South King County in Washington State:

Five School Districts and an Educational Services District Tackle Racism as a Barrier to Early Learning in Mathematics

BACKGROUND

This profile of a five-school district effort in Washington state's south King County is one of three the California-based Heising-Simons Foundation asked Education First, a national education policy and strategy consulting firm, to write. The profiles are designed to help more California policymakers, education leaders and funders see how different communities are prioritizing early learning in mathematics to improve outcomes for their youngest learners, especially for low-income students and students of color.

"Early mathematics" encompasses any formal or informal instruction for learning for children from birth to age 8, when children begin to conceptualize what numbers are and how to use them; develop early mathematical thinking, such as counting and understanding spatial relationships and patterns; and develop beliefs about their own mathematical abilities. Some ground-breaking research suggests that early mathematical skills, such as knowing numbers and ordinality, correlate more strongly with student success in later elementary school than do other indicators, such as literacy skills and behavior, and that children who do well in math early tend to do very well throughout school.

The south King County profile provides an overview of an effort to improve family engagement in early math, particularly by addressing institutional racism that prevents educators from working with families as equal partners.

For additional information on the Heising-Simons early math initiative and an overview of the profiles, please see the introduction to the profiles or go to the Heising-Simons Foundation webpage. ■

"We're thinking about the problem and the solution differently than we were two years ago," says Kendra Lomax, the managing director of Teacher Education by Design at the University of Washington. Lomax is one of six members on a steering committee responsible since 2012 for coordinating a concerted effort by five school districts and a local educational service agency to improve math outcomes for early learners. Focus has been on marginalized student populations that are not meeting expectations in under-resourced neighborhoods of south King County in the Puget Sound region.

King County is one of the major counties comprising the region. Anchored on the west by Seattle, King County also includes sprawling suburbs, industrial areas, rural acreage and mountain passes to the west. With Seattle and its eastern suburbs experiencing dramatic growth and wealth from technology giants such as Microsoft and Amazon, much of the county's lower-income and immigrant populations have moved to the south end of the county.

The original focus of the partnership—and still the main concern—has been to help early learners benefit from improved teaching in math. Initially, the school districts worked toward this goal via activities targeted at increasing the knowledge and skills of their early learning educators and by developing district-wide early learning math plans. In particular, they focused on better aligning systems, resources, and teaching and learning supports across preschools and elementary schools to strengthen student transitions between grades and to ensure that historically marginalized students had access to skilled educators in math.

Greta Bornemann—steering committee member, the Puget Sound Educational Services District (PSESD) director of mathematics and the organization's lead for this early math initiative—recalls: "When we first started, our work in mathematics focused on school-level work, with terrific principals and teachers working to align kindergarten and preschool. But this was really a technical fix and an obvious first step. It did not address a key structural barrier to learning: the absence of family and community voice in decision-making."

In 2017, the initiative's steering committee—consisting of PSESD's math director and family engagement specialist, one parent, one community member and representatives from Washington STEM and the University of Washington—began looking more closely at how to make a substantial, early difference for children of color in math. Over several meetings, they agreed the initiative should better emphasize removing barriers to successful family engagement, including specifically confronting the role structural racism plays in school systems. "District leaders came to this conclusion after a period of due diligence designed to uncover the root causes of the gap between the early math abilities of students of color and their white and more affluent peers," explains Bornemann.[1]

> "The work supporting teaching practices is still important. But we know that to confront inequities in math education, we need to do more. So, we've taken seriously the calls to action for social justice, the elimination of racism and development of equity in math education."

Lomax suggests that with this new commitment, "We're interrogating and challenging 'deficit' views of children and families of color and are working across districts to view communities and families as the experts who can identify problems and generate solutions for their children." She adds: "The work supporting teaching practices is still important. But we know that to confront inequities in math education, we need to do more. So, we've taken seriously the calls to action for social justice, the elimination of racism and development of equity in math education by the National Council of Teachers of Mathematics [and other professional organizations]."[2]

[1] The five districts are Federal Way, Highline, Kent, Renton and Seattle. The Puget Sound Educational Services District (PSESD) facilitates a six-person steering committee guiding early math work that is underwritten by the Bill & Melinda Gates Foundation.

[2] See the joint position statement from the National Council of Supervisors of Mathematics and TODOS: Mathematics for All at Mathematics Education Through the Lens of Social Justice: Acknowledgment, Actions, and Accountability. The statement calls for educators to adopt a social justice stance that "interrogates and challenges the roles power, privilege and oppression play in the current unjust system of mathematics education" and to create stronger family/community relationships to promote mathematics learning. See also a publication authored by the NCTM Research Committee (Aguiree et al. "Equity Within Mathematics Education Research as a Political Act: Moving from Choice to Intentional Collective Professional Responsibility." *Journal for Research in Mathematics Education*. Vol. 48, No. 2, 2017, 124-147.). The publication asks researchers in mathematics to consider why mathematics learned in the home has less value than that learned in schools, particularly for "nondominant students whose home mathematics is not usually brought into the classroom."

RECOGNIZING RACISM IN THE ENGAGEMENT OF FAMILIES OF COLOR

Committee members concluded that educators' messages and attitudes about math expectations often stifle true family engagement, especially for families with nonwhite members. Furthermore, they perpetuate institutional racism. Families whose voices are absent from school planning and parent meetings are more often families of color—a troubling verdict especially as the demographics of the south King County area have changed substantially, according to Bornemann.

Bornemann adds that one significant reason many children of color struggle in math is that educators often perceive families of color as working from a deficit of math knowledge. Thus, the result of any engagement effort should be giving families authentic opportunities to add their voices to conversations about how to improve outcomes for their children.

Some research confirms that a largely white educator corps views nonwhite families as working from a deficit. For example, a qualitative study of family engagement efforts within one large city found these efforts "often disregard the cultural and social resources of nondominant families." The researchers speculate that school and community efforts to build authentic family engagement "might entail creating opportunities for teachers and educational leaders to learn from nondominant families to improve teaching and learning."[3]

Matthew Gulbranson, family engagement specialist at PSESD and another member of the early math steering committee, elaborates on how he sees school systems failing to engage families of color: "Oftentimes when we're thinking about the parent's role in their child's education, it's not about being a partner. This is what we've said typically: 'We're going to tell you what to do and you need to do it.' That is not engagement. That is information-sharing. In most cases in education, there's a transactional relationship between the parent and the school. That's the status quo. When people who are not part of a community try to make decisions for another community, that process is by its nature oppressive."

Catherina Willard, family development manager of the White Center Community Development Association (WCCDA) and a member of the steering committee, sees how families and children are impacted. In her view, when white-dominant organizations or institutions, such as social service agencies or school districts, assume they understand the issues their constituents are facing and know what the people they mean to serve need, they "perpetuate racial disparity and white supremacist culture," she argues. "Instead, the people who are oppressed by the inherently racist institutions we have inherited need to define their own obstacles and needs, and must be centered in any process that is supposed to serve them."

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For the early math initiative steering committee, truly changing this paradigm in schools across south King County begins by recognizing that improving teaching quality in classrooms alone is not sufficient; change also requires family engagement and support. Those, in turn, require educators to begin acting on the knowledge that families of color use math too and that language and culture contribute to different conceptions of how to perform mathematic functions, including skills as seemingly simple as counting (see the sidebar on counting on page 7).

[3] Ishimaru et al. "Reinforcing Deficit, Journeying Toward Equity: Cultural Brokering in Family Engagement Initiatives." *American Educational Research Journal*, Vol. 53, No. 4, 2016, 850-882.

PUSHING FORWARD

Committee members ultimately coalesced around three principles for guiding and radically changing parent engagement and classroom teaching strategies to support early math in area schools:

- **All parents want their kids to be successful at math, and parents and educators should work together to identify barriers to success.**
- **Addressing barriers to success requires reexamining and recognizing (1) how parents were taught math and what their perceptions about mathematics are; (2) deeply held, traditional assumptions by teachers and curriculum staff—largely based on a western European view—about how math should be taught; (3) power dynamics between schools and families and between individuals from different races and ethnicities; and (4) cultural differences between the largely white teaching corps and the family population that is much more diverse than the population of teachers.**
- **Listening to nonwhite parents—including recent immigrants from across the world—engenders learning that teachers can use for their own instruction and the supports they ask of parents.**

In 2018, to start rolling out the new emphasis embedded in its three principles, the steering committee came to the early math initiative's Professional Learning Network and its Implementation Network. The Professional Learning Network consists of district coaches and others leading professional development for math teachers. The Implementation Network consists of district math leaders and curriculum directors, community partners and parents. Both networks were created the prior year as learning communities designed to develop participants' knowledge and skills in advancing stronger math pedagogy in their districts.

Today, they focus on advancing stronger family engagement and partnerships in students' math learning (both networks have created goals to guide their work—see text boxes on this page and the next page). The Professional Learning Network is prioritizing changes in how professional developers work with teachers to engage their students' families; the Implementation Network is prioritizing support for new district approaches and activities for engaging families.

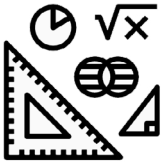
Both networks are starting to help educators in the participating districts understand the importance of engaging families in new, authentic ways to support early math learning; they are encouraging educators to reflect more about engaging families from different cultures and whether or not they listen to and learn from them and view them as assets to their children's education. Network members also sit on teams charged with advancing family engagement work in their individual districts, developing strategies to better engage families of color and giving those families a greater voice. The goal is to improve early math for their districts' youngest students.

GOALS OF THE DISTRICTS' EARLY MATH PROFESSIONAL LEARNING NETWORK

Gain knowledge & skill in supporting teachers to take up anti-racist stances and practices

Develop skills to facilitate adult learning

Refine teachers' early mathematics content knowledge



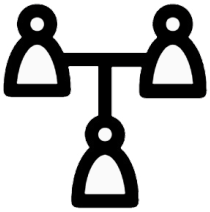
Bornemann suggests that the early learning math initiative's current emphasis on family engagement is an effort to ensure that it's no longer "about one-way communication. I want parents to tell me about the kinds of things they do with their children and about their own experience with mathematics."

Marci Baril, math director for Kent School District—one of the state's largest districts that encompasses a significant portion of unincorporated King County in the shadow of Mt. Rainier—says that the networks are exploring how communities "experience disconnect" and how districts can reconnect them to mathematics "through their world experience and culture." She adds, "The goal is to build the knowledge and skills of teachers who work to bring in family and parent voice and break down siloes between districts and families, regardless of where they are from, their level of education and their experience with math."

Dylan Bosseau, a member of both networks, teaches preschool at Rising Star Elementary School in Seattle Public Schools. He says his participation in the networks has forced him to reflect on and modify his teaching and focused him and his fellow participants on concepts such as the Western colonization of mathematics (Bosseau also notes that the concept of mathematics predates Western civilization). The networks' efforts to help educators listen to parents and see how they practice math differently, he says, has helped him see various ways for engaging students from other cultures and be a better instructor. In his view, the two networks are trying to make early childhood mathematics a practice about inviting all students and their families into it through multiple entryways.

GOALS OF THE DISTRICTS' EARLY MATH IMPLEMENTATION NETWORK

Deepen understanding of structural and implicit racism and the essential partnerships to close opportunity gaps



Increase family and community voices in districts' decision-making and embed those voices into the early mathematics work of this project.

Create structures that allow for family and community voices to co-create and co-plan early mathematics efforts

DIVERSE ENTRYWAYS INTO MATHEMATICS EXPLORATION: GROCERY STORES, LAUNDROMATS AND FAST FOOD RESTAURANTS

South King County is an exemplar of the American melting pot. In the Kent School District, for example, children and their parents speak at least 85 languages.

Members of both networks note that just because immigrant family members may not have a formal math background doesn't mean they don't do mathematics. Everyone performs mathematics, they point out, and this reality creates a natural bridge for authentically engaging parents as partners for their children's success in math.

Network members say that teachers, their coaches and administrators are beginning to see how fast food restaurants, grocery stores and laundromats, among other places in the community, are places where parents can and naturally do engage in mathematics. Coming to this realization is part of what needs to happen, they suggest, to undo the assumption that mathematics is only performed in school where virtually all the teachers are white.

"In a laundromat, for example," a member of the Professional Learning Network says, "parents have to use mathematics strategies involving counting (time and money).
They ask, 'How much time do I have to complete my laundry before I have to be somewhere else? How many machines are available, so how can I best divide my load of laundry? How many clothes will each machine take and how much will it cost if I use two or three machines?'"

To foster the understanding that all parents use math, the Implementation Network has been promoting community math walks, such as one for educators in the Renton Public Schools—a district located on the south edge of Lake Washington that includes The Boeing Company's massive 737 plane factory.

In the Kent School District

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These community walks invite educators to talk with families about their home- and community-based mathematics activities. The goal is to increase their knowledge and familiarity with students' communities, particularly of activities and practices that might relate to math instruction, and to broaden understanding of student and parent mathematical competencies by recognizing ways students see and use math in the home and other places outside of school.

COUNTING IN KHMER (CAMBODIAN) CULTURE: THE WESTERN WAY IS NOT THE ONLY WAY

On the other side of the world, Cambodians conceptualize counting in sequences of 5, not 10. Once they arrive at the number 5, they combine it with the word for the number 1 to signify 6. In their language, 1 is "muoy" and 5 is "phrum." So, 6 is "phrum muoy."

The Cambodian 5-Based Number System

Khmer	Number	Khmer	Number
muoy	1	dop muoy	11
pi	2	dop pi	12
bai	3	dop phrum	15
buhn	4	dop phrum muoy	16
phrum	5	mpei	20
phrum muoy	6	mpei muoy	21
phrum pi	7	mpei pi	22
phrum bai	8	mpei phrum	25
phrum buhn	9		
dop	10		

COUNTING: NOT THE SAME EVERYWHERE

Network members are also learning that mathematics is not practiced the same everywhere and that knowledge of cultural differences can influence instruction.

Dylan Bosseau regularly works with his preschool students on counting collections: having students compile and then count objects. He says he has become more in tune to cultural differences among his students and families when they count. When he asks kids to count on their fingers to 10, some count fingers up, some fingers down and some include spaces in between their fingers. And during a recent family math meeting focused on counting collections, he says one of the parents counted to 100 by first counting by twos and then placing them into groups of 10. Lastly, she counted the groups of 10. He now knows, he says, that her son might potentially count the same way.

Bosseau also has observed family members of students counting in ways that do not reflect the 10-based number system in use in the United States and European countries (see page 7) and that some students come from cultures where there is no such concept as the "teens"; their language simply combines the words for 10 and three, for instance.

He says that listening to these different ways of counting has helped him better understand the computation errors students are making in his classroom as his students learn numeracy skills. His work with families, he says, has helped him do a better job of coaching students.

> "Projecting deficits is the 'white story' for why brown kids can't succeed. There are deficits that school district personnel typically project onto families and students of color. They routinely say, 'Kids don't have access to resources; their parents don't have transportation or time to attend meetings.'
>
> Parents can walk to meetings but don't because no one listens to them and they think it is a waste of time."
>
> —Catherina Willard, family development manager, WCCDA and a member of the Early Math Initiative Steering Committee

RESULTS AND THE RATE OF CHANGE

While the initiative's work to improve math teaching in the classroom continues, the new emphasis on family engagement—and working with parents from different cultures and backgrounds—is nascent, having begun in earnest in 2017. Thus, it is too early for any changes in student learning to be picked up by standardized tests in third grade. However, a recent qualitative evaluation of the early math focus on family engagement suggests it has been challenging yet shows signs of progress at changing minds and practices (at this writing the report is still in draft form).

For this evaluation, Washington STEM, in partnership with Aspect Research + Evaluation, conducted interviews with district teams and the steering committee. They administered a survey to early educators to capture insights and challenges in relation to project goals in year two and to help partners identify areas needing continued attention as they work toward a regional vision for strengthening early math.

Bornemann summarizes the draft findings:

• Evaluators noted that district teams interviewed said they have a solid foundation and clarity of direction to remove structural or institutional barriers and strategies to improve racial equity, but district leaders also recognize the need for teachers and administrators to continue to explore their own racial biases. In fact, a key finding of the report is that some district teams are finding it challenging to focus their work specifically on racial equity and that teams can get better at partnering with families to set goals for their children and design learning opportunities.

• Still, the evaluators found that several teams are making progress in developing relationships with families and community through parent committees, community math walks and early learning gatherings. Some teams noted the shift away from districts telling parents what they should know to engaging families through listening and learning and making them feel welcome in schools and that their contributions are valued. The evaluators suggest that even though districts are wrestling with how they should listen to and learn through families, several have made important changes in their thinking and practice.

Steering committee members are optimistic about the progress they are seeing, both with those teams working with teachers and with some teachers themselves. Lomax, who is the lead planner for the Implementation Network, notes the changes network members have made in shifting mindsets: "They are certainly talking and thinking differently. They're mirroring the learning of the steering committee. They're realizing how important family and community voice is to the work. At first, they saw family engagement as one person's job in the district. And now they're starting to see that it's part of their work as well. We're starting to see people trying to connect to families more as equals."

One of PSESD's family engagement specialists, Matthew Gulbranson, notes that some schools are starting to change their approach as well: "The biggest difference is developing relationships with parents. At the beginning districts weren't seeing a connection between racial equity and early math. One of the big shifts that I've seen with districts is really seeing that connection. It's not a separate strategy that lives with the district equity person."

At the same time, moving "at the speed of trust"—as Gulbranson characterizes the initiative's steady progress—does not undo the need to show concrete gains in student learning, including increases in test scores. "There's the pressure to raise scores in a defined amount of time," one participant in the Professional Learning Network says. "As a group, we're talking about what's needed for change to happen and how to impact a teacher's math instruction. We're taking the long view for this discussion." Network participants are beginning to identify added measures outside of student academic growth to monitor the progress they're making as they engage families more equitably.

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Gulbranson says that it's "a journey that never ends because it is essentially a journey that requires educators to look into their hearts and make changes to the way they have been doing business." ■

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INTERVIEWS AND PHOTOS

Quotations and content for this profile were obtained through interviews of Marci Baril, Greta Bornemann, Kendra Lomax, Matthew Gulbranson, Dylan Bosseau, Catherina Willard and focus groups with members of the Professional Learning Network and Implementation Network, all of which occured April-August 2019. In addition, we are grateful to the Puget Sound Educational Service District for sharing the photos of students and teachers used in this report.

The Heising-Simons Foundation is a family foundation based in Los Altos and San Francisco, California. The foundation works with its partners to advance sustainable solutions in climate and clean energy, enable groundbreaking research in science, enhance the education of our youngest learners, and support human rights for all people.

Education First is a national, mission-driven strategy and policy organization with deep expertise in education improvement. Its mission is to deliver exceptional ideas, experience-based solutions and results so all students—particularly low-income students and students of color—are prepared for success in college, career and life.

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