

As I reflect upon my journey in the Masters of Arts in Educational Technology (MAET) program, I cannot help but think about where I was when I started the program. I had just started my second teaching job and was thrilled to be a full time 6<sup>th</sup> grade science teacher. My excitement to share my love and curiosity for science was boiling over. However, as I started to prepare for the school year my excitement slowly diminished as I realized the district I moved into didn't have the basic resources to teach the standards. The science textbooks for the middle school had a copyright date from the year I was born, and if the content I needed to teach was in the textbook, it wasn't in the textbook that I was given. The previous teacher left me four 3-inch binders (one for each marking period) of the worksheets and packets from the 6<sup>th</sup> grade textbook that she had the students work on. As I thumbed through the material, I felt a giant lump form in my throat because I knew what I was left to work with didn't align with my beliefs about education.

I spent my summer researching newer science curriculums and found an Internet based curriculum. The only problem: I couldn't provide regular access to the Internet for my students. Nevertheless, I pitched the idea to my principal. He agreed to have me pilot the program for a year and got me a classroom set of iPads. As I started to use the iPads in my classroom and had my students use the online curriculum, I felt that I wasn't utilizing the technology to its fullest potential. At this same time I knew I needed to start researching masters' degree programs because my teaching license was going to be up for renewal soon. I knew that I didn't want to be an administrator of any sort and I didn't want any more "core" certifications added to my license but I also knew that I wanted something that I could put into use in my classroom right away. I found the MAET program and knew that this was the program that would help me expand the use of technology in my classroom.

Education, and society for that matter, appears to be fascinated with the possibilities and uses of technology so getting my master's in educational technology seemed to be the right fit. I chose the MAET program specifically because knowing myself as a learner, I knew the flexibility of the class styles would work best for my hectic lifestyle. Many other master's programs were simply all online and I knew that I would get the most out of the classes if I could have the face-to-face interaction that the hybrid MAET program provided. I especially liked the fact that the hybrid classes were offered during the summer months where I could focus solely on my master's classes. The hybrid classes were two weeks face-to-face that then transitioned to four weeks in an online setting. The small class sizes of the face-to-face portion of the class provided an instant community where I felt comfortable taking academic risks, which allowed me to grow as an educator and student. This community made the transition to the online portion of the classes much easier because I felt connected to something bigger rather than just being a "number" behind a screen. Knowing the importance of a human connection behind a computer screen was a big "take away" from CEP 820: Teaching Students Online.

In CEP 820: Teaching Students online, I learned how to effectively teach in an online learning environment. I was particularly interested because even though many students do not have access to the technology or the Internet outside of school, they do have access within my classroom walls in a one-to-one format. The online setting can provide immense differentiation in instruction as well as assessment. However, this online format does have its constraints because if the user doesn't feel a human connection, the motivation to excel in this environment will not be there. In this class, building relationships with the students inside the classroom needs to be paramount because then that relationship or connection can transfer into the online environment. In my school many teachers fear the future that the "computer will replace the teacher". To me, if the teacher is doing the exact same thing as the computer then you should be replaced. Teaching students online shouldn't be as opening up a website and sitting the student in front of the device. As teachers, it is up to us to use the technology to maximize learning, which involves creating relationships with students—something that a computer cannot do.

As a classroom teacher, I feel I have two main paths to take when approaching technology—use the technology as it is and alter my content and pedagogy or alter the technology to fit my content and pedagogy. I find myself using my knowledge of learning and how students learn (pedagogy) along with what it is that they need to know (content) and adapting technology to fit those needs. Before taking CEP 810: Teaching for Understanding with Technology I had no idea that what I was doing with technology in regards to teaching had a name—TPACK (Technological Pedagogical and Content Knowledge). Taking this class was confirmation of my teaching practices.

At that time in my career, my school, had a decent amount of technology available but some teachers refuse to use it in their classrooms because they don't understand its use and purpose. I observed colleagues doing things the “traditional way”, which sometimes ends up taking longer than using a new tool. I think many of my colleagues were/are technology resistant because they don't understand it themselves and if they use technology instead of their “traditional way” it is like they are saying their traditional way is “wrong” and using the technology is “right”.

In CEP 810, I went through a simulation of “cooking” where each group was given random tools and given a random task to complete with this tool. My group's designated station (fruit salad) was given the tools of a whisk, masher, pizza cutter and tongs. We immediately began verbalizing what tool would be used for what job/fruit. While we surveyed the tools, I immediately made the connection to technology—tools and their use in the classroom. Even if you have a wide variety of tools (or technology) available, if it doesn't serve the purpose (to enhance the content/pedagogy) then it is not useful. This thought reminded me of a quote that has been reiterated many times in throughout these courses— “Technology is just a tool, a means to an end, not the end itself.” (Mishra, P. & Koehler. M. J, P.15). Technology doesn't guide our teaching but it is simply a tool to enhance it. In our fruit salad preparation, we quickly discovered that some tools were very versatile while others were very specific. For example, the tongs could be used for cutting and peeling while the whisk served the sole purpose of creating a raspberry puree. The same can be said for classroom technology—for example: chromebooks are very versatile while classroom clickers served a sole purpose.

We continued cutting up our fruit to make our fruit salad and experimenting to see what worked and what didn't. The idea of collaboration became evident as we neared the end. For example, I had a set of tongs and another person at my table had pizza cutter. Our goal was to cut a cantaloupe into bite size pieces for the fruit salad. Immediately, we devised a plan that since the pizza cutter had a straight edge, it would be the best choice for cutting the cantaloupe. However, the pizza cutter was not sharp enough to do the initial cut through the rind. Using another tool (my tongs), we were able to start the cut through the cantaloupe rind and then finish it with the pizza cutter. The collaboration and problem solving to cut a cantaloupe can be transferred into the classroom when students are constructing their own knowledge. Students learn by taking their pre-existing knowledge, in our case it was how a fruit salad is made and how fruit is to be cut up, and apply that knowledge to a new way of constructing a fruit salad (Donovan, S., Bransford, J., & Pellegrino, J. P.10).

Drawing upon my “cooking with TPACK” if we as students didn't have any prior knowledge about our tool, we would also be resistant to using it. We would probably rely and use our “traditional” tool because we are familiar with it and know how it works rather than experiment and use a new tool. Going through this simulation in CEP 810 of how technology can be perceived and used allowed me to view my colleagues in a more empathetic light.

Realizing how many colleagues learn and acquire technology skills made me think of the variety of ways my students learn. While taking CEP 800: Learning in School and Other Settings, I learned about how different learning theories impact student learning. Early in my teaching career, I would have categorized myself as a behaviorist when it came to how learning takes place in a classroom. I thought of learning as a series of rewards and punishments and the learning that took place was done in response to a positive stimuli. For

example, I previously thought that the reason a student would learn his/her multiplication facts was to earn a star on the multiplication chart hung in the classroom with all the students' names on it.

Upon further reflection, I have discovered that all the learning theories we discussed (behaviorism, cognitivism, constructivism) all take place in my classroom depending on the circumstance. For example, my school uses PBIS (Positive Behavior Interventions and Supports), which is a school wide focus on positive behavior. This program is grounded in behaviorism where you reward the positive behavior a student does immediately every time it is done in order for the behavior to be repeated. The reward is often in the form of a ticket, which is later entered in a drawing or a verbal praise. However, after taking CEP 800, my thinking has shifted that my ideal classroom would be a mix of cognitivism and constructivism. Ideally students would be the ones constructing their knowledge through their own experiences (constructivism) and the teacher would be the facilitator. However, due to my middle school students' cognitive development where students can think logically when it comes to concrete events and analogies but depending on where they are at, they struggle with abstract events and analogies so it is up to the teacher to help organize the abstract information (cognitivism). For example, if a student is learning about how tectonic plates move just under the Earth's surface due convection currents (caused by temperature changes) in the mantle. Often students do not realize they understand the concept of convection currents or the vocabulary but it is up to the teacher to organize the information and connect convection currents to something the students are familiar with such as the boiling of water to macaroni and cheese.

I do believe that students come to us with a variety of prior knowledge and experiences with the world. It is the learner who constructs his/her learning in relation to his/her experiences, which is constructivism. For example, if a student is learning about weathering and erosion. A student might have had an experience on a lake where a sand castle was destroyed due to a wave. Allowing the student to draw on this prior experience and then apply it to creating a stream table with sediment in it lets the student construct his/her learning about weathering and erosion.

Looking back at myself from when I entered the MAET program four years ago, I believe I am a more confident and effective teacher. I did not complete the MAET program in the fastest possible way, which I think was a blessing because it allowed me to see the effects of different learning theories and other practices in my classroom. Once I learned something in my master's classes, I was able to put it into practice in my classroom. Similarly to many other things in life, once something is implemented there isn't an "instant" change. However, because I predominately teach sixth graders I was able to see the effects of my change in practice when those sixth graders became eighth graders and I had eighth grade teachers telling me the connections students made in their classrooms to what they learned in mine back in sixth grade science.

## References

Mishra, P. & Koehler, M. J. (2009). [Too cool for school? No way! Using the TPACK framework: You can have your hot tools and teach with them, too.](#) *Learning & Leading with Technology*, 36(7), 14-18.

Donovan, S., Bransford, J., & Pellegrino, J. (2000). *How people learn: Brain, Mind, Experience and School*. Washington, DC: National Academy Press.

