Unique Puzzle Pieces

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When I initially started looking for graduate programs, I wanted to find a school that offered flexibility when it came to scheduling. As a teacher and coach of an almost year round sport, having the same night off every week is impossible. How would I ever be able to commit to a term long class unless it was on Sundays? If that were not hard enough, I would consider myself a very unique person to say the least, when it comes to my certifications and my hobbies. I am certified to teach grades six through twelve in mathematics and health, and my competitive cheer program takes up the rest of my day at school. How would I ever find a program that would be able to incorporate the two things that I love—mathematics and coaching? Low and behold, there was an answer: the MAED program at Michigan State University!

I began my program in the summer of 2010 with two concentration areas: mathematics education and sports and coaching leadership. Looking back on everything I have learned is bittersweet. It is exciting to have almost completed my master's degree, but I am sad that this chapter is over. I have truly grown exponentially from this experience.

Reflecting Back

What amazed me most about my courses in the MAED program at Michigan State University was their ability to surround me in real-life situations, and most importantly create authentic projects and assignments that allowed each student to produce work that would inevitably be able to be used in our own unique careers. There was never a point where I said, "I'm never going to be able to use this." I was always given the opportunity to create and utilize information and resources to my high school mathematics classroom or within my cheer program.

From a glance, one might also wonder if relationships between students and teachers suffered because of the online format. This is something I know I struggled with before applying. Will I have the same camaraderie or personal feeling from a completely online program? After all of this, I can honestly say, "Yes!" I'd shout it from the roof tops! Personally, I believe those relationships, both from fellow students and professors were better than that of sitting in a classroom together. In the online format, you have to build relationships immediately in order to work and grow together in your courses. In order to learn from others, you want to make sure you are deeply invested into their work as well as your own by being able to give meaningful reflection and feedback to others, as you would receive back from them. While I have never met any of these people in person, we all know a great deal about each other, our careers, possible classrooms or teams, our families, hobbies, etc. This program is not just about gaining more knowledge course by course; it was truly a process of learning and growing as an educator and coach.

Sports and Coaching Leadership

The first course that I took as a graduate student was KIN 854: Legal and Administrative Issues in Coaching. It might seem I hold this course as significant as I do because it marked the beginning of a

new educational experience, however, this course taught me more than just what to expect in graduate level courses.

As a teacher, head coach, and perhaps one day, an athletic administrator, it is extremely important to know my legal responsibilities in any of these positions. In this day in age, lawsuits involving sports and sport safety are becoming more common. As a coach of one of the arguably most dangerous sports, competitive cheerleading, learning proper progression of stunt and tumbling skills would seem to be natural, and one might think holding certification to signify these achievements would be required. With nine years of coaching behind me, it is amazing to see that these things are not often required of coaches, but that does not mean that you are not liable for upholding the safety of these athletes. By taking on an athletic team, these are assumed responsibilities and this comes with inherent risks for the participants.

This course was about looking beyond the initial sport specific training, and broadened my knowledge of the many, many other things that go into being involved with athletics in any way—the equipment, the facility, transportation, medical treatment, hosting events, and all of these including law suits and the legalities of each.

What made this course so beneficial was that each week we were given a number of tasks to do. Each task asked us to be a coach, an athletic director, an athlete, a parent, etc. It was important to look at every situation from different points of view. In each of these situations, what would you do to reduce risks, or take control of a negative situation? I really felt that I was able to learn but also actually try it out in scenario form. It is easy to say you understand the legal terms, but do you *really*? These exercises were open ended and gave you full run to implement a plan, just like it would be if I were the athletic director, coach, etc.

On the legal side, we were given many case studies and situations to analyze. Who was at fault? Was there a valid court case? What would the charges be? What would you do as the coach or athletic director? By the end of the course each student created an athletic director's yearly checklist including items such as: meetings, things to do, facilities and equipment to check. We were also asked to create a tryout packet, inclusive of program rules and expectations. These assignments are things that I continue to use in my career.

After the legal lessons were learned, I really enjoyed KIN 855: The Psychosocial Bases of Coaching with Dr. Marty Ewing. I should mention that in the first week Dr. Ewing noted that she had a negative bias toward cheerleading. At that time, cheerleading was not the athletic activity that we see today. I wanted nothing more than to make sure my work was first rate, and help work on a positive promotion of cheerleading. This actually motivated me rather than scared me. This course helped me understand my athletes as learners and as performers, as well as help me fine tune my demonstration skills to create more effective practices.

When learning a skill, just like academics, it is important to know what motivates your athletes. It is not as simple as, they love this activity! Some kids participate for very different reasons, so you must understand this about your athletes. They must know why learning a specific skill is important. For cheerleading, most skills and techniques are a pre-requisite to learn something else. In most cases, regardless of what motivates the athlete, they do value high level skills and want the opportunity to try them. Cheerleading, as I often remind my athletes too, focuses so much on fixing things that are incorrect, that we have to make sure we take time to also recognize improvements and things that are

done well. This remark also goes for helping motivate an athlete, as well as teach them something. They know that they will be recognized for good technique.

In creating an effective demonstration, you must plan ahead. You must make sure you have the attention of the athletes, describe the skill, and demonstrate the skill and the movements that go with it. It helps to break down a skill into a few key components. Let the athletes get practicing. Nothing is worse than listening and listening without being able to try the movements. You will definitely lose some athletes attention with something long and boring. Give critical feedback as the individuals are trying. This is more beneficial.

One of the most memorable things that Dr. Ewing said during this lesson is that demonstrations can do just as much bad as good. For me specifically, I could see immediately where this would come into my cheer practices. When stunting or tumbling, you are dealing with different body types, different strengths, and different abilities. Each athlete can sometimes have their own advice or tips that help them perform something, but are not great at explaining in great detail what the movement truly is and what it is helping them accomplish. From that point on, in my practices we talked about giving out vague information and tips. It was always better to let the coach describe and demonstrate first, before everyone comes in with their own "helpful tips." Too many things thrown at an athlete at once, definitely does more harm than good.

Mathematics Education

When it came to the classroom, I wanted nothing more than to improve the way that I teach and the resources that I used. Just like I had mentioned, technology is a wonderful way to engage students and increase student achievement. Honestly, when I started, I did not feel very comfortable trying out new things. TE 831 with Professor Erik Byker completely improved my understanding of technology in the classroom and increased my confidence using technology.

First, Professor Byker made a big clarification between the difference in using technology for professional tasks and implementing technology to increase student achievement. Developing "innovative" strategies of technology use for the classroom is far different than simply using tools in the same way they are commonly used. It is also different from using tools to complete out daily tasks in the routine of being a teacher. Technology can be used to scaffold, differentiate, and vary the types of activities and lessons that a teacher uses in the classroom. We learned of the NETS standards that are guiding principles in how to plan and develop the use of technology in the classroom. They are a set of the purposes of technology use and what technology can provide students and teachers. Before this course, I had not even known they existed, let alone how to incorporate them into my classroom.

Next, Professor Byker had us research The TPACK Theory—a theory that summarizes this entire program, in my eyes. The TPACK was created by Punya Mishra and Dr. Matt Koehler. The theory is based upon the integration and interaction of three categories of pedagogical knowledge, content knowledge, and technological knowledge. Pedagogy refers to teaching, content is specific knowledge that a teacher has in the content area, and technology is the knowledge of resources that can be utilized in teaching. It is important that these three areas come together in order for great teaching to occur, and it is not a new phenomenon. They note that effective teachers have always known and done this. The biggest role in integration and the three knowledge types working together is the teacher—one who

"transforms content in creative ways." This theory inspired me to continue on my quest of improving my technical knowledge; the category in which I felt was my weakest.

Within the course, I learned how to create a digital story and post it on YouTube. I re-purposed Microsoft Excel to improve a Dilation Project that I have always done with my geometry students. I even created a screen-cast to give my students a demonstration and concrete directions as many times as they needed it. I made a voice-thread reflection my experience in the course and used so many online tools like Wordle and Glogster. Knowing what those items are, and actually knowing how to use them built my self-efficacy in just diving into technology and giving it a try. It was amazing how easy they were to use and create with a few steps or a short tutorial.

Adding to my understanding of the TPACK theory and using technology, I also took CEP 805: Learning Mathematics with Technology with Dr. Ralph Putnam. This course taught me about what it really means to "understand mathematics" and have a more active classroom.

There is so much that is interpreted as understanding—knowing how to decipher between relational and instrumental understanding, as well as communicating it as a key skill for me as a teacher. When we learn mathematics, we ideally and instrumentally understand the mechanics, rules, and basics of a specific topic. From there, we want to connect the ideas to what students already know about mathematics, and finally put it into context in real life. We want students to get a number sense as they learn mathematics. We want them to be able to take their knowledge and correctly analyze a situation and be able to problem solve to find a solution to the problem in a mathematical way. When we learn math, this process does not happen immediately. At first, we just get the procedural and format of what we are doing. What does it look like? What rules do I follow? As we become more and more comfortable, we are able to branch out to more difficult or complex varieties. Then, as learners, we can take this and apply it in an actual situation. Where would I use this? Can I set up this scenario from words into something that is mathematical?

The most intricate part of this idea is making students an active participant in the learning process. I was told once that in order to deeply understand something, a student needs to be presented the material in four different ways. Within the classroom, I present material in parts, but make the students discover the concepts, rather than tell them. This forces students to start problem solving from the get-go. Students are engaged and have to take part in their learning. Adding movement, technology, and manipulatives also helps students become more alive in the classroom.

From the teaching end, it is important that teachers also play an active role in learning. We have to monitor and assess constantly to redirect and guide. Programs like is an extremely effective program, it is effective because of the teacher's facilitation. Guiding questions and the way in which you design your classroom environment highly effects what a student learns. Students, especially in the high school, love to get into a routine—warm-up, notes, homework. Avoiding the repetitive nature in the classroom makes students more alert and suspicious of what they might do each day. With mathematics, students seemed to be used to more routine based work, rather than engaging into the relational understanding of what it is, why it is that way, and how it relates to their prior knowledge in mathematics.

Putting the Pieces Together

The final capstone seminar, ED 800 with Dr. Koehler, Professor Leahy and Professor Zellner, has been the place to put all of these pieces together. This course is what makes the MAED program special. It is a time to reflect back of what we have learned in our own unique ways, but also look forward to what will come next.

When I completed my undergraduate degree, I created an enormous portfolio that now sits in my office and collects dust. It is so hard to keep it updated as teaching standards change, and I want to add items to it. Easy would not be an adjective used to describe its ability to be shared. Just one semester after I had graduated, electronic portfolios became the way to go! Things have changed. Technology has made its way into almost every facet of life, and that is not going to change. I have wanted to create an online portfolio ever since, but where to begin?

I am so grateful to have the opportunity to create an artifact that culminates my learning, communicates my strengths, and can continually be changed and updated as I continue to grow as an educator and coach. We are twenty-first century learners. The ability to use technology—the same technology that has provided us with the ability to complete this program—is a wonderful way to showcase exactly what we have to offer. This website is an authentic look into my education, my thoughts, and my classroom—far better than what a single term paper or resume can do. The information that can be shared is limitless, and the types of artifacts that can be shared with others have increased to more than just a sheet of paper, after sheet of paper, after sheet of paper. Technology is more than a helping tool—it is essential to today's learners!