

Making Changes for the Betterment of All

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When I finished my undergraduate degree at Central Michigan University and entered the world of teaching seven years ago, I knew my time as a student was not over. I knew that to become a better teacher and to be able to renew my teaching certificate I would have to continue my education. For the first three years of my teaching career my school provided me with lots of professional development ranging from classroom management to curriculum development. During this time, the State of Michigan adopted the Common Core State Standards for Mathematics, and I was sent to a multiday training so I would be more equipped to help my students master the new standards. As the end of my provisional teaching license slowly approached, I knew the professional developments I had attended were not going to be enough to help me earn my professional teaching license. I knew I was going to have to continue my education in a concentrated program of study. But I was not sure what I wanted to study.

As I thought about the professional developments I had attended and which ones sparked the most interest for me, my mind was drawn to the Common Core professional developments I had attended. The sessions were hands on and focused on getting students to discover and discuss math and not just memorize concepts and facts. I knew I wanted to continue my education in a setting like the Common Core professional developments. I thought a program like that would keep me interested in continuing my education, challenge me, and help me grow as an educator. So I set out to find a continuing education program that would do just that.

One of my colleagues informed me about the educational technology program at Michigan State University and how wonderful her experience was in the Master of Arts in Educational Technology (MAET) program. I spent some time doing research about MAET and its different offerings. The program was extremely flexible and offered online classes, face-to-face classes, and cohort hybrid (2 weeks face-to-face and 4 weeks online) classes that ran in the summertime. The brochures and testimonials on social media spoke very highly of the program and raved about the hands on approach of the cohort hybrid and relevance to the classroom. Everything that I read about the program seemed to fit my needs. Taking the cohort hybrid summer classes (9 credits in 6 weeks) for the majority of the program seemed like the best fit for me. So four years ago, I took the plunge and applied.

As I entered the program, I reflected on how little technology exposure I had in my career and personal life. I was employed by a small school district in southern Michigan that had very little technology. When I started my master's, my school did not have wireless Internet and the building I worked in had three computer labs for six grade levels (about 80 students each) to share. I didn't even have a class set of scientific calculators for my middle school students to use. I had just gotten a smart phone so the world of applications let alone educational apps was foreign to me. It's amazing that I even considered the educational technology program given my lack of technology exposure. But nevertheless, I pushed on because of what the program had to offer, and it would undeniably provide me with a challenge and an opportunity to grow.

Needless to say, when I started my first set of cohort hybrid classes (CEP 810, CEP 811, and CEP

812) my mind was blown. In the first day, I was exposed to more applications and devices than I had ever worked with in my life. In CEP 810 (Teaching for Understanding with Technology), my instructors designed the class in such a manner that I was constantly forced to learn how to use new technology and application on the fly. Through the use of quick fires, I had limited time to learn how to use the technology and produce work that fit the requested criteria. Although at the time the quick fires were stressful, they made me just jump in and not hem and haw about how to approach the assignment. These quick fires showed me that I am capable of teaching myself or using the Internet to quickly learn how to use technology that is new to me. They helped me discover the power of a personal learning network, and also reinforced the notion that the best way to learn how to use something is to actually play around with it and use it.

I have transferred this philosophy into my classroom teachings. When I introduce new technology (computer or calculator applications and digital or physical manipulatives) to my students, I know that I have to provide them with time to explore its features before I can actually expect them to use it as a learning tool in math. Plus I have found the students are much more likely to remember how to use the technology when they discover how to use it on their own or are more familiar with its set up before I tell or show them how use it. Not only has CEP 810 forced me to become more familiar with multiple forms of technology, but it also showed me the importance of exposing students to technology before I ask them to use it to discover mathematical content knowledge.

The course CEP 810 also drastically changed my outlook on how to use technology in the classroom. Entering the class, I thought I was looking for ways to use technology in my classroom to increase student interest and keep students busy. In other words, I was unknowingly looking for shiny objects to babysit my students. But this course introduced me to better and more meaningful ways to incorporate technology into my classroom and lessons by following the Technological, Pedagogical, and Content Knowledge (TPACK) model. TPACK focuses on how technology can be used in the classroom to help students access and process subject matter material and support and enhance learning. It emphasizes that teaching with technology is more than giving students technology. Instead a specific technology is chosen to be integrated into the lesson because of its affordances and abilities to help students gain a deeper understanding of the material. Deciding which technology to use in a lesson and how to weave it into the lesson is just as important as the pedagogy the teacher uses to teach the subject matter material and the subject matter material itself. TPACK helped me see technology as an intricate piece of the teaching puzzle and not a stand-alone resource that could be haphazardly thrown into any lesson for entertainment purposes. This course helped me see the difference between teaching with technology and using technology in my teaching.

Another course in the MAET program that has altered my teaching is CEP 800 (Learning in School and Other Settings). This course focused on the different theories of learning and how they affect the design of a lesson and the depth of knowledge a student can reach. When I started teaching, I was of the mind set that all student learning was a result of a response to a stimuli. I assumed that my students were all motivated to work hard and do their work because they wanted the positive reinforcement of a good grade and the praise of their parents. I also assumed that the negative punishment of taking away part of lunchtime or passing period would be enough to get students to want to learn. However though my

experiences as a teacher and by revisiting the learning theories, I now understand that Behaviorism has its place in the classroom and schools but it will not suffice as the main driving factor behind student learning.

Since Behaviorism is not the only learning theory, there are other ways I can view learning like through the lens of Constructivism. The Theory of Constructivism says that students learn by experiencing things that build upon their previous knowledge and then reflecting on those experiences. It is essential that the teacher understand the students' preexisting knowledge or misconceptions so she can guide the lesson to build off the students' prior knowledge or expose the misconceptions so they can be corrected. In a constructivist-learning environment, the students are always reflecting on how the activity they are engaged in is helping them gain a deeper understanding. It is the teacher's job to guide the students in their learning process. The teacher designs lessons that allow the students to investigate or explore mathematical concepts. Eventually the students draw conclusions from the patterns that were exposed in their investigations. Instead of being told a math concept the students investigate it and construct their own knowledge about the concept.

After revisiting this learning theory in my master's program, I can see how it is a good description of how students learn mathematics. The Common Core Math Standards are written in a way that opens them up to investigation. Instead of saying that the students should be able to do a skill, the standards say the students will understand or explain concepts. By designing more investigation-based lessons for my students I can help the students construct their own mathematical knowledge. This change in teaching style has gotten my students to be more actively engaged in class and helped them become active learners instead of passive learners. This shift has helped my students be more invested in what they are learning because they are discovering concepts instead of being told the concepts. The increased investment has led to deeper understandings and will allow the students to apply these concepts in authentic situations.

A third course that has affected the way I teach is CEP 820 (Teaching Students Online). When I was looking at potential classes to take in the MAET program this was not a class I was interested in because of the limited Internet access at my school. But I took the class anyway because it was a required class to earn the NP endorsement on my teaching license. Now that my school has expended its technology a bit and I have a better understanding of how to teach students online, I am extremely thankful that I took this class. This class has transformed my teaching because it allows me to reach my students both inside and outside my classroom.

Before taking this course I had very limited exposure to online classes and assumed that they all consisted of busy work and forced responses on a discussion board. But after completing this course, I now understand that creating an online learning environment is more than just providing students with links to readings or websites. To create an impactful digital learning environment there must be specific components in place to make learning in an online platform more impactful. They happen to be the same components that make learning in a face-to-face setting effective (using multiple representations, providing practice with specific feedback, and a safe place to have discussions and ask questions). The most critical component of online learning (just like in the classroom) is creating a relationship with the

learners. This is harder to do in an online setting but can be done through providing feedback, video chats, and thoughtful conversations on discussion boards. Although I do not see myself teaching in an online only setting, I can still use these ideas when I create hybrid settings in my classroom. By making my classroom a hybrid setting, I can differentiate more and meet the needs of all my students but still maintain the integrity of a traditional face-to-face setting. This class also showed me ways to effectively help my students extend their learning outside the classroom to allow for even more differentiation.

Throughout my four-year journey in the MAET program, I was able to become a better teacher. This program helped me find areas of weakness in my teachings that I did not know existed and gave me ways to turn my weaknesses into strengths. I feel equipped with the skills and abilities to tackle new forms of technology and integrate them into my classroom to increase my students' understanding of the material because of the work I have done throughout the program. I also feel more confident in designing and implementing inquiry based lessons both in a face-to-face and digital formats. In the end, not only have I benefited from this program but also ultimately my students have benefited because they are receiving a better version of me as a teacher. I know that my journey of becoming a better teacher is not over, but I feel I have developed the skills and abilities to continue this growth process on my own.