the ways we think, versus solely memorized procedures done quickly and accurately. And we encourage parents to enter into a dialog with teachers, to ensure that teachers and administrators do their part to value the mathematics that parents from marginalized communities *do* know, and not pit home mathematical practices against school mathematical practices. Rather, the goal is to cultivate mutual understanding and respect for multiple methods of engaging with mathematics.



Accountability to Families and Communities

We call on school site administrators, district offices, and county offices of education to bring the stakeholders to the table and make the infrastructure for what you would like to see. We have to include the voices of parents and students in making these new systems a reality. Yes, families need information from the school; however, often, this is where it stops. Rather than a one-way flow of information, we should take up the two-way flow of trust and transparency. Families must be at the table. The San Francisco Bay Area PLAN *Transformative Family Engagement Standards* can be the start of how family involvement is evaluated (see link in the parent organizing resources section).

We also call on school districts to prioritize funding of full-time parent-family coordinators, who are of and from the communities served by the school, and who can support the connection between teachers, administrators, and students. Budgets are social contracts. When a family coordinator position is budgeted, the school benefits.

Who holds leadership accountable? The students, parents, and the larger community. In the same way that families must be a more integral part of the fabric of schooling right now, community members should take ownership of their local schools and hold the elected officials in positions of power accountable for the school they would like to see in their community (e.g., school board members in some places, mayors who appoint school board members, etc.).

We also need to have accountability for ourselves, particularly families who hold disproportionate privilege in our school system. We urge all parents and caregivers to consider their position to enact change in this system and lead an antiracist charge that would include the radical rebuilding of school and family partnerships. The necessary steps to changing school cultures should not fall on the backs of communities of color; rather, we must all be accountable.

Thank you to the children who shared their art with us, and their parents for supporting them to share.

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Resources Particularly for Parents and Parent Organizers

Parent Organizing/Power of Parent Knowledge

Global Family Research Project: Research papers and Resources on engaging with parents and families
<https://globalfrp.org/>

Lessons from Families with Power/Familias con Poder

<https://www.tolerance.org/magazine/fall-2009/learning-to-roar>

A shortlist of lessons from teachers learning to organize with parents:

<https://www.tolerance.org/professional-development/grassroots-parent-organizing>

Parent Organizing/Power of Parent Knowledge (continued)

Once I'm Comfortable, No One Can Shut Me Up!": Building Community and Agency with Family Meetings. By Melissa Adams-Corral

<https://medium.com/@heinemann/once-im-comfortable-no-one-can-shut-me-up-building-community-and-agency-with-family-meetings-9c63eac6aad4>

San Francisco Bay Area PLAN has family engagement standards to help parents and school districts organize and hold themselves accountable to family engagement

<https://www.bayareaplan.org/our-work/transformative-family-engagement-standards/>

CASIO Education & TODOS webinar by Maria Zavala and Marta Civil. *Black, Indigenous, & Latinx Parents as Intellectual Resources: From Option to Imperative*. August 4, 2020. Recording: <https://youtu.be/yolt-7-pQ7k>

Mathematics Resources for Parents (Varios en Español)

Math and Parent Partners (MAPPS): Research and resources on engaging Latinx families in building mathematics agency in students and leadership among parents

<https://mappsua.wordpress.com/>

Young Mathematicians <http://youngmathematicians.edc.org/>

Erikson Institute - Early Math Collaborative <https://earlymath.erikson.edu/ideas/>

Zeno Math powered <https://zenomath.org/activities-page/>

California Department of Education has resources in Spanish and English for parents: <https://www.cde.ca.gov/re/CC/mathinfoparents.asp>

DREME Early Childhood Mathematics at Home, some articles applicable to early elementary (English y Español): <https://dreme.stanford.edu/news/home-early-math-learning-kit-families-ideas-supporting-young-children-s-math-skills-during>

Blog de Linda Levi: Haciendo las Matemáticas en Casa - Promoviendo la Solución de Problemas; Sugerencias para Padres <https://www.cgimath-tlc.org/blog/2020/5/20/haciendo-matemáticas-en-casa-con-tus-hijos-promoviendo-la-solución-de-problemas>

Linda Levi's Blog: Doing Math with Your Child - Promoting Problem Solving; Suggestions for Parents

<https://www.cgimath-tlc.org/blog/2020/3/20/doing-math-with-your-child-promoting-problem-solving-suggestions-for-parents-by-linda-levi>

TODOS LIVE recording: Math at Home/Las Matemáticas en Casa: <https://www.todos-math.org/todos-live-#March24>

Further Reading: Research on engaging Latinx Parents in Mathematics Education

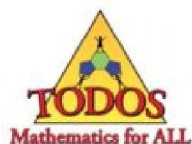
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TODOS: MATEMÁTICAS PARA TODOS

El objetivo de *TODOS: Matemáticas para TODOS* es abogar por la equidad y la educación matemática de alta calidad para todos los estudiantes — en particular, los estudiantes Latinas.

Afroamericanos, Indígenas y Latinos

Padres como colaboradores en la educación matemática

Abstracto

En este comentario de seguimiento a nuestra declaración de posición, abordamos la reestructuración radical de las relaciones entre padres de familia y la escuela. Es un hecho que la participación de los padres en la educación es esencial para el éxito de los estudiantes; sin embargo, en la educación matemática no aceptamos el conocimiento que los padres afroamericanos, indígenas y / o latinos aportan a las escuelas de sus hijos. En este artículo, primero **reconocemos** que centrarse en padres afroamericanos, indígenas y latinos es un camino necesario hacia la educación matemática durante nuestra crisis actual de COVID-19 y en el futuro. Sugerimos **tomar acción** entre los líderes escolares, los maestros y los padres de familia para que esta colaboración se realice. Finalmente, describimos las medidas de **responsabilidad** para asegurar que los padres afroamericanos, indígenas y latinos que están al borde de la educación lleguen a estar al centro en las políticas de educación matemática y pedagogía.

Reconociendo la necesidad de rediseñar la participación de los padres

La pandemia de COVID-19 iluminó las desigualdades que afligen a nuestros sistemas educativos, particularmente para los estudiantes de bajos ingresos y los estudiantes de color. “Maestro” (y bibliotecario, entrenador de educación física, etc.) se agregó repentinamente a la lista de roles de los padres¹. De repente, las escuelas, que todavía se llevan a cabo en el ideal de nuestro país como lugares de igualdad en nuestra democracia estadounidense, no eran el centro de educación, comunidad y servicios sociales que normalmente son. Reconocemos que los sistemas escolares de todo el país estaban preparados de manera diferente para continuar con alguna forma de enseñanza remota de emergencia² cuando la mayor parte del país se mudó al refugio en el lugar, y que las diferencias se basaron en gran medida en la situación económica de los distritos escolares. Pero también reconocemos que el trabajo conjunto de padres de familia, maestros y líderes escolares es otra fórmula para sobrellevar transiciones drásticas como las que todos enfrentamos en marzo.

¹ En esta redacción usamos la palabra “padre” para referirnos a todas y cada una de las personas responsables del cuidado de los niños, ya sea que la relación sea formal e informal. Reconocemos que hay una variedad de formas de criar hijos, independientemente de que dichas relaciones se reconozcan legalmente o no.

² Más sobre la enseñanza remota de crisis como terminología:

<https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>



Por lo tanto, reconocemos que las pandemias gemelas de COVID-19 y el racismo han exacerbado la necesidad de repensar por completo las relaciones de los padres con los sistemas escolares. Los maestros no dedican el tiempo que los padres dedican a sus propios hijos, en particular ahora que las escuelas están en modalidades híbridas y de aprendizaje a distancia. También reconocemos que esta disminución en el tiempo escolar formal ha resultado en frustración para algunos padres, quienes encontraron que apoyar a sus hijos para que aprendan matemáticas en casa fue quizás el más particularmente desafiante de todas las áreas de contenido.

También reconocemos que debido al patriarcado arraigado en nuestra sociedad, las madres o figuras maternas, en particular, han asumido la mayor parte de la carga de estar constantemente disponibles para sus hijos. Esto nos resuena visceralmente, ya que la mayoría de las que trabajamos en este comentario somos madres. También reconocemos que las familias afroamericanas, indígenas, latinas o de otras comunidades oprimidas económica y educativamente pueden estar diciendo en este momento: "No tenemos tiempo para las matemáticas. Estamos tratando de sobrevivir aquí". Sabemos que todos los padres apoyan plenamente la educación de sus hijos, sin embargo, los padres afroamericanos, indígenas y latinos se enfrentan de manera desproporcionada a barreras para participar tanto como deseen.



Finalmente, reconocemos que la participación de los padres en la escuela es a menudo una calle de un solo sentido, con los padres posicionados como receptores de conocimiento para apoyar a los niños en casa para que les vaya mejor en la escuela. Donde los padres abogan por sus propios hijos, como los intentos de perturbar el nexo entre la escuela y la prisión (Stovall, 2018), pueden ser etiquetados como problemáticos.

Los programas de la participación en familia suelen estar aislados de las iniciativas del distrito. El personal que dirige estos programas a menudo trabaja en un silo, no en colaboración con otros departamentos del distrito o de la escuela. Y en ausencia de dicha infraestructura, los educadores luchan por construir asociaciones auténticas con los padres, tutores o cuidadores, más allá de rastrear la cantidad de participantes que asisten a los eventos. Jeynes (2013) encontró que los programas que "fomentaban una mayor comunicación entre padres y maestros" eran uno de los cuatro tipos de modelos de participación de los padres que tenían efectos estadísticamente significativos o positivos en los resultados de los estudiantes. Esta investigación, en parte, muestra que los padres fueron clave en la educación antes de COVID 19 y su participación significativa jugará un papel más importante en la educación de sus hijos (niños más pequeños, en particular) durante el cierre de las escuelas y dentro de las estructuras de aprendizaje híbridas.

Acciones: Hacia asociaciones genuinas con los padres

Aunque reconocemos que el sistema más amplio de educación necesita una revisión en términos de familias y relaciones escolares, enfocamos nuestras recomendaciones en aquellos que consideramos más impactantes para la enseñanza y el aprendizaje de las matemáticas. Dados los reconocimientos de nuestro momento actual arriba, nuestro tema principal es remodelar la relación entre la escuela y el hogar. Sugerimos las siguientes acciones:

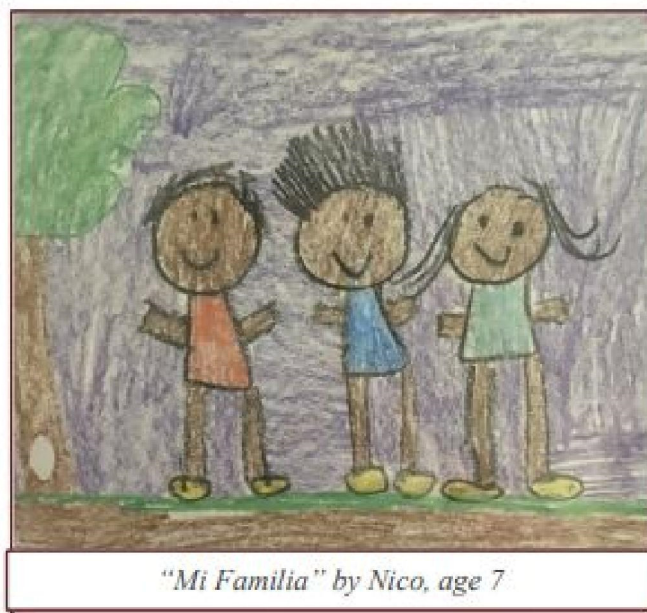
Acciones para líderes educativos

Cultivar confianza, respeto, y transparencia

La Comunicación ha sido un factor clave para unir a maestros y padres (Westmoreland, Rosenberg, López, & Weiss, 2009). En nuestro momento actual, podríamos decir que *la transparencia* es un factor clave en la comprensión de los padres de lo que sucede en las escuelas, así como en la participación de los padres y las familias en las políticas e incluso en las decisiones de instrucción.

En particular, en el contexto de las matemáticas, las apelaciones a la naturaleza libre de cultura de las matemáticas y su supuesta superioridad sobre otras formas de conocimiento pueden ayudar a mantener un sistema de poder en el que solo los funcionarios escolares (como maestros y administradores) son vistos como expertos.

A menudo, esos funcionarios escolares son blancos y atienden escuelas con grandes poblaciones de afroamericanos, indígenas y personas de color (BIPOC) (por sus siglas en inglés) que han sido sistemáticamente excluidas de los niveles altos de matemáticas. Las intersecciones de estos dos temas de la supuesta neutralidad de las matemáticas y la prevalencia del racismo no pueden ignorarse a medida que avanzamos en lo desconocido del año escolar 2020. No resolveremos este problema en este momento. Es más grande que la propia educación matemática. Instamos a todos los líderes educativos y maestros a priorizar el trabajo por cuenta propia para comprender cómo somos cómplices de un sistema de opresión llamado escolarización, y cuáles son nuestros papeles en el desmantelamiento y reconstrucción de este sistema³ – finalmente avanzando hacia la curación de heridas profundas. Este trabajo debe realizarse con los padres como colaboradores



"Mi Familia" by Nico, age 7

y con los padres de grupos históricamente marginados en particular. Un paso en este proceso es valorar las prácticas matemáticas en el hogar de los padres, en particular los padres de BIPOC, y encontrar formas de tender un puente entre las experiencias del hogar y el conocimiento escolar, y no al revés (consulte nuestra lista de recursos para esto al final del comentario).

Proporcionar recursos a los padres y a las escuelas

Brindar recursos y apoyo a las familias durante y después de la interrupción escolar, especialmente en matemáticas, que a menudo muestran las pérdidas más pronunciadas durante el verano y el tiempo fuera de la escuela (Quinn y Polikoff, 2017). Los recursos deben incluir materiales, como los dispositivos mencionados en nuestra sección de apertura, así como apoyo dirigido específicamente a los padres.

Integrar la participación familiar con las metas de aprendizaje de cada distrito creando un equipo de participación familiar a nivel de distrito para trabajar con las familias con atención explícita a las matemáticas. Las prácticas prometedoras han enfatizado el papel fundamental que desempeñan los distritos en los esfuerzos para involucrar a las familias (Westmoreland, Rosenberg, López y Weiss, 2009), incluida la creación de infraestructura para el liderazgo de todo el distrito para la participación familiar, en particular a través de la asignación de fondos del Título I, que podría involucrar el liderazgo de los padres institutos, desarrollo profesional para apoyar la participación familiar y medidas de responsabilidad para evaluar la efectividad de involucrar a las familias que reflejen la demografía del distrito escolar. Sin embargo, poco modelos de participación distrital se enfocan explícitamente en la educación matemática, particularmente con familias de comunidades de color, especialmente en formas que coloca a los padres de comunidades marginadas como recursos intelectuales para la enseñanza de las matemáticas (Civil & Menéndez, 2010; Ishimaru, Barajas-López, & Bang, 2016). Uno de estos modelos es el trabajo del programa *Math and Parent Partners* (MAPPS) (por sus siglas en inglés). Los padres latinos fueron reposicionados como recursos para el aprendizaje de las matemáticas, al mismo tiempo que desarrollaron la comprensión y la navegación por las matemáticas académicas privilegiadas en las escuelas. Los programas como MAPPS podrían llevar a que las familias y los equipos a nivel de distrito / escuela trabajen cohesivamente para planificar, implementar, evaluar y mejorar continuamente los resultados de los estudiantes mientras se transforma la cultura de cuyo conocimiento matemático cuenta dentro de los entornos escolares.

³ Esta reflexión de “Adoptar la equidad” (*Embracing Equity*) está dirigida a las personas blancas que son más nuevos en las ideas de dismantelar los sistemas de opresión
<https://embracingequity.org/blog/2018/11/2/let-us-work-together-the-role-of-white-co-conspirators-in-dismantling-systemic-racism>

Acciones para profesores de aulas

Invitar a los padres al proceso de enseñanza y aprendizaje

Los padres afroamericanos, indígenas y latinos tienen mucho que ofrecer en las aulas; sin embargo, no siempre se les pide que se unan y sean parte de la instrucción. Ishimaru, Barajas-López, and Bang (2105) han defendido la participación de los padres de los grupos no dominantes en la escolarización no como receptores pasivos de conocimiento, sino como “colaboradores expertos y compañeros líderes”. (pág.14). Dada nuestra expectativa actual de clases en línea e híbridas, las escuelas pueden desarrollar una cultura de aprendizaje en línea que aproveche las conexiones entre la escuela y el hogar que apoyen la identidad y la autonomía de las matemáticas para los estudiantes y los padres. La investigación sobre padres latinos que visitan las aulas sugiere que las observaciones y los informes de las visitas a las aulas fueron una forma en que los padres pudieron reflexionar sobre las formas de apoyar a sus estudiantes y desarrollar el liderazgo en la educación matemática (Civil & Menéndez, 2012).

Los modelos de enseñanza en línea e híbridos pueden abrir nuevas oportunidades para que los padres participen en la educación debido a la naturaleza en línea; sin embargo, esto no se puede esperar como absoluto. Las escuelas deben liderar extendiendo la mano y creando un espacio para que los padres compartan sus conocimientos, así como sus esperanzas, necesidades y deseos para sus hijos. Un punto de partida es invitar a los padres a participar en clases en línea en vivo con regularidad o invitarlos a hacer videos para compartir con sus clases sobre temas relevantes. Plataformas como *Slack*, *WhatsApp*, *Microsoft TEAMS* y *Google Classroom* tienen formas de mantener conversaciones continuas entre padres y maestros sobre temas relacionados con todo tipo de conceptos matemáticos, sin requerir membresía a redes sociales en línea, como *Facebook*. Sin embargo, para utilizar dichas plataformas, los distritos escolares deberán aclarar los problemas de privacidad que pueden estar asociados con la publicación en estos formatos.

También planteamos que este año de aprendizaje a distancia e híbrido es una oportunidad para reestructurar la evaluación e involucrar a los padres en la evaluación de aspectos del aprendizaje de las matemáticas, como las actitudes de los estudiantes hacia las matemáticas, el acceso a los materiales en el hogar y la participación en actividades fuera de la escuela. -prácticas matemáticas escolares. Para obtener más información sobre la participación de los padres en la evaluación, consulte nuestro documento de comentarios de evaluación. [*Student and Family-Centered Mathematics Assessment*](#).

Hay otras formas de acercar a las familias a espacios matemáticos que no son necesariamente espacios de clase. Por ejemplo, el Instituto Americano de Matemáticas (AIM) (por sus siglas en inglés) ha estado organizando seminarios web en línea para padres y estudiantes para apoyar el compromiso con las matemáticas a través de espacios en línea. Ofrecen eventos gratuitos, con más información en su sitio web de matemáticas- [*Math Communities website*](#).

Organizar con los padres

En algunas escuelas, existen estructuras formales para que los maestros y los padres construyan una comunidad juntos y trabajen hacia metas comunes. Los sindicatos de padres y maestros (PTU) (por sus siglas en inglés) son un ejemplo, así como las asociaciones de padres y maestros (PTA). Si bien las organizaciones centrales como PTU y PTA tienen sus propios problemas de equidad (por ejemplo, barreras para la participación de los padres que trabajan durante las reuniones o falta de servicios de traducción), también pueden servir como puntos de partida para la organización de los padres con el apoyo de los maestros.

Además, los maestros pueden buscar asociaciones genuinas con los padres afroamericanos, indígenas y latinos en sus comunidades en torno a cuestiones de justicia social. Melissa Adams-Corral escribió sobre cómo, cuando era maestra, inició reuniones familiares con sus padres, en su mayoría latinos, para construir una comunidad entre los padres y tener un espacio para hablar sobre cómo estaba progresando el aprendizaje de matemáticas de sus hijos (sus alumnos). Con el tiempo, el espacio de reunión de padres y maestros comenzó una herramienta para organizarse contra una política que impactaba desproporcionadamente negativamente a sus hijos: el seguimiento en las clases de matemáticas de la escuela secundaria. ([You can read her full article in Medium here](#)).

Acciones para los padres afroamericanos, indígenas y latinos

Aquí nos gustaría hablar directamente de padres a padres, especialmente a nuestros padres de comunidades marginadas, nuestros padres BIPOC y Latinos que están frustrados con un sistema escolar que no refleja sus realidades vividas y que han experimentado frustración con las matemáticas ellos mismos.

Confíen en ustedes mismos

Nosotros los (padres-autores de este artículo) nos sorprende lo rápido que podemos dudar de nosotros mismos cuando nos enfrentamos a un problema que afecta a nuestro propio hijo en la escuela, en lugar de los problemas que enfrentamos en nuestro trabajo como educadores y maestros. El amor y la naturaleza de la relación entre padres e hijos son únicos. Por tanto, debemos confiar en nosotros mismos. Muchos de nosotros estamos lidiando con nuestros propios traumas de experiencias matemáticas pasadas, incluyendo maestros que nos deshumanizaron (por ejemplo, que nos hicieron sentir incompetente). Podríamos pensar que no sabemos matemáticas en absoluto.

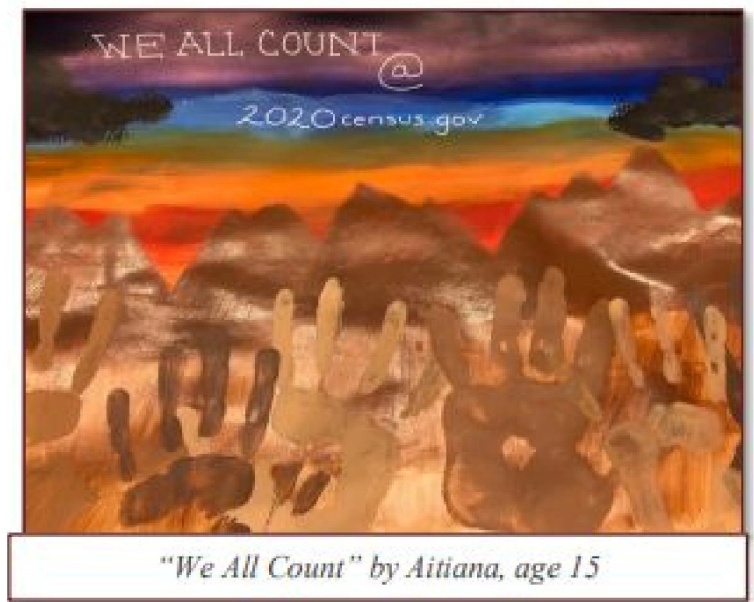


"African Savanna" by Olive, age 12

Es cierto que existen algunas formas de enseñar matemáticas que quizás no hayamos experimentado como estudiantes. Sin embargo, los padres sabemos mucho. Tenemos todas las formas en que aprendimos a hacer matemáticas y las formas que hemos creado como parte de nuestras vidas. Podemos ayudar a nuestros hijos a desarrollar el amor y la curiosidad por las matemáticas. Podemos decir genuinamente: "No sé, averigüémoslo" cuando nos enfrentamos a las matemáticas en las que no hemos pensado en años. Podemos modelar la resolución de problemas todos los días. Es hora de volver a escribir nuestras historias matemáticas “*mathematical stories*” (Adams, 2018) y construir la autonomía y las identidades positivas de nuestros niños.

Organizar y abogar como comunidad

También podemos organizarnos y defendernos a nosotros mismos. No necesitamos esperar a que la escuela inicie conversaciones entre nosotros. En este momento de distanciamiento social podemos encontrarnos y hablar de manera virtual y segura sobre nuestras preocupaciones, preguntas, estrategias para apoyar el aprendizaje matemático y nuestras necesidades. Podemos hacer una red de apoyo entre nosotros. En las escuelas donde hay mucha diversidad económica, lingüística y racial, seguramente surgirán problemas de equidad. Sin embargo, las matemáticas pueden ser una herramienta para conectarse. Los padres pueden conectarse y organizarse en torno a sus fortalezas en el aprendizaje y la enseñanza de las matemáticas (ver por ejemplo, Caspe & López, 2018, *engaging families in STEM learning* “comprometiendo familias en el aprendizaje STEM”) y experiencias similares con frustración o amor por las matemáticas. Como cualquier comunidad, una comunidad de padres llevará tiempo, esfuerzo, fracasos y éxitos para cultivar. Tenemos mucho que ganar al iniciar conversaciones entre nosotros mismos, especialmente dado el aislamiento que muchos los padres sintieron cuando las escuelas cerraron repentinamente este pasado primavera. Podemos construir las conexiones que necesitamos ahora que nuestra comunidad está intacta a medida que avanzamos en un año escolar con muchas incógnitas.



Animamos a todos y cada uno de los padres a cultivar la confianza en sí mismos para participar en el pensamiento matemático y ser ejemplo para sus hijos e interesarse acerca de las matemáticas, para ayudar a cambiar la cultura de hacer matemáticas hacia una que nos valore a todos y la forma en que pensamos, versus procedimientos únicamente memorizados hechos de forma rápida y precisa. Y animamos a los padres a entablar un diálogo con los maestros, para garantizar que los maestros y administradores hagan su parte para valorar las matemáticas que los padres de comunidades marginadas conocen, y no confrontar las prácticas matemáticas en el hogar con las prácticas matemáticas escolares. Más bien, el objetivo es cultivar la comprensión mutua y el respeto por los múltiples métodos de involucrarse con las matemáticas.

Responsabilidad ante familias y comunidades

Hacemos un llamado a los administradores escolares, las oficinas del distrito y las oficinas de educación del condado para que traigan a las personas interesadas a la mesa y creen la infraestructura para lo que les gustaría ver. Tenemos que incluir las voces de padres y estudiantes para hacer realidad estos nuevos sistemas. Sí, las familias necesitan información de la escuela; sin embargo, a menudo, aquí es donde se detiene. En lugar de un flujo de información unidireccional, deberíamos adoptar el flujo bidireccional de confianza y transparencia. Las familias deben estar en la mesa. Los Estándares de Participación Familiar Transformativa del PLAN del Área de la Bahía de San Francisco pueden ser el comienzo de cómo se evalúa la participación familiar (ver enlace en la sección de recursos de organización para padres).

También hacemos un llamado a los distritos escolares para que den prioridad a la financiación de los coordinadores de padres y familias de tiempo completo, que son de las comunidades a las que sirve la escuela, y que pueden apoyar la conexión entre maestros, administradores y estudiantes. Los presupuestos son contratos sociales. Cuando se presupuesta un puesto de coordinador familiar, la escuela se beneficia.

¿Quién responsabiliza al liderazgo? Los estudiantes, los padres y la comunidad en general. De la misma manera que las familias deben ser una parte más integral de la estructura de la educación en este momento, los miembros de la comunidad deben tomar posesión de sus escuelas locales al hacer que los funcionarios electos y designados en posiciones de poder sean responsables de la escuela que les gustaría ver en su comunidad.

También debemos ser responsables de nosotros mismos, en particular de las familias que tienen privilegios desproporcionados en nuestro sistema escolar. Instamos a todos los padres y cuidadores a considerar su posición para promulgar un cambio en este sistema y liderar una carga antirracista que incluiría la reconstrucción radical de las asociaciones entre la escuela y la familia. Los pasos necesarios para cambiar las culturas escolares no deben caer sobre las espaldas de las comunidades de color; más bien, todos debemos ser responsables.

Gracias a los niños que compartieron su arte con nosotros y a sus padres por apoyarlos para compartir.

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Resources Particularly for Parents and Parent Organizers

Parent Organizing/Power of Parent Knowledge

- Global Family Research Project: Research papers and Resources on engaging with parents and families <https://globalfrp.org/>
- Lessons from Families with Power/Familias con Poder:
<https://www.tolerance.org/magazine/fall-2009/learning-to-roar>
 - A short list of lessons from teachers learning to organize with parents:
<https://www.tolerance.org/professional-development/grassroots-parent-organizing>
- “Once I’m Comfortable, No One Can Shut Me Up!”: Building Community and Agency with Family Meetings. By Melissa Adams-Corral
<https://medium.com/@heinemann/once-im-comfortable-no-one-can-shut-me-up-building-community-and-agency-with-family-meetings-9c63eac6aad4>
- San Francisco Bay Area PLAN family engagement standards:
<https://www.bayareaplan.org/our-work/transformative-family-engagement-standards/>
- CASIO Education & TODOS webinar by Maria Zavala and Marta Civil. *Black, Indigenous, & Latinx Parents as Intellectual Resources: From Option to Imperative*. August 4, 2020. Recording: <https://youtu.be/y0It-7-pQ7k>

Mathematics Resources for Parents (Varios en Español)

- Math and Parent Partners (MAPPS): Research and resources on engaging Latinx families in building mathematics agency in students and leadership among parents
<https://mappsua.wordpress.com/>
- Young Mathematicians <http://youngmathematicians.edc.org/>
- Erikson Institute - Early Math Collaborative
<https://earlymath.erikson.edu/ideas/>
- Zeno Math powered <https://zenomath.org/activities-page/>
- California Department of Education has resources in Spanish and English for parents: <https://www.cde.ca.gov/re/CC/mathinfoparents.asp>
- DREME Early Childhood Mathematics at Home, some articles applicable to early elementary (English y Español):
<https://dreme.stanford.edu/news/home-early-math-learning-kit-families-ideas-supporting-young-children-s-math-skills-during>
- Blog de Linda Levi: Haciendo las Matemáticas en Casa - Promoviendo la Solución de Problemas; Sugerencias para Padres
<https://www.cgimath-tlc.org/blog/2020/5/20/haciendo-matematicas-en-casa-con-tus-hijos-promoviendo-la-solucion-de-problemas>

- Linda Levi's Blog: Doing Math with Your Child - Promoting Problem Solving; Suggestions for Parents
<https://www.cgimath-tlc.org/blog/2020/3/20/doing-math-with-your-child-promoting-problem-solving-suggestions-for-parents-by-linda-levi>
- TODOS LIVE recording: Math at Home/Las Matemáticas en Casa:
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The mission of *TODOS: Mathematics for All* is to advocate for equity and high quality mathematics education for all students — in particular, Latina/o students.

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Centering Our Humanity:
Addressing Social and Emotional Needs
in Schools and Mathematics Classroom

Abstract

In this commentary paper that follows our recent [Position Statement](#), we argue for prioritizing teachers' and students' social and emotional well-being as we prepare for the 2020-2021 school year. First, we **acknowledge** the realities and tensions. Next, we discuss **actions** for all educational stakeholders to take to prioritize the well-being of all people working in schooling systems. Finally, we offer suggestions on ways to hold ourselves **accountable** to community healing and mathematical learning, as well as suggest resources for educators.

Acknowledging Realities and Tensions

TODOS's recent position statement begins with an assertion that we are living through twin pandemics: COVID-19 and racism. We recognize that the COVID-19 pandemic has created new traumas (of isolation, disconnection, job loss, to name a few) and exacerbated others (such as increased domestic violence, food insecurities, lack of shelter), for all in our communities, in some way. The pandemic of racism has heightened awareness of police murdering Black people and has sharpened attention to how we are all impacted by racial trauma. These twin pandemics are especially impacting Black, Indigenous, and People of Color (BIPOC¹) communities. While we all may have experienced some form of trauma, we also acknowledge we are not all affected in the same way. We must acknowledge the ways in which traumatic experiences manifest in our schools, such as but not limited to microaggressions from teachers and peers based on race, disproportionate discipline rates, over identification for interventions and special education services, as well as under-identification for advanced mathematics content.

We also acknowledge that as attention to social and emotional needs grows in school systems, educators are troubled by the implications of who is viewed as in need of social and emotional learning intervention (see, for example, [National Equity Project SEL & Equity statement](#)). We are troubled by the over identification of Black and brown students as lacking regulation of their own emotions. We note a growing but underdeveloped discussion around the need for social and emotional learning among non-minoritized students, as part of learning to disrupt cycles of inflicting trauma on others. While many students need support to heal from daily and ongoing traumas, not all social and emotional interventions are in the best interest of all students. Ready-made/canned social and emotional interventions can often implicitly center around white ideologies and imply that some people must be fixed rather than understood. Every individual defines and navigates trauma in a way that is unique to their experiences, and as such, will need to process and understand their trauma in their own unique way.

We also acknowledge that as we think about trauma, we must continue to come from an asset-based approach, and not think about trauma as something to be fixed. Shawn Ginwright (2018) takes a healing-centered approach, which is "strength based, advances a collective view of healing, and re-centers culture as a central feature in well-being" (p. 3) and focuses on reframing trauma in order to humanize those who experience trauma. One of the main points Ginwright makes is changing the question from

¹ In this paper, we use Black, Indigenous, and People of Color or BIPOC, which helps reframe racism from a black-white binary to include acknowledging native-invisibility and anti-blackness as key tenets of white supremacy. For more on this term, see <https://www.thebipocproject.org/>

what is wrong with you to *what is right with you*, thus aligning with our ideas of what it means to take a social justice approach to teaching mathematics, with a main tenet of eliminating deficit perspectives of students in mathematics (NCSM & TODOS, 2016).

We acknowledge that a one-size-fits-all approach does not consider the specific strengths of students, teachers, and schools. Instead, we encourage the following actions as overarching ideas that promote the development of a humanizing, antiracist mathematics community.

Actions for Centering our Humanity

We are quickly moving to the new school years with few answers on what instruction will be like. No matter the form (distance, in-person, or hybrid), when we start the new school year, we need to find a way to teach mathematics in light of the social and emotional needs of students and their families. Recommendations from the National Child Traumatic Stress Network (NCTSN), in an article posted by the Teaching Tolerance Staff (2020), include prioritizing *relationships*, as opposed to assignment completion and behavior compliance. Many states and school districts ended the year with a heavy focus on maintaining relationships and learning how to teach remotely. They so can now build on the lessons from last year towards humanizing/antiracist classroom communities.

Teaching Students Mathematics

In our call to action, we recommend shifting away from teaching mathematics *to students*, and toward teaching *students* mathematics. This approach begins with acknowledging the whole human, what Aguirre, Mayfield-Ingram and Martin (2013) call centering on students "in light of," not in spite of, their humanity (p. 9). In shifting our perspective toward students, we can work to humanize teaching and learning mathematics (de Araujo, 2018). As de Araujo states in her reflections of teaching high school mathematics, "With this new perspective, I found myself motivated and continually challenged to first know my students and then figure out ways to help them learn interesting and meaningful mathematics. It was always a challenge, and it was (almost) always rewarding" (2018).

We call teachers to action in making this shift of teaching *students* mathematics. We call on administrators to support teachers to make this shift. District leaders can help make this shift by resisting unnecessary testing measures, supporting school teams to make their formative assessment plans with this in mind, and revising teaching evaluations to include feedback to teachers on how they are attending to the social and emotional health of students.

From "What to Teach" to "How to Be"

To aid in radical refocusing of classrooms from "what to teach" to "how to be," administrators and leaders must get used to the idea that the pacing-guide model is broken. We, teachers, have always had to race to cover content. Teachers cannot make the changes they need to make under pressure to conform to a system that privileges content over people. It is more critical than ever that mathematics teachers find ways to create relationships with all students in their class, especially those who are starting off the year in remote settings. In mathematics classrooms, teachers need to continue to

maintain high expectations of their students; however, teachers could start each class by checking in with students, utilizing classroom community building routines and sharing how things are going, before launching into mathematical content. We also suggest that teachers find ways to recreate the informal spaces that they might usually rely on at school to make connections with students, such as office hours so that the small moments that aid in building relationships can be recaptured.

Safe and Brave Spaces – for Whom?

Along with these recommendations, the NCTSN (2017) also provides guidelines for all teachers to learn in their brief, *Addressing Race and Trauma in the Classroom*. One suggestion from this brief that we highlight includes creating and supporting safe and brave environments for students. We assert that this is a necessary action for antiracist mathematics classrooms. Along with creating relationships, we also need to create safe and brave spaces where students can share and heal. The NCTSN (2017) defines a safe space as "one that promotes feeling safe both within oneself and from the risk of physical or psychological harm from others" (p. 4) and a brave space as one "in which everyone is willing to take a risk in order to authentically engage" (p. 5). We draw on Ginwright's (2018) suggestions for taking a healing centered approach in practice, which includes starting by building empathy, encouraging students to dream and imagine, and building critical reflection and taking loving action.

We also urge teachers to ask the questions, *"For whom has my classroom traditionally been a safe space?"* and *"How can I ensure it is a safe and brave space for my most marginalized students?"* Recognizing how whiteness as ideology² permeates mathematics education in general, we suggest reflecting on, *"In what ways does my classroom reflect that Black lives matter?"* and *"How is my classroom built around the health, safety, and brilliance of Black, Indigenous, Latinx, and other historically oppressed populations?"*

Healing-Centered Mathematics Teaching

To some teachers, these actions appear not to have much to do with actual work of teaching mathematics. We disagree and assert that they are essential to all aspects of teaching mathematics. In the mathematics classrooms, loving actions might feel like privileging relationship-building over content-coverage, creating flexible grouping structures that account for different students' pressing needs, eradicating the language of retribution (i.e., punishment) and implementing the language of restoration (i.e., healing) (Figure 1 below), and creating a *flexible* classroom culture (Hand, 2010) where teachers and students together co-construct the classroom agreements to allow space for students' self-expression. Such a classroom requires teachers to re-evaluate classroom management systems, routines that assert control over students, and ideas of reward and punishment.

² For more on what it means to recognize how whiteness permeates mathematics education as ideology, read Battey & Levya's (2016) article [A Framework for Understanding Whiteness in Mathematics Education](#) in the Journal of Urban Mathematics Education.

Retributive Justice asks...	Restorative Justice asks...
What law or rule was broken?	What is the harm?
Who broke it?	What are the needs and obligations of everyone affected by the harm?
What punishment is deserved?	How will all the affected parties work to heal the harm as much as possible?

Figure 1: Retributive Justice versus Restorative Justice
(adapted from [Oakland Unified School District - Restorative Justice](#))

One way to directly connect Ginwright's healing centered approach to mathematics is to draw on Kokka's (2019) framework of *Healing-Informed Social Justice Mathematics* (Figure 2), where she intertwines social justice, healing centered, and trauma-informed approaches in mathematics classrooms. Kokka (2019) contends this framework offers "a way for students to learn mathematics, gain sociopolitical consciousness and improve wellness" (p. 1199).



Fig 2: Kokka's (2019) Conceptual Framework for
Healing-Informed Social Justice Mathematics

In addition, the Charles A. Dana Center at The University of Texas at Austin and the Collaborative for Academic, Social, and Emotional Learning (CASEL) (2016) wrote a brief on how to blend the Common Core State Standards for Mathematical Practice with social and emotional learning competencies (link in (re)source list).

Accountability to Students and Families

We need to hold ourselves accountable to a standard of doing no harm. This can happen by questioning who benefits from particular social and emotional interventions. It is too easy to police the actions of brown and black bodies in the name of helping them learn to control their emotions. This issue is particularly pertinent to mathematics classrooms, where rigid classroom behavior policies may lead to teachers pathologizing behaviors that are actually reasonable responses to an overly controlled environment or to a system of schooling that seeks to oppress students.

In the case of excessive control and disciplinary inequities, we can hold ourselves accountable using school, district, and state-wide data. We can invite trusted colleagues to observe instruction and provide critical feedback in ways that acknowledge teacher learning and growth. We must take a critical eye to the rates at which our students are being disciplined. When our data show racially disproportionate rates of disciplinary action, we must stop making excuses that place the blame on students and families that damage and demean their identity and instead hold ourselves accountable to improving our beliefs, behavior and actions. We must use multiple strategies to understand our own perceptions and understand our students rather than presuming that it is the student who lacks the skills to regulate their emotions. One way to do this is to pause before reacting, and ask ourselves, *"What need is the student expressing through this behavior?"* and *"Who else has this need?"* And if the classroom community space has been violated, instead of punishment, the question is, *"How is the community restored?"*

Leadership that Supports Student-Centered Mathematics Instruction

Leadership needs to be held accountable for the time and space needed throughout the school day and week to check in on the social and emotional well-being of all members in the school community. Such community health checks should include teacher to teacher, teacher to student, student to student, administrator to teacher, and teacher to family member and caretaker. School leaders must ensure that:

- Circle time or other structures are being used in the (virtual) classroom where students are provided the opportunity to share with the classroom community;
- Students have alternative ways to express needs privately, including but not limited to mental health questions on exit tickets; time to journal and reflect individually, which is not necessarily prioritized in middle or high school mathematics classrooms;
- Faculty meetings have structures such as small group discussions on how the week has been;
- Time is dedicated to teaching teams to do wellness check-ins about particular students and their families;
- Procedures and infrastructure are in place during distance and hybrid learning for students to set up a time with the teacher or another member of the school community in a safe space if they are feeling overwhelmed or triggered;
- A plan is implemented so that every person in the school community knows of and has ways to address their emotional needs safely.

Holding Space for Each Other

We know trauma is a continuum, and we need to be ready to support the social and emotional needs of teachers, students, parents, and all members of the school community. When we can safely return to our school buildings, regardless of when that may be, we need to recognize the anxiety and trauma teachers, administrators, staff, and students may have in leaving their homes, and the anxiety parents face allowing their students to attend schools. We need to ensure that time and understanding are given to those who are not comfortable with the return. Returning to school buildings brings new recommended public health norms, such as physical distancing, mask-wearing, and increased hygiene practices. We must take into consideration how to follow health recommendations in tandem with attending to social and emotional needs. We will all be adjusting, and we must recognize everyone will get used to this in their own time and allow the space for everyone in the school community to make this adjustment.

In this paper, we have parsed out the relationship between social and emotional needs and mathematics learning for the sake of discussing how to move forward. However, the reality is that human-centered mathematics classrooms hold the social, emotional, intellectual, and learning needs of students all at once – in creating community, planning instruction, selecting and implementing curricula, coordinating with families, etc. We have provided resources below, which outline ways to support the social and emotional needs of everyone in the school community. It is possible, with a humanizing perspective, to successfully provide this support in the mathematics classroom.

(Re)Sources

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https://www.nctsn.org/sites/default/files/resources/addressing_race_and_trauma_in_the_classroom_educators.pdf.

General Resources for Educators and Parents:

National Child Trauma Stress Network (<https://www.nctsn.org/>)

Teaching Tolerance website (<https://www.tolerance.org/>)

In Particular, Supporting Students Through the Coronavirus:

<https://www.tolerance.org/supporting-students-through-coronavirus>

The Collaborative for Academic, Social, and Emotional Learning: <https://casel.org/>

In particular, read CASEL's roadmap for reopening schools:

<https://casel.org/reopening-with-sel/>

Civil Rights Data Collection: Data Snapshot: School Discipline: <https://ocrdata.ed.gov/Downloads/CRDC-School-Discipline-Snapshot.pdf>

The Hidden Cost of Suspension: How can kids learn if they're not in school?

<https://nces.ed.gov/programs/maped/storymaps/oss/>

School discipline data indicators: A guide for districts and schools

<https://files.eric.ed.gov/fulltext/ED573680.pdf>

Addressing Race and Trauma in the Classroom: A Resource for Educators:

<https://www.schoolcounselor.org/asca/media/PDFs/FINAL-Race-and-Trauma-in-the-Classroom-Factsheet.pdf>

The Future of Healing: Shawn Ginwright's article in Medium, accessible to a variety of audiences

<https://medium.com/@ginwright/the-future-of-healing-shifting-from-trauma-informed-care-to-healing-centered-engagement-634f557ce69c>

Restorative Justice Implementation Guide: Whole-School Approach from Oakland Unified School District

<https://www.ousd.org/cms/lib/CA01001176/Centricity/Domain/134/BTC-OUSD1-IG-08b-web.pdf>

Examples of Social and Emotional Learning in Elementary Mathematics Instruction:

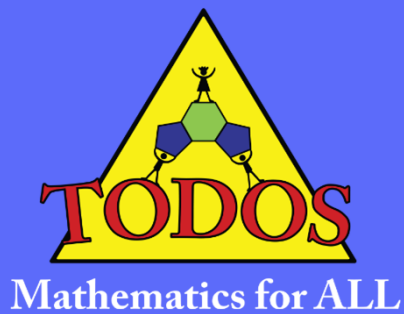
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List of Resources for Teaching Mathematics and Science for Social Justice, by Kari Kokka.

<https://bit.ly/SJMathScienceResources>



The mission of *TODOS: Mathematics for All* is to advocate for equity and high quality mathematics education for all students — in particular, Latina/o students.

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Student and Family-Centered Mathematics Assessment

Abstract

In this commentary paper that follows our recent [Position Statement](#), we remind school leaders and teachers to put the well-being of children and families first by accounting for unique social and emotional needs of students from living through twin pandemics when making assessment decisions. We **acknowledge** the interruption of schooling, and the desire of educators to do their best to support their students. We suggest **actions** that promote assessment by teachers in the classroom (virtual or in-person) and lean heavily on formative assessment as opposed to tests and mandatory benchmark testing. We conclude with **accountability**. We, as the multiple stakeholders in mathematics education, are accountable for maintaining the social and emotional well-being of our students while they are at school. We cannot ignore this responsibility in the process of identifying students' mathematical assets and developing new ones. We all must hold school leadership accountable for supporting teachers to help students build on what they know and expand to new concepts.

Acknowledging New and Ongoing Barriers to Equitable Assessment

Content assessments provide opportunities for teachers to gather information about what students know so we can meet them where they are and help them connect new learning to what they already understand. With so much unknown about student knowledge in the wake of the 2019-2020 school year, we will need to lean on what we know is best for the social and emotional well-being of our students and the development of a positive mathematics identity. We are concerned with growing attention to

The choices we make in the first few weeks of the new school year will send a message to the students, families, and the communities with whom we work. Those choices should make clear that our students' well-being and sense of belonging are our priority.

students "falling behind," and how the start of the next school year may be devoted to identifying "deficiencies" and determining how students can be "fixed."¹ Instead, we should critically examine the dominant assessment practices and reimagine ways to uncover what students already know.

The choices we make in the first few weeks of the new school year will send a message to the students, families, and the communities with whom we work. Those choices should make clear that our students' well-being and sense of belonging are our priority.

However, starting the new year with testing to determine loss and gain of mathematical

knowledge undermines this priority. Au (2019) reminds us that standardized tests originated as a weapon "to 'prove' that whites, the rich, and the U.S.-born were biologically more intelligent than non-whites, the poor, and immigrants" (p. 36). These purposes still dangerously permeate our education system and seep into classrooms, ultimately punishing Black, Indigenous, and People of Color (BIPOC)

¹ In our recent Position Paper (*The Mo(ve)ment to Prioritize Antiracist Mathematics: Planning for This and Every School Year*), we describe in more detail how focusing on a loss of knowledge due to the global emergency is a distraction from focusing on the well-being of families surviving twin pandemics of COVID-19 and racism.

Communities. Educational researchers and scholars of color, in particular, have extensively documented that traditional assessment practices systematically sort students of color into tracks that deny opportunities for engaging in higher-order thinking when learning mathematics. Ibram X. Kendi speaks to this in his book *How to Be an Antiracist*:

The idea of an achievement gap between the races - with Whites and Asians at the top and Blacks and Latinx at the bottom - creates a racial hierarchy, with its implication that the racial gap in test scores means something is wrong with the Black and Latinx test takers and not the tests. From the beginning, the tests, not the people, have always been the racial problem. (p. 101)

Assessments (e.g. tests) can have detrimental impacts on student identity, including mathematics identity and disposition toward mathematics, when done excessively, unnecessarily, and without consideration for student well-being. We do not need to inflict more anxiety and unintentionally cause more trauma by giving kids assessments that sort and rank them. Rather, we must highlight assets of understanding in their thinking and reasoning. Additionally, a one-size-fits-all diagnostic can include inequitable practices that do not account for all students' needs and can lead to tracking and negative labeling. We must ask ourselves, *"If traditional standardized instruments perpetuate ranking and sorting of students, why aren't alternative assessment practices being formulated and utilized?"* We pose this question not as a way to reflect on the state of our educational system, but as a statement for change.

Actions for Centering Assessment on Students' Knowledge and Needs

Given our goal of prioritizing students' social and emotional well-being, and therefore prioritizing assessment embedded in activity, we propose some actions for the coming school year and beyond. We suggest prioritizing formative assessment and new assessment practices that provide evidence of what students understand. We stress utilizing parents as a resource for assessing students' strengths. We propose these assessments be utilized in time for the teacher, parents, and the students themselves to use the acquired information to make decisions about what comes next in any students' own learning trajectory.

More concretely, we propose that teachers be supported to:

1. Articulate learning goals that properly fit in the learning progression of mathematics, while accounting for students' social and emotional development (what students already know, how this knowledge fits with current instructional decisions, where students should go next in the landscape of learning mathematics²);
2. Assess with a focus on concepts and mathematical practices (e.g., students' explanations, justifications, and ways of reasoning);
3. Design their own assessments (rather than imposed by others) informed by observations of what students already know, by information gathered from students' teachers from the previous year, and by contributions from what parents know of their own children's mathematical practices. See Fig. 1.

² For more on what is meant by acknowledging students' humanity, see our commentary paper on social and emotional needs, www.todos-math.org.

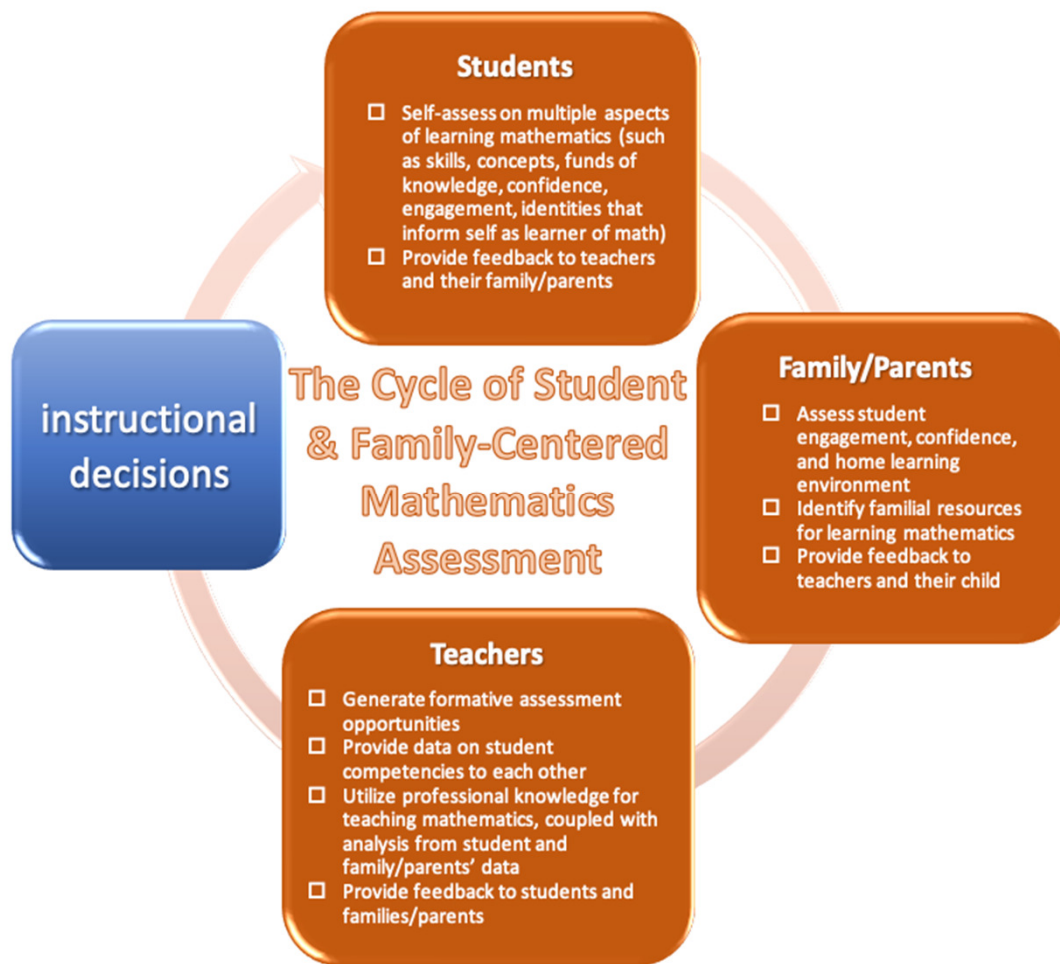


Fig. 1 The Cycle of Student and Family-Centered Mathematics Assessment.

We propose a view of teachers as professionals most attuned to the needs of their particular students, and therefore as those in the best position to decide how to assess their students' thinking. Asking students to self-assess may be familiar to some teachers. Drawing families into the assessment-instruction cycles may not be. We propose that parents contribute to assessment data, such as observations of students' confidence and attitudes towards math, as well as children's participation in mathematics embedded in homelife. Finally, we urge most mathematical assessment to take place within student activity, utilizing embedded formative assessment techniques (William & Leahy, 2015), in ways that also honor out-of-school learning that students may tap into to make sense of formal mathematical concepts.

Now, more than ever is the time to think outside of the standardized testing box. Our suggestions may require districts to suspend their own assessments or widen testing windows where possible, if the timing and frequency of assessments conflicts with the needs of the students. Schools or teacher teams could propose their alternative assessment strategies to the district for record-keeping if data tracking is the concern. Alternative assessment practices might take many forms, such as but not limited to, collection of evidence during group and individual discussions; individual, partner, and group sense-making routines; problem-solving tasks; and observed game playing strategies. What is important to the

foreground in order to assess students' ways of knowing and content understanding is the need for a critical lens in determining what prerequisite understandings are necessary, if any, to support learning. Further, it is necessary to trust the teacher's knowledge of how to design and deliver these alternative assessments in their own classrooms.

Accountability

The past few months have been hard. In addition to the fear and uncertainty brought on by the pandemic, we have seen the increased disparities and inequalities lived by BIPOC. Going forward, we cannot justify returning to the classrooms and continuing to accept what was a normalized practice of teaching and over-assessing students of color in ways that did not lead to their own mathematics development. This moment should be a real turning point for the educational experiences of our students.

We are accountable for first maintaining the social and emotional well-being of our students while they are at school. We cannot ignore this responsibility in the process of identifying students' mathematical assets and developing new ones. We must hold ourselves accountable to the standard of supporting and connecting what they understand to new learning, in ways that center the whole person in the classroom and account for their social and emotional well-being.

With the data we gather, students should not be singled out for skill recovery, and they should not be encouraged to memorize procedures to catch up. It is us, the world of mathematics education, that needs to slow down and acknowledge we have all lived through and continue to survive through a stressful viral pandemic; academic gains will come, but not at rates we expect. Further, we must develop asset thinking (to challenge deficit thinking), redefine what it means to be knowledgeable, and provide the appropriate bridge to ensure all students can connect their funds of knowledge to new ideas. With patience and support, we trust that teachers and parents can work together to nurture all students mathematically.

(Re)Sources:

Au, W. (2019). Racial Justice Is Not a Choice: White supremacy, high-stakes testing, and the punishment of Black and Brown students. *Rethinking Schools*, 33(4). Retrieved from <https://rethinkingschools.org/articles/racial-justice-is-not-a-choice/>

Kendi, I. X. (2019). *How to Be an AntiRacist*. One World.

William, D. & Leahy, S. (2015). *Embedding Formative Assessment*. Learning Sciences International.

Additional Resources for Educators and Families:

DREME Family Math <https://familymath.stanford.edu/>, capacity-building for parents as resources

Progressions Documents for the Common Core Math Standards: helpful background knowledge on how math concepts connect and progress <http://ime.math.arizona.edu/progressions/#products>

TODOS Live! Webinar recording: *Tests, Assessments and Learning Math: Equitable Alternatives in Pandemic Times* with Vanson Nguyen and Amanda Ruiz: <https://vimeo.com/406074404>

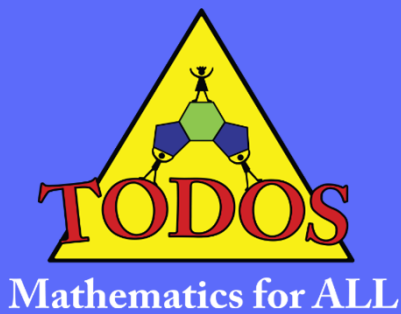
Engaging in the Mathematical Practices (Look-fors) <https://www.nctm.org/Conferences-and-Professional-Development/Principles-to-Actions-Toolkit/Resources/5-SMPLookFors/>

NCTM Research Brief on Formative Assessment <https://www.nctm.org/Research-and-Advocacy/Research-Brief-and-Clips/Strategies-for-Formative-Assessment/>

Performance Assessment Tasks from Inside Mathematics
<https://www.insidemathematics.org/performance-assessment-tasks>

What are Alternative Assessments? University of Minnesota has some ideas and examples here, that can apply to the high school context as well as universities <https://cei.umn.edu/support-services/tutorials/integrated-aligned-course-design-course-design-resources/alternative>

Supporting New-Comer Students to Learn Mathematics: This research brief by TODOS board members includes thoughts about the role of assessment with students new to schooling in the US
https://theanswerlab.rossier.usc.edu/wp-content/uploads/2020/06/AnswerLab_Issue9_main-061120-draft-2.pdf



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Equity Considerations of Access, Use and Design of Technologies for Teaching Mathematics

Abstract

In this paper, we add to the discussion on technology considerations for the teaching of mathematics in the coming school year. Technology is not a learning panacea. Nor does the right technology supplant instruction and professional knowledge for teaching. Given the scope of possible topics to discuss in relation to technology for teaching mathematics during the ongoing COVID-19 pandemic, we choose to highlight essential equity considerations rather than aim for a comprehensive discussion or a list of suggested online tools. We acknowledge the possibilities and challenges in distance teaching that relies on inequitably distributed technologies. We propose actions for educators organized through the lens of access, use, and design. Finally, we discuss accountability towards our commitments to equity and social justice when implementing technologies for teaching mathematics.

Acknowledging Possibilities and Challenges

As we continue to use technologies to limit interruptions to schooling in light of various events, we must preserve our commitments to equitable, just, and humane teaching pedagogies. Technological resources are not a replacement for teaching; rather they are tools to aid us in meeting our instructional goals and to help us foster relationships from afar.

We acknowledge that alongside the incredible power and potential of technology, there are also a number of issues in terms of access, design, and use. Some of these challenges include how access to broadband networks and online-capable devices is inequitable, with affluent, urban communities tending to have more access, and notable disparities by racial groups (National Telecommunications and Information Administration (NTIA), 2019). Many of the technological tools engineered for instruction and used most broadly were designed without input from or consideration for Black, Indigenous, and People of Color (BIPOC) communities or the neurodiversity of humanity. Students with particular needs may be disadvantaged by the design of learning activities that lack the necessary accommodations. Teachers have been tasked with using technologies with little preparation on how to do so in alignment with effective mathematics teaching practices. Without overcoming these challenges, issues of use do not even become part of the conversation.

Actions to Address Access, Design, and Use

Given the speed at which change to schooling conditions are occurring, it is impossible to anticipate all of the challenges that will arise during this new school year. In this section, we suggest actions that various stakeholders might enact as they work to address access, use, and design of technologies for learning that align with [our mission at TODOS](#). We note this list is not comprehensive and hope that as we learn and know better that we continually strive to do better. In addition, though we have generated suggested actions, we know that this school year will require all of us to be flexible and fluid as we face changing circumstances.

Access

In utilizing technologies for instruction, we must first consider if families, students, teachers, and other education staff have access to what they need to make school work for everyone in distance and hybrid modes. Access can be considered in terms of both connectivity and use. In the spring of 2020, both educators and the general public alike became aware of the disparities in access to high-speed internet connectivity – necessary for students and teachers to successfully interact with many forms of digital instructional media ([see, for example, this article in the Washington Post](#)). Many people who relied upon public Wi-Fi access points at libraries, schools, churches, fast food restaurants, etc. lost those points of access due to the pandemic. In many rural areas without broadband access, schools had to quickly procure and distribute hot spots to allow students access to instruction. In May, [EdWeek reported that 96% of teachers have access to high-speed internet at home and have relied on that for teaching](#), while few if any districts had stipends to offset their out-of-pocket costs. Moving forward, we must act to ensure students *and* teachers have access to high-speed internet and that families can do so without sacrificing other basic needs. This requires us to engage in conversations with students, families, and communities to understand the access available in schools, homes, and community spaces and then create plans to fill in any gaps.

Once connected, many students may lack devices to access learning activities. Again, teachers must work with students, families, and community organizations to understand which devices students utilize and, if needed, provide devices aligned with the instructional materials. For example, if students are regularly expected to write, those who utilize their learning activities from a smartphone may have greater difficulty completing assignments than those with laptops because it can be very difficult to write on a phone. Alternatively, teachers must also consider how they can align instruction with available technology. For example, in some households where the speed of connectivity is slow, downloading videos versus streaming them works better because streaming quality can be poor at slow speeds, whereas once a file is successfully downloaded it can playback properly. Moreover, teachers must consider the challenges that arise for families with multiple remote learners/workers who rely upon a single device. Teachers must learn to connect families to resources both within and outside of the schools.

Mechanisms must be put in place, so students, teachers, staff, and all those in the school community have ways to check their access to the internet and technology. This is becoming increasingly important as many states are renewing their requirements for schools to take attendance (which was suspended during the initial crisis in the spring), and many states tie school funding to attendance, creating the conditions for drops in school funding due to students' technological access issues. Teachers and staff must ensure they are checking on students and their families to ensure all have access to devices and networks. Through conversation, surveys, phone calls, etc. teachers can connect with families to ensure students have the tools they need to be successful. There are several ways teachers might approach this, including a weekly check-in with each student as well as follow up by administrators and others in the school community. These check-ins could also be facilitated by existing parent-school partnerships ([see our commentary paper on Parents](#)). In addition, there should be ways for teachers to talk with administrators regarding their concerns about their own and their students' access, especially once the school year is underway.

Finally, needs must be reassessed as the year goes on. School districts, government, and community organizations need to establish the relationships and communication channels so solutions can be enacted quickly when barriers exist.

Potential Access Actions
Teachers can embed weekly check-ins around technology into instructional time or into family check-ins. Family circumstances can change quickly, and technology can crash for a variety of reasons. Revisiting technology needs as the year goes on will be important.
Teachers can have multiple methods for how to take attendance that accounts for the differences in access and possible issues with connectivity. Some examples include checking usage statistics on learning platforms, allowing students to keep journals of their progress, screenshots of Zoom calls, and (especially in earlier grades) checking in with parents to understand how students engaged with particular learning activities.
Teachers can ensure systems that maximize equitable access to mathematics instruction are in place. For example, if you are unsure if students have printers at home, do not ask for them to print out items necessary for engaging in class.
School administrators can develop strategies to assess and aid teachers and families with connectivity issues; initial needs assessments help get started, however establishing checkpoints to revisit needs and creating flexible budgets to adjust to teachers' and families' needs as the year continues will be important.
School site teams can collect and share data about attendance and participation as part of evaluating digital learning plans. Establish procedures to revisit these plans with input from families and students.

Design

As schools rush to approve and purchase curricular resources for distance and hybrid learning situations, we ask school communities to rate these resources with a critical eye towards design considerations, including whether the technology:

- Maintains or supports access to high-quality mathematics learning
- Has accommodations for students with different needs (visual, audio, learning differences, EL) integrated into the design
- Supports social and emotional development of students
- Aligns with a vision and mission of antiracist education

The final point may be harder to wrap our heads around. How could technology undermine an antiracist approach to teaching? As illustrated by authors like Cathy O’Neil in her best-selling book *Weapons of Math Destruction*, even machine-generated algorithms are riddled with bias from their human

originators. Our suggestion is to take a critical eye to the damage that even seemingly innocent tools for teaching might inflict on students. For example, see [this article on Classroom Dojo](#) as indoctrinating children into a culture of surveillance. Technology and norms for the use of technology that reproduce the harmful policing aspects of schooling do not belong in an online antiracist classroom. For example, rather than the hard and fast rule of requiring students' cameras to be on during a live lesson, a teacher could instead remind students that they trust they can manage their own needs during a lesson and ask to the extent that they feel comfortable to have their cameras on.

Teachers should consider students and families as they set up learning management sites. For example, it can be difficult for middle and high school students to engage with distance learning when six teachers each use a different learning platform or designs of the learning sites differ dramatically. Further, collaboration among teachers is critical if one is to gain an understanding of students' remote learning experiences. Such collaborations among paraprofessionals, language acquisition teachers, special educators, etc. are essential to providing the necessary accommodations for students. Teachers who may be accustomed to providing necessary accommodations in face-to-face classrooms may not know how to do so remotely. All instructional personnel must hold one another accountable for the necessary services.

Finally, most educational technology developers have not been teachers or even in the world of education. However, social media and other platforms have created a third space for developer feedback. We must proactively convey feedback from teachers, students, and families to the software companies who are profiting from their products, from those designed for synchronous (i.e., "real-time") interactions, and those designed for asynchronous (i.e., "on your own time") mathematics practice. This allows those in the school community to hold developers accountable as they provide feedback.

Potential Design Actions
Teachers can communicate clearly with families about what technological platforms you will be working with and why. In particular, for working with newcomer families, consider communicating through short videos translated into more than one language for families who may not read target home languages.
Teachers can invite feedback from families. Collaboration with parent groups, site council, and family coordinators can be helpful here to get feedback from multilingual families.
Leaders in decision-making positions (such as administrators, site council groups, etc.) can bring the user group to the table when making decisions about technologies for teaching and learning. This may be teachers, students, and families who are all involved in the decision making about technology adoptions and renewals.
All users can utilize third-space technologies (twitter, developer feedback forms, online forums, etc.) to provide feedback to developers on design needs for your communities. Teachers, parents, students, and administrators should all provide feedback to help shape the direction of educational technology.

Use

We must support students, teachers, and families in understanding the use of technologies, and we should not assign technologies that are misaligned with our core values. Schools and technology companies must provide the necessary educational opportunities for families and schools to use tools effectively for instruction and learning. Collaborations must occur within our schools and communities to make sure students and families are able to use the necessary technologies.

We must commit to critically examining our learning environments so that humane uses of technology are prioritized. This requires us to question whether it is feasible (or desirable) to require students of all ages to be tied to a computer screen for hours a day with little opportunity to engage in exploration, play, and conversation. For example, as states come out with guidelines for instructional minutes during distance learning, it is unlikely that all minutes should be spent in online learning environments. Therefore, teaching teams should strategize around how instructional minutes might be divided between synchronous time with teachers, independent online activities as developmentally appropriate for children, and learning time off-screen. Moving to remote instruction requires us to rethink the structure of the school day for faculty, staff, and students so that we are intentional in bounding the workday.

Moving to remote instruction must not dehumanize teaching; relationships must be fostered and preserved. Much as we take time to develop norms for navigating the physical classroom and developing community, so must we take time to do so in the digital classroom. Such norms must also take into account issues that are of particular concern in digital environments such as privacy and cyberbullying. As we develop these norms, understanding of students' perspectives on our learning environments is critical; we must talk to students in ways that show we value their perspectives and knowledge. Let us be honest: some students know more about online relationship dynamics than we teachers do! We must also ensure students understand ethical uses of technology while also protecting their privacy and prioritizing healthy relationships with teachers, staff, and peers.

Potential Use Actions

Teachers can provide families with resources for how to use the various technologies, keeping in mind the particular needs of your families (e.g., limited access to devices, unstable internet connections, etc.). Clarity of communication and attention to the communication preferences of families are especially important during distance learning.

Teachers and administrators should consult research regarding appropriate amounts of screen time for various grade levels (e.g., [see these resources from We are Teachers, 2020](#))

Teachers can ensure they are routinely engaging in purposeful activities and discussions with students to build relationships both synchronously and asynchronously.

Teachers and students should work to build norms around safe and productive interactions and uses of technology.

Accountability

Accountability is difficult but crucial to ensuring that we continually engage in actions to develop and foster equitable, just, and humane learning environments. We note that delineating specific accountability systems and measures will take much time and thought, given the new challenges brought about by the pandemic. Therefore, in this section, rather than prescribing means of accountability we detail guiding principles we think critical to the success of such measures.

Quality Learning Environments

All of us education stakeholders, from the general public to the superintendent of public instruction, must hold schools accountable for the provision of high-quality learning experiences. Schools must put in place systems to ensure *access* (as described in the prior section) is regularly monitored and addressed. These systems must be shared with students and families so they can, in turn, hold schools accountable for the provision of safe, equitable, humane, and quality learning environments. Moreover, these systems must extend to teachers as they must have access to the knowledge and resources to teach effectively from a distance. Such systems must allow for and encourage open and safe dialogue.

Students should be accountable for and hold others accountable for the ethical use of technologies. Schools must work collaboratively with students to develop accountability systems for holding everyone accountable for ethical and humane uses of technology. This includes ensuring technology-related issues such as cyberbullying are addressed. Families can help to hold schools accountable for quality learning experiences by communicating concerns and engaging in public discourse via organizations, school board meetings, and elections. Communities can pool or pull resources in reaction to leaders' progress, or lack thereof, in fulfilling the promise of quality learning environments. Technology developers can be held accountable by the provision of feedback on what those in the school community need.

Multiple Stakeholders Involved in Digital Accountability

Accountability relies upon open and accessible dialogue among stakeholders. We must not only invite people to the table, but we must also bring the table to the people. It is insufficient to lament lack of involvement; we must instead look to the lack of engagement as a sign that our approach is insufficient. This accessibility means that people should be engaged in multiple platforms and at times and in spaces that do not cause unnecessary harm or difficulty. Information should be easily accessible in forms and languages(s) that are of use to those who are impacted.

Systems of accountability should also include mechanisms for change. If actions do not result in movement toward quality, humane learning environments, our accountability systems must change. Such provisions are included in some accountability systems. For example, elections allow us to vote out those who have not upheld their commitments.

In an era of distance and hybrid learning, we fully recognize that technology for teaching mathematics is no longer an afterthought. As we rethink technology for teaching mathematics, we have to keep the same student-centered, human-centered pedagogies that we teach within brick and mortar schools. While we have full confidence in teachers as professionals, many of the recommendations we make will require school districts to put their budgets where their commitments are, and invest in teachers' professional knowledge for technology use, access to equipment as well as tech support for families, and a range of other new expenses – but we can do it. Technology that allows for distance learning is what is going to keep teachers, children, and families alive through our viral pandemic, and help students keep learning mathematics.



Equity Considerations for Access, Design, and Use of Technologies for Teaching Mathematics.

Read the full commentary at www.todos-math.org/statements

Mathematics for ALL

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Teachers and students should work to build norms around safe and productive interactions and uses of technology.

(Re)sources

<https://www.ntia.doc.gov/data/digital-nation-data-explorer#sel=internetUser&disp=map>

On the distinctions between online teaching and emergency remote teaching, and why it's important to have a plan for ERT beyond our current COVID pandemic, higher ed focus

<https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>

We are Teachers. (2020). *Kids (and teachers) don't need to spend 8 hours a day on school work right now.*

https://www.weareteachers.com/virtual-learning-schedule/?fbclid=IwAR0YdvSza5BhcfQY7WT4nme3Vgrh_ZOwkQxwKMywFYJtPmEJbIr5-X4BVIU

California Parent Poll: COVID 19 and School Closures. Education Trust West Parent Survey Data on early COVID school closures. The data here might be helpful to inform how school districts approach technology distribution and support, or designing surveys. <https://west.edtrust.org/ca-parent-poll-covid-19-and-school-closures/>

CoSN (Consortium for School Networking) has a [free survey template originally designed in 2016](#), before COVID-19 when our internet concerns were more focused on a “homework gap”. The survey questions are just as important today and can be used as a starting point. More free resources for digital equity at their website: <https://cosn.org/>

National Standards for Quality Online Learning can be a starting point for assessment of county/district plans for online learning. <https://www.nsqol.org/the-standards/>

A special thank
you to the
children who
shared their art
with us.

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A Position of
TODOS: Mathematics for All
and Four Commentaries

