The Healing Turtle and *Currere*

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The human experience is to expect great things to result from said existence, and the composition of my internalized standards have only outlined their value in my life since I was put on the doorstep of spirituality as a young Native American girl, beginning to grasp the idea of gratitude and purpose. My growth is more of a quadratic function: exponents of my variable experience taking me through the minima and maxima of lessons to be learned. My own vocabulary is an indicator of my manipulation of mathematics in expressing the matrix of philosophies that I am meant to publish—and more importantly expose—to those who cross my path. Academia appeared to be a productive conjunction of my curiosities; a college campus has opportunities awaiting just past a meeting with a passionate administrator, the most fitting organization, or the organic conversations produced in a lecture hall. I slowly write my narrative by connecting my heritage to the abundant possibilities that exist within the mind and the ability to lead learners to their own sense of confidence between subject and self.

Sundance

A stern, patient voice pointed directly at me, asking if I knew how to sage myself. At merely seven years old, I did not know how and was shown by my Grandpa Nelson as we stood in the center of the Prayer Lodge. He motioned to me, repeating his gestures, as I slowly wafted the smoke towards myself. Sage has always had a sweet sensation and, from that moment on, an association with my identity. Soon after, I was gifted my name: Healing Turtle. My young and naive mind made the connection with healing to some grand assumption that I would become a doctor of sorts. Not too far off, as I have come into maturity, I have realized I was put on this land to heal in different ways—spiritually, emotionally, intellectually, relationally.

My father was named White Buffalo. Our names are signs that we are unique and valued symbols in our culture, and with that, comes responsibility. The Arapahoe myth of creation began with a world only made up of water stretching in all directions (Trenholm, 1970). An Arapahoe man floated along in loneliness with only the Creator to accompany him. In the Creator's intention to flourish life on Earth, various animals were ordered to dive to the depths of the waters and to bring back dry land. None could accomplish this task but the turtle, and from then on, Arapahoe people and other beings could set forth. The turtle's gradual contribution to the foundation of life is what makes the animal sacred. I see these aspects in myself, and I value the knowledge that my Grandpa Nelson trusted me enough to grant me this journey.

A major contribution to my sense of self in my spirituality was through the Northern Arapahoe Tribe's Sun Dance Ceremony on the Wind River Reservation in Wyoming; the ancestral roots of this ceremony "recognized the lifegiving rays of the sun in their prayers" as the Arapahoe prayed to the Man-Above (Trenholm, 1970, p. 11). This practice is also recognized as our tribe's New Year. As a child, I watched on as men danced and women fasted in the Prayer Lodge for three days and nights in the sweltering July heat. We would wake at dawn to the sound of drums and watch as the dancers greeted the sunrise. On the final evening, the dancers and fasters completed their ceremony, honoring the sunset with the rest of the tribe, and as it set over the horizon, everybody began to cheer.

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It was an honor for a family to fast and pray in the Lodge, but once committed to the ceremony, their word must be kept. Sun Dance brought weight to my thoughts because I realized what commitment and loyalty I must have in my devotion to and respect for my culture. Prayer is my own inner monologue of intentions, and the more I desired to listen without ego to my ancestors, the less I strayed from my path and that of the conscious freeway I had access to within myself. I imagine a pure light—a satisfaction with purpose, a justification of servitude, and an acceptance with the pursuit of knowledge. Every year that I have come back to the sacred grounds of my reservation, I feel an energy to collect my thoughts and leave behind all that does not serve me.

An Introduction to STEM

I always thought I would grow up to be an author or artist. I won writing awards throughout all of my secondary education and inserted myself into creative spaces constantly. I understood the initiative to succeed within liberal arts, but that intent required structure—one that I would have to develop myself. Alternatively, technology had been a constant factor in my upbringing. Since I could remember, I had my own desktop computer. A root memory I have was playing with Microsoft Word and PowerPoint in order to make my own graphic designs. Around middle school, I discovered front-end web development by browsing niche blogs online. With my artistic background, I found joy in the structure of digital art and web design. I would exchange my webpage coding abilities with other users for promotion of my own blog, but I never considered it to be a career path until a decade later, despite my constant desire for creative freedom.

As I prepared for applying to college during my senior year of high school, I recall this deeply intrinsic feeling that I would regret passing up the opportunity. At 17 years old, I only had so much individuation under my belt, but I knew that some unique knowledge would cross my path and give me the privilege to explain myself more gracefully. I did not trust my own voice or vision enough at that age to pursue English or graphic design, so I decided that an associate degree in computer science would give me the tools to keep creativity in my life with a safety net. It felt functional and freeing at the same time.

Thus, my passion for arithmetic began with an inadvertent mathematics degree while enrolled in the computer science program of a quaint community college. I was advised in the fall of 2017. They printed out my schedule for the next three academic years; I would have to take 35 credits of strictly mathematics and grow my skills from Intro to College Algebra to Ordinary Differential Equations. I had failed a math class in high school and had only picked myself up by the bootstraps in my senior year. Despite not having any innate familiarity with my abilities in the subject, when I was presented with the requirements set out before me, I immediately flipped the switch and accepted learning as a lifestyle.

For all three years of attendance at my community college, I tutored part-time. It began with tutoring English as I simultaneously built my mathematical understanding. As the semesters progressed, I was able to add more advanced math courses to my tutoring ability. That job resulted in me being surrounded by experienced peers at the end of their own Associate of Science degrees, and they had an impeccable learning style that I could not have found elsewhere. My sponge-like curiosity was guided by their commitment to discipline. During sophomore year, I became involved in Student Senate, and by my final year, I was elected Student Body Treasurer in addition to acquiring a double-internship in the Information Technology Department as a web developer and graphic designer.

Throughout all of the connections I had made through tutoring, academic service, and involvement with various departments, Healing Turtle kept coming back to me. The complexity of my schedule did not phase me because every moment of work was a moment of interaction with the collective consciousness that was my community.

Being Native American and having the privilege of pursuing higher education as a female in science, technology, engineering, and mathematics (STEM) made me realize that I cannot sit idly by and take advantage of all that I have learned in my academic experience. With being a novice in academia while earning my associate degree, I wanted to adamantly pursue opportunity within the rural and tight-knit community at the College of Southern Idaho. I began an outline of how I could fill my time with what I loved while utilizing creativity in an approach to my career path.

The initial plan to pursue computer science had always been rooted in my intuitive understanding of technology and design. I diligently broke down these topics as much as possible—down to the foundational components of how and why I should pursue such creations in the first place. In the present moment, I now realize this was my slowly expanding passion for logic and reason, yet I still recalled my spiritual intentions with being diligent in how I invest my time. Before joining the Information Technology Department, I was told by peers that they would never hire me without experience. This sparked the enigmatic reality of what it means to do something you love: you have to trust yourself enough to ask first.

While preparing for my pursuit of becoming a web developer with the college, I built my own website showcasing my resume, personal articles on philosophy and learning, informational videos on YouTube, and a web design portfolio. This all revolved around 15 credits of school a semester, after which I gained my esteemed internship and began coding for student accessibility on the college's website. This opportunity gave me a glimpse into the technology industry and insight into how my integration with academic organizations can reach out to many people. I found passion in coding beyond the means of production for marketing and consumerism. It was about helping others with possible disabilities in accessing college processes. I felt a deep connection to the transaction of ideas happening in a college environment but knew that my computer science degree and that career path were beginning to isolate me from my spiritual intentions related to my work and that change was on the horizon.

As I experience the pleasure of learning, developing my ideas, and collaborating with a passionate academic community, I remind myself of my roots. The Healing Turtle cannot exist in an ivory tower. I could not harbor my wisdom and must accept that I was existentially required to connect with others. This is why I could not continue to code behind a dimly lit computer monitor any longer and had to find a more realistic framework in which to translate my philosophy.

Logic and Spirituality

As I transitioned into a strong bachelor's degree program in mathematics and grew to love the work I was doing, it exposed me to all of the possible ideological structures offered in solving a problem. It became a blueprint in how I reformatted my perspective on communication, interaction, and engagement with the community. I became involved in research related to group theory over the summer of 2021, and it humbled me in the sense that all of this intimidating jargon that exists in mathematics is just a language to be learned. We are simply training our minds to simplify the world into elements that either do or do not exist in a group.

Regardless of whether math tends to be the outcast of preferred academic subjects, I see it as another opportunity in evolving the student experience such that they will not feel they lost years to studying it. I accepted mathematics as a means to an end when I enrolled in college. I did the work because I trusted my curriculum and how it would benefit my abilities as a developer. In those 35 credits of commitment to mathematics, I also discovered that there is influence in standing in front of a crowd, explaining the objectivity of the world to them, as have the many mathematicians and logicians before us. I had found my happiness between subject and self. It is not likely that I, nor my future students, will be required to compute a triple integral or recall an intricate theorem at whim in our daily lives, but the intellectual process endured, as each layer of the computed equation will live on in our assessment of the world.

"For all their precious and undeniable powers, human logic and mathematical proofs do not seem to cast an equally brilliant light on every corner of the cosmos" (Suzuki & Knudtson, 1992, p. 79). When I found this quote in a book focused on Native American heritage and wisdom, it became problematic to the philosophy I had identified with for years. Merging logic and spirituality will always require continual metacognitive effort. The irony of the challenge and these colliding ideologies continue to drive my work.

In my advocacy for diversity in academia, I find that my own engagement in it as a Native American educator is necessary due to my spiritual drive to conquer mathematical understanding beyond the means of capitalist productivity. I was once a disengaged student in adolescence who found no reasoning behind the curriculum I was forced to study. It never felt natural or relevant to my life. Earning my Associates of Science in Computer Science and Mathematics exposed me to unique subjects beyond the core curriculum standards of algebra. Topics containing logic, such as discrete mathematics, could be a valuable integrated alternative in secondary education mathematics curricula. This topic's ability to have more dialogue in explaining logical processes and forms of categorization has the advantage of connecting to personal, real-world applications. I strive to disengage the fear that various students have for mathematics through engaging learning practices and active discussion relative to the material.

Let us consider an explicit example of this philosophy in action. I spoke with a student earning hours towards their journeyman license as a plumber. They felt that, although they constantly navigated these plumbing systems within bare frames of newly developed houses, there was no challenge. I wanted to focus on how they had to perform tasks within given restrictions (related to their trade). They found joy in discovering the most productive way to build a plumbing system. This aligns similarly to exploring logic in mathematics: how can we simplify this problem as much as possible, and how can it make our lives easier in the process? As the student continued on with their daily work and came home to reflect on the problems they faced, they studied different approaches outside of what was required of them for schooling. It became quickly obvious to their employer that this employee was actively applying themselves to their commitments. Their growing curiosity and work ethic inspired their peers.

Logic lives in all problems, but if the proof is never pursued, there never exists a better outcome. As I plant these seeds in those who cross my path, they can share their growth with others, and the cycle continues. This is the Healing Turtle.

Discipline in Purpose

There is a coarse grit required in chiseling out the idea of self. Knowledge allows students to find a representation of such through objects, symbolism, and application,

but what stunts this chance for growth is the implication of what has become a more industrialized school system. At a panoramic level, we live in a society grounded in capitalism and the ideation of building the lives that we work for—and to have work that one enjoys is a privilege in itself. That brings me to this notion: if we know we must work and if this is simply action in repetition, then there is no path other than to exploit knowledge and cognitive ability to its finest threads in unraveling how one genuinely perceives their existence. Speaking as Healing Turtle, I hope for my students to leave the classroom with the ability to have confidence in their voices as learners. Transferring this skill to students is another act of my intent as Healing Turtle, in that I can build a classroom environment where learners feel safe to explore their ideas without oppressive, and rather procedural, practices rooted in strictly formative assessment.

The challenge exists in having this philosophy function within the lens of a school system. With my growing passion in curriculum development, the path we set up for students is merely a roadmap of the concepts they will encounter. Considering the background of my undergraduate degree, I feel that interdisciplinary studies between STEM and liberal arts is a valuable collaboration. Although I have loved my experience in pure mathematics, I have never once been asked to write, speak, or reflect on how I felt about the material until I was being funded for research. Such is expected of an objective subject, but how much unique perspective is lost in translation to students? I made myself look inwards on the material regardless, but what about the students who were not asked to? Reflection of self is a form of academic discipline.

Beyond secondary education, andragogy is neglected at a university level. I struggled to come to terms with that education because I so deeply pursued further connection with pure mathematics. I had a similar experience with my time in computer science. The curriculum I studied lacked *currere* (Pinar, 1975), and therefore, I struggled to connect to the computer programs I developed. As teachers, we have the opportunity to plant seeds of knowledge in our lessons that challenge students to see how the structure of academia can work to the benefit of their unique perspectives of the world. Students deserve to understand the accumulation of their work, whether it be through portfolios, idea maps, or personal projects relating their own interests in the subject being taught.

This brings me to my philosophy in discipline; where my goal is to explore the cognitive breadth of ideas coming into fruition, the most genuine world I could contribute to is one where I am constantly learning and reflecting. All the information a student could need has the possibility to be directly in front of them, sparking those small but valuable connections between self and interaction with the world, but the teacher must be aware of their own intrinsic philosophy on learning in order to properly set up students for success. This pursuit is possible for any path: creatives, mathematicians, authors, and all of the silver linings between the arts and sciences.

To be so enamored with the mantra of infinite knowledge has resulted in backlash from small corners of society in my education. I was told that a jack of all trades is a master of none, and I questioned if all of my simultaneous pursuits in computer science, design, mathematics, and education were possible. I had to look inwards and to wonder if my attempt at connecting these ideas truly mattered, yet this is what sparked my passion even further. I truly believe that by the time I had received such criticism, I was already wound up too tightly into my curiosities, and this is because I had the autonomy to know that I deserved freedom of choice.

This is something all students will have to debate within themselves often: what information and normalcy is worth letting go of? The “raw material of reasoning”

(Descartes, 1960, p. 18) is what remains when one goes through the cathartic process of releasing that which does not serve one's purpose, thus, allowing virtue to overcome vice. Where does vice exist in an academic system? It exists in our own doubts of self. Students lack the foundation of identity in why they pursue a topic in the first place. If they do badly on an exam, what will convince a student that their ideas are still worthwhile beyond GPA?

This fantasization of a constant influx of knowledge, although fulfilling, creates an equal and opposite reaction in the sense that where one is committed to what may be rational findings, there is the possibility that one's commitment to the idea was not conceived distinctly in the first place (Descartes, 1960). As I complete my Bachelor's of Science in Mathematics and prepare for graduate school, I must constantly check in with myself and where I am with the content so that I do not risk the fear of blinking, earning a doctorate degree, and still being completely disconnected from my work.

Analysis can detach a learner from the world. As Wittgenstein (1922) explained it: the combination of some amount of elements creates a picture that represents a thought, and this complex series of combinations will either be true or false. These cognitive blueprints are just a few paths that can be taken in finding one's voice, and they offer the ability to gain the skill of questioning one's reality. Healing Turtle exists in the realm of mathematics by means of validating the connection between subject and self. We have given students the tools to study arithmetic, to analyze prose, to become fluent in worldly matters, but they must also be given the tools to study the self.

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