

Cheyenne Peters' Math Teaching Philosophy

In high school, math made sense to me. It was a great deal of rote memorization; we learned a definition and formula in class, then I would go home and do twenty problems using those and do the same thing in class on a quiz or a test. It wasn't until college, when my critical thinking and problem solving in math were challenged, that I realized that I wasn't as good at math as I thought. It wasn't I had a research experience that I realized and really understood that there's more to math than rote memorization. At Michigan State University I really learned what mathematics is. I learned what it felt like to struggle trying to understand the concepts that didn't come to me as easily as others did before. It was through taking college level math classes that I was challenged and learned to persevere, even when I started to dislike math. In college I learned how my future students would feel about math: the ones who hate it; the ones who struggle to understand it no matter how much (or how little) they try; and the ones who are used to rote memorization and struggle when it comes to using their critical thinking skills. As a teacher, I use my experiences with math to connect, relate, and engage students in my classroom.

Math is not just learning formulas and solving equations. Though that is an integral part, math applies to our everyday lives. Math is using problem-solving and critical thinking skills to quantify and measure the real world. One way I would like to teach is through project-based learning. I believe that students have a better grasp of the concepts when they use them in practice. Math is very conceptual, which can be hard for them to understand. Students always ask the question, "When will I ever use this again?" Through a project, students see math in action. We use math to make sense of things that happen around us and in our lives. Not only do we use math in that sense, but we also use math as a way to create access and opportunities. Strong critical thinking and problem-solving skills are extremely valuable in today's society. Someone with strong math skills has more access and opportunity than someone with weak math skills. For example, employers want people who can think on their toes. Problem solving and critical thinking skills are very valuable to them because it helps them come up with solutions to projects the company is working on. These skills are honed in math classrooms. When teachers challenge students to think outside the box and come up with various strategies, students are exercising their critical thinking and problem solving skills.

Everyone should have access to relevant math teaching. By relevant, I mean math that relates to them and makes sense in their everyday lives. Gloria Ladson-Billings' culturally relevant pedagogy is how teachers can make math for everyone. When we relate the content to students' lives, it is revealed

that all students can excel at math. This way of teaching connects the math and relates it to student. It helps increase the engagement level in the classroom. Students no longer feel like what they are learning in the classroom is irrelevant and only important in school. It is through this process, that we help students think of themselves as mathematicians. When they see themselves as doers of math, it becomes part of their educational identity.

Access to relevant math education is also teaching math for social justice. If math is one way we analyze the world, then there also needs to be a focus on how current events can be studied and analyzed in math. Teaching math for social justice uses math to explain data and observations of injustices and inequality that happens in our society. This extremely important. If we never talk to them about what's happening in the world or expose them to something culturally different than what they are used to, they will never build these skills to analyze the world around them. This type of teaching has students critically think about current issues that we face as a society. This teaching can focus on local or global issues to give student perspective that the world is bigger than just themselves. It brings in a real world context about the math they are learning and how it explains what is going on in the world.

Access to mathematics not only is in the way we present content material, but also the environment in which our students learn the mathematics. Students spend the majority of their time at school. This is where they make friends, discover their talents, and, of course, learn content material. Since students spend so much time at school, the classroom should feel like a community with their peers. They need to feel like they have a safe environment in which to learn. One way to start creating this classroom community environment is to allow students to have some say about what they want in the space. Allowing them to have input on the classroom rules is a start. They will shape what will foster a safe learning environment for themselves and each other.

Another aspect of access the mathematics is relationship building. Teachers should relate to their students on a personal level. Relationships with students helps them connect to the teacher and the teacher to the student. Knowing one small thing about a student's personal life makes a difference to them. Students just want to know about the person in front of them for an hour Monday through Friday for the entire school year. From my experience, this made a difference in how my students interact with me. When students understand that their teachers care, they give those teachers more respect over ones who don't build that relationship. When students have that relationship with their teachers, they are more willing to learn. The relationship between students should also be like this.

When students know a little bit about their classmates, they have more respect for each other and each other's learning. The class becomes a community setting.

Math is emancipating and empowering. Math education is for everyone because anyone can be a mathematician. Every student should be challenged. Every student should be pushed to learn math more deeply. No matter what level they are at, it is our job as educators to make sure they have access to teaching that pushes them to practice their problem solving skills. In a safe community environment, their minds can be expanded, allowing them to think more critically. My goal as a mathematics educator is to help students reach their full potential and become well-rounded citizen.