

Leaders in Mathematical Thinking

Marian Small - Big Ideas

>> I do a lot of work with teachers, talking to them about how important it is when you plan a lesson to have an idea that is important that kids walk away with. If you read the curriculum documents, often those ideas are not clear. They're kind of buried in a lot of stuff. If you have very little math knowledge, you may not know what those ideas are. So there was a time when you relied on the text author, who did have expertise, and who did know those ideas, to do it for you. Now we're asking people to do it on their own, and I'm not sure that's fair. I'm not sure you can expect a person who has very little training in math, who has little opportunity to really indulge in it because they're busy with all the work that they actually do to instantaneously come up with all this stuff. So I think taking all expertise away is not the answer, either. I think what we need, and what I say to teachers, is I – a person like me, not me, but a person like me – is a starting point for you. Then you have to evolve it into you. But I can't expect every single teacher in Ontario to invent the wheel, I don't think that's practical. I don't think students will inquire unless the teachers know how to intervene appropriately. So if I look at a typical grade four class, they're not inquiring about anything interesting, they're just not --teachers have to know how to set up situations that are worth inquiring about. Well, to set up that situation, you have to kind of still know what you're going for. So we often say there's a mantra, like elementary school teachers teach kids and high school teachers teach math. And the truth is, both of them need to do kids and math. So if you're teaching a mathematics class, you have to be thinking, what are the mathematical ideas I need these kids to know? And it can't just be random, because there's a curriculum you are paid to follow. So if the student inquiry doesn't go anywhere there, you can't let that happen. At the same time, you have to be responsive to kids. So I think there is a back and forth, a delicate balance. I think that student inquiry happens well with older kids in particular, when teachers set up the right conditions. And they are torn between a curriculum and inquiry. I really believe it's a very complicated balance between achieving the curricular goals and addressing student interests and inquiries. So you have to be a masterful teacher to set up those inquiries so the math will happen. I can't just hope the student inquiries will take me where I want to go, because my experience is that isn't what's happening.