

## **Math in Action**

### Co-constructing Learning – Teacher Perspective

>> If we're not engaged on a topic, we're not going to learn.

>> Yeah.

>> So the fact that they're taking our ideas that we wanted to learn from and putting it into subjects, we're learning so much better.

>> The students are leading the learning. They're going to be the person and the group that's deciding, where are we taking this question? What are the questions that we're formulating as a result? What do we still want to know?

>> The first thing is that we can use our data, and using the charts we can find out a lot of other information, like central tendency.

>> Great information. How does this relate to mathematics?

>> It is something that a teacher has to be open to, being patient, being comfortable with knowing I might not know the outcome right at the beginning. You need to be a risk-taker.

>> Crime seems like a very bold issue in Toronto right now.

>> And relevant for sure, right?

>> Yeah.

>> We need to be open, and also understanding and accepting that every year, you receive a new class that has a diverse population, and you need to plan and strategize according to those students.

>> What are your biggest challenges when you're trying to plan? When you're trying to make a prediction for 15 years from now?

>> People have stereotypes.

>> It's not going to be perfect and accurate.

>> How is it that you came up with your topic? And how is it that you have a connection to this topic?

>> I think you need to keep it interesting for yourself and for your students. So what's valuable and what's rich is not only the mathematics that's taking place. There's a culture that's been built, that's been established, where students feel safe.

And you can hear and you can see the respect that has been built between the students. There isn't a hierarchy there. One student isn't running the show. You're working as a team. And everyone has something valuable that they can bring to that team.

>> So Jessica, what do you have to say about manufacturing?

>> The industries, like, the companies, are manipulating how the adults think about plastic water bottles. It also affects the children.

>> Once that culture's been established, when you observe what's going on in those groups, you can see that equity, that team-building. And if there's those circumstances where you're not observing not, then as a facilitator, that's where you step in. So if you're not agreeing, and you have different ideas, did you listen to the ideas of your peers?

>> We just did, like, a mini vote of which one we thought would be better.

>> And you assist a child in their voice being heard by the other members, reminding students as well that listening is a skill. You need to listen to the contributions of others, and build on those ideas.

>> They can have, like, a white lie in it, saying that, "Oh, this water's going to be so good for you," like, you can get abs and muscles, and all of them.

>> It's the way they explain it.

>> They might be influenced by the person that's advertising. Say Drake is drinking it, people are going to listen to Drake, obviously.

>> Yeah. Advertisements do affect -- there's a big role.

>> The advice I would have to another educator that might be thinking about math in action, inquiry-based learning, is get in there and take the risk. Things might not go the way you want all of the time, but be willing to try. It is not more work. It is different work. In fact, I find it much more manageable. You don't want to have stacks of paperwork as a teacher. And you have to question the value in that. I think it's important to be open-minded to things, and not close your mind by saying, "I'm too busy. I don't know how I could fit all of this in." You're not doing something in addition to what you're already doing. You're changing what you're doing. You're tweaking it. You're making alterations. It is completely manageable. You just need to be open to the change. As a teacher, I'm always reflecting on my practices. I think, did something work? Could I improve it? Is it something I'm never going to use again? I think that good practice is listening to your students and reflecting on your teaching experiences. Bringing creativity to mathematics. It sort of breaks down some of the thinking that, I can't do math. I'm not good at math. And I think we can

overcome that by saying, actually, math is all around us. We can't escape mathematics. It's everywhere. And the kids come to realize that, oh, math is actually science. Math is art. Math is physical education. Breaking down some of those thoughts that I can't do something, and allowing them to see that they actually are already doing it.