

Conversations on Economic Inclusion with Me'lani Joseph

Dionissi Aliprantis

This is Conversations on Economic Inclusion. I'm Dionissi Aliprantis, the director of the program on economic inclusion here at the Federal Reserve Bank of Cleveland. In our program, we aim to bring together researchers and practitioners to learn about what it takes for more people to participate more fully in the economy. In a recent conversation with Basit Zafar, we learned how getting students into college majors that are a good fit for them is important for growing incomes and the economy. It is well known that workers with a college degree tend to earn more than workers with a high school diploma. Careers in science, technology, engineering, and math pay particularly well, a reflection of the benefits the economy derives from their output.

Considering STEM careers represent a path to success in the labor market, it's worth reflecting on the hurdles underrepresented groups face in studying STEM fields. To gain some insight on this issue, I recently spoke with Me'lani Joseph. Me'lani was educated as an engineer at the Massachusetts Institute of Technology, but has spent the bulk of her career advocating for greater participation in STEM fields by Black and brown students. She recently wrote a report surveying the landscape of out-of-school STEM enrichment programs in northeast Ohio. And we discussed what programs can do to encourage underrepresented groups to choose careers in STEM.

"Before getting into any programming specifics," Joseph argues, "We all need to stop underestimating what Black and brown students can achieve and start believing in their success in STEM fields." But belief is not enough. She sees the need for engaging students with STEM content early and often as key to youth becoming comfortable, and if they want, pursuing a STEM career. Joseph is excited about the power of learning communities or groups of students who encourage each other to believe in themselves and to foster their excitement for learning about STEM topics. She sees near peer mentoring as an effective way of building those communities. While younger students are exposed to older students' enthusiasm for a topic, older students are able to realize their own capacity for changing the world after influencing a younger student's path.

Students benefit from programs with significant minority involvement as leaders and staff, and learning communities comprising educators is one way of helping white teachers become more knowledgeable about what it's like to live as a Black or brown person in the US, according to Joseph. She says that programs that stick with it over the long haul also tend to have the most success. The aim of such enrichment programs is sustained engagement with students, not just a one-time experience, but a commitment to students as they grow. Before we get started, I should mention that the views expressed here are those of the participants and not necessarily those of the Federal Reserve Bank of Cleveland or the Federal Reserve System.

And now, here's my conversation with Me'lani Joseph. So, you were commissioned by the Cleveland Foundation and the Nordson Corporation to write a report. It's an analysis of the landscapes in Greater Cleveland and Lorain County. It's titled Towards Greater Equity in Science, Technology, Engineering and Math. Could you tell me a little bit about what the goal behind the report was?

Me'lani Joseph

Yeah. So, the goal was to do this landscape analysis of all the key STEM providers and give the foundations a sense of what is happening out there in this space. They fund different things, but they really wanted me, given my experience and my expertise in this area, is to make sense of everything out there. Tell them what's out there, what are they doing, who are they servicing, what are the outcomes

of their work. And so, it was extremely informative. I mean, I learned a ton. I really learned a lot. I talked to over 150 people. And from those conversations, I was able to get the barriers that these organizations and people face in doing their work. And from my own thinking, was able to synthesize recommendations about what we could do to make a difference in getting more Black and brown young people in particular exposed to accessing and possibly pursuing STEM.

And so, that's the ultimate goal, is to really figure out how to get more Black and brown youth to be more comfortable, and if they want, pursue STEM as a career. So, that really was the big, big goal of this work. And its initial phase, a very, very first start. And so, I have a next phase. Once the report is out there and we get some conversations going, then I'm really interested in what that translate as far as action.

Dionissi Aliprantis

What are some of the barriers that you identified in the report? Could you describe a couple of those?

Me'lani Joseph

Yeah. So, there are many. Some of the key ones were, well, I'll just start by saying that there are incredible opportunities for STEM engagement in this region. And so, that was clearly evident from this process. And so, that's great. One of the biggest barriers though is that-

Dionissi Aliprantis

That's good news. That's really good news, right?

Me'lani Joseph

That is very good news. And so, one of the big barriers though is that folks don't know about these opportunities, and especially the Black and brown population don't know about these opportunities. I think that a couple of the other key barriers are, is that I didn't find high urgency around how to engage Black and brown young people as well. And the fact that there's the dots aren't being connected as far as what the different institutions are doing. I think that if those were being connected a lot more strategically, then we could see higher numbers of Black and brown young people accessing STEM opportunities in the region.

Dionissi Aliprantis

So, hopefully, it's might not be actually huge, maybe not huge changes in practices in some ways, but maybe more of a mindset shift. And that's actually the other question I was going to ask you about is that you mentioned in your report this mindset shift and the idea that we underestimate what Black and brown kids can achieve in STEM and what's possible, I think in a very general sense. And I'll just say I personally also feel that way very strongly. And so, I'm curious if you could maybe expand on that or describe that.

Me'lani Joseph

Yeah. So, I think a mindset is pervasive in every realm. So, it's pervasive in the young person, and the family of the young person, and educators, and the STEM providers and the stakeholder. I mean, literally everyone. Much like racism is pervasive in all of our minds, regardless of who you are, just because we live in a society that's built upon racism, I still like all of us, including myself, actually, including myself, have some hangups and I'm in this work.

Dionissi Aliprantis

But you're a part of it. I mean, you're a part of the society. I mean, we all are, right?

Me'lani Joseph

Exactly. So, I just feel like there's a mindset shift that we have to change in order for us to get over the hump of getting these young people who are perfectly capable of being very, very successful in STEM to believe in it themselves. And so, when everyone in the ecosystem believes in the success of Black and brown young people, then guess what? They're going to be successful.

Dionissi Aliprantis

I'm just wondering if you could speak to their ability to see mathematical problems that are inspiring, and beautiful, and fun, and just to get them excited about learning and allow them to be creative and to use their minds in that way.

Me'lani Joseph

Yeah. So, this is actually a good opportunity to talk about what I believed is the life spectrum that we need to consider in order to really make a difference in achievement and getting more Black and brown young people into STEM. And so, I believe it begins before the baby's even born, so prenatal. So, I believe that having relationships, building relationships with young people who have not had the baby yet to get them exposed to the wonders of math and science, engineering, technology, before they have the young person is critical. And then it's a continuum of having constant math and science experiences throughout the lifetime and through early professional. So, often there are programs that just focus on, say, elementary or middle or high school or even collegiate, but I personally feel like we're not going to have mass, mass change, until we get a parent and families before the kid even is born.

Dionissi Aliprantis

In some ways, in my own mind, this is maybe one of the toughest issues to address. So, I think one is obviously the mindset shift, just because it's baked into all of us and so we all have to think very hard about that. But I also think there's this issue about time and supporting kids over the prenatal to early career, like you just said. I think a lot of our programming, it's hard to, I think with our current institutional setups, to have programming that engages with kids over a long period of time sometimes. And thinking about that durability of those relationships, could you maybe even elaborate on that in terms of what you see as potentially very effective in terms of solutions for engaging kids over time? And then what do you see as solutions to push us more in that direction in terms of programming?

Me'lani Joseph

So, I'll just go back just a little tiny bit too, because you asked a question about math and I want to answer that. And so, what I was going to say is that, I do use the term early on, and I use that a lot in my work, is I feel like in order to make any kind of difference in STEM proficiency and excellence, is to be exposed to math and science, engineering, technology early and often. So, that might look like, and I'll just talk from my own experience, since I have three young kids who are now big old, young adults. So, when I would go and Dionissi, you probably did this too, when you would go to the grocery store, I mean, we would talk to our kids pretty much like little adults, honestly, and that was throughout their life.

And when we would go to the grocery store, we'd have conversations about, oh, that lemon is yellow and it costs 78 cents a pound. And you'd be having these discussions and conversations with your little people very early. So, they're hearing these numbers and they're seeing, oh, that is correlated to that. Or you're talking about, oh, that room looks like it's 10 feet or 10 feet by 8 feet.

Dionissi Aliprantis

Exposure. I feel like every time that you're exposed to it, it becomes more familiar, right?

Me'lani Joseph

But I was conscious about doing that. So, I was conscious about making mathematical inferences and connections with my kids very early. And so, they have that experience. And so, I think that if we could inform other young parents who are about to have kids, that having these conversations or reading books on math things, or solving problems, or the world, or these are all part of the solution of getting young people early and hopefully often thinking about math and science content. And so, I just wanted to make sure that I put that in there. I'll also say that I am proposing that we somehow figure out how to get STEM resources into the homes of every single Black and brown young person. So, I feel like if there was something at every stage of a young person's life in the home to at least give everyone something accessible, for the infants, it could be like a CD.

I think they still use CDs or some kind of downloadable, some kind of audio, something you could access by your phone, and it may play a song on something STEM related. Or maybe there's a audiobook that young people could access, so we can make available to every single family. Maybe there's some kind of manipulative for the young people, but at every single household of Black and brown. Maybe there's books that we give to the young people. Maybe there are games that we give. UNO was great for learning numbers, and colors, and strategy. Maybe there's chess boards that we could give to every family. And I really believe this could be done.

Dionissi Aliprantis

I think it very clearly could be done. And it actually feels a little bit like an extension to me of the work that Dolly Parton's doing. I've thought about that, where it's just been a huge benefit to me as someone with young children, that we obviously have a lot of books in our house anyway. But life is complicated, and you're busy, and you're tired and somebody just puts the book in front of you to read with your kid, it makes it a lot easier. And I've often thought like, man, when you think about all the things going on in the world, this might be one of the best things for kids and for our society that's being done. It's just a very cool thing. And maybe what you're saying is send people UNO in addition or send them a board game, or a book, or something that's also mathematically or STEM oriented.

So, when you think about these types of programs, and one of the features that you described is something that's very effective, that really improves their effectiveness is you talk about learning communities. So, I'm wondering if you could describe these so we can understand how they can foster positive outcomes. And I'll start with students. So, I think about it in terms of say, shared experience in a support group. I think that mindset shift can happen within... In social sciences, we talk a lot about peer effects, and I think we have a predisposition to thinking about them in negative ways. So, influencing someone to say, start smoking or drinking alcohol, or using illicit drugs, or something like that or dropping out of school.

But I think there's this mechanism, this strength of positive peer effects that we don't necessarily appreciate. And I'm thinking about this in terms of peer mentoring or tutoring. I'm thinking about the younger kid, the older kid. I'm thinking about same age kids. So, I think there's a lot to talk about there.

And I'm curious if you could describe some of the ways that you think these learning communities for students themselves can be really effective.

Me'lani Joseph

So, that's a good place to start, because we can talk really positively about that. I mean, learning communities in general are really positive, but I'm a firm believer in cohort. So, the cohort idea. And especially when you're talking about STEM, which is grossly underrepresented in Black and brown people. And so, when young people can get together who look like themselves, who have shown an interest in... And really, I'm talking about more of the high school age right now. So, for young people, maybe middle school too, I mean middle school, I think that you can show a strong interest in STEM. But I think that when young people see other young people who have an interest in say, chemistry or biology or engineering or math, then I'm seeing other people who look like them, then that gets them more excited and be like, oh, yeah, if they could do it, I can do it.

Dionissi Aliprantis

It's just encouraging, right?

Me'lani Joseph

Absolutely. So, building a community, and I know you get this, Dionissi, because you do this work and in the math context, that just it's a beautiful thing. It's a beautiful thing when you see young people who are having similar experiences in math and science, engineering, technology, and they're able to talk about things and they get excited and they just see other people's excitement. I also believe in the power of young people being influencers on the younger people. And again, you know that through the work of the math movement, and just the model in which you use peer and then near peers. And so, I look at my own, again, my 18 year old about to go off there into college, into the world. And I feel like there's him and many of his classmates could have been so much more utilized in getting young people excited about and exposed to STEM. And they just weren't given that opportunity.

But I feel like if there were some institutional ways in which young people could be used in that way, I think that that's also a key part of the solution that I just haven't seen. And so, I really hope in my next phase of the work, maybe couple phases down, I mean that for me will be a success, is that there's some infrastructure around young people, say high schoolers who could have influence and engagement with the middle schools, elementary school, young people.

Dionissi Aliprantis

So, it's interesting you bring that up. So, there's a couple reasons that's interesting. One is that we're planning to speak with Matthew Kraft from Brown who had a proposal on how to scale up mentoring and tutoring in a national context. And I actually don't know enough about that. I want to learn more about his proposal. But I want to dig in here, because I really agree that I think this is a really effective mechanism. And I think it goes both ways. Could you talk about what it does for the older kid as well?

Me'lani Joseph

Absolutely. So, I think it goes both ways. So, I think that the impacts on the older young person, is that it shows them that they are valuable, I think it increases their confidence. I think it shows that they have some agency in the whole system of getting young people interested in math and science. Could be English, could be arts, it could be whatever subject, quite honestly. But it shows that they have some real influence over this younger person. And I think that it'll carry them forever, that they will forever

remember the little face that looks up to them and is just staring in their eyes, and is just eating up every single word that they're saying. And knowing that there was a time where there was this young person, and I had that impact on that little person.

I mean, I think that they carry that. I think that my son, my 18 year old now, will carry those experiences that he had with tutoring younger Black boys in math, that the power that that gave the young boy, but also what that meant for him internally. Like, wow, I would like to recreate that. I would like to be a person who is able to recreate that experience in a young person's life, but also see how maybe I can encourage my peers to also have those experiences. And so, I think it's really powerful for the older young person in those experiences.

Dionissi Aliprantis

Beautiful. And that was very beautifully said. But moving on from students, if we were to think about educators and thinking about learning communities of educators, what are some of the things that a learning community could offer to an educator?

Me'lani Joseph

Yeah. When I think about learning communities, it's all about learning. So, when I think about building these learning communities with educators, I think about how can they share their experiences of curriculum, of their experiences of engaging with Black and brown young people in particular, what works, what doesn't work? What's been successful with them? There I think it's about their own journeys, their own racial equity journey. Well, how are the non-minority educators getting in touch with their racial equity journey, and how can they share their journeys with other people who are having a similar journey? When I think about solutions, I think about specifically people who are in this space.

I think there needs to be some education around just the history of America and the legacy of racism in this country. I think that's a foundation for getting a little closer to understanding the context by which Black people in particular live and face in this country, and have faced, and have lived for 400 years. And so, for me, I think that's really, really important and is really part of the solution. It's a piece of the solution to get white teachers in particular, to become more culturally competent, and just knowledgeable about the lived experience of Black and brown young people, and people in general in this country.

So, I just think that I wanted to make sure I said that, because I think it's really important, because I do feel like that is a piece that... Because there's all this DEI training now that's popular, but actually, there's something to it. And I think it actually really is important if we're going to try and address systemic, and institutional barriers, and racism that exist in pretty much all facets of life for me as a Black person.

Dionissi Aliprantis

So, Me'lani, could you speak for a moment about some of the characteristics of some of the exemplar organizations that you came across?

Me'lani Joseph

Yeah. So, through my interviews with all of the organizations and my landscape analysis of STEM providers, and also with my knowledge of just what I know works with having an impact on young people, there were some exemplar characteristics organizations that I outlined in my report. And so, one of them is having dedicated leaders who are pretty much go above and beyond the call of duty to make the experience of young people the most it can be in the organization. The organization that the

young people are affiliated with usually have an ongoing relationship with the young person. And so, if it's year round, that's better than an eight-week program. So, organizations that tend to have a constant communication with a young person was also became really clear that that had greater outcomes on young people.

The fact that the young people can engage with organizational leaders and staff that were racially and ethnically similar to them, also is very key in the outcomes of young people. So, if young people are seeing their leader or the organization leader who looks like them, it just helps in their outcomes. Having organizations that stay connected with young people once the program period is over is also really important. And so, if it's a high school oriented program, but then they go off to college, then the ability of that organization to stay connected somehow with that young person also, tended to increase their outcomes of success.

And then the fact that resources were maximized and leveraged, also was really important. And it really boils down to say the leaders or the staff in the organization, if they're constantly thinking about what are the different resources that I can use to enhance my organization, but also enhance the young person's chances of success, was also critical. So, those are people who are making connections and continually thinking, what can I bring? What can I do? What can I expose this young person to? On an individual basis, I mean, that also was something that I'm saying as an exemplar characteristic. And then there are some clearly defined outcomes of the activity. So, of whatever the initiative is, that there are some clearly defined goals and they're achieved through the activity.

I think that also is something that's really distinguishes between those organizations and activities that are exemplar versus those that are not. And then folks tend to not do this very well, but there are a few that do this well. But using, collecting data, and analyzing it among their program to keep refining and retooling what they're doing so that it can get better and better. And so, those were some of the exemplar characteristics that I talk about in my report and that I firmly believe are critical to maximizing the outcomes and the success of young people.

Dionissi Aliprantis

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