

Philosophy of Mathematics Education

For the past several years the conversation with family, friends, and close acquaintances has sounded something along the lines of:

“What’s your major?”

“Mathematics.”

“Oh. Really?! What do you want to do with a math degree?”

“I want to be a high school math teacher.”

“Oh no, really?! Well, we do need good high school math teachers! My math teachers...”

And then they proceed to tell me about their awful math teachers and/or a horrible experience they had with a math teacher. While my family, friends, and close acquaintances are shocked that I want to be a high school math teacher, I can confidently say that I feel the Lord’s calling to become a math teacher. For as long as I can remember, I have loved working with numbers. As a logical, black-and-white thinker, math has always brought me joy and I hope that the joy math brings me shapes my philosophy of mathematics education. Even though I am only in the beginning stages of becoming an educator, I plan to foster a classroom that is characterized by a high respect for the study of mathematics and others, personal relationships, community, collaboration, high energy, and high expectations.

I understand that math is not every student’s favorite subject, but as a math teacher, I want to show my students that math is essential to their education and deserving of their respect. In other words, I would never expect a student that comes into my classroom with a fixed mindset about how much they do not enjoy math to leave exclaiming how much they love math. Rather, I hope they will leave my classroom with a growth mindset feeling confident in their

math skills and a recognition of how important math is to their daily lives and education.

Shankuntala Devi, also known as India's "human calculator" because of her ability to compute numbers quickly, once said, "Without mathematics, there's nothing you can do. Everything around you is mathematics. Everything around you is numbers." We use math on a daily basis whether we recognize it or not. Math helps us cook, bake, shop, travel, build and construct objects, and so much more! By creating assignments that allow my students to explore math within their daily life, I hope to promote a recognition of how math is relevant. For example, if I was teaching a unit on transformations, I would constantly point out examples of transformations in our daily lives. This includes eye dilations, rotations of wheels on different modes of transportation, reflections in mirrors, and so on. With a growing recognition for the relevance of math, my hope is that my students will in turn find a greater respect for math and have a deep understanding of mathematical concepts.

Aside from my hope that my students will have an appreciation for mathematics by the time they leave my class, I want my students to have respect for those around them and me, their teacher. Everyone deserves to be treated with recognition and love because everyone is a son or daughter of Christ. Matthew 7:12 states, "Do to others whatever you would like them to do to you." Respect is one of the most powerful classroom management tools. If a teacher respects his/her students and students respect their teacher and classmates, it will result in effective and valuable learning time. Less time will be spent off task and dealing with behavioral issues, and more time will be spent on task learning about important mathematical concepts. Ultimately, my desire is to create a classroom atmosphere that fosters the principle, "Respect math. Respect others." This policy encompasses what I want to promote within my classroom and I believe it

will build a community of mathematicians that are willing to work together to learn and explore the beautiful world of mathematics.

In hopes of attaining a classroom culture of respect, I also hope to foster personal relationships with my students. In the beginning of this semester, when I was asked what I hope my students know from being in my class, I wrote “that they are loved,” “that who they are matters and affects the community they live in,” and “that I take interest in their lives and care about them as their teacher.” These three ideas are rooted in my faith as a Christian. As a Christian, I know every student is loved deeply by God and I want to reflect that love through my interactions with them. I firmly believe that every student matters and that God can use me to show them that their lives matter. I do not want to miss out on being a part of their story and allowing them to be a part of my story. That is why having personal relationships is a big part of my philosophy of education. In order to have these personal relationships, I will be intentional, ask questions, listen, be open, write personal notes, celebrate with them, mourn with them, and so much more. Having personal relationships with my students will hopefully build trust and a stronger, more collaborative community within my classroom.

In the past decade, math education has started to change. For several years math education was all about memorization and the ability to “plug and chug.” In *Classroom Confidential: The 12 Secrets of Great Teachers*, Laurel Schmidt claims, “In the not-too-distant past, many educators treated curriculum like a zoo for ideas. Students were allowed to view from a distance, but never touch, interact, or make their own discoveries” (1). With the shift in standards to Common Core, the idea of allowing students to explore “the why” behind mathematical concepts has started to shape math curriculum. Now, students are encouraged to

problem solve and think outside of the box in creative ways instead of following a step-by-step process. This idea resonates with a saying one of my favorite math professors, Dr. Hunter:

“There is more than one way to do it. That is the beauty of mathematics.”

From observing several math teachers in the field at La Colina Junior High, I have seen the power of allowing students to explore math concepts and find “the why.” All of the math teachers I observed at La Colina, except two, used collaborative groups as their main teaching method. Using collaborative groups is a powerful teaching strategy because it builds a strong, interactive community within the classroom. Students are able to work together through problems and learn different approaches from one another. Essentially, they become more responsible for their learning by using each other as a resource.

As a teacher, I plan to engage my students through various types of lessons using different teaching methods including collaborative groups. I do not want to be the math teacher that simply stands at the front of the class and lectures at her students. I want to plan innovative activities that consistently keep my students engaged and allow them to explore the world of mathematics and its beauty. After learning about Howard Gardner’s Theory of Multiple Intelligences, I know and understand that all students learn through different means. I want to appeal to all different types of learners through my curriculum and I will be able to do this by using different teaching strategies and techniques like the jigsaw technique, speed dating, using manipulatives (algebra tiles, patty paper, etc.), peer editing, and so forth. Just as there is more than one way to solve a math problem, I believe there is more than one way to teach mathematics. And that is going to be the beauty of my classroom.

One way I plan to cultivate a culture of respect and build personal relationships while using various interactive and collaborative teaching strategies is by maintaining high energy. In other words, I am going to be optimistic and full of zest. As I learned in educational psychology, optimism and zest are two character traits that have been proven to enhance learning (KIPP.org). Throughout my time in the teaching credential program, my professors and peers have consistently commented on my love for math. I even received a “Student of the Week” award for my passion for math and learning in ED 101, Explorations in Teaching. While math truly brings me joy, I believe working for the Lord is where my true joy in teaching math is found. One verse that I have been resonating with throughout my time in the credential program is Ephesians 6:7, “Work with enthusiasm, as though you were working for the Lord rather than for people.” I believe the amount of joy that math and working for the Lord brings me will help me become an effective teacher and enhance my students’ learning and motivation.

One of Westmont’s four pillars of teaching dispositions is lifelong learner. A lifelong learner “displays curiosity and passion for learning and transferring enthusiasm to learning to others.” Since my love for math is a part of who I am, it will naturally become a part of my professionalism. I believe this is what will allow me to be a teacher that is concerned with instilling a thirst for knowledge within my students. Teachers have the power to set the tone of their classroom. With my passion for math, I will be able to create a dynamic classroom with high energy and enthusiasm for math. However, my concern is my students may act out because of the amount of energy in my classroom.

While I can’t expect my students to be perfect, holding them to high expectations can inspire and motivate each of them to have a drive for personal success. In *Teach Like a*

Champion 2.0, author Doug Lemov states, “One consistent finding of academic research is that high expectations among teachers are the most reliable driver of high academic achievement among students even students who do not have a history of strong achievement” (89). Holding students to high expectations will not only counteract their behavior issues, but also motivate them to work hard and ultimately succeed. I will always treat my students fairly and hold them to high expectations because I care deeply about their mathematics education. I believe every student can be a strong mathematician if they put forth persistent effort. With this belief, I will hold my students to high expectations and encourage them to improve their math skills.

In closing, I am able to recognize that my personal philosophy of mathematics education will constantly be evolving. In all honesty, I will most likely recraft my philosophy often as I gain experience and learn more about mathematics education. My personal philosophy may never be solidified, but cultivating a classroom that is characterized by a high respect for the study of mathematics and others, personal relationships, community, collaboration, high energy, and high expectations are all aspects that I want my classes to have throughout my teaching career. In truth, my hope is that my students experience the Lord’s love while they are in my class. If they forget everything I taught them, but somehow take away that they are deeply loved and cared for, then I will know that I made the greatest impact I could have on their lives. My philosophy will always guide my teaching career, so I plan to keep developing my personal philosophy of mathematics education and commit it to the Lord’s values. As it states in *Bible-Shaped Teaching* by John Shortt, “what we do in our classrooms can be shaped by the Bible, or, more precisely, by God through the Bible.” If I commit my personal philosophy of education to the Lord’s ways, he will help me grow in my thoughts and continue to develop a

powerful philosophy of mathematics education. As it says in Psalm 37:5, “Commit everything you do to the Lord. Trust him, and he will help you.”

Works Cited

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