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REFLECT

Throughout my summer RET experience, what reignited my curiosity was the experience of weaving together many pieces of research and professional development topics in order to look at education and teaching through a more transformative and evolving lens. I was able to explore topics with surprising depth and in ways that I'd never anticipated before. I was able to examine methods of exposing my students to real, open-ended environmental problems by helping to build their knowledge through inquiry-based strategies.

The professional development activities during the summer research gave me the opportunity to experience curiosity in action. In addition, they forced me to venture out of my comfort zone and view STEM and learning from passive recall and guided assignments to inquiry, performance, and project-based learning. I have moved from the desire to ask my students "what is" to asking them "why." Therefore, I will treat knowledge as something to be actively discovered instead of memorized. Consequently, I will incorporate more opportunities for outdoor learning with the hopes of inspiring curiosity and agency for environmental awareness and change. Some of my major takeaways from our summer meetings include:

- Learning is not static; it's regenerative, which requires a change in the way that we, as educators, disseminate information and require our students to display mastery.
- STEM education is not a linear path but a more flexible, inquiry‐based structure.
- Discomfort isn't a barrier; it's an opportunity to ask new questions and explore different angles.
- Simple curiosity triggers can lead to deep exploration and effectiveness in prompting student question‐asking, brainstorming and the formation of student-centered learning activities.

REFLECT (Continued)

Going forward, I will apply these concepts to my classroom culture to help cultivate curiosity as a habit. Encouraging open ended prompts, allowing students to follow their own interests, modeling learning as exploration and treating uncertainty as a starting point and not a failure will be a few of the many changes I will incorporate.

The research in the laboratory also sparked my curiosity because it transformed passive information retrieval into an active, goal-driven research process. Instead of just receiving answers, I monitored planning steps, adjusted strategies along the way, and pursued tangents. I was able to hone previously learned skills of microscopy, DNA extraction, PCR and genotyping. In addition, I was able to get training on new skills in leaf sampling, HRM, using light scanning, stomata measurements and the exploration of meiosis in corn tassels. I will be able to transfer these skills to my classroom teaching practices and embed these newly learned

concepts into lesson plans. In short, this summer taught me that curiosity isn't just a trait, it's a process. Tools like AI don't just answer questions, they show how to ask better ones, reshape thinking processes in real time, and treat uncertainty as the heart and core of discovery. In the classroom, celebrating that messy, openended process can create a culture where curiosity thrives and where STEM learning becomes an avenue for students to continuously build, explore, and own.

FIGURE SOMETHING OUT

During this summer research experience, I encountered some meaningful challenges, uncertainties and barriers. They unveiled a lot about persistence, reflective practice, and what it means to be a lifelong learner in education. First of all, in the beginning, there was a call to let our discomfort guide our thinking and conversations. As educators, we are used to following a prescribed method of teaching without considering, the perspectives of our students and the differences in their learning styles as well as their individual strengths. The idea to shift to regenerative STEM teaching was met with some resistance due to the demands of following pacing guides, specific objectives and state testing preparation within our different school districts. However, practices such as ORID (Objective, Reflective, Interpretive, Decisional) aided in strategically refocusing me on each goal after each new learning opportunity.

Using ORID provided reflective dialogue with colleagues that was engaging and beneficial in that it allowed me to see multiple perspectives and connect ideas to put into practice upon my return to the classroom. The "You Project" identified my individual growth mindset and made it clear to me that there are strategies within my personal life that will assist in my growth as a learner and educator. In addition, reflective writing, feedback seeking and collaboration are habits that will continue to help me persist and grow. My experience this summer reiterated the fact that teaching and learning are in tandem with one another. By placing myself in the learner's seat, I have learned how embrace uncertainty, seek feedback and reflect deeply. These practices will drive my growth as a learner and educator while encouraging curiosity and agency in my classroom. It is with these tools that I will bring a renewed sense of commitment by designing learning to support shared growth towards and new way of teaching that nurtures wonder and treats uncertainty as an opportunity to positively move forward.

MAKE CONNECTIONS

In order to encourage more curiosity-driven learning experiences, I will use inquiry-based learning strategies, parking lots, providing student choice, student-generated tasks, and open-ended real-world challenges. I will provide opportunities for students to collaborate and learn from each other through the use of group projects and hands on activities such as the Climate Fresk. I can authentically engage students through modeling my own curiosity through the demonstration of asking questions, being self-reflective and open to multiple perspectives. If students get a sense of my own curiosity, it will encourage them to explore their own. The cultivation of this type of learning environment will prompt students to ask more questions, brainstorm and reflect. I will continue to share stories of discovery, failure, hope and success that have helped to drive scientific investigation, inventions and pathways to improvements in our everchanging ecosystem.

PREPARE FOR WHAT'S NEXT

Throughout the school year and beyond I plan to continue collaboration with my lab and mentors by scheduling check-ins and using reflective practices to improve the incorporation of research strategies in my classroom. I will continuously share my successes, desires and needs with my lab so that they can assist me with the implementation of my newly acquired innovative strategies in research. Digital communication with my lab will be extremely pivotal and important as the school year becomes increasingly busy. The use of PLCs is something that I have been participating in and it is something that I will continue. However, I will now look at PLC collaboration through a different lens in that I will share more strategies that promote curiosity, reflection and the maintenance of such practices. Furthermore, the use of technology such as AI will help to drive student curiosity and provide an avenue for deeper thinking.

It is easy to lose momentum as the school year progresses, so it is important that I begin each unit by engaging my students in inquiry-based questioning to spark curiosity. Frequent "gallery walks" in teams, using large post its around the classroom are also a great way to motivate students through collaboration, sharing thoughts and inspiring creativity. Lastly, the assigning of student roles and reflective journal writing are also tools that I will use to encourage student ownership of learning and improved student outcomes. Through the use of more project-based learning, student choice, student-centered instruction, outdoor learning activities, modeling, authentic storytelling, inquiry-based questioning and open-ended questioning, I will continue to ignite curiosity in my students in the upcoming school year and beyond.