



Georgia MathTalks – Series 1: Episode 5 Part 1

Wed, 09/04 07:35AM 20:50

SUMMARY KEYWORDS

equity, students, math, mathematics, teachers, classroom, mindset, content, Georgia, pathway, school, district, opportunities, higher level, accelerated, high expectations, equal opportunities

SPEAKERS

Brooke Kline, Dr. Tamara Pearson, Dr. Lya Snell, Dr. Walter Stephens, Mike Wiernicki

- D** Dr. Lya Snell 00:08
Welcome to the Georgia Department of Education, Georgia MathTalks Podcast series!
- D** Dr. Lya Snell 00:22
Welcome to the fifth episode of the Georgia MathTalks podcast series where we will talk about the "Limit Does Not Exist". Thank you for joining us! We have an exciting topic to talk about today, which is mathematics equity and access for our learners in Georgia. During the last episode, we had the privilege of having Felicia and Meghan, the STEM and STEAM Specialists for the Department of Education, come to talk about STEM and STEAM programming. I am Lya Snell, the Mathematics Program Manager for the Georgia Department of Education.
- B** Brooke Kline 00:54
I am Brooke Kline the Secondary Math Specialist for the Georgia Department of Education.
- M** Mike Wiernicki 00:58
And I'm Mike Wiernicki, the Elementary Math Specialist for the Georgia Department of Education.

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Dr. Lya Snell 01:03

Our Advisory Council spent time defining mathematics equity in Georgia and talked about what leaders should know and what the responsibility of leaders are related to this topic of mathematics equity. We are so excited because we have two special guests with us in this episode. We have Dr. Tamara Pearson here from CEISMC at Georgia Tech; thank you for hosting us here on your campus. Thank you for being here.

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Dr. Tamara Pearson 01:31

My pleasure to be here.

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Dr. Lya Snell 01:33

And we have Dr. Walter Stephens from Houston County, former principal of Thompson Middle School, and Director of Operations at their central office now.

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Dr. Walter Stephens 01:44

Good morning. Thank you for having me.

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Dr. Lya Snell 01:46

So, What is math equity? From the standpoint of building level leadership, district leadership as well as in your role at CEISMC, what would you define as mathematics equity?

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Dr. Tamara Pearson 01:57

At CEISMC, we think about equity in terms of making sure that every student has what they need, in order to have the most opportunities available to them post-secondary. So, whether that means that we need to create summer learning opportunities for students that wouldn't otherwise have access to those things. Or if that means creating new after school programs, we think about how do we wrap our whole selves around a child so that they have all the opportunities available to them. Specifically, with mathematics, it means often helping to define what quality mathematics education looks like on a daily basis inside of a classroom so that it's engaging for students.

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Dr. Lya Snell 02:37

Thank you for sharing. Dr. Stephens, from a building level leadership perspective and a district level leadership perspective, what do you consider to be mathematics equity?

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Dr. Walter Stephens 02:49

One of the key things when we talk about mathematics equity is allowing students to gain access to those teachers who truly have a firm grasp of the content. And when you have teachers who have a firm grasp of the content, it almost goes without saying that those students will begin to pick up solid mathematical skills and understanding and you don't have students learning the material along with the teacher. So, for us, and even for me, as I was a principal, it was very important that I put people in the classroom that was going strong with the content, but also knew how to deliver that content to the students. And to provide them with a solid foundation as they begin to progress towards I would like to say, higher mathematical not just skills for being able to access those content, those courses once they transition out middle school and into high school. A lot of times when we think about mathematics equity, we often want to make sure that those students had the best teachers that were solid in their content, and were able to deliver that content. And not only were they able to deliver that content, but we were not shutting students out because of what we perceive their ability to do with regards to math and not just some of the other content areas.

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Dr. Lya Snell 04:06

So, that really goes to this idea that we hear often these kids can't, whatever is followed by that. And dispelling the myth of certain kids are not good at math, or certain people who walk the earth are not quote math people. How do you dispel that myth when working with educators in your roles? All... everyone is a math person, not some people that were born with an innate ability, it's actually each and every person can develop their mathematical skills to a deeper understanding. How do you help teachers understand that?

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Dr. Tamara Pearson 04:43

So, I think there's a couple of ways that you can do that. One is it's a belief system for teacher, right, you have to walk into your classroom believing that our children can learn at the highest levels, no matter what deficits they may be walking into your classroom with. So, if that's your core, you don't believe that, then there's a struggle right there. No amount of research that I show you is going to change that core belief that you have. But then the other thing is taking it often out of the math realm and having teachers explore within themselves, you know, thinking about beyond what you do for a living, what are you good at? And why are you good at it right, and how much of so say you're a really good cook. How much of the fact that you're a really good cook has to do with years of cooking, and how much of it has to do with you were just born to cut. And helping teachers to understand that, oh, I'm actually a really good cook, because I work really hard at it. And because I enjoy it. And so, if we bring both of those elements into our math classrooms, then more students will be successful in mathematics.

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Dr. Lya Snell 05:40

Thank you. I agree.

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Dr. Walter Stephens 05:42

I definitely agree with that. Let me go back to my last few years at Thompson Middle School. For us, it was when students transition out of fifth grade into sixth grade, we knew that was a big transitional piece and just like when to transition out of eighth grade into high school, we also knew that was a big transitional piece not to diminish what happens in the seventh grade. But, once you have those two bookends, if you will that foundation piece that they need to be successful in seventh grade was the seventh grade to build on those skills. And then transition eighth and eighth grade begins to put skills together that will make them successful in high school. Very important. But you're absolutely right, when you talk about teachers who understand math, but also have a special gift to, to deliver that concept to students, and it not seem like a far-fetched abstract idea is a powerful thing. So, I think for me, as a as a former principal, I had to be very intentional about finding people who loved math. And also, were able to, to pour that on to students in terms of their love for math and gets into love math also. So, you know, when you when you talk about students being at risk, or that perception that some students can't do math because of where they're from, and I have to tell people, so that small phrase from a principal I believe, from Gwinnett. When she talked about, you know, free is how they live it's not how they learn. Sometimes we always come in with preconceived notions about because of the student's zip code, they really don't need to be exposed to this because they are pretty much doomed, if you will, to live this particular life based on where they are. But we need to be able to provide that access for those students to teachers who truly love what they do. And we have to be, again, intentional, when we make those kinds of things happen. So, in other words, we can't put teachers who don't understand or really are comfortable with their content with students who are already struggling with math and on the verge of just really hating at math anyway. So, you want to make sure that you're intentional about finding those people who can really bring out the best in those students. And we saw a lot of that when I was principal at Thompson, middle school teachers, They were able to give those students who love it, those students who will often tell you that, you know, I don't like math, I've never liked math, you know, just not good at it. You have to begin to turn that that mindset from those students. And there's the bigger piece also is turn the parents' mindset away from that, and get them to see that you have a brilliant child, and that your child has a strong future in math or problem solving wherever they go. So, teachers who, again, love their content, who love to teach it are able to capture the essence of learning, when that proverbial light bulb goes off for those students, and not just the students, but also the parents.

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Dr. Lya Snell 08:33

So, it sounds like everything centers around mindset. And everything centers around this idea of caring, and teachers having a passion for the subject for which they teach. And In this case, mathematics. So, having a passion and then also caring enough and believing that all students can learn. That was profound. Your reference of your zip code does not define your destiny; your zip code does not define the level of mathematics that you should be exposed to.

Brooke, in terms of secondary, are there opportunities, no matter your zip code, for higher level mathematics to be offered?

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Brooke Kline 09:14

Yes, there are certainly opportunities, you know, for all different types of mathematics courses at the secondary level. And districts have the ability to simply offer those courses. So, there's a plethora of fourth course options. And there's other you know, dual enrollment opportunities for students that can really open and expand their horizons for all students. It's just the commitment from a district to be able to offer those courses you know. Of some of the smaller districts, you know, are limited because of the fact of their, you know, the amount of courses that they're able to offer because of the staff. But the opportunities are there for districts.

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Dr. Lya Snell 09:56

And even for the small districts, opening up to Georgia Virtual School opportunities and thinking creatively about how to provide access to some of those rigorous courses through programs like Georgia Virtual School.

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Brooke Kline 10:09

So, Walter and Tamara, I'd also be interested in we're talking about this culture that you created in within the school. And that mindset, you know, what were what are some of the biggest challenges that a district would face when implementing this or trying to encourage this mindset within the within their school?

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Dr. Tamara Pearson 10:28

So, there's a couple things that come to my mind, when we talk about this pipeline towards higher level mathematics. You have to really look at the mathematics pipeline. And the pipeline starts as early as third grade. So, in order to make it to Calculus, in the 12th, grade as your fourth math course, you have to be in algebra in the eighth grade. And in order to be able to be an algebra in the eighth grade, you have to be in the accelerated pathway starting in the sixth grade. And for most school districts, the way that they identify what students are going to be and the accelerated pathway are based on the students that are identified as gifted and talented in the third grade. So that means that we're making decisions about students' futures when they are eight years old, which is crazy to me. So, I think that that's the first thing that has to switch. The second thing,

though, is that even for, you know, students that end up in that in that accelerated pathway. It's the mindset of do I believe that I belong here? And do I believe that valued in this classroom? Do I believe that other people that look like me are in this classroom? Do I believe that my teacher thinks that I can learn, right? There's all these things going on in children's heads, that can cause them to be a success, or to be a failure in that class and to move back into kind of the traditional pathway. And so, I think that those are the kinds of things that we have to look at. And then even beyond that, I remember when I worked for Atlanta Public Schools, the conversation that I constantly brought up to the mathematics department was not every school is even able to offer algebra in the eighth grade, because they don't have enough teachers that are secondary qualified to be able to offer, you know, high school courses in the middle school. So you have some schools that yeah, we have three sections of, you know, with at that time, it was Coordinate Algebra in the eighth grade, and then you have some schools that have no sections, because we don't have a teacher. So, how is that equitable?

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Dr. Lya Snell 12:17

Right? That's very, very, very powerful. Because also speaking in the elementary years, and having it connected to gifted many times, you will see that certain students may not necessarily be even tested for let's, the gifted program. So, schools have to be conscious as well about some of those decisions being made so early, and ensuring that the net is cast wide enough to catch students who are all interested, and also capable of pursuing that path.

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Dr. Tamara Pearson 12:43

Yeah, we just started a we have a partnership with him M. Agnes Jones Elementary School, which is a school in Atlanta Public Schools on the west side of Atlanta. And we just, over the past two weeks ran a mathematics camp for rising third, fourth and fifth graders. And we were really adamant with the school. And they were on board with this, that we did not want to use Star data as the criteria for being accepted into the camp. We created our own assessment, that the only content required was, you know, addition, subtraction, multiplication, and division. And it was really focused on finding students that are good problem solvers, and critical thinkers. And we do that because we want to show the school that this one assessment that you're using is not the only way to look at kids around mathematics. And these other kind of, you know, mindset skills are the things that are really important for success. And we can develop, you know, the kind of, you know, skill based procedural knowledge. It's that mindset. And so, if you have a kid that loves math, and loves puzzles, and loves problem solving, If you give them engaging mathematics activities, then they're just going to run with it.

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Dr. Lya Snell 13:59

So, that supports Dr. Jo Boaler, at Stanford University does a lot of work around mathematical mindsets. And she also had a summer camp where students who traditionally did not like math just because of how it was taught in the classroom and the preconceived notions they had around the subject matter. And after the camp, you could see the students on the video talking about how excited they were about mathematics, how they could see the patterns, math was made visual for them, so that they can understand it, and make connections with the abstract. And so, because of the experiences, because of the excitement and passion around the subject in the camp, they completely transformed their idea of what learning mathematics is, and what their feelings about learning mathematics were. And so that that was very, very powerful. In my experience, as a teacher, students would always joke with me about how passionate I was about mathematics, and they would laugh about it. But by the end of the year, they also love the subject matter. And no one was able to say that they did not like mathematics. So again, it goes back to the teacher, the caring, the passion around the subject matter.

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Dr. Walter Stephens 15:19

I think one of the things, if I can go back to talk about how those kids were selected. We can talk about those accelerated pathway. Because we knew that every kid, even though they were not identified as gifted as required by the criteria, you still have kids who are just brilliant mathematicians. Things probably like nobody else can. But for whatever reason, they may not be good at science, they may not be good at social studies with language arts, wherever the case may be, but they're great at math. So, we still do gifted in Houston County, but we have gifted and talented. So, you may have some kids that are talented, who teachers are allowed to select those students that go into an accelerated pathway, which will allow them to gain access to some of those higher-level math once they get into to high school. But what you'll also find in Houston is that in every middle school, you know, you have that accelerated pathway program. So, we're making sure that is equitable, whether you're in a title one school, or you're in a school that has 17% of your population, of free and reduce, you know that equity is there. So, when you sit in the classroom, you are able to look around and see people that will just like you see people who live on the same street as you do. It's just that important. Also had that experience when I was in high school, and I can I tell the story, that when I finally figured out how to do geometry, it was it was relayed to me that, you know, you must have cheated. So, that in essence just really just killed my spirit.

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Dr. Lya Snell 16:56

Wow.

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Dr. Walter Stephens 16:57

In terms of being able to do math, so when I got to Tuskegee started doing math, it really clicked for me. And it clicked for me, because I had an outstanding professor, who would not allow me to settle for anything less than my very best. So you have to be able to have that keen insight and understanding of who you're putting in front of your students not just based on an interview, but just based on it may be a classroom visit, it may be delivering a lesson to you during the interview process, this individual is going to do what is necessary for your students. And when they look in their classroom over the classroom, they see everybody as great mathematicians. It doesn't mean that they're going to run into struggles, because kids will struggle with math, I think we all have it at some point. But just being able to just encourage them every single day and allow them to make those mistakes, but at the same time, work them through the mistakes that they've made. So, they can have a greater understanding of those mathematical concepts. So, when you when you talk about, you know how to how to find those individuals and create that culture; I think it really, really starts with course everything rises and falls on leadership, it really starts with leadership, and those individuals believing that those students can do it. And that those students can be successful and challenging those students to be successful both in and out the classroom. So, we talked about the summer programs over on the West End, but having kids do mathematical competitions, and in seeing that they can do it. And we did that this year, out of six, seventh and eighth grade, all of our kids went to the national competition in Birmingham. So, that was powerful. You just have to really drive that focus and be passionate about math. And we could really push that down to their students.

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Dr. Lya Snell 18:48

So, you mentioned several key points, how important it is for students to engage in that productive struggle. And we have our eight Standards for Mathematical Practice as well that we consider to be our power standards for all grade levels, K-12. And so not being afraid to fail not being afraid to struggle. Not failure in a sense of grading, but engaging in the struggle necessary to deeply understand the content. But having an instructor that cares and having an instructor that's passionate about helping all learners reach that level of proficiency in this content area. This is the beginning of a conversation about how we as a system can put processes in place and practices in place and have conversations around how we ensure that each and every learner is taught at the highest level and allowed to reach their maximum potential in our mathematics classrooms. This is the beginning of many conversations to come.

Thank you for joining us on this fifth episode. We look forward to continuing the conversation around mathematics equity and access in Georgia.

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Dr. Walter Stephens 20:02

Thank you for having me this morning.



Dr. Lya Snell 20:04

And thank you to Georgia Tech and Dr. Pearson for hosting us in your wonderful studio. We appreciate the hospitality.



Dr. Tamara Pearson 20:10

Our pleasure.



Dr. Lya Snell 20:19

Thanks for listening. Please Join us next time on our quest to mathematize the world.