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What a Career in Teaching Could Look Like for Me: My Journey of Self-Reflection and Self-Discovery

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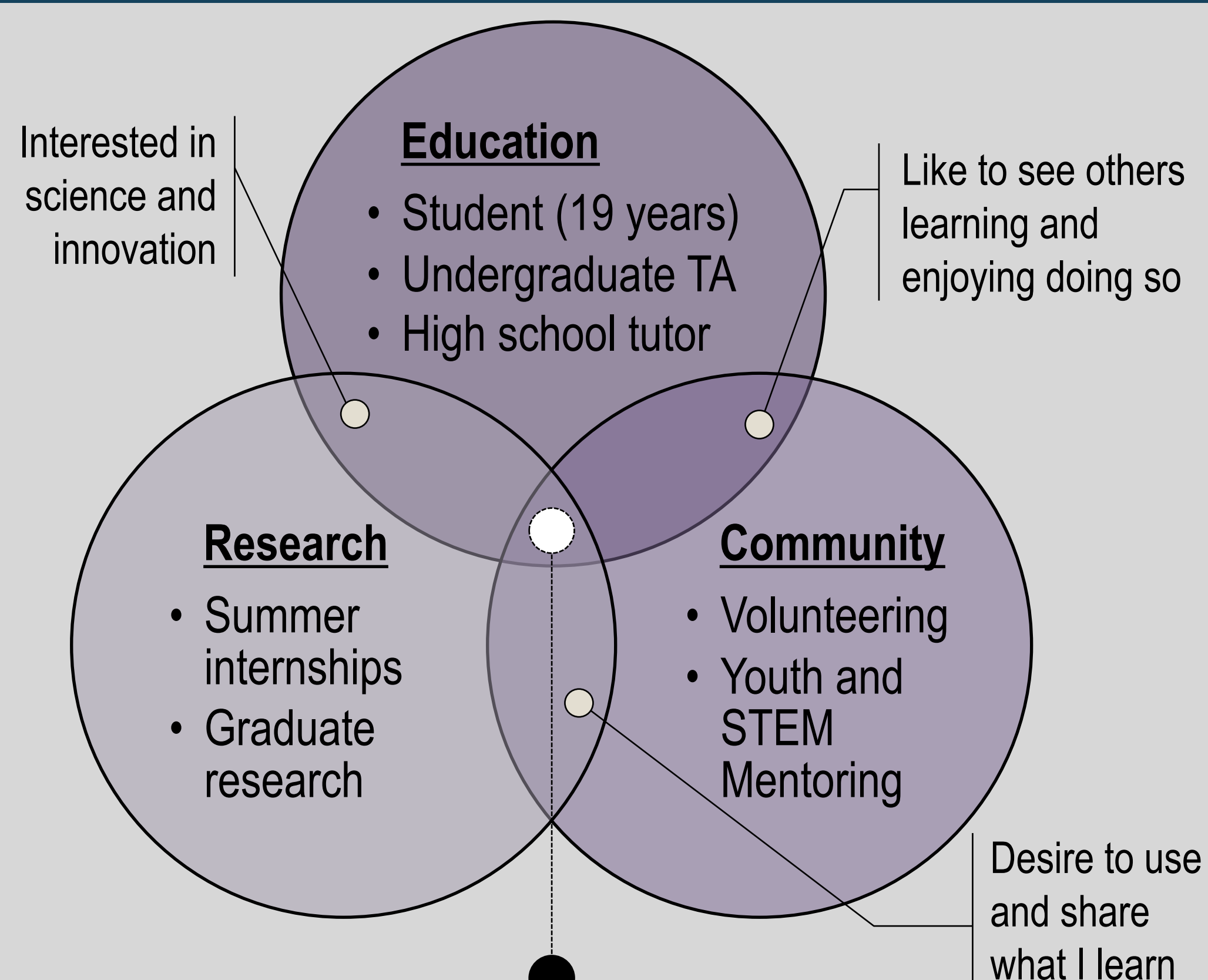
Introduction

I started the STEM Instructional Program the summer before my first teaching experience as a graduate student at WMU, and I saw it as a great training opportunity for the upcoming school year. As a General Chemistry II lab instructor, I would encounter students from various majors and backgrounds, with different learning styles and attitudes toward chemistry and math.

In order to effectively engage these students in a pre-lab lecture and to prepare them to complete the experiments, I needed to learn how to keep their attention, clearly explain and relay information in an interesting way, check their understanding, and assess my teaching for improvement along the way. By participating in this program, I had the opportunity to:

- Develop my teaching style and perspective
- Learn and apply useful tools/strategies for the classroom
- Assess and improve my teaching methods
- Grow as a teacher, student, scientist and mentor
- Reflect and prepare for a career in teaching

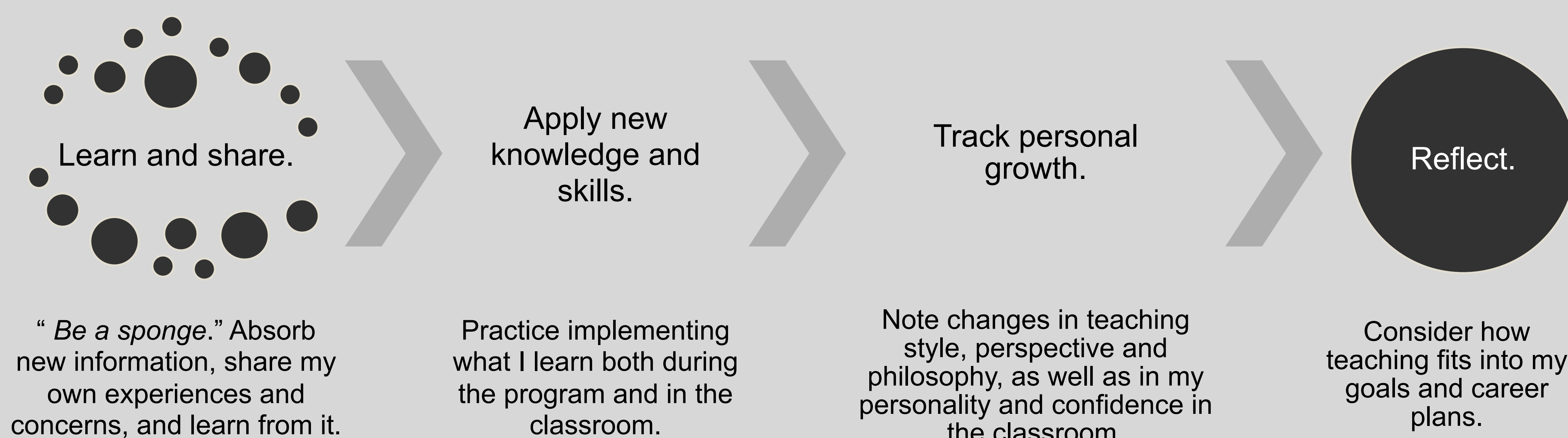
Background



I'm an M.A. student with a love for education, science and giving back. Ultimately, I want a fluid career in academia, research, medicine, and community outreach. I want to be able to teach at any level (from elementary to advanced degree), study drug discovery and mentor students.

- **My initial approach:** "Think like a student". Based on my experiences and those of the people around me, I would use what helped or could have helped us succeed as students. *But...*
 - What else really goes into teaching?
 - How will I know if I'm being effective?
 - What can I do to improve as I go?

The STEM Instructional Program: an opportunity to learn and grow



Two-week Summer Program: professional development and instructional techniques

Summer 2018

- Evaluated my role in the classroom and identified personal beliefs/experiences that impact my teaching style and perceptions of students
- Practiced writing and aligning learning outcomes, re-designing course materials, and developing critical thinking and active learning activities

After the program

- Learned strategies for engaging students in the learning process, testing their understanding and assessing my teaching
- Recognized the importance of student-centered learning and teaching
- Realized how much I don't know about teaching and left inspired to learn more

Year-long Mentoring Program: evaluating pedagogies and sharing personal narratives

Fall 2018

- Excited about science and learning and believed that "Chemistry is life" so application would be key to getting students engaged
- Practiced using the tools that I learned over the summer in the classroom
- Had the opportunity to oversee students doing research as part of the HHMI research project option
- Noticed students just going through the motions but not understanding the chemistry and math behind the experiments

- Students today want to know "why" they need to know the content and how it applies to them directly, not just to the things around them.
- It's important to provide clear instructions and expectations, so I practiced doing so in my syllabus, presentations and research assignment description.
- A flexible teaching style is needed to reach a classroom of diverse learners. Based on student feedback, my PowerPoint method wasn't enough.
- Assessment is important to both the teaching and learning process, so I created surveys and quizzes to gather feedback.

Spring 2019

- Used learning outcomes to emphasize content and explain why the content matters
- Incorporated more practice calculations, used the white board more, and chose different application examples
- Improved the design of assignments and the order of presentations; created rubrics
- Noticed students posing intuitive questions, responding to in-class questions, and effectively communicating their understanding in written reports

Going forward

- Students are right to want to know "why".
- It's better to look at teaching from both the student and teacher point-of-view.
- Flexibility is important overall not just in teaching style. What worked for one class may not work for the next.
- Good teaching will involve continuous improvement.
- It is good to step out of my comfort zone and help students to do the same.
- There is no policy on everything about teaching.
- Part of our job as educators is to help students become life-long learners.

My Takeaways

Developed skills that are transferable to future experiences:

- Cognitive empathy
- Oral and written communication
- Backward course design
- Active learning strategies
- Formative assessment
- Evaluation of teaching effectiveness

Used student feedback to identify and address challenges.

- **Verbal:** "I understand it better mathematically. Adding the chemistry makes it confusing." "I don't understand it when you just talk at me. I need to see it."
- **Survey questions and responses:**
 - How confident and prepared did you feel to start the experiments in lab? What could have helped you feel more prepared?
 - "I felt prepared...the PowerPoints shown were extremely helpful in understanding what I was supposed to do and what was actually happening in the experiment."
 - "I felt somewhat confident...would feel more prepared if the calculations beforehand were better outlined..."
 - "Not at all.. I'm blaming the snow days and my lack of engagement. More explanation and mercy would've been very beneficial."
- **Observations:** disengaged body language, a shift in focus while explaining something, no response to in-class questions, written reports that do not reflect an understanding of the experiment

Based on student feedback and my own observations, in future courses I need to:

- talk slower and cover information more in-depth
- do more practice calculations
- work on the overall "flow" of my talks
- stop relying so much on PowerPoint slides.

A Lasting Impact

- Experienced personal growth and increased my confidence as an instructor by stepping out of my comfort zone in and out of the classroom
- Developed a teaching portfolio by designing my own assessments, rubrics, syllabus, and assignments.
- Recognized the importance of a learning community and received first-hand insight and advice from experts in education
- **Teaching philosophy:** Anyone can learn anything with the right support. You have to practice it to learn it

Acknowledgements

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