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Self Reflection Paper
Culturally Responsive Teaching in the STEM Classroom
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Part 1: Identity Reflection

I am six years old and my grandmother is visiting us from Tempe, Arizona for a week during the summer. It is bedtime and my sister and I are trying to settle down in our shared room, one twin bed on each side and one window on each side. It is a warm night like so many summer nights on Long Island, and the metal double fan that is in the window is spinning and rattling blowing air to try to cool us off. My grandma comes in to kiss us good night and I beg her to sit on my bed and tell us stories, stories from when she was a little girl growing up in Russia with her mother and older sister. She laughs and sits on the edge of my bed, and starts to tell one of my favorites, the story of when she and her sister Sylvia went to wash dishes in the river. The dishes were in a basket that they had to lug to the water in order to rinse them clean. In this story, as they were walking back to their home, the Cossacks came on horses down the dirt road. “Aunt Sylvia and I became so scared that she dropped the basket of dishes in the middle of the road and we ran all the way home!” We all giggle at the idea of the dishes being dropped and run over by horses, and how her mother scolded them for losing the whole set of dishes. As young as we were, my sister and I could not comprehend how terrified my grandmother and Aunt Silvia must have been when it happened.

Grandma would continue to tell us this story over and over again at our request, along with how she escaped Russia to live in Poland, and then rode a steamship through Ellis Island, where she

met her own father for the first time at the age of six. A week later her long braids cut short so she would look more “American” and fit in. I carry these stories with me 40 years later, as they are etched into my brain as part of who I am and where I came from. As my sister and I became older, we began to realize the severity of our grandmother’s situation in Russia – the trap door in the floor to hide from the Cossacks and listening to their house ransacked by strangers. At the time, to us, they were stories. Now as an adult I have realized that these stories have shaped who I am as a person and how I see the world.

Growing up a Jewish, white girl on Long Island was pretty easy in many ways. There were many people just like me, although I did field my fair share of comments mostly as I became older and my peers became braver in their learned bigotry. For me, this began to form a double personality when it came to being Jewish: one where I was proud of my traditions and heritage, and the other where I wanted to hide it from the world thinking that people were out to get me because of my religion. As I became an adult, I realized that I connected more with the tradition and heritage of where I came from than the actual religion, although it can at times be difficult to separate the two.

As an educator I have taught in many situations, but none as homogeneous as where I am currently located. I have been in New York City, Boulder, and Philadelphia before landing in rural Vermont. I am one of three Jewish teachers at my school, which houses grades pre-k through twelfth on our campus and is quite large. We have two staff members of color and a handful of students out of 900 that have cultural backgrounds that are obviously different. We are just beginning the conversation of incorporating specific floating days so we do not need to

use our personal days for holidays, an idea that is foreign to almost everyone we work with. It has taken us a while to get here, but it is a step in the right direction for not only me as a Jewish person, but also my colleague who would like Good Friday as her own day. We are also just beginning the conversation of the idea of Equity for All, an initiative being followed by our district (three schools total) to instill in the staff the concept that all people have a certain way they can view the world based on their identity and culture.

It was a long time before I would tell my students I was Jewish and celebrated holidays different than their own. I wasn't sure how it would be received not only by my kindergarteners, but also their families. I am currently in my 14th year at my school, and only within the past few have I become more vocal about my background. My beliefs have made the switch from the irrational "I can't tell anyone" towards using it as a teaching moment for the children and families and also the staff. My colleague and I have had conversations with my principal who is always willing to listen, about how people can be more sensitive to all in our community.

Part 2: STEM Learning History

In my memories linked to the STEM concept, I am in junior high before I am officially taught anything relating to the sciences. Earth science, life science, physical science... I had a health teacher I loved and who talked to us as if we were equals. Mr. Haas was his name, and he regaled us with stories of his evening job as a bartender in a place a few towns over. I couldn't imagine what it was like teaching a bunch of wiggly, embarrassed eighth graders about our bodies during the day, only to go off and pour beer at night. I imagine it may have taken the

same people skills to handle both. My memory of Mr. Haas' class was that of his delivery of information in a way that was relatable – he didn't talk down to us or make us feel inferior, and he was able to teach the material in an engaging way.

Fast forward to high school, and I enjoyed my eleventh grade health teacher as well, but this is where it stopped. Having completed the requisite biology, earth science, and chemistry, I dropped physics after sitting through a few weeks of classes so dull I would fall asleep. I had my mind set on being a photography major in college, and used the extra period to take another art class. The irony that photography itself as it stood in 1991 had an extreme amount of science at its core in the developing and processing of both film and paper.

As an educator working with young children, I hope to bring to them the experiences I did not have as a child in school. While I do have memories of becoming involved in all types of science during my own play as a young child, whether it was at the beach or in my yard, or even watching as maple syrup hardened on snow to make candy, it was not introduced to me in a purposeful way until I was 12 years old. As my teaching career continues, I find that I am able to incorporate the STEAM concepts in an authentic and meaningful way. Young children are natural scientists and for the most part they happily engage with the world around them. When they are given the opportunity to explore and develop their own questions, they become invested in moving forward. As their teacher, I see myself as the person who guides their learning, whether with engineering design challenges or why Monarchs migrate.

Part 3: Role of culture in teaching

Culture can come in many forms. It can be how you were brought up, who you lived with or who you didn't. It can relate to your religion or race helping you to form an identity which connects you to a group of people, whether positive or negative. When I think about my students, homogenous they may be from the outward appearance, some of them are unfortunately connected to drug culture, the culture of poverty, or trauma. This is the type of culture that I usually consider when I am teaching my students any curriculum, especially STEM. When children are unregulated due to outside forces in their lives, I look at my lessons and continuously tweak and change how they are presented as well as the expectations of the outcome. This child can't be in a group for engineering design because he is unable to control himself and destroys the work? He becomes the class photographer and is given the responsibility of using the I pad to take photos. Another child has difficulty transitioning? She is able to go to her table first, and given a time limit to know what to expect. Being inclusive in this way teaches the children that not all forms of learning looks the same, and that acceptance of where each and every one of them comes from is important.

Culture can play a large role in any form of education, especially STEM. Children's backgrounds and traditions are all part of who they are and what they bring to the classroom each day. Often times in our STEM lessons the children work with groups or a partner to help them learn how to develop plans and create a product based on a challenge. If they are working alone, it is almost always at a table with others. This is all part of the bigger picture of education, and

in turn, how the world can work. It is important to recognize what skills children bring to their classroom which includes where they come from and how they are raised.