

## Leaders in Mathematical Thinking

Ruth Beatty - Thinking about Math and Culture

>> It's really broadened all of our understanding of what it means to do math, and how important it is to think about math in a different way, so to think about math beyond just doing math, or solving math equations, or whatever. Like, the math is very exploratory, it's very inquiry-based, the way that we're doing it. And to make these rich connections between these really deep mathematical concepts and these activities that the kids are engaged in, and to see the level of engagement with students, because they love the logical thinking, but they love the creativity as well. They're so engaged in these problem-solving questions that they pose to each other as they're going through these activities, that we can really see that they're developing this rich understanding. And then there's the communication piece, there's the pedagogical piece, which is around having knowledgeable others in close proximity, having a mixture of direct instruction and then informal inquiry. And really building this community in the math classroom where it's trust and humour, and a sense of safety and well-being, so that children are developing this very personal, positive relationship with mathematics. One of the videos I showed this morning was of a woman, an Ojibwe woman, who was talking about her own educational experiences. And she talked about how she always had to go into the dominant culture. And she was told that, you know, in her community, they said, go and learn their ways. That's how you become strong, to be able to walk into worlds, kind of thing. And so she did, and she learned the dominant way. And she became a teacher. And then she started to reflect, and she thought, "No one ever comes to us." You know, no one ever asks us about our ways. We've got this rich culture, we've got this heritage, and nobody ever asks us about it. And so I was thinking for the students in the school, their friends are from the First Nation. So it's really important for them to know as much about their friends' culture, and their own culture. I mean, being Canadians, the First Nation's people are called that because they were the first nation. So it's really important for them to know about that culture as well. And then the other thing we were talking about, too, is the fact that this approach to learning was beneficial for all students in terms of their math understanding and math achievement. So it was really important, I would say essential, for the students from the Algonquins and Pikwakanagan First Nation. But it was good for everybody. It's a better understanding where the students are coming from, but it's also broader than that because when we talk about education, or sorry, communication in this context, we're really talking about listening to First Nation's voices. And that's what we prioritize in this project. So when we're starting the project, we meet with community leaders, knowledgeable others, elders, community members, and really ask them what it is they would like for their children. What are their goals? What are their aspirations? What is important to them in terms of the education of their children, and really listening to that? And then going forward, but always keeping up that ongoing dialog, so that we're always checking in and making sure that we're doing things in a responsible way that's aligned with the goals and intentions of the community. But then for the teachers, this communication piece, it allows them to form these really strong relationships.

And if you're building a strong community, whether it's in the community or in the school, or bringing those two communities together, you need to build strong relationships. And communication is a key.