Designing for a Purpose

I can definitively say that the number one way in which my thinking has changed throughout the course of the Master of Arts in Educational Technology (MAET) program at Michigan State University (MSU) is to be more purposeful in the implementation of my teaching strategies. There was certainly a focus on the use of technology, but it was supported by the idea that technology should not be used for the sake of having technology. Technology should be used for the sake of creating learning experiences. I had the opportunity in multiple different classes to support and develop a new way of thinking and problem solving. The idea of design thinking, that is problem solving using a particular set of steps, can be used for professional reasons like implementing new teaching strategies and technology, for educational reasons like finishing course work or learning new skills, or for personal reasons like designing a new house. Design thinking helps promote more purposeful teaching strategies and helps recognize that even if a plan or idea has worked, upon reflection, are there ways in which it can be improved?

It was very serendipitous when I started the MAET program. I was just getting underway in the planning stages of remodeling my house. This was a significant remodel, adding an extension, moving the kitchen, moving the laundry room and dining room, and changing all the floors just to name a few. What I realized now is that I think I have been a design thinker my whole life, I try to meticulously plan each phase of a process before I begin to implement it. Once a plan is implemented I work on trying to improve it. Through the designing of my house and the renovation of it, I have come to realize how important the planning stages are. What I have come to find out from my course work is that this thought process is called design thinking. With that said through some of my course work, I have also come to realize, just like in my house project, how important planning stages are in many more aspects than just a final product. It is not without this planning process that purposeful implementation of ideas can occur.

The ground work for design thinking was laid in one of my earlier courses, CEP812 Applying Education Technology to Issues of Practice. In this class, we explored problems of practice that needed to be reevaluated for the 21st century. However, to fully understand the problem, I investigated how to update teaching as my problem of practice, the class focused on the principle of asking the "good" question. To design a potential solution to the problem, the class explored what would happen if one were to ask "why?". The idea was to explore why something is done the way that it is and is there an alternative way of doing it. For teaching, I looked at the way in which current standards of teaching were, and explored new ways to update that teaching.

The idea of questioning to explore further learning was natural for me because I am a science teacher. Any science experiment worthwhile starts with asking a question. It was interesting to explore the design process through the process of questioning, it really connected to the scientific method. I worked with colleagues asking questions about observations we had about the teaching process. By asking questions, we were able to narrow our focus on underlying issues and design a solution from there. CEP812 was an important course because it helped broaden my use of skills I already had and apply them to new situations. It introduced the design process which I would have an opportunity to develop significantly later on.

In the early stages of my home remodel, we, that is my wife and me, had a tough time figuring out the layout of our house. We knew we wanted an open floor plan, we like to entertain guests but not have someone locked in the kitchen, but we were having a difficult time making it work on paper. It was not

until one of us asked the other, “why do we want the bay window?”. Without getting into too much of the detail, we could not design an open floor plan with a kitchen, dining room, and living space while still having a certain window exist. As soon as this question was asked, we could then analyze it and figure out a solution to the open floor dilemma.

The process of problem solving is an interesting one to me. I think I have come to realize that I appreciate the contractors who work on my house are the ones who think critically as opposed of just going for the “simple” solution. Many times in the renovation of my house, I see a decision a contractor has made and think, “What in the world is that? If he just took a moment to think of another idea, I don’t think I’d be staring at that!”. CEP817, “Learning Technology by Design”, explored the idea that critical thinking for designing solutions is a skill. A skill that can be practiced, and improved on. A skill that is a part of the design process. Where CEP812 formed the frame of design thinking, CEP817 built the structure. I came to understand the design process, which I learned was developed by the Stanford School of Design, as a series of steps. I think I felt like this was the case going into this class already, but this provided the opportunity to purposefully reflect on the design process.

CEP817 focused on learning the design process heading towards a consumer product. We had read several articles and books about the planning and implementation of products like Frebreeze. Sometimes these products did not work how the company had intended so they had to pivot in order to stay relevant or create sales. CEP817 pivoted and took the process that creates purposeful products and had the class use it to make purposeful solutions in education. The MAET program as a whole is based on the principle that a new teaching strategy or technology should only be used if it is purposeful and leads to new learning opportunities. In CEP817, I used the design process steps: empathize, define (through questioning), ideate, prototype, and test. I used these steps to create a purposeful solution to the question, “How to raise science American College Readiness Test (ACT) scores?” There are many ways in which this could be achieved, however, through the process of design thinking, my solution focused on practicing graphing and data analysis to raise scores. I came to understand the ACT is mostly science practice, so to prepare students I would have them practice science. Just as my own solution had my students practice to build a skill, CEP817 had me practice developing design thinking. Criticial thinking and design thinking is one of many threads that connects MAET program courses together, I had the opportunity to practice design thinking again, when I designed a website for hybrid learning.

In CEP820, “Teaching Students Online”, I developed an online space that would be used with my students for hybrid learning. Hybrid learning occurs when teachers and students meet in class, but there is also a digital space to expand the learning community outside the walls of the classroom. In the beginning stages of designing the website, I was lost. I did not know how to proceed because I did not really know where I wanted to go. I was not sure if the site would be hybrid or entirely online. All I was really able to do was select the unit I would teach, evolution. What I came to realize was that even though this particular course or project was not created with the idea of design thinking in mind, it is an opportunity to practice design thinking. I first considered how I wanted the online space to be used. I considered myself as a student and thought about how I would use the course. I reflected on various MAET courses and considered tools that I liked and tools that felt extra. I then asked myself questions, “what do I want the students to know at the end of this unit?”, “how am I going to create learning opportunities for students?”, and “how do those learning opportunities support what I want students to know?”. Once I asked those questions, I could then get a better understanding of what I wanted the final product to be. I empathized first to understand what I wanted the product to be, I then asked

questions to define what my product would be. I ended up frontloading the design process for the site so that the following stages fell into place naturally. I came up with multiple ideas of lessons that I wanted to use in the hybrid class and began to develop those lessons. I ended up with a purposefully designed online space that would enhance student learning in a hybrid setting. I have not had the opportunity to test this unit yet, but I have already begun using the design strategies I developed through my MAET experience in my own classroom.

What is interesting about the design process is that it occurs in many small stages within itself and it can never truly be done. As I was designing my house, we have come across issues that were not considered during the process so we had to redesign solutions because our original solution caused a problem. As I was designing the website, I had to problem solve best practices in order to create a better final product. I know that when I do use the website, it will have issues that I was not able to foresee and it will have to be reviewed and adjusted to create a better product.

What I have found most beneficial about the MAET program was that it was not just theoretical ideas about education. The practicality of design thinking was immediately beneficial. Yes, I may have already been a design thinker, but this program has helped me define and practice critical thinking even further. Recently, my school established a one to one technology policy, every student was given a Chromebook. My biology class, being on the list to receive a new book, was one of the first classes to receive an online book. I was actively involved in my department reviewing and testing different online options to see what would work best. Some online books were simply the standard book put onto a laptop. These books were eliminated because they did not offer anything beneficial. When reviewing different material, different companies offered a wide variety of tools, however, my final decision was determined by the resource that I would be able to use most purposefully that would create new opportunities for learning. I could feel that I was using the guiding principles of the MAET program to make the best selection. Now that I have the resource of my choice, I am using the design process to make for more impactful integration of technology and lessons that are more than, “because I have it, I’ll use it.”

In the future, I want my students to be able to practice design thinking. I have found this process to be helpful both professionally and personally. I need to consider how to implement such a strategy purposefully so that it can have as big of an impact as possible. I do not want some of my students to turn into some of my current contractors, the inability to think critically and design a solution with a purpose because they did not have the opportunity to practice it themselves in their own education.