

Sharita Ware (00:00):

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Eric Cross (00:14):

Welcome to science connections. I'm your host Eric. My guest today is Sheta where Sheta is the 2022 Indiana state teacher of the year. And in her 10 year career, as an engineering and technology teacher, she has dedicated herself to helping students build knowledge and skills for high school and life. Beyond. In this episode, we discuss how she inspires her seventh and eighth grade students to build problem solving and critical thinking skills through hands on real world and collaborative projects. She is as humble as she is knowledgeable and through our conversation, it was easy for me to see why her students feel successful under her guidance. And now please enjoy my conversation with Sharita Ware.

Eric Cross (00:59):

Can I start off by saying congratulations on teacher of the year. Thank you for the state of Indiana. Um, that's amazing. So I, I, I did watch, uh, your videos, uh, short interviews, and then you spoke, was it Purdue? Yes. You were there. And so, uh, to see if fellow seventh grade, eighth grade science teacher out there being celebrated, like I was so excited, so yeah, I wanted to congratulate you on that and, and just kind of talk to you about like your teaching journey and ask you, uh, maybe just kind of start off with your story about what brought you into, into the classroom, especially the middle school.

Sharita Ware (01:29):

Classroom. So what happened is when I was working in industry as an engineer and when my husband and I got married, we decided that I was gonna, um, stay home with the kids because, you know, we wanted, um, our influence to be greater on our kids than, you know, the people that would be watching them, you know, because they would ultimately spend more time with them than they would with us. And, and so, um, I stayed home and when my youngest was going to be going to kindergarten the next year, I was like, okay, what am I going to do? Cuz I really don't necessarily feel like I need to stay at home. Mm-hmm <affirmative> but um, I knew going back to industry would be a challenge just because in my field, I, I was traveling a lot before I got married and had kids.

Sharita Ware (02:14):

And so I knew that that wouldn't really be conducive to again, raising children. So I, I get this email, my inbox for Woodrow Wilson, teaching fellowship at Purdue. And they were just looking for people in stem fields to go into teaching. And I was like, okay. And it was a national search, you know, I filled out the

application, we had to go in and do some sample teaching mm-hmm <affirmative>. And I was picked as, as one of the, the teachers to go through the program. And I started off thinking I wanted high school. And the really cool thing about this, uh, program is that we had long observation periods at high school and at middle schools. And so we would go to a school and we'd stay there two or three weeks. And so it, it kind of gave you right. A little bit more insight to what happened on a daily basis. And after those observations, I was like, I like middle school better than I, uh, like high school. And so I just kind of went that direction and you know, the rest is history. So

Eric Cross (03:19):

I feel like our stories are similar because I went into teaching thinking I wanted to do high school because I like the maturity and you a little bit more sophistication, advanced things, but yes, middle school, I felt like I can, I could get them more upstream before and kind of help shape mm-hmm <affirmative> that experience for them? Because I feel like at middle school is really where they kind of decide like what they can do based on their experiences.

Sharita Ware (03:39):

I found in the middle school that the kids, I mean, they just, they clamor around you and they're like, what are we doing today? You know? And they get so excited and, um, they're, they're just, I don't know, I guess in some ways, just more hungry in the sense of like they're willingness to, um, now sometimes they're a little reluctant, but you know, their willingness just to try new things. And I think, um, my students really what I have found over the years that they have found a safe space and I hear the kids, you know, say to me so many times that, you know, it's safe. I feel, I feel safe in here. And, and it's not something that in my mind I'm thinking about, oh, I need to make this a safe place. It's just, I guess part of just who I am as a person has created this environment of, of safety and, and the kids recognize that, you know, I don't play favorites. You know, everybody starts out mm-hmm, <affirmative> on equal footing. I, I don't care what your backstory is. I don't care how many times I see you in the hallway when I'm walking during my prep. You know, when you hit my room, I'm, I'm gonna treat you the same way on day one, that I treat everybody else.

Eric Cross (04:54):

You really understand how to build culture with, in, with your classroom, with your students. And, and you said they feel safe, but is there anything that you do that someone could like apply? And like you found that you've gotten a lot of just relational capital through doing these things, or is it just your personality? Like how, how do you build those connections?

Sharita Ware (05:12):

You know, growing up being a, a very quiet person. I, I think a lot of times my voice was ignored because I was the quiet kid in the back of the room. And oftentimes I became seen or heard because of my work, you know, in the beginning it was kind of like, oh, she's just this quiet girl in the back of the room. And then, you know, the first essay was due or the first project was due. And then it was like, oh, you know, then you're the person to be on, you know, people's teams. And, and that, I don't know, that always kind of bothered me because, you know, I'm thinking just because you're not the loudest person in the room doesn't mean that you don't have something to say, mm-hmm <affirmative>, you just might not be talking all the time. You know? And, and so for my students, I just, I try to create that equal playing field where there's, nobody's voice, that's more important than anyone else's and try to make them all feel like that what they have to say, or what they have to contribute is, is enough, is good.

Sharita Ware (06:14):

Enough is important as...

Eric Cross (06:16):

It is, as it is. And there's probably a lot of things that you do. But in addition to building these relationships, what do you do? Like how do you make your learning fun for students?

Sharita Ware (06:25):

I think, um, I'm also a little bit on the silly side. Um, we do a, a Barbie prosthetic leg project, and this was after trial and error of having the kids make full size prosthetic legs. And I try to make it as real world as possible, but with none of the children being amputee or, you know, having access to someone, it was really hard for them to really visualize what needed to happen. Mm-hmm <affirmative>. And so, um, I found this Barbie that had a prosthetic leg and I was like, well, LA, so I just started collecting Barbies and chopping their legs off <laugh>. And so I have this jar of Barbie legs. And so, and I said, you're gonna make prosthetic legs. And I lay this jar of legs on the counter and the kids are like, like they gasp and then they crack up and then they're like, okay, this lady's crazy. So...

Eric Cross (07:22):

That's when you take off your scarf and there's this necklace of just Barbie legs that are just around and you're like, I'm a middle school teacher and they go, oh, okay. I understand. Yeah. Yeah. It's totally fine. Is this a lesson that someone that you made up or is it something that you've re remixed? Is it something that someone could do if they looked it up anywhere?

Sharita Ware (07:38):

Um, so I think teach engineering has the, the full size leg that the kids make. And that's where I initially got it from.

Eric Cross (07:47):

Is that the website teach engineering?

Sharita Ware (07:49):

Yes. And, um, I, in fact, I get lots of ideas from there. Um, and I, I always usually tweak them, but it's, it's one of those things that kind of gets your brain going. And so it was kind of a mixture of, uh, project lead the way gateway to technology and the teach engineering. And I think the project lead the way had us making like braces, uh, for, um, kids with, um, like cerebral palsy or, or something like that. And the kids did okay with that project. Uh, but I wanted to go just a little bit, uh, deeper with it because part of what I was wanting them to do is that context and that connection, that human connection, because for me, it's not just enough for them to make a project. Uh, before we start this prosthetic leg, I read them a story out of a Scholastic magazine, and it's a, a teenage girl that lost her leg in a boating accident.

Sharita Ware (08:42):

And she was super active, um, playing sports and running. And, and so I was, you know, trying to get the kids to, you know, make that connection, someone close to their age. Um, and then how it's not, it's, it's more than about her physical healing. It's also about her mental healing and how she had to, you know, talk to herself to say that she could, you know, recover and, and come back from this and still go on to do all of the things that she was doing before. Um, and in some ways it's kind of cool because, um, you know, she has a running prosthetic, she has a, a swimming prosthetic, and she has her every day with the pain and toils prosthetic. So just trying to, you know, help them to see that it's more than just the, you know, the biomedical mechanical engineering aspect of the project.

Sharita Ware (09:30):

And so they have to design for comfort. They have to design for, um, swelling. And then, um, they also can, if they, if they want to, they don't have to, if they want to, they can create their own backstory. So when they get there, um, we have a day where they are introduced to their client, so they get to meet their Barbie and, and then they get to decide if they want a backstory and, and then do their research based off of that. So if it's someone that was a runner, then they can design a prosthetic running blade. So just, they have lots of, uh, flexibility.

Eric Cross (10:04):

The, that aspect of adding the narrative. It does so much for like listening to it on the outside. It one, it adds this humanity to, you know, what can sometimes just feel like it may be cold, logical stem. We're just, we're just doing things. We're fixing things. We're, you know, we're discovering things, but really the stem has value when we're actually applying it to, to, to serve humanity or our ecosystem or whatever it is. There was a, a coding, uh, class I was doing with my students and I showed them this app called be my eyes. And it's for people who are visually impaired and it pairs them with a volunteer. And when they call, and there's a whole huge pool of volunteers and I'm one of them. And when my, when it happens in class, I answer and it uses the FaceTime. So the person who's visually impaired is holding up their phone and you see what they see and you tell them and real time what's happening.

Sharita Ware (10:54):

Oh, wow. That's so cool.

Eric Cross (10:56):

These are, these were the things I think for students that the story, the, the human part of it, mm-hmm, <affirmative>, it must bring in so many more students into engagement.

Sharita Ware (11:05):

Yeah. I, I feel like it does because I, I think, um, and, you know, along the journey, they kind of lose, um, they lose sight a little bit because, you know, they get out in the lab and they have access to all of these different materials. And I think, you know, truly making it, you know, project based for me is I try not to control the materials too much. Um, I try not to make it so wide that they just get lost, but I try to throw a few curve balls in there, you know, of, of materials that really don't make sense to use, but they kind of think they make sense to use. Um, because the, the, the meat of it is that the prosthetic leg is a similar size of the original leg and that the, the knee functions. And so I don't limit, and I grade them off of efficient use of materials.

Sharita Ware (11:59):

So, and that just throws them off because I think, well, how many Popsicle sticks can I use? And I'm like, you can use as many as you like, but remember, this is a prosthetic leg that, um, your Barbie, which is one six scale, um, is going to be wearing all day. So you could think that a Popsicle stick, if you chose to use a Popsicle stick is kind of like dragging around a two by four <laugh>, you know? So do, is that what you really want to use as your material? And some of the kids really think about it and saying, okay, I'm, I've got this aluminum rod, okay. This is probably what I would use for my bone structure, because it's

lightweight, but yet it is supportive. And then sometimes they come up with their own ideas in terms of materials, like one student brought in his, um, 3d doodle pin mm-hmm <affirmative> and he made joints and everything with this pin.

Sharita Ware (12:54):

And I'm, and I had delayed buying one, cause I'm like, I, how do you have control over that thing? Mm-hmm <affirmative> he brought that in and he did probably two or three iterations of it and, and got it to work where even the knee where it bit back 90 degrees, but it stopped. He made like, so that it didn't bend forward. It blows my mind. I'm like so many UN unexpected things have, have happened just from my, um, teaching style. Now I did have, my first few years, I had a, a teaching coach, um, come in and, um, I asked her to come into my room because I just wanted to make sure because I was not a traditional teacher. She said, this classroom is amazing. And, and I think the one thing that she helped me with was, was purpose and consistency and the sense of making sure that with the standards that all of these cool things and ways of being, um, that I was doing in my classroom, that, that I kept it purposeful and intentional. So many times as educators, I know in having student teachers again, ask yourself the question, what is the big picture I want the kids to take away. And once you ask that question, then everything that you have them do will lead to that big picture. Well, it should lead to that big picture.

Eric Cross (14:22):

So it sounds like they're, you're starting with this end goal in mind and then kind of backwards planning to get there. Yeah. Do you think you would've been the same type of teacher if you would've gone straight from college into the classroom? No. And if, if, no, as you're shaking your head, what do you think it is about? Cause I've been asking myself these questions, like just over the years, what is it about coming from industry and going into the classroom? Do you feel like, is how has that impacted you in how you teach?

Sharita Ware (14:45):

Well, I think it's twofold cuz I was older. I already had three children. I think the combination for me, I think is I was already a mom and I had worked in industry. So the behavior aspect of kids and, and then having that real world experience. And I, I just feel like whether it's in the classroom, um, marriage, kids, to me, it's 90% relationship, you know, and the rest will work itself out. That's, that's just my, my take on it. But I, I feel like having kids, so some of the behavioral things I kind of was aware of, you know, and just learned many times just not to react to some of the things that they did.

Eric Cross (15:31):

Which is huge. Right. Especially in middle school is controlling your reactions.

Sharita Ware (15:35):

Yes. Cuz that's what they want. You know? And, and I had this student last year as well. She's brilliant. And so if she cannot wrap her mind around the purpose of what you're doing and, and you're pushing her to do something that she doesn't think is necessary, mm-hmm <affirmative>, she kind of has these meltdowns. And, and so we just had this, you know, I don't know, we just came to this understanding and it, and it works to control the meltdowns. I tried to make sure. And, and I used her as a gauge because I knew she wasn't, she wasn't getting upset because she didn't understand. She didn't understand the why mm-hmm <affirmative>. And so I felt like if she got the why then so would everyone else. So when she, if she was okay with it, then I was like, okay, then I must have explained it well enough.

Sharita Ware (16:25):

And so in my mind that I really need to make sure they understand the, again, going back to that purpose <laugh> and intention, making sure that that is clear. And then I think that's what gets lost. Sometimes mm-hmm <affirmative> uh, with us as teachers, we, we know where we want the kids to go and we want us to trust the process, you know, just do it because I said so, but sometimes, you know, empowering your children to under to understand the why, because that again is what allows them to be able to do bigger and greater things on their own. So on that next project comes along. They're starting to tell you, well, first we need to make sure we understand what, um, we're being asked to do to do. So we have to define the question. We have to make our driving question that will help us stay focused. And, and you're just standing up there going, okay, now you don't need me. I'll go here and sit down. <laugh> so it's, uh, it is really cool.

Eric Cross (17:28):

Now I'm thinking about my own kids. Like, do my students know the why behind the lesson we did today? It's one area of growth that I wanna make sure I do this year with my students. And so I really appreciate that. So the, and you just hit on something that is, has been in the forefront of my mind lately and math and English as you know, tend to be prioritized in schools everywhere because it's what state tested. And it's what, you know, this is a whole other conversation, but I've been talking to math teachers frequently about one of the challenges that they experience or they've been telling me is that math is kind of taught. Like it's just computational, you're solving these problems, but it's really separated from any real life application. A lot of times, you know, it's pizza or gumballs or, or just fictional scenarios and students don't perform well many times. And some of the reasons why is cuz just no connection. I don't want to solve puzzles. Like it's not my jam. Do you have any just inside or, or

perspective on how math is, is taught in maybe a way that you think it would students would benefit more?

Sharita Ware (18:32):

You know how kids learn in elementary school, you've got this, the same teacher teaching all of the subjects. And so wouldn't that be an awesome opportunity for you to have like these, these projects where I feel like you could, a class could legit work on the same project for a whole entire year. And so couldn't the English be writing your persuasive letter to the mayor, asking him to do this or do that. And the process of doing that they're, they're, they're writing with a purpose with a true purpose. Um, and then when they're doing math, you know, they want, they want a new neighborhood park. So, you know, well how much is this gonna cost? Well, math, what size is it gonna be math? Let's see what it looks like, art, you know, you just, you have all of this things. And then of course then science.

Sharita Ware (19:32):

So if it's on a heel, how can we, you know, deal with erosion? And you know, you can just pull so many different things into that. And so not only are they learning, but they're narrowed in and focused on a project, they're, they're able to dive deep into, you know, learning more of learning, how to express themselves and communicate with real people. So it's more of taking these compartmentalized learning that we do in middle school and high school. Mm-hmm, <affirmative> where you're almost learning apprenticeship style. Mm-hmm <affirmative>, you know, you have these master educators and it's not about them being the best at math or being the best at this or that. Cuz there's so many tools now that could help you through that. But you're, you're giving, you're teaching them so many life skills and so many ways to think and problem solve that, that we're just that the kids just don't have.

Eric Cross (20:27):

I think that that is amazing. And I think that in that situation, what I'm hearing is we're going deeper, not wider because there are a lot of different concepts that kids are expected to learn. Or I should say there are several concepts that teachers are expected to teach doesn't necessarily mean that our kids are learning, but we're teaching them. And this way you're embedded it into an authentic context. Students are able to go through this cycle just like real life. And then they're also able to build these kind of really transdisciplinary skills. Not only am I learning the math, the English, the the, but I'm also learning the interpersonal skills of being able to sell myself and present myself in a way that's winsome. And it's especially powerful coming from someone from industry. Last question, even just listening to you, I know you, you are this for a lot of people, but I wanted to ask you who inspires you?



Sharita Ware (21:14):

I think there have been lots of people over the years. Like I'm thinking of my shop teacher who has since, uh, the last few years passed away. Um, he was one of those people, I think similar personality to me, super quiet person, but he was always in the background on my journey and his name was Joe Mo and we called her Madam Carol was my 10th grade English lit teacher. And she was the one that started reading my work out in front of the class. And you know, and that just gave me courage, not so much to be seen. Uh, but that the work I was doing was, was good. And, and I think I needed that kind of encouragement. Lastly, my students inspire me because when I look at their faces and see the excitement, I think of those students for the first time and, and, and think about this seventh and eighth graders for the first time feeling like they really have something to say, they really have something to contribute of value. And, and I do it for them. You know, the reason why I am here in this moment is because of them. Um, without them, you wouldn't be talking to me <laugh>

Eric Cross (22:37):

This is, this is true. This is, this is true. You would probably never say this about yourself, but you just exude a humility and a service in how you talk about your students and yourself. And I just wanna thank you for using your gifts, but I don't wanna just call them gifts because it makes it sound like you didn't earn 'em and your skills that you've earned and worked very hard to acquire over the years to go back into the classroom and leave industry, cuz you, you could have gone back to industry too, but you decided not to. And you could have worked in the industry and your hours were a little different pay is a little different, but you came back to serve the kids of Indiana and because of you and because of that choice, those students have a brighter future and believe in themselves and they're finding their voice. And I want to thank you for that and for representing all of us stem teachers who are in middle school and being that leader. So thank you for that and thank you for being on the podcast.

Sharita Ware (23:24):

You're welcome. Thank you for having me.

Eric Cross (23:28):

Thank so much for listening. Now we wanna hear more about you in the amazing work you're doing for students. Do you have any educators who inspire you? You can nominate them as a future guest on science connections by emailing stem, amplify.com. That's ST E M amplify.com. Make sure to click, subscribe wherever you listen to podcasts and join our Facebook group science connections, the community until next time.