

Practicum in STEM Leadership - Leadership Project Proposal

By Yishan Lee

Title: Science isn't just a bunch of facts - Let's build scientific literacy!

Option: Implement a Professional Development Experience

Rationale: I have chosen this option because it is of immediate relevance to my school community as one of our professional goals this year is to help our students become more skillful at interpreting informational text. Literacy is a cross-curricular skill that is critical to the academic success of our students. In addition, our students will need support in developing science literacy skills as we transition to the new science state exams, especially when science is traditionally not a priority of instructional focus in the lower grade levels. I hope to share my knowledge and resources with my colleagues to prepare them for the shift in science instruction that has already begun.

Audience: I plan to implement this professional development experience to 3 different groups of audience:

- **Within my school:** The PD will include all the science educators (both general education and special education teachers) in the elementary and middle school grade bands. It could potentially include teachers from other core subjects, since literacy is a major component across all subject areas. Each co-teaching team of educators works with approximately 75-150 students, depending on their grade band.
- **Within the Math for America community:** I plan on submitting my PD proposal to the Math for America fellowship that I am a part of. If accepted, we are looking at a virtual or in-person workshop with a participant size of up to 20 educators who teach a STEM subject in Fall 2023.
- **NSTA National Convention:** I also plan on submitting my PD proposal to the next NSTA National Convention so I can reach more science teachers from across the country in Spring 2024.

How will the project demonstrate integration of STEM?

A common misconception about science is that it is just a collection of knowledge about random scientific facts that may or may not have a connection with one another. Students tend to feel intimidated by science classes because they find the disciplinary content and vocabulary to be challenging. When educators place the emphasis on passing on scientific knowledge as bits and pieces of scientific facts to our students, we are not helping our students develop the skills to make sense of the world that we live in. When we shift our focus to scientific literacy, we are providing our students opportunities to experience science in a more holistic and meaningful way, which encompasses a multitude of skills as highlighted in NGSS' science and engineering practices.

The purpose of this project is to help teachers reignite our students' passion for science by integrating critical STEM skills, which can include engaging with scientific texts, interpreting data or diagrams, constructing explanations, drawing conclusions, and designing solutions to real-world scenarios. I plan to incorporate strategies learned from my Endeavor coursework, NASA resources, and additional strategies from my own toolkit that may be applicable.

Outcomes / Expectations: Here are the learning outcomes for my audience:

- I can justify the importance of fostering scientific literacy.
- I can envision what scientific literacy can look like in my classroom.
- I can access resources and strategies to develop scientific literacy in my classroom.

Follow Up:

- A **reflection survey** will be administered at the conclusion of the PD to assess participants' understanding and identify possible next steps.
- Create an accessible space via virtual platforms (such as Google Drive, Padlet) for teachers to continue the discussion and share best practices/successes with each other beyond the PD.