

Leaders in Mathematical Thinking

Jill Gough - Benefits of Technology

>> I think that our students are using hand held devices for everything in their life. I think they use computers as well. I want our learners to understand how to use technology to help me learn, not just to do the shortcut work. So I think it's really important that we have computing devices that help children build tables, see graphs, understand the connections between those two. Test mathematical arguments to see the outcome, and then be able to revise. So I think there are many pieces of software and apps that do that. I just want students to use apps that help them learn, not that do math for them. I think they become owners of their own learning. I think that when we put technology in the hands of children, they don't have to follow the path that we are going on. They can ask "what if" questions and test it out, and then ask each other clarifying questions about what they've discovered and what they think. And when they make mistakes, it's not on paper in ink that's hard to deal with. It's just a mistake in pixels that I can go back and refine and try again. So I think it makes our students adventurous and curious and pioneers in their own understanding of math, instead of passively sitting waiting to be told here's the next thing we're going to do, and this is the way that we do it. We work really hard at my school to have students understand and show what they know with words, pictures, numbers and symbols. How many different ways can you show me, so that we deepen understanding and empower the children to take the path that best suits them. Well, I never saw the graph of anything that I didn't draw myself until I was a classroom teacher. So I really struggled through calculus as a student. Just getting the graph drawn was the objective. No longer is that the struggle. I now can relax about that and interpret and visualize and make predictions, and apply what I know instead of the heavy, heavy lifting that had to be done before. I never got to the application; I never saw the beauty in what was happening. I couldn't see any symmetry, because my hand-drawn work didn't really show that because of its natural inaccuracies. So I think it's an exciting time to learn math, because you can see and manipulate things for yourself, and watch what happens and follow ideas, instead of struggling to get them out so that you can see them. Resistance, still, about technology is very concerning to me. Our students do not think the same way we do. They don't learn the same way we do. And it is, we look old to them when we don't allow technology. I hate when I hear in classrooms, "You need to put your cell phone away." That can be a great tool for communication, when it's used well. I would prefer that we teach our students how to learn to use the devices they have for their learning, instead of as a distractor from their learning. Putting it up doesn't teach them to do that. Putting it up tells them that we just don't know things, where if we -- it's a gradual release of control. I'm going to make mistakes when I have technology. I would rather teach our students to learn and make those mistakes and get them corrected, than to just say "no," because it's so important in our future. Because their future is also mine.