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Practicum in STEM Leadership
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STEMIFICATION: Beyond Science and Math
Diving Deeper Into the True Nature of STEM in ALL Classrooms

Social Studies (SS) teachers are not the first to think of themselves as STEM teachers. Like English Language Arts teachers (ELA), they are usually not the first to sign up for training and staff development related to STEM. The professional development that I designed for my practicum aimed to bring Social Studies teachers into the conversation helping them see that STEM is not only for math and science. My background before education was in computer science and focused on developing algorithms and problem solving. I have found that being a teacher is all about problem solving and as a part of the NASA Endeavor STEM Leadership program the focus on problem solving has taken on greater importance for me. I was excited to share the materials and connections that NASA Endeavor has given me with my colleagues.

As partners throughout our NASA Endeavor program, Ms Amy Hurlock Zock and I designed and delivered our professional development experiences together. Working with our instructional coaches, we wanted to capitalize on this opportunity to continue our mission of bringing our schools together as we work to align STEM instruction. We chose to focus on the areas of ELA and SS in grades 6-8. The instructional coaches helped us design a delivery plan that would reach these content area teachers at both of our schools during their typical common planning times. While Ms Zock was focused on the materials for the ELA teachers, I focused on the SS teachers. Our presentations were separate but maintained continuity in format. Unfortunately, our original plan of offering the sessions during common planning had to be changed when our state and school system transitioned to online learning as a result of the COVID-19 epidemic. We were able to offer a modified training for English Language Arts after school on 3/11/20 for a small group of teachers. We had our second session on 3//20/20 for approximately 60 minutes as an online learning experience.The first session focused on ELA and the second session focused on SS.

Working with Ms Zock has been part of an effort to parallel our approach of STEM education and integrated technology in the STEM labs and Robotics programs at two schools which both feed into a common high school. We set out to work with 20 grade level content teachers from Eastbrook Middle and Valley Point Middle school in grades 6-8. This would have allowed us to impact the 1200 students we share. We were not able to work with all of the teachers as originally planned; however, we have plans to continue these efforts into the Fall. The commitment to continue professional development is exciting as our school system focuses on integrated learning with a STEM focus.

There were three areas that we used to focus our presentations, data, resources, and authenticity. I shared many NASA data resources with the SS teachers specifically looking at how data can be used to introduce, hook, or augment current social studies instruction. We spent time exploring the Earth Exploratory images and brainstorming ways to incorporate this data into social studies standards. After my coursework in Coding, Robotics, and 1:! Devices, I was excited to expose my colleagues to Scratch and CoSpaces as

opportunities for using technology to create and visualize content. I was able to allow teachers to explore these platforms and we even developed some integrated lessons with my classes and their classes using these resources. The importance of having authentic reasons to learn and grow was emphasized in all the examples I shared from my own students' work in developing solutions for sustainability to the resources that NASA has to offer educators which are highlighted in the NASA Express newsletter.

The online format was new for me and it did present some difficulty in the discussion aspect, but the feedback received from the teachers who participated was overall very positive. Using a Google Form, teachers ranked the information as very useful and many have followed up with me to learn more about things we discussed during the training. The comment that showed up more than once was, "If I try this, will you help me". I was excited that my colleagues wanted to try the ideas, and I am looking forward to working with them to develop new learning opportunities for our students. When this all started I could never have predicted how timely my presentation would be, but with new professional development requirements in place for everyone during the Covid-19 shut down many teachers have asked about the resources. I have learned so much during my time as a part of the NASA Endeavor Stem Leadership program, so it is an honor to be able to share it with my colleagues and friends.

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