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ARTICLE

Reimagining teaching and learning in STEAM: Cultivating sustainable symbiotic relationships among faculty and students at an HSI

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Our session was an intentionally interactive discussion, where we shared and invited participants to engage with us as we reimagine teaching and learning in STEAM with our focus on inclusivity, equity, and cultivating sustainable symbiotic relationships. The purpose of our session was to curate ideas, strategies, and resources, and attend to approaches for what works.

Our ongoing discussion emerges from and extends our collective autoethnographic work to conceptualize this new evolving endeavor. As our institution aspires to become a Research 1 university, we acknowledge the urgent need to broaden the traditional approaches to pedagogy, to include and cultivate culturally relevant, wholistic, symbiotic relationships to increase our collective capacity to thrive. hooks (1994) reminds us that we are a classroom community and “our capacity to generate excitement is deeply affected by our interest in one another, in hearing one another’s voices, in recognizing one another’s presence.”

Our conceptual framework is based on a culturally relevant ethic of care, holistic wellbeing, and sustainable symbiotic relationships. Individually and collectively, we struggle. Despite our paramount goal to engage in meaning-making, we fail to recognize or respect our own needs, let alone those of our colleagues and students. We have integrated reading, writing, traditional curas, and art into our pláticas to facilitate and inform our inquiry. “The function of art is to do more than tell it like it is—it’s to imagine what is possible” (hooks, 2006). This notion falls directly in line with bell hooks’s pedagogy of “teaching to transgress.”

Our writing collective and presentation team is comprised of five UTRGV faculty members. We are from different departments and disciplines. We teach graduate and undergraduate bilingual, transnational, first-generation, predominantly Latinx students. We seek ways to cultivate and enact a culturally relevant ethic of care in critical pedagogy to transgress. We reimagine care as faculty and students co-constructing symbiotic relationships with “teaching and learning opportunities to question and reject long-established roles in favor of new ways of engaging proactively with critical, voiced involvement at every stage...” (Rodriguez, 2013, p. 108).

We continue to collectively explore and disrupt the barriers we face as faculty and those of our students. We identify needs and curate ideas, strategies, resources, and approaches for what works—an ongoing iterative and evolving process of discovery. We create spaces to mentor each other. We endeavor to create spaces for empowerment, scholarly productivity grounded and sustained in wellness, and cultivate wholistic symbiotic relationships among colleagues and with our

students.

Dr. Lewis's Reflection:

Embracing (dis)comfort and self-care.

Our session was well-attended and welcoming. Participants appreciated our collective conversation, lingered after the session concluded to further engage, and a group followed up with us after the conference to continue the conversation.

I extended the ideas and insights gained from the conference and our session, integrating the inspiration into my personal and professional life. During the conference, I attended sessions presented entirely in Spanish and connected with colleagues and doctoral students whose origins are from Mexico and Central and South America, and whose first language is Spanish. This situated me out of my comfort zone. Following the conference, I applied for Faculty Development Leave (FDL) for Spring 2024 to focus on learning Spanish and arranging for a cultural immersion experience in Mexico. My intention is to enhance my capacity to engage in culturally responsive and sustaining pedagogies, particularly with my Latinx students, as well as engage with colleagues. Gratefully, my FDL was approved, and I commenced with formal Spanish classes during summer 2023 and fall 2023. I am documenting my adult learning journey to gain deeper insights to inform my praxis at a predominantly HSI institution.

Additionally, I was inspired by our collective to cultivate a garden. My garden yielded enough to share with my neighbors and a community of appreciation around growing, cooking, and eating fresh produce emerged. I continue to reflect on and leverage self-care to ensure I have the energy and capacity to attune to my students and fellow colleagues. I center my choices in food on whole foods, plant-based, and local options, and my activity out in nature is rooted in cultivating health and well-being. I set healthy boundaries and encourage my students and colleagues to do the same, acknowledging one cannot pour from an empty vessel. I apply the concept of an ethic of care to myself, as well as those I engage with personally and professionally, to nurture and inspire inclusivity, equity, and sustainable symbiotic relationships for teaching and learning in STEAM.

Dr. Espinosa-Dulanto's Reflection:

Solidarity, Support, (un)awareness.

From the moment in which we submitted our proposal for this conference, this experience has been eye-opening for me at different levels. Probably the most salient one is to consider that professors need to advocate for professors. Or, in more inclusive terms, humans need to advocate for humans.

Through our academic journey, some institutional policies de-humanize our scholarly experiences. As a junior professor, I have learned from K, M, S, and V that current policies in higher education ponder professors as "knowledge producers" or, more concerningly, "teaching machines". The educational system is structured to show accomplishments or objectives at the cost of decreasing the quality of life of the persons who are part of institutions of higher education.

During the conference, I realized that several of the administrators in STEM who attended our session were unaware of the way "self-care" conceptions impact their humanity (i.e., after I related the topic of self-care to neoliberal practices, I remember one of them stating "I'm not really sure I understand what neoliberalism is"). However, they are all willing to share their experiences and learn in horizontal dialogues. Next steps in STEAM: humanize science.

Dr. Solis's Reflection:

Lessons from the garden.

Even when one is from a given place, this does not preclude one from feeling alienated or displaced. Born and raised in the Matamoros – Brownsville border complex, I am also a child of the brown, Mesoamerican diaspora. In fact, a proud child, having had the privilege of touching my ancestral lands with my bare feet, of eating its food, and enjoying its company. I have also had those countless joyous moments in Matamoros and in Brownsville with the same love and care. Nonetheless, returning to the place I am most familiar with has not precluded me from the alienation a woman of color continues to feel within academic institutions. After leaving for over a decade to pursue a PhD, I returned accepting a position as a non-tenured, junior faculty at UTRGV.

Dr. M, in her astuteness, invited me to meet the collective over a Zoom meeting for a university seed grant proposal they put together. It was invigorating listening to them share their journey as a collective, as colleagues, and as friends. When they invited me to join them for the RGV STEM Education Conference, I was thrilled to accept and collaborate with experienced and respected faculty members. Their focus on the ethic of care, holistic well-being, and sustainable symbiotic relationships, aligned with my research on *saberes curativos*, curative knowings, and their relation to home and community gardens.

For our planning meeting, we suggested meeting at the community garden where I currently participate. We gathered there on a sunny afternoon and enjoyed lunch together. It was there that we decided to bring soil and seeds from the garden to our presentation. The farmer managing the community gardens kindly assisted with the necessary supplies and cantaloupe seedlings.

My contribution was to bring lessons from the garden into the presentation and the collaboration. As I listened to each of them present their work and their journey as part of the collective, I felt a strong sense of belonging. I remember feeling the soil clinging to my hands, helping reduce the nervousness of public speaking. It was lovely to hear others share their experiences in gardens with their abuelas and take our seedling offering. We took the rest of the seedlings to the conference registration table for them to be given as gifts. I want to think they were. The collective is growing into a sanctuary of sorts, a trusting place for me that the conference helped embrace.

Dr. Viren's Reflection:

I had started feeling the isolation in academia long before the global pandemic forced us into it and placed us in front of cameras. The hallways with the, often closed, doors to the left and right, the paucity of comfortable social areas where one could chance upon colleagues outside of scheduled meetings, and the infrequent opportunities to engage in non-work-related conversations on campus, resulted in a workspace neither hostile nor compatible to conviviality. Pre Covid-19, I did not expend too much thought on this lack.

However, losing complete face-to-face interactions with colleagues and students and the inability to travel to conferences, made me realize, more than ever, how important human connections are in academia. Our research collective too grappled with powerful surges of response to the pandemic. We gathered virtually, in person, in community gardens, in our homes, and over meals. Through painful and honest conversations, we attempted to create a space that was at once supportive, cathartic, and enlightening. "Honesty and openness is always the foundation of insightful dialogue" (hooks, 2000).

In my virtual classes, we looked right into each other's eyes, in meeting spaces that left no room to converse about personal experiences of illness, loss, and bereavement. Realizing that it was

impossible to tackle the task of teaching and learning without first recognizing and addressing individual and collective grief, I made space to vent/engage/lament/ share the heaviness we were all feeling. This space acknowledged our lived experiences, thus co-constructing symbiotic relationships.

Sharing the work of our collective and how it informs our teaching at the STEM conference was relevant and necessary. The mixed reactions of our diverse audience ranged from surprise, curiosity, concurrence, affirmation, and commendations. Many underscored the lack of such humanizing practice in professional spaces. I hope to keep working with my colleagues (beyond our collective) to keep exploring and finding innovative ways to create sustainable, equitable, and culturally relevant approaches to pedagogy.

Dr. Martinez's Reflection:

Her-stories, Peer Mentoring, and Knowledge Sharing.

The conference gave us an opportunity to connect with a team of peers from different colleges and departments. To prepare for the presentation, we engaged in collaborative work using pláticas, our traditional way of transmitting and sharing knowledge. Our final planning meeting was in a local community garden where we not only shared academic knowledge but also engaged in a wholistic exchange. From learning about preferences and families, health, and care, sharing a meal—broke bread together—that included vegetables from the garden. The time spent that day was so different. We broke the separation between public (work) and private (personal) areas. It felt personal, it felt real, it felt as if we all cared about each other. Through pláticas, we share stories in which we connect our research with our experiences as well as our heritages, successes, and challenges. The garden was the context—where it literally became the terrain for care and mentorship to be unfolded.

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