Indigenous Futurities in Curriculum

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WE OPEN THIS SPECIAL ISSUE with an exercise that brings our ancestors and us together as we engage our thinking and action around Indigenous futurities in curriculum. We ask, "What land or water do you carry with you today? Who do you bring with you?"[1]

I (Hollie) carry with me, Tsoodził. This is one of the sacred mountains of the Diné that is located between Gallup and Albuquerque, New Mexico. My mother and matrilineal line is from an area west of Tsoodził. I bring Tsoodził with me because it represents home. When I travel from Pennsylvania to home, it is the first thing I look for to let me know I am near. The sacred mountains of the Diné orient the people and provide direction. They have existed before our human existence and continue to guide us. The mountains are one representation that we can look to, to know that Diné futurity has already been set in motion, the knowledge, tools, and instructions have already been set out for us.

I (Leilani) carry with me my homelands in Cirniq (Chignik) and my sister's homelands in Falasteen (Palestine)—places that are connected through our relationship with one another and through remembrance, inheritance, and imagination. Cirniq is a place and community I was able to reconnect with as an adoptee through acts of remembering and imagining. Several lines from a poem by Koyukon Athabascan poet Mary TallMountain (2005)— "I tell you now. You can go home again" (p. 13)—sparked a feeling, a memory, a hope, and ultimately, a future in which I was reconnected to the place my ancestors have always known, a place our grandmother left to attend a Baptist Mission school, a place colonialism sought to sever me from unsuccessfully. Carrying Cirniq with me reminds me that our histories, our imaginations, and the work we do in the present to realize the futures we want to be a part of are all vital to Indigenous futurity work. My sister has yet to visit Cirniq, but that future is already present in the stories and photos I share with her, and she will remember them when she returns. Because I am writing amidst genocide, I also carry with me Falasteen, a place my sister Lena both remembers and imagines, a place her grandmother was violently dispossessed from at the age of 8, a place that also exists in LA because she carries her roots and memories with her. Her existence and steadfastness are the seeds of presence and resistance that will realize her right of return in the future. Her determination, embodied by so

many Palestinians who say to themselves—"I am Palestinian, and because I am Palestinian, Palestine has a future" (Al-Emleh, 2022, n.p.)—also reflects vital and vibrant futurity work in motion. Some day she will take me there so that we can remember the place her grandmother and ancestors have known and cherished for generations. These places I am carrying with me today are thousands of miles away from us and from each other, and also as close as an embrace, a memory, and a dream.

Nu Tuukwa yan Hopi maatsiwa, nu Hospoawungwa niikyangw nu Sistomongaqw. My name is Jeremy Garcia, and my Hopi name is Tuukwa (derived from paternal affiliations with the Tobacco and Rabbit clans). I am from the Hopi village of Sitsomovi and of the Hospoawungwa (Roadrunner) clan. The lands, water, and relations I carry with me are rooted across Hopitutskwa (Hopi ancestral lands, Arizona). As a Hopi, I carry stories of emergence associated with Sipapuni—a physical and sacred site located in Öngtupqa (settler colonialism renamed this as the Grand Canyon). In our stories, it is stated that, as the Hopi entered this fourth world, they met Máasaw. Hopi Elder, Kuwanwisiwma (2002) shares, "As clan after clan emerged to this world, each was challenged to commit itself to a life plan that was dictated by the guardian deity, who Hopis know as Máasaw" (p. 161). As Hopi, we/I continue to sustain our covenant with Máasaw by living a life as stewards of the earth and maintaining cultural and ceremonial lifeways associated with dry farming. Within our stories of emergence, clans were instructed to mark their journey by leaving "footprints" (i.e., petroglyphs, shrines, etc.) that symbolized their presence and stewardship of the lands. The lands and waters I carry with me embody relations to this spiritual covenant which continues to inform our Hopi futurities as stewards of the land.

Indigenous Futurities in Curriculum Theory

We begin this issue by sharing the diverse lands, waters, and relations that we bring with us. Evident in our opening narratives, our relations to these lands and waters realign and connect us with our ancestors. Just as Indigenous lands and communities are diverse, so too are Indigenous futurities in education and beyond. In her article on rematriating curriculum studies, Unangax̂ scholar Eve Tuck (2011) foregrounds rematriation as an important framework for upending settler colonialism in curriculum studies. Rematriating here means returning lands, attending to the significance of land in curriculum, as well as "the redistribution of power, knowledge, and place, and the dismantling of settler colonialism" (p. 37). As Tuck offers, "When curriculum studies are rematriated, alternative aims of curriculum in communities begin to surface" (p. 35), and in this issue, we connect diverse futurity work to these alternative aims. Curriculum theorizing that begins from specific Indigenous lands and waters as vital and diverse systems of relationality has the potential to upend settler colonialism and support Indigenous futurity.

Refusing Erasure and Replacement

This special issue takes its direction from Eve Tuck and Rubén Gaztambide-Fernández's (2013) foundational article, "Curriculum, Replacement, and Settler Futurity" published in this journal. In it, they were explicit that the field of curriculum studies is complicit in settler colonialism and that curriculum can explicitly or inadvertently "reinscribe settler colonialism and settler futurity" (p. 73). Settler colonialism is a structure rooted in the elimination of Indigenous

lands and lives (Wolfe, 2006) and intent on extinguishing Indigenous peoples' "historical, epistemological, philosophical, moral and political claims to the land" (Tuck & Gaztambide-Fernández, 2013, p. 74). Describing settler futurity, they offered that "Anything that seeks to recuperate and not interrupt settler colonialism, to reform the settlement and incorporate Indigenous peoples into the multicultural settler colonial nation state is fettered to settler futurity" (p. 80). Understood in this context, the field of curriculum studies, in its early, contemporary, and even critical iterations, can be thought of as a *curriculum project of replacement* (p. 75) if it does not actively work to interrupt settler colonialism and settler futurities.

This special issue creates space for those countering settler futurities and those invested in cultivating Indigenous futurities to share with and learn from one another. As Smith (2021) notes, "What is more important than what alternatives Indigenous peoples offer the world is what alternatives Indigenous peoples offer each other" (p. 121). By Indigenous futurities, we mean futures in which Indigenous lands, languages, and lifeways thrive. As Indigenous communities and scholars have shown us, Indigenous futurities are not only in the future, but are being practiced and seeded now. Our Indigenous existence is already set in motion. It has already been and is being prayed about, spiritually constructed as it has been and told and reaffirmed through creation and emergence stories. Indigenous futurities exist despite settler colonial practices of erasure. We view the work of interrupting settler futurities and nurturing Indigenous futurities as intimately interrelated.

In thinking through the politics of interrupting settler futurities, anticolonial scholar Leigh Patel (2016) invites us to ask, "if the futures we imagine, if the learning we want to create space for, animates or interrupts settler logics" and whether the possible futurities we are mapping are "settler or decolonial" (p. 95). As Indigenous educators, we must continually reflect on whether the types of futurity work we are engaged in centers Indigenous values and systems of relationality or aligns with settler logics and practices of erasure. Interrupting settler futurities requires a corresponding effort to imagine and enact decolonial and Indigenous futurities. Noelani Goodyear-Kaʻōpua (2019) describes futurities as, "ways that groups imagine and produce knowledge about futures" (p. 86). Futurity is not a simple thought about what the future might look like, but rather deeply implicates the styles of thinking about the future, the types of practices that give content to a certain future, and the logics behind how present actions are legitimized or guided by specific futures (Anderson, 2010 as cited in Goodyear-Kaʻōpua, 2019). Indigenous futurities refuse to see conquest as inevitable and, instead, imagine and actively work toward a present and future in which Indigenous peoples, lands, and lifeways thrive. Indigenous futurity work in curriculum studies requires thinking about the types of curriculum theorizing and practice we must engage in now, to realize Indigenous futurities.

In this special issue, we invited contributors who engage in Indigenous futurity work in education without the need for settler justification. We intentionally invited contributions that refused to center or "soothe settler anxieties" (Tuck & Gaztambide-Fernández, 2013, p. 86). We invited Indigenous scholars and community members to share how their theories and practices of curriculum support Indigenous lifeways, knowledges, and languages. We also welcomed scholars who are committed and who "hold one another accountable," to refuse settler futurities in curriculum. We invited contributions that center decolonial, anticolonial, and Indigenous curriculum theorizing and practices that contribute to sustaining Indigenous futurities.

In response, we received a range of papers that share theory and practices committed to Indigenous futurities in curriculum studies. We have framed these contributions in three sections. The first, highlights Indigenous lands, languages, and epistemologies as the basis of renewal and

Indigenous futurities. The cycle of renewal reminds us that there is always time and space to reassert Indigenous theory and practices in curriculum studies that support Indigenous futurity. The papers in the second section attend to the complicated work of countering settler futurities and creating space for Indigenous futurities within and against the grain of dominant disciplines, such as social studies and computer science. The final section returns to Indigenous futurity work as a process of renewal and realignment with Indigenous ways of knowing and being, this time within early childhood learning in the context of land-based education and through Indigenous nation/community and university partnering to create character building curriculum.

Section 1: Indigenous Lands, Languages, and Epistemologies as the Basis of Renewal and Indigenous Futurities

We open this issue with "Towards Curriculum of Renewal: Na:tinixwe Approaches From/For the Language, Land, and People" by Sara Chase Merrick (Hupa), which offers a Hupa framing for how Indigenous futurity is constantly renewed through ceremony and the everydayness of Hupa ways of knowing. Merrick describes their renewal ceremony as a part of the cyclical processes of their existence. Here, the "daily acts of embodying and living Indigeneity, honoring longstanding relationships with the land and with one another" become important ways of embodying Hupa renewal and nurturing Indigenous futurity, highlighting how the everyday actions of "individual Indigenous people, families, and communities often go unacknowledged but are no less vital to decolonial processes" (Hunt & Holmes, 2015, pp. 157–158). Indigenous futurity, which is deeply intertwined with our histories and legacies, is always considered in the present and lived by the original instructions of our ancestors. Hupa people persist towards their continued existence with intention, knowing that their renewal ceremonies provide time and space to reflect and reorient towards Hupa livelihood in a sacred way. Merrick's framing of renewal serves to anchor the cycle of articles in this special issue, highlighting the cyclical nature of life and social change and the reality that the Indigenous values, languages, lifeways, and processes needed to nurture Indigenous futurities already exist and are there, waiting for us to connect/reconnect with them.

Section 2: Countering Settler Futurities and Reclaiming Space for Indigenous Futurities

While the previous section anchors the special issue in the idea of renewal and the cyclical nature of life, this section demonstrates how settler colonialism's persistence works to break the cycles that ensure an Indigenous existence. Sage Hatch (Siletz) and Jerry Rosiek's article, "Agency and Counter-Agency in Curriculum Studies: Teacher Work Against the Grain of Settler Futurities," documents the persistent and "tricky" dynamics of settler colonialism in K-12 public schools and how teaching for Indigenous futurity must encompass more than the efforts of individual teachers working against the grain of settler futurity. Located in a high school in his own Tribal community, Hatch reflects on the ways settler colonialism mediated the anticolonial teaching he had hoped to engage with Indigenous students. The stories of deflection, surveillance, resistance, and support of a curriculum unit he created underscore the active, dynamic, and shape-shifting nature of settler colonialism, including settler erasure and replacement (Tuck & Gaztambide-Fernández, 2013) that continues to structure settler schooling and curriculum.

Teaching against the grain of settler futurities and in service of Indigenous futurities will require that teachers do more than "include" Indigenous histories and experiences in their curricula; they must engage in an equally active and dynamic process of resisting settler colonialism. They argue that the "complicated practical politics of teaching against the grain of settler colonialism should be acknowledged and addressed in teacher education programs" (p. 32) an insight that implicates not only mainstream teacher education programs, but given Hatch's experiences as an Indigenous teacher, highlights responsibilities for those leading Indigenous teacher education programs as well. Further, teachers must also become involved in relational networks to help them "sustain a practice" of refusing settler colonialism in schools.

Cueponcaxochitl Moreno Sandoval (Nahautl) starts her article, "Ancestral Computing for Sustainability: Learning From Indigenous Mothering While (Re)Birthing Computing Education Towards Indigenous Futurities," with a heartfelt letter to her son that expresses and embodies the love, hope, and careful considerations that Indigenous Mothering puts into providing a world where we can all "walk the flowery path of our ancestors, with dignity for all" (p. 38) She asks how Indigenous Mothering practices might offer an "otherwise military child, a radical rebirthing in a nurturing womb that intentionally centers the protection of children and Earth for future generations" (p. 38) as she theorizes alternatives for computing education curriculum. She describes the framework "Ancestral Computing for Sustainability" that promotes considerations for supporting Indigenous futurities through computing education. Sandoval poses "what if" questions that she responds to through Indigenous Motherhood ways that center children in the decisions made for communal wellness across environmental, social, and economic experiences.

Section 3: Realigning Curriculum with Indigenous Self-Determination for Indigenous Futurity

In the third section of this special issue, the articles describe ways to continue the cycles of renewal that center Indigenous ways of knowing within curriculum theory and practice and remind us that Indigenous futurity is already in motion. In the article, "Embracing Epistemological Collisions as Sites of Critical Indigenous Pedagogy: Insights From Partnering for Diné Curriculum Building," Hollie A. Kulago (Diné), Logan Rutten, and Dorthea Litson (Diné) describe pedagogical sites that occur within their partnering work that can lead to deeper considerations for Indigenous futurity if there is intentional attention paid to epistemological commitments and collisions. Within their study that investigates the processes and practices of their partnership between a university and an Indigenous entity to build curriculum, they reveal moments in their work when Diné ways of knowing challenged the educational institution rooted in Western ways of knowing. They describe how embracing these moments as sites of critical Indigenous pedagogy supported a deeper understanding of how and where decision making can support or undermine Diné futurity.

The final article in this special issue demonstrates how Indigenous axiology, ontology, epistemology, and pedagogical "modes of teaching and learning are very much present within Indigenous communities and that land-and-water-based education offers a construct for including Indigenous epistemologies in curriculum" (Lees, et al., p. 74). In "Securing our Futures through Land and Water Education: Developing an Indigenous Language Curriculum in a Tribal Nation Early Learning Program" by Anna Lees (Little Traverse Bay Bands of Odawa Indians, descendant), Michele Balagot (Tulalip Tribes), Natosha Gobin (Tulalip Tribes), Michelle Myles

(Tulalip Tribes), and Elizabeth Starks (Shiwi/Diné), we learn how Coast Salish ways of knowing were meaningfully centered within their curricular framework and within the process of creating curriculum. As Indigenous families and community members worked together to create the curriculum through their ways of knowing, they found land and water as generative foundations to navigate the complexities of school-based education, a process that took patience, perseverance, and trust and "empowered [them] to do what they always wanted to do" (p. 87).

Curriculum Theory and Practice that Upends Settler Colonialism

Collectively, the articles in this special issue take up many of the "alternative aims for curriculum" that begin to surface when "curriculum studies is rematriated" by communities (Tuck, 2011, p. 36). Rematriating curriculum studies "is concerned with the redistribution of power, knowledge, and place, and the dismantling of settler colonialism" (p. 37), which the works in this special issue show us. We see that Indigenous futures are possible when people work collectively to "remember the true purpose of knowledge in/for our communities" (Tuck, 2011, p. 36), which for many meant theorizing and enacting curriculum specifically in service of Na:tinixwe, Coast Salish, or Diné futurity. As Lees and colleagues show us, framing curriculum through huyadadčəł, *our ways*, remembers that curriculum can and should build on the lifeways carried on from ancestors of this community since Time Immemorial. Another possibility for curriculum is to "uncover the quiet thoughts and beliefs of a community" (Tuck, 2011, p. 36), an aim that Hatch reveals when he came to learn that Two Spirit youth felt affirmed by his curriculum. By infusing Ancestral Knowledge into computing education, Sandoval invites us to consider how technology and computing can be leveraged to "make generational knowledge of Elders, youth, parents, warriors, hunters, leaders, gardeners, fishers, teachers, and others available to other generations" (Tuck, 2011, p. 36). Both Lees and her colleagues and Merrick "make use of home languages to express ideas, and to bring new language to new and recovered ideas" (Tuck, 2011, p. 36), whether through cəkʷ-, təł, and hayəd kʷi gʷəshaydxʷs or Na:tinixwe curriculum of renewal. They center their work within the ways of being, knowing, and ethics of their respective communities. By centering Diné ways of knowing in their partnering goals and processes and identifying epistemological collisions as sites of critical Indigenous pedagogy, Kulago and colleagues demonstrate how curriculum inquiry projects can be "crafted to have multiple points of entry, and multiple meanings to be drawn," and developed so "that there is continuity between curriculum and community life that moves in recursive ways to further inquiry and further applications of meaning" (Tuck, 2011, p. 36). Finally, the authors here describe what Tuck (2011) called, "curriculum of repatriation or rematriation … an approach for participatory decolonizing educators and scholars—people who choose to consider curriculum in community, not on communities, and in ways that are anticolonial, not imperialistic" (p. 35).

We hope that after reading these diverse examples of futurity work in education, you have a sense of how your curriculum work can disrupt settler futurity and foster Indigenous futurities in curriculum. This work is intimate, personal, and also collective. This work is also not abstract, but always located somewhere, on lands that have been cherished and sustained for millennia. We invite you to think about the places you carry with you and how those might anchor your curricular theories and practices. We invite you to consider the Indigenous futurity work in curriculum that is likely already seeded and being practiced somewhere close to you. Maybe you are a leader in this work, and if so, we encourage you to continue. Maybe you are someone with a gift to offer

that movement, and if so, we encourage you to do the intentional work of figuring out your roles and responsibilities in relation to that movement. However you relate to this work, we hope that you are imagining and working toward a future in which Indigenous Peoples, lands, languages, and lifeways thrive.

Notes

1.   This exercise was shared with Hollie by Kumu Shari Frias from the Ka ʻUmeke Kāʻeo school, and we have been given permission to use it here.

References

Al-Emleh, M. (2022, March). The future, now: Embodied sovereignty in the Palestinian diaspora [Video]. *PechaKucha*. https://www.pechakucha.com/presentations/the-future-now-embodied-sovereignty-in-the-palestinian-diaspora-478

Goodyear-Ka'ōpua, N. (2019). Indigenous oceanic futures: Challenging settler colonialisms and militarization. In L. T. Smith, E. Tuck, & K. W. Yang (Eds.), *Indigenous and decolonizing studies in education: Mapping the long view* (pp. 82–102). Routledge.

Hunt, S., & Holmes, C. (2015). Everyday decolonization: Living a decolonizing queer politics. *Journal of Lesbian Studies*, *19*(2), 154–172. https://doi.org/10.1080/10894160.2015.970975

Kuwanwisiwma, L. (2002). Hopit navotiat, Hopi knowledge of history: Hopi presence on Black Mesa. In S. Powell & F. E. Smiley (Eds.), *Prehistoric culture change on the Colorado Plateau: Ten thousand years on Black Mesa* (pp. 161—163). The University of Arizona Press.

Patel, L. (2016). *Decolonizing educational research: From ownership to answerability*. Routledge.

Smith, L. T. (2021). *Decolonizing methodologies: Research and indigenous peoples* (3rd ed.). Zed Books.

TallMountain, M. (2005). You *can* go home again: A sequence. In B. Swanson & A. Krupat (Eds.), *I tell you now: Autobiographical essays by Native American writers* (pp. 1–13). University of Nebraska Press.

Tuck, E. (2011). Rematriating curriculum studies. *Journal of Curriculum and Pedagogy*, *8*(1), 34–37. https://doi.org/10.1080/15505170.2011.572521

Tuck, E., & Gaztambide-Fernández, R. A. (2013). Curriculum, replacement, and settler futurity. *Journal of Curriculum Theorizing*, *29*(1), 72–89. https://journal.jctonline.org/index.php/jct/article/view/411

Wolfe, P. (2006). Settler colonialism and the elimination of the native. *Journal of Genocide Research*, *8*(4), 387–409. doi:10.1080/14623520601056240

Towards Curriculum of Renewal
Na:tinixwe Approaches From/For the Language, Land, and People

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Ya:ydil whima:lyo Niwho:ng-xw niwho:ng-xw
Ya:ydil whima:lyo niwho:ng-xw dikyung To:-ching whima:lyo niwho:ng-xw dikyung
We are walking my family/friends In a good way, in a good way
We are walking my family/friends in a good way here Towards the water we are walking in a good way here

Hay Na:tinixwe (*The Hupa People*)

IN A VALLEY BETWEEN MOUNTAINS, following the Trinity River, the Na:tinixwe (*Hupa people*) reside in the far reaches of Northern California, Na:tinixw (*Hoopa Valley*), and spoke/speak Na:tinixwe Mixine:whe (*Hupa Language*). Prior to settler colonialism, beginning at time immemorial, education for Na:tinixwe was a life-long process guided by ninisa:n (*land*), kisdiyun (*elders*) and kixuna:y (*spirit ancestors*). We were fortunate to have not had major colonial contact until much later than most other tribes in the state and country. It wasn't until the Gold Rush in the 1850s brought a massive influx of settlers to our geographic area. With them came greed and violence. Despite many attempts at removing us from our traditional territory, we were able to maintain a great deal of our homelands, knowledges, and ceremonies, a credit to the intelligence and strength of our ancestors.

As tactics of violence changed toward assimilation in the latter part of the 1800s, Indian Boarding schools across the nation were springing up to target Indigenous children, their identities, and families. Our Indigenous knowledges and languages were targeted, outlawed, and discredited. In our community, just as in many others, colonial curriculum was forced on us in all aspects of Na:tinixwe life. Schooling was and continues to be detrimental to our peoples and our ways.

In 1893, the Hoopa Valley Indian School was established by the Bureau of Indian Affairs to teach Na:tinixwe children how to be civilized by trying to kill everything about them that made

them Hupa. This school, along with virtually all other Indian boarding schools, forced these children to speak only English and punished any use of Na:tinixwe Mixine:whe (Bushnell, 1968). Linguicide was widely employed by Indian boarding schools as a settler colonial curricular requirement in order to eliminate Indigenous peoples and their sovereignty (relationship) to land (Iyengar, 2014). Although there was a school right on the reservation, many children, including my own grandparents, were sent to schools hundreds of miles away to further sever their ties to their homelands and families. The impacts of these schools on Na:tinixwe children, families, languages, and lifeways cannot be understated. While at the same time the strength and sheer will toward surviving and continuing the ways of our ancestors must be held up as well.

The Hoopa Valley Indian School was converted to a day school in 1934 and then California state public school. The public schools on the reservation today are virtually in the same location. The (setter) state continues to hold the ultimate power over the curriculum and structure of these schools. While there have been some major victories and changes over time around the inclusion of Hupa language and curriculum in small doses all made possible by Hupa and other Indigenous teachers and staff, Hupa language and knowledge continues to be suppressed and marginalized today (Chase, 2020). Consequently, colonial curriculum—i.e., state and common core standards—remains at the center.

As a result of this settler colonial history and ongoing structure (Kauanui, 2016), our language is down to just a handful of first language Na:tinixwe Mixine:whe speakers, and our Na:tinixwe knowledges are not taught and practiced with the same consistency with children as they once were. At the same time, we've had a parallel history of Na:tinixwe resistance and survivance that has allowed us to hold on to a great deal of our territories, ceremonies, and knowledges. We have continued to practice our world renewal ceremonies, given to us straight from our spirit ancestors at the beginning of this world. We have continued to reclaim and renew what we have lost. This article highlights just one snapshot in space and time of this renewal process with a specific focus on Na:tinixwe curricular approaches and Na:tinixwe Mixine:whe with Na:tinixwe youth. I humbly acknowledge all of those elders, activists, and leaders who have come before me/us and the great work they have done.

Xa' Ya:ydiɬ! (*Ok let's go!*)

I open this article with a song that we sing during our walks to the river or creeks in our Na:tinixwe Mixine:whe (*Hupa Language*) Immersion camps. While there have been Hupa Language Immersion camps in the community dating back to the early 1990s, this particular immersion camp for Hupa youth in grades K-4 was started in 2017 in partnership with the Hoopa Tribal Education Association as a part of my Dreamstarter Project from Runningstrong for American Indian Youth. These now annual (and sometimes more frequent) youth camps bring together Emerging Hupa Language Learner-Teachers, Mentor Speakers-Teachers, cultural practitioners, and youth and their families to create a space over 1–2 weeks dedicated to speaking Na:tinixwe Mixine:whe. We work very closely with mentor teacher, Danny Ammon, and expert first language speaker, Wha:dichwing (*My paternal aunt*) Verdena Parker, for these camps. I conducted a community-based inquiry project following three of these camps from 2018–2019 utilizing Na:tinixwe methodologies (Merrick, 2024) to put into praxis our Na:tinixwe visions of education based on conversations and work with over 50 community members ages 5–85.

This article draws from this inquiry project (Chase, 2020) in order to highlight the key approaches to a Na:tinixwe curriculum of renewal that have been identified by the community and most importantly put into praxis with youth and their families. These approaches are counter to settler-capitalist, linear notions of time, progress, and extraction. When we utilize approaches grounded in Na:tinixwe Mixine:whe, Na:tinixwe, and Na:tinixw, we are able to look towards possibilities of renewal along a cyclical timeline that continues the work of ancestors since time immemorial. The approaches to renewal identified in this article include:

- Renewed Relationships with K'iwinya'ya:n (*Humans*) and Other Beings
- Ninisa:n as Pedagogy
- Renewed Ch'ixolchwe (*Story*) Praxis
- Renewed Whing (*Songs*)
- Intergenerational Knowledge Transmission

The article begins by explaining the Na:tinixwe theoretical framework of renewal and its connections to the Indigenous Studies theoretical framework of resurgence. Each following section gives concrete examples of each curricular approach and the ways that it has worked toward renewal of Na:tinixwe language and knowledge. I end with the story of one Na:tinixwe youth, Whiłiyo', and the impact these approaches have had on her in relation to recent experiences of racism at her school and a broader discussion of the findings of this work.

In our opening song, we thank the students for spending this time with us, for walking with us in a good way together to our sacred waters. We are so happy that they are with us in whatever ways that means. Even if they are not having a good day, we are still so happy to see them and that they came to be with us, and we do it all in Na:tinixwe Mixine:whe. I open with this song to invite you as the readers ya:vdił! (*let's go!*). Come along with me on this journey to see the ways that our community has been able to create and recreate curriculum against and away from settler colonialism and towards the healing, renewal, and vitality of our land, language, and peoples. I share these insights so that other communities might undertake this work in their own communities in their own contexts in ethical ways so that we might ban together the broader project of Indigenous resurgence and decolonization through teaching and learning with children. Ya:vdił!

Theoretical Framework: Na:tinixwe Renewal is Resurgence

In this work, I use the terms renewal and resurgence in tandem. Renewal comes directly from Na:tinixwe. We practice world renewal ceremonies and apply these same spatial-temporalities in our everyday lives. Renewal speaks to a Na:tinixwe ontological view of time and the world. We have world renewal ceremonies that we conduct in the community every other summer. The world then renews through our ceremonies in a cycle rather than settler notions of linear progress. These are the same ceremonies given to us by our creator thousands of years ago that have continued despite settler colonial policies and pressures to cease. When we speak of bringing something back, such as our educational practices or language, in the community we use the language of renewal in line with our ceremonies. Although our language is currently endangered, in the broader sense of things, it is on a pathway toward renewal.

Through the renewal of Na:tinixwe Mixine:whe, we reopen windows into Na:tinixwe epistemologies by speaking these words once again and reconnecting these words to our people and land. Na:tinixwe scholar Jack Norton (1979) writes:

> Spiritual leaders prayed for their protection of the land, the welfare of the people, and the harmony of the universe … . The ceremonies, the beliefs, and the land where the people had come into being were the Hupa's greatest treasures, and each new generation learned to honor and care for them. (p. 35)

Our people continue to pray for and create a world in which "each new generation" can learn to honor and care for our people and the world. It is through this knowledge transmission to the new generations that our people and world as a whole continue to be renewed.

Glen Coulthard (2014) defines Indigenous resurgence: "Resurgence, in this view, draws critically on the past with an eye to radically transform the colonial power relations that have come to dominate our present" (p. 157). Coulthard wants us to critically use traditional knowledge to change the colonial present we are now living in. Leanne Betasamosake Simpson (2017) continues: "Resurgence is hope for me because of its simultaneous dismantling of settler colonial meta-manifestations and its reinvigoration of Indigenous systemic alternatives—alternatives that have already produced sustainable, beautiful, principled societies" (p. 49). She too believes that our "Indigenous systemic alternatives" hold the key toward transforming society as it is. Our ways have proven successful for thousands of years prior to colonization and will prove so once again. While these specifics of what resurgence is to each community may vary, for me Na:tinixwe renewal shares many of the same goals as resurgence. Most centrally is the fact that our ancestral ways need to be taken seriously and lived out as alternatives to the everyday violences of colonialism. Our original instructions from our ancestors still hold true, and their power needs to be felt once again, not just during special times of year or events but all day every day to move us back toward a much healthier existence.

By orienting this work within broader projects of Indigenous resurgence, I hope to align the work being done in this specific community with broader global fights against colonial domination. While the importance of this cannot be understated, staying true to the words, thoughts, and intentions of Na:tinixwe renewal make this work what it is. Therefore, I will assert renewal as the theoretical framework guiding the examples of our Na:tinixwe curricular approaches that follow.

Renewed Relationships with K'iwinya'ya:n (*Humans*) and Other Beings

Settler colonialism seeks to destroy the relationality central to many Indigenous nations, including the Na:tinixwe. Boarding schools are just one example of this. As I wrote earlier, Na:tinixwe curriculum prior to settler colonialism centered around teachings from elders in the community, the land, and all other beings with whom we share the land. Therefore, a curriculum of Na:tinxiwe renewal must center the reconnection of these relationships between our peoples and other relations.

Here I reflect on my own moment of recognizing the importance and brilliance of filleting hay ło:q' (*a salmon*). This was my own process of renewal and repositioning our traditional knowledge as a curriculum that needs to be taught to our children in meaningful and consistent

ways. I hope highlighting my own thought process will prompt others to recognize their own ancestral brilliance and reassert it in their youth's learning. Sometimes we don't need to do more reading or research; sometimes we just need to carry out our familial obligations.

One day, I was leaving my house to meet a research collaborator, and as I was leaving, a van pulled into the yard. It was a tribal program delivering fish for my father, a tribal elder. I knew it later would be my responsibility to take care of this fish in the proper way, to both honor my role as the daughter to my father in a Hupa family, as well as to honor the life of the salmon given for our family to eat later.

At first, I was annoyed at another thing to add to my to-do list. However, upon further reflection, this was such an important moment in my own journey of renewal to recognize the significance of being able to hold and pass on this knowledge to future generations. Thankfully, filleting ło:q' is one of the educational practices that has continued despite settler colonialism in familial, community, and ceremonial spaces. At the same time, this practice continues to be threatened by settler capitalism and settler exploitation of the Trinity River water. A Na:tinxwe curriculum approach understands how to teach biology in a way that could be recognizable to current schooling and still remain within a Na:tinixwe epistemology. This could come in place of dissecting a ewa:k chahł (*poor frog*) that was harvested specifically for dissection in a classroom and then thrown away. In many biology classes across the country, frogs are bred solely for their bodies to be dissected by students. In my biology class as a student at Hoopa High, we had baby sharks instead of frogs, but the violence across the species is the same.

Na:tinixwe people conduct a biology lesson of renewal every time that they prepare a fish for the people to eat. There is a very specific way that you must treat the fish, very specific places that you must cut, you must know what the different organs are and what they do, what they should look like. Additionally, central to this lesson—as opposed to settler biology lessons—are the teachings that require you to honor the life of the salmon by cutting it in certain ways to use as much of the meat as possible, to waste anything and dishonor the life that has been taken. There are appropriate ways to dispose of the organs and other remaining parts that give back to the land and other beings that will take part in the feast of the salmon, sa:ts (*bears*) are a great example. However, not everyone is given the opportunity to learn these lessons anymore, and with climate change and corporate greed of farmers, our fisheries continue to be under threat.

Consequently, this process takes place less often. Recently, there was a quota given to families because the river was so depleted, one fish per family. This was devastating to those who depend on fish to feed their families for traditional and economic reasons. The river doesn't care if you have money or not; the river only cares if you know how to fish in a respectful way. But if there are no fish as a result of settler colonial impositions, this throws off the balance of Na:tinixw. Within this example, we can see the continuation and intellectual rigor of Na:tinixwe modes of education, the devastating results of settler colonial imposition, and the need to continue the fight against these impositions through the continuation and sharing of this practice. Currently, in formal education settings, you may see a fish be filleted during the fish fair at the public schools on the reservation that takes place once a year, which is great but not enough. Similar to the small amounts of Na:tinixwe Mixine:whe instruction in the schools, this small lesson sits at the margins of the broader settler curriculum and interests being served through this curriculum.

In our Na:tinixwe Mixine:whe camps, we took a direct approach to make our Na:tinixwe foods, fish and acorns, central to our curriculum, inviting elders and cultural practitioners as experts to share their knowledge with our students. Our experts were aunties, uncles, grandmas, and grandpas, so in positioning them as teachers, we were reestablishing the tradition of family as

teachers and holders of vital knowledge. Families of all of our students and teachers were invited to partake in our traditional foods feast, remapping a regular Friday in the summer as a day of renewal for our community. In addition, we were able to reconnect the language to these processes and connect the kids to both of them at the same time. The land was used in a traditional way once again, signaling an important reconnection that contests settler colonial mappings of space and time.

We were able to bring in Chucky Carpenter- ne'in who has an expertise in cooking ło:q' (*salmon*) in a traditional way with fire on cedar sticks. Additionally, we brought in Suzie Sanchez who has an expertise in cooking sa'xa:wh (*acorn soup*) in a traditional way with fire and a special type of rocks. Then on the final day of the camp, we had our guests show the students and allow them to help in appropriate ways with the process of cooking these foods. In traditional Na:tinxwe fashion, we had to share this meal with our families. As an effort to get families more directly involved with the camp, we hosted a parent lunch during the final day of the camp. It was during the work lunch hour to be considerate of working parents. We were able to serve the traditional foods the students helped to prepare as well as others that we had prepared on our own including elk and nahts'ik' (*Indian tea*). For many families, it is rare to be able to take part in the preparation of these foods and be able to eat them, especially outside of the context of ceremonies. Part of our work within this curriculum of renewal was to bring the family back together. Many of the parents and families are of my generation or a generation older than me; this means that none of them are fluent Na:tinixwe Mixine:whe speakers. They too grew up with the loss caused by boarding schools, and so they too are a part of this renewal process. Boarding schools specifically targeted the Na:tinixwe family; in our approach, we bring our families back together in a good way. The other benefit to bringing in these family members is that they were also positioned as teachers and a vital part of our students' learning experience. The students can then, in turn, teach their parents what they have learned, and they can continue to learn from one another, not only in the context of our family lunch but in their homes as well.

Ninisa:n (*Land/the world*) as Pedagogy

Another central tenet of our renewed curriculum includes land-based education that enables children to explore and strengthen a reciprocal relationship with ninisa:n. In a Na:tinixwe ontological framework, we want the children to know the land and for the land to know them.

Wildcat et al. (2014) write: "Being present on the land provides powerful ways of seeing one's relationships to the land and other than- humans, as well as new ways in contesting settler colonialism and its sense making mechanisms" (p. V). They articulate that land (and other than human beings) has always been a key source of pedagogy for Indigenous nations. Given that settler colonialism attempted to destroy this relationship, going out being in relation and learning from the land re-establishes these relationships *and* contests settler colonialism. It disrupts exploitation and domination over the land as the only way to relate to it and centers relationships and care with it. We employed this pedagogical approach in our camps. Each day we scheduled time to walk to the creek, to transmit Na:tinixwe Mixine:whe, and to re-establish this relationship between Na:tinixwe youth and the land *and* contest the settler colonial relations of domination and exploitation to land they learn in school, the media, and in the broader national discourses. Lessons in this activity would be guided by the land and the students' exploration of it. One example of this was that students would crawl in the creek and plants much further than the adult teachers.

They would find new plants that we did not cover in our language lesson previous to our walk. As a result, we could teach them new vocabulary words we would not have otherwise. Our spring camp was conducted almost entirely outside, meaning that all of our lessons, planned and unplanned, were centered around and with ninisa:n.

It was a transition for myself and the other Na:tinixwe educators. It was a transition from other classroom teaching experiences that we all had and, maybe most poignant, that we received ourselves. For me it required a process of letting go of the formal education structure I had known. This may seem like an obvious theoretical point but proved to be more complex in practice. I felt a certain type of anxiety about, almost lack of control over, the area in which we were learning. However, upon reflecting on this loss of control I felt was part of the point, to have a free and open learning environment. This took some major adjusting on my part as a teacher, trained to "maintain control over my classroom." This adjustment made me really think about how even the physical space of a typical classroom—enclosed, with walls, borders, and boundaries with doors that lock— is another method of controlling students. Outside there are no doors, or walls, no major physical borders of containment, only suggestions by the teachers as to the area in which students should stay for their safety. One teacher and student were worried about students "just taking off into the bushes." They were panicking too. But what if this "taking off into the bushes" is where the self-directed meaningful lesson with the land takes place for students? It is an entirely different type of way of structuring, or even unstructuring, a space for learning than many of us have experienced in school. It definitely requires trust in what we are doing and what our ancestors did for so many years before. What does it mean to trust children to guide their own learning and relationships with themselves and other beings? We were hoping to find out and saw something transformative unfold.

When we speak about an engagement with land, we aren't just talking about the landscape itself but all the living beings that call the land its home, including ourselves. We were able to engage with other beings and be guests in their homelands. We are renewing our relationship with ninisa:n and by doing so contesting settler colonial relations of power (Goodyear- Ka'opua, 2013; Simpson, 2014). One teacher described a meaningful encounter she and her group had and how quickly the children were able to pick up on the lessons, reorient themselves to the beings, and proactively protect them. In broader settler discourses, frogs often get constructed as gross pests. Humans and their needs and desires are always placed above them. On the other hand, to Na:tinixwe, Chahł (*Frog*) is an important figure in many of our stories. She and her people call this place home as well. We are not superior to Frog; we are in relation with her. You can see the shift in the students' relationships with the Chahł in this example. It is important to note that this particular scenario was not planned in the curriculum. The teacher recounted:

> Our group found a family of frogs! And they wanted to go get them, and I said, "da:w chahł xontah"! And they said, "oh it's their house!" And I was like, "diye!" Then one student found a nail and said, "This is dangerous to them. We need to get this away from them." And I said, "niwho:ng, niwho:ng!"

In this scenario, we can see a group of students meeting a family of frogs and getting to know them. The teacher communicates in Na:tinixwe Mixine:whe that this is their home. Knowing that they have a home and not wanting anyone to mess with it, they decided to leave them alone. Shortly after, one student even sees something that might create a dangerous situation for the frogs and moves to protect them. We can quickly see their relationships with the frogs go from one of

objectification and domination, to one of care, protection, and renewal. This is such a valuable lesson central to Na:tinixwe epistemology, and better yet, the students themselves created the conditions for this lesson to take place because we gave them the freedom to do so.

Renewed Ch'ixolchwe (*Story*) Praxis

In our circle time at the beginning of each day of our camps, we talked about our traditional stories and the lessons they taught us. This was a great time to check the comprehension of the students and see where we needed to make adjustments so that they were able to understand the story. On the first day only, we would play the story in both Hupa and English so that they would be able to get some context for the translation of what they would be listening to for the next week. We needed to balance ensuring that the students understood the stories with exposing them to as much Na:tinixwe Mixine:whe as we could, all the while, knowing that they would not be able to understand a lot of the specifics of the language in the timeframe that we had. Na:tinixwe stories each have specific lessons to teach each time that they are told. Teaching Na:tinixwe morality was a key to our approach, and stories are often the best way to do that. The key lesson for both of the Xontehł-taw (*coyote*) stories that we used was do:diwa'unchwe'n (*don't be greedy*).

We would begin each day talking about the story and lesson in English and then be able to use that framework to keep the kids accountable throughout the day in Na:tinixwe Mixine:whe. For example, if during snack time they were taking too much and there wouldn't be enough for other students, we could say do:diwa'unchwe'n, and they would know what it meant and could connect it to the story and learn from Xontehł-taw's mistakes. Seven-year-old Nundil recounted her understanding and application of the lessons for us:

> Well, the coyote wanted to drink too much water. He wanted to be greedy. He wanted to share it with no one else. And that's what I like about that story. And the second one about candy. I'm not gonna be greedy about candy. He wanted a larger one and a larger one. Xoji' nikya:w mmm hmm, and then he got smashed.

Nundil demonstrated both an understanding of each story line, the lessons that it taught, and even applied it to her own practice moving forward. Seven-year-old Mack expressed the importance of learning Na:tinixwe stories. I asked: "Would you want to do stories like this at school?" He responded: "Yes, because this is where I was born." I followed up: "Yeah cuz it's part of who you are?" He replied: "Yeah, cuz our ancestors have been telling these stories for a long, long time so they are really important." Mack is putting forth the long lineage in which these stories have been told; he recognizes that he is now a part of that lineage, and that is hugely important.

Following circle time, we would move to the tables and review key words for students to listen for in our Xontehł-taw stories with visual cues and actions. We would all listen to a recording of Verdena Parker telling the story either with illustrations or with a puppet show to guide the students along the storyline. These were great ways for them to be able to understand the story without us having to directly translate it each time and, more importantly, for us to be able to completely stay in the language. In addition, this gave the students an opportunity to listen to extended fluent streams of Na:tinixwe Mixine:whe, again that none of our core teachers had the capability to do on our own. As this group was familiar with *Coyote and the Sweetball*, we switched between that story and the new one each morning. Each day they listened to the same

stories with different visual cues so that they would be able to understand it progressively more each time. We then incorporated physical cues for key parts in the story that were repeated throughout. For example, for the key phrase which'in' ch'ima:s (*roll out to me*) that Coyote says repeatedly throughout the story, we would gesture our hands towards ourselves to give them another context clue for the meaning of the phrase. By the end of the week the students clearly enjoyed interacting and following along with the stories. On the final day, once they were accustomed to the camp schedule, Verdena was able to come visit the classroom and tell them the stories in person. Students circled around her as she told the story in the language, visibly engaged and excited, presumably just as they would have hundreds of years ago. Verdena was able to see the fruits of her labor in the growing language capabilities of the students and teachers (her students). Even if it were for those brief moments, Na:tinixwe Mixine:whe was being transmitted from an elder to young children through traditional storytelling practices once again.

Following story-time, we would move to stations with activities related to the story. For example, we created a scene out of the story in a corner of the classroom so that the students could use the language from the story in context. It was in this station that students could use the phrase "which'in' ch'ima:s" and see that the use of that phrase would signal the rolling out of a ball from our "cave" just as it did for the kids and Coyote in the story. Other stations included matching, listening, Pictionary, and a nułtsung! (*find it!*) game, all of which reviewed the key vocabulary from the story in fun and interactive ways.

Renewed Whing (*Songs*)

Whing (*songs*) are central to a traditional Na:tinixwe educational approach as well as our renewed curriculum. Songs are incredibly important to Na:tinixwe. There are prayer songs, gathering songs, and songs central to stories. Unfortunately, some of these songs have been dormant for some time due to settler colonial pressures. However, that doesn't mean that many of these songs can't be renewed just as Na:tinixwe Mixine:whe. In fact, songs in Na:tinixwe Mixine:whe were one of the most effective methods of language transmission, most especially getting the students to produce speech. We had songs that we would sing at circle time accompanied either with posters or physical cues. Some of these songs had already existed in previous programs. We had such a fun time singing with the kids, and they could not get enough of the songs, and they were learning the language in the process. Songs were very helpful in aiding our growing language capabilities. We found that one of the hardest times for us, as teachers, to not slip into English was transition times between activities. Beyond our regular circle time songs, we also had transition songs. So instead of having to say, "Okay everyone, it's time to move to the next stations," we sang a clean-up song in the Hupa language that students quickly associated with moving on to the next activity. We had a "clean-up song," a "line-up song," and a "creek walking song" (see in intro). These songs made a world of a difference for us all to stay in the language and provided seamless transitions between activities.

Intergenerational Knowledge Transmission

Families of our students were invited and encouraged to stay and participate as much as they could during the camps. We had one mother and her baby who came consistently each day.

Most parents of our students had little to no knowledge of Na:tinixwe Mixine:whe. We wanted them to learn as much as they could too, so that they could continue to use the language with their children at home, even after our camps ended. On the last day of each camp, we gave each student a packet that included recordings, storybooks, coloring pages, posters, visual aids, games, and many other curriculum items. Many families were incredibly proud to see their children being able to learn to speak the language that they were denied. They were so happy and excited to have their children teach them small phrases and most often the songs from our camp, and the students were excited to do it. Tehla:n, mother of one of our students, was able to attend all three camps and stated:

> There was a lot that was learned, and I'm learning a lot for my 6-year-old is teaching me, and then my other daughter comes and then her dad who didn't grow up here. He's on the [tribal] roll, but he didn't grow up here, and he's like well now I feel left out.

This particular student has taken the initiative to teach the rest of her family the language that she has learned in our camps. One parent who is Na:tinixwe but did not grow up on the reservation is now excited to learn from his daughter. A lot of this work is bringing our Na:tinixwe who have been denied the opportunity to learn the language for many different reasons back into it.

Everyone is welcome. It is especially powerful if it is one's own child who is reopening that process for their family. Family and community are central to our curriculum of renewal; in our camps, family and community were the space and source of knowledge. Bringing our language back brings our people back together.

The final day of the camp was dedicated to celebration. We took a field trip over to the K'isdiya:n ya'kya:n-ding, the tribal Senior Nutrition Center. This is where many elders in the community go every weekday for a free lunch but mostly to visit with one another. We arranged a performance of the many Na:tinixwe Mixine:whe songs we learned for the elders. We told the kids about it earlier in the day, and they seemed nervous but excited to show what they had learned. The kids yelled to us in the opening circle the many relatives that they knew were going to attend and told us who they knew that ate there regularly. They then speculated about whether or not they would watch them perform. There were similar conversations that took place when we were walking over to the center. When we arrived, I introduced myself and our group to the room full of elders; many of them knew me but some did not. Then I told them what we had been learning and what they wanted to share with them. We proceeded to perform our songs guided by our visual and physical cues so that the elders would understand what we were singing as well.

Some students were shy in the beginning, but by our ending song, they were beaming with pride. We finished, and the room erupted with applause. We thanked them for letting us share and walked back to our classroom. As we were walking out, I overheard a conversation between some elders. One said to the other: "Did you recognize any of the words they said?" The other one responded excitedly, "Yes I think so!" This was so important and exciting for me. Many of these elders were of my parents' generation or a little older. So many of them were either punished for speaking the language, or it was their parents who did not teach them to speak out of love and protection. That said, I'm sure that many of them have negative connotations associated with the language, such as trauma, fear, regret, and loss. The fact that, from this performance, some of them were able to feel good about what they remembered from the language, even if it was a few words, was incredible.

The other major addition to our programming for this camp was a small graduation ceremony that we conducted on the final day. We invited the families of our students and would

honor each and every one of them for all of the hard work that they put in. Then they would be given take-home packets and their very own Xontehł-taw stuffed animal so that they would have a Xontehł-taw to speak Na:tinixwe Mixine:whe with whenever they wanted. Their Xontehł-taws would be able to read along in their storybooks and remind them of the lessons he teaches. This was a great opportunity for families, students, and teachers to come together and celebrate our survivance as Na:tinixwe learning and teaching Na:tinixwe Mixine:whe, despite all odds. One of my favorite parts of this particular graduation was that each student would be called up to receive their packet and be able to shake Wha:dichwing Verdena's hand to recognize their accomplishment and feel like legitimate Na:tinixwe Mixine:whe speakers because they were getting their approval from a speaker. I believe that Verdena enjoyed this just as much. Some students unprompted would give a hug rather than a handshake to express their love and appreciation for the language. Our graduation was a celebration and honoring of the language just as much as it was for our students.

Whiłiyo's Story

I end this article with the story of Whiłiyo' and the words of renewal of Na:tinixwe youth. Whiłiyo' was 9 at the time of our second camp. She was very nervous to come to our camp because she had not taken Na:tinixwe Mixine:whe classes in a few years. After a few hours of being at camp, she went from being shy and timid to beaming with pride when we would sing our renewed Na:tinixwe Mixine:whe songs. Xowunchwing (*her mother*) later relayed to us how impactful coming to this camp was on her. After camp ended, I would find out from her mother that Whiłiyo' was having a difficult time at school, dealing with racism from students and administration. When we had our one-on-one conversation, I could tell that she wanted to tell me about an incident that happened at school (a local public school). However, she was clearly emotional, and I didn't want to push her. Then later when I was able to have a conversation with her mother, Whiłiyo' got the courage to tell me what happened. An excerpt from our conversation is below:

Whiłiyo'-But umm I feel good when I speak Hupa and always feel happy I was never scared.
Whidehch (Me)- Would you feel scared to be that way at school?
Whiłiyo'-[Shakes head yes]
Whidehch (Me)-Do you feel like you would get picked on or something or made fun of?
Whiłiyo'-[Nods yes]...last year umm
Xowunchwing- Go ahead tell her...
Whiłiyo'-Last year umm the kids were making fun of the singing part of Indian Day, and so I felt kinda scared of that [on the verge of tears].
Xowunchwing- And it hurt you?
Whiłiyo'-Yeah [quietly].
Xowunchwing- ...cuz you know what it means, and you know it's special?
Whiłiyo'-...mmhmmm...
Xowunchwing- ...and it's a prayer.
Whidehch (Me)- Yeah, that is scary. I'm sorry that happened, but you know the power of that, and you know the truth of that, so you can hold on to that, but that's scary, and that's sad that that happened. I'm sorry and that's why we really wanted to try to do a complete opposite thing in the camp where singing was everything that we do.

I want us to use this excerpt to bring us through the importance and immediacy of this project, the many approaches that it took, and work it was able to start in the community. Our songs and ceremonies were targeted for elimination under settler colonial policies and practices. Whiłiyo's experience above highlights the legacy of that targeting. Yet, the fact that she knew in her heart the importance of such songs speaks to our survivance as Na:tinixwe. Songs are an incredibly important part of our curriculum of renewal for this very reason and continue to speak to the urgency of this work and the need to continue to expand it so that students never have to have experiences like this at such a young age.

Hayah No:ntik' (*To there it stretches*)

Throughout this article, I have highlighted the importance and possibility of a Na:tinixwe curriculum of renewal while simultaneously marking the ongoing challenges of doing so within a settler colonial context. Each curricular approach—Renewed Relationships with K'iwinya'ya:n (*Humans*) and Other Beings, Ninisa:n as Pedagogy, Renewed Ch'ixolchwe (*Story*) Praxis, Renewed Whing (*Songs*) and Intergenerational Knowledge Transmission—targets a specific type of renewal for everyone and everything involved. The language, the children, the families, the land are all reconnected in a good way. These approaches are seldom seen in the state schools that Na:tinixwe youth are mandated to attend, and so we must continue to build this work so that Na:tinixwe youth can have a Na:tinxwe education all the time, not just on special occasions or in small doses. This work in the community has grown tremendously since my initial inquiry project, and I am so excited to see and be a part of where it goes next. While much of this article is intentionally grounded in this specific people, space, and time, I hope to have brought up important questions and tensions around Indigenous resurgent and decolonial curriculum to speak to broader struggles against settler colonial curriculum in Indigenous spaces and places.

Lastly, I hope our work has inspired others to enact their own specific projects of Indigenous renewal.

References

Bushnell, J. H. (1968). From American Indian to Indian American: The changing identity of the Hupa. *American Anthropologist*, *70*(6), 1108–1116. https://doi.org/10.1525/aa.1968.70.6.02a00050

Chase, S. (2020). *Na:tinixwe education as a site for (re)newed words and worlds* [Doctoral dissertation, University of California, Berkeley]. UC Berkeley eScholarship. https://escholarship.org/uc/item/8c34j9wf

Coulthard, G. S. (2014). *Red skin, white masks: Rejecting the colonial politics of recognition*. University of Minnesota Press.

Goodyear-Ka'opua, N. (2013). *The seeds we planted: Portraits of a Native Hawaiian charter school*. University of Minnesota Press.

Iyengar, M. M. (2014). Not mere abstractions: Language policies and language ideologies in US settler colonialism. *Decolonization: Indigeneity, Education & Society*, *3*(2), 33–59. https://jps.library.utoronto.ca/index.php/des/article/view/19559/17835

Kauanui, J. K. (2016). 'A structure, not an event': Settler colonialism and enduring indigeneity. *Lateral*, *5*(1). https://doi.org/10.25158/L5.1.7

Merrick, S. L. C. (2024). Łe:k'iwhlaw 'O:lts'it: Knowledge gathering as a methodological approach to Na:tinixwe-based inquiry. *American Indian Culture and Research Journal*, *47*(1), 89–107. https://doi.org/10.17953/A3.1615

Norton, J. (1979). *Genocide in northwestern California: When our worlds cried*. Indian Historian Press.

Simpson, L. B. (2014). Land as pedagogy: Nishnaabeg intelligence and rebellious transformation. *Decolonization: Indigeneity, Education & Society*, *3*(3), 1–25. https://jps.library.utoronto.ca/index.php/des/article/view/22170/17985

Simpson, L. B. (2017). *As we have always done: Indigenous freedom through radical resistance*. University of Minnesota Press.

Wildcat, M., McDonald, M., Irlbacher-Fox, S., & Coulthard, G. (2014). Learning from the land: Indigenous land based pedagogy and decolonization. *Decolonization: Indigeneity, Education & Society*, *3*(3), I–XV. https://jps.library.utoronto.ca/index.php/des/article/view/22248/18062

Agency and Counter-Agency in Curriculum Studies
Teacher Work Against the Grain of Settler Futurities

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FOR ANYONE WHO HAS MET WITH OPPOSITION to teaching about Indigenous history, contemporary presence, and culture in k-12 schools, the stories to follow will likely feel familiar. Such curriculum often triggers resistance, not just in the form of reasoned debate about facts and age appropriateness of course content but also protean social and material resistance that is often entangled with national political discourses, widespread white fragility, settler culture inevitability and entitlement, institutionalized career insecurity, and individual habits of thought and feeling. Once activated, these shape-shifting assemblages[1] of material, discursive, and affective forces do not just make the work of teaching more difficult; they actively erase Indigenous truths, lives, and futurities from the curriculum. Through exploring narratives of how settler futurities reveal themselves as these assemblages, the hope is that this creates opportunities to imagine, deploy, and maintain a counter agency that challenges educators and curriculum theorists to engage with and navigate the complexities and possibilities of Indigenous futurities (Johnson & Jacob, 2022). Creating space for Indigenous futurities is not passive; it is not as simple as changing our mindset and motivations. It requires educators to participate and become a part of something larger than ourselves, to build complex networks and spaces of possibility, communities of support, for the work of moving towards Indigenous futurities.

What would be needed to prepare teachers to deliver curricula that resist the settler colonial erasure of Indigenous peoples, Indigenous claims to land, and Indigenous possibilities? Does such teaching involve telling the truth about local and national histories? Certainly, this is part of it. Does it involve including Indigenous epistemologies and cosmologies alongside Eurocentric epistemologies and scientific ontologies? Again, these are necessary inclusions.

Inclusion, however, is often a form of domestication and assimilation. It provides "a glimpse into an ethnic community, rather than a challenge to the mainstream values and goals of schooling" (Marker, 2006, p. 503). In the guise of pluralism, Indigenous culture, truths, and values become just one item in a long list of "diversity" achievements caught under an umbrella of settler-

colonial acquisitiveness. It is framed as an additive but is not transformative and serves to reinscribe a discourse of settler innocence (Tuck & Gaztambide-Fernández, 2013). It does not acknowledge the transformation of settler-colonial ideologies, epistemologies, and conceptions of reality required by genuine inclusion of Indigenous presence and perspectives.

Eve Tuck and K. Wayne Yang (2012) observe, "settler colonialism and its decolonization implicates and unsettles everyone" (p. 7). Once the "inclusion" of Indigenous experience becomes substantive—once the transformative philosophical, moral, and metaphysical implications of Indigenous history and survivance is understood, or even suspected—the reception of such curricula often changes. It moves from being embraced as a welcome addition to being resented and resisted as a burden and insult. More problematically, this resistance takes many forms, so it is difficult to anticipate.

This essay examines an episode of social studies teaching in which the inclusion of content about Indigenous history, contemporary presence, and culture triggered social and institutional resistance. The events take place in, arguably, an ideal setting for the enactment of a curriculum that challenged settler colonial ideologies. The lead author, an Indigenous teacher, was working in a school that served the community in which he was raised, whose enrollment was majority students from various Native backgrounds, and in a school led by an administrator who also identified as Indigenous. He expected this would be a place that would welcome the teaching of a heteroglossic narrative about U.S. and Oregon history that included perspectives of his Indigenous students' ancestors. Things, however, did not turn out that way. This leads to an inference that the curricula of settler colonialism cannot be thought of only in terms of textbooks, state standards, and lesson plans. It also includes agentic assemblages involving entire communities, settler ideologies, individual attitudes, career anxieties, and more.

Understanding curricula in this extended way implies that learning to teach against the grain of settler colonialism requires preparing teachers to engage with the whole of this dynamic, not just to include the ideas that are often left out of mandated school curricula. Drawing on the personal experiences of the lead author and a variety of conceptual resources, this essay offers both an illustration and a theorization of what substantively teaching in a manner that refuses to always and everywhere center settler futurities entails.

Settler Colonialism and Curricula

The work of resistance against curricular hegemony is often framed as educational "truth-telling." The teacher provides accurate information and counterstories about colonialism and racism, as well as multiple perspectives of history, and through the process, lessens the grip of these hegemonies on children's minds and on our shared society. Given the variety of deflections and resistances that often emerge in response to this kind of teaching, such an idealized view is oversimplified and, in some instances, counter-productive.

This is not a rejection of the necessity of "truth-telling." Certainly, some true stories about the past and present are currently excluded from our curricula, and those silences often need to be broken. However, more is required of teachers than to know that truth and to tell it to students. More is required, even, than designing a clever student-centered inquiry-based lesson where they encounter these social and historical truths themselves. Once this kind of curriculum is taught, it is not as if the disinformation dissipates like fog being burned off by the morning sun. The fog frequently fights back.

Having set aside an exclusive reliance on a truth-telling version of teaching, the question becomes: What understanding of the social studies curriculum would better enable teaching against the grain of the constantly shifting assemblages of Eurocentric narratives of national identity, individual comfort levels, real and perceived curricular mandates, and institutionalized settler-colonial power in schools?

Social studies curricula that decenter whiteness, settler colonialism, or capitalism receiving push-back is not a new or even uncommon phenomenon (Jackson, 2023; Sawchuk, 2021). Many scholars have provided critiques of the settler-colonial ideologies, as well as accounts of various strategies of resistance to the silences these ideologies enforce (Calderón, 2014; Kulago, 2019; Sabazalian, 2019; Shear & Krutka, 2019). Roxanne Dunbar-Ortiz and Dina Gilio-Whitaker (2016), in their book, *"All the Real Indians Died Off": And 20 Other Myths About Native Americans*, documented a variety of myths about Native American history that enable people to ignore or dismiss its implications for understanding our contemporary society. For example, Indigenous people are often framed exclusively as existing in the distant past, which avoids addressing the implications of the fact that Indigenous persons and communities are a part of contemporary society. Genocide of Indigenous peoples is often presented as an accidental consequence of disease as opposed to as an explicit policy of the U.S. government. Both of these are examples of the way settler futurities are sustained through the erasure of Indigenous presence and the manufacture of settler innocence.

Engaging with Indigenous futurities means stepping away from existing structures and educator comfort zones and stepping into spaces of possibility. We can do this by adopting an agentic understanding of settler colonial influences over educational spaces. This enables us to see settler futurity as always in motion. It also makes clear the need for a focus on equally dynamic Indigenous futurities that can guide and sustain efforts to decolonize curricula; as Laura Harjo (2019) states "[Indigenous futurities are] an action; it's a practice … that invokes our ancestors' and relatives' unactivated possibilities in our present lived moment, and it imagines future possibilities" (p. 34).

The process by which Indigenous history and culture are marginalized and settler futurities are privileged is often nuanced, or as Linda Tuhiwai Smith says, "tricky" (Smith, 2005)—meaning efforts to share this history are frequently not received the way they are intended. Often, the very means by which we seek to resist settler colonialism serve, ultimately, to reinforce colonialist hierarchies. Glen Coulthard (2014) outlines the limits of a politics of recognition, in which the effort to achieve visibility and acknowledgment only serves to reinscribe the power of colonizer culture by locating the power of validation in the settler-colonial systems of governance. Gerald Vizenor (2008) cautioned against portraying Indigenous identity and culture as static. Vizenor argues, using careful analysis of archival documents, that distinctive Indigenous identities and practices have evolved over time, adapting to new circumstances without assimilating into settler-colonial culture, norms, and narratives—a process Vizenor calls survivance. Similarly, Eve Tuck (2009) has written about the danger of "Damage-centered" narratives about Indigenous people, which, in the process of recounting real damage that has been done by settler colonialism, serves to misrepresent Indigenous peoples as identified exclusively with that damage.

Dolores Calderón (2014) details the implicit grammar of settler colonialism in k-12 social studies curriculum. These "grammars" presume settler superiority, the inevitability of the nation-state, and the myth of the USA as a nation of immigrants, all of which serve to preserve narratives of settler futurity. These narratives are unsettled by the continuing presence of Indigenous peoples in North America. Scott Manning Stevens (2021), in his excellent essay "On Native American

Erasure In The Classroom," points out how seemingly progressive gestures like the removal of offensive statues can feed a liberal moral narcissism, a narrative of moral purity that erases progressive non-Indigenous persons' responsibility to address the more intractable forms of institutionalized oppression in which we all live. Leilani Sabzalian (2019) explains the tension between the idea of Indigenous sovereignty and the ideal of multiculturalism in public schools and the need for teachers to understand the complex manifestations of Indigenous erasure in schools.

The stories and analysis to follow demonstrate that settler-colonial narratives about past and present social relations are not passive, simply awaiting the arrival of teachers who can present challenging facts and alternative viewpoints—the curricular equivalent of a politics of recognition critiqued by Glen Coulthard (2014). Looking closely at this sort of work, whether looking at individual classrooms (Mitchell & Rosiek, 2006; Pratt, 2021) or at policy playing out at a district or statewide level (Alexander, 2010; Rosiek, 2019; Rosiek & Kinslow, 2016) suggests that colonial cultural and institutional systems that sustain oppression actively resist the circulation of alternative viewpoints; they writhe and rebel against efforts to change the stories we tell ourselves about history and social reality.

Narratives of Personal Experience as Methodology

This study draws on multiple theories that endorse the use of personal stories as data, a practice of analysis, and as a mode of representation in research. Primary among these is Tribal Critical Race Theory (Brayboy, 2005), which speaks directly to the way personal narratives can be a part of a larger and longer cultural struggle against settler colonialism. Tribal Critical Race Theory respects personal experience as a source of insight that is more than just anecdote. Stories are the means by which we highlight things of lasting significance, draw attention to tensions that give structure to events, and build relations from the past, through the present, into the future. In his widely cited essay, "Toward a Tribal Critical Race Theory in Education," scholar Bryan Brayboy (2005) writes:

> TribalCrit honors stories and oral knowledge as real and legitimate forms of data and ways of being. Stories are not separate from theory; they make up theory. … stories serve as a way to orient oneself and others toward the world and life. (p. 439)

Insofar as the stories that follow are told from a particular perspective and include an evaluation of the events in the story, they constitute a form of theorizing about the experiences being recounted. This is done not just for the purposes of description but with an intent to advocate and intervene in what we regard as a relatively common colonialist dynamic.

The analysis in the stories is informed by and extends some of the tenets of Tribal Critical Race Theory. Most notably, it builds on the first tenet of critical race theory, that "colonization is endemic to society" (Brayboy, 2005, p. 429). The stories document the way endemic colonization manifests in curricular decisions in a school. It extends this tenet by highlighting the way colonialism is not just present throughout schooling processes but is actively moving and changing. It is protean and moves with purpose in the work of educators. By presenting this new view of curricula, these stories-as-theory enact the fifth tenet of Tribal Critical Race Theory by showing how Indigenous theories of non-human agency (e.g., Deloria, 1999; Garroutte & Westcott, 2013; Marker, 2006, 2018) transform familiar understandings of curriculum, power, and

knowledge and give them "new meaning when examined through an Indigenous lens" (Brayboy, 2005, p. 429).

The stories in this study take the form of what Sabzalian (2019) calls "survivance stories" (p. 3). In her book, *Indigenous Children's Survivance in Public Schools*, she explains how such stories reside at the intersection of settler colonialism, a structural form of oppression that transcends individual experience, and personal experiences of navigating those structures without being assimilated into them. She writes:

> Survivance stories are characterized by their attention to colonialism but also to varied practices of survivance within that experience. Survivance draws attention to "Indigenous peoples' "active sense of presence" (Vizenor, 1999, p. vii) and creative negotiations amidst colonial dispossession. (p. 4)

The stories that follow draw attention to the shifting nature of the work of attempting to teach against the grain of settler colonialism, particularly in the context of social studies teaching. The hegemonic stories about U.S. history that circulated through the school and community and put pressure on the teachers' pedagogical decision-making are framed not as passive but dynamic, even agential (Garroute & Westcott, 2013; Pratt, 2021; Rosiek & Kinslow, 2016). This required an equally dynamic response, constant adaptation, and vigilant tracking to ensure that the curriculum did not get pulled into an "undertow" that pervasive settler colonialism creates.

Stories About Teaching Indigenous History

My name is Sage Hatch, and I am a citizen of the Confederated Tribes of Siletz Indians in the State of Oregon. The stories that follow detail some challenges and frustrations I experienced as a first-year teacher. At some level, they may read like simple complaints or an inventory of professional grievances. This is not how they are intended. The purpose here is to reflect on the preparation to deliver Indigenizing and decolonial curricula that I received in my pre-service teacher education program and the part of that work for which I was not prepared. I was fortunate to have received my master's degree and teaching license from the Sapsik'ʷałá teacher education program at the University of Oregon, a program that recruits Indigenous teachers to work in schools that serve a significant number of Indigenous students.[2] This program was a part of a larger teacher education graduate degree program that emphasized the promotion of equity, inclusion, and justice in public schools. Despite receiving what I still think is excellent training, there were aspects of the work that simply were not addressed. In part, I believe this has less to do with my specific program than the way we think about curriculum itself.

My first teaching assignment started out auspiciously. I was offered and accepted the opportunity to return to my home community and work in a school with a large number of students who shared my cultural identity. I was invited to teach in a school in which the enrollment was ~ 50% Indigenous students. Most of the Indigenous students were from my own tribal community. The school had an Indigenous principal who was also the district superintendent (it was a very small district). This person recruited me by emphasizing the importance of Native educators working with Native students and modeling academic success to a new generation.

Story 1-Deflection

I was excited to have secured an assignment as a social studies instructor at a time when the State of Oregon had mandated teaching about the history and present lives of Oregon's Indigenous communities across the k-12 curriculum. *Oregon Senate Bill-13 (SB-13): Tribal History/Shared History* had just passed and directed the Oregon Department of Education to address Indigenous erasure in Oregon's k-12 curricula.[3]

I planned to take an intergenerational approach to a number of my lessons. If we were going to study the history and present lives of Oregon's Indigenous communities, my students would have direct access to those communities and people who knew about the local history and contemporary life in the Siletz nation. While doing this intergenerational work, I was also hoping to develop connections between my coursework and the coursework of my fellow high school teachers, specifically with the English Languages Arts (ELA) and science teachers. As I pursued these latter collaborations, I learned, to my surprise, that many of the teachers I was working alongside had not heard about the passage of SB-13 nor the implications it had for their subject areas. They were not opposed, simply uninformed.

I knew the State provided professional development resources to address such knowledge gaps. However, after asking around, I saw no indication that the district and the educators in my school building would be taking steps to meet the new state requirements, even though we had a large Native youth population.

I took this concern to the principal/superintendent and asked if the school would be preparing for the roll-out of Tribal History/Shared History mandate and how I might help. I did not think this would be a cause for strain, and so was surprised when the principal/superintendent told me the SB-13 policy was not currently a priority within the district. Instead, the superintendent asserted that teaching about Indigenous communities, history, and culture was the sole work of the Social Studies Department (me) and not that of the whole faculty. I pointed out that this was not what the new legislation mandated; it explicitly directed administration to support teachers of all subject matters to develop a curriculum that included Indigenous perspectives and ways of knowing. It would not be difficult, I added, to include Indigenous perspectives in a unit or two in science and English classes. I knew people who could offer professional development that would support this work. I said I would be willing to do it if necessary.

Ignoring the offer, the principal expressed doubts about the possibility of including an Indigenous lens within other subject areas, such as science.[4] Naively perhaps, or maybe a bit willfully, I pressed on. I cited current work being done within the Indigenous Traditional Ecological Knowledge (ITEK) movement (Whyte, 2013, 2018). Still dubious and probably frustrated that I was not taking the hint, the principal said he had not heard about such things and asked me to provide examples of how this could be included within the high school curriculum. This did not feel like a genuine invitation but rather like an effort to table the proposal. I left the conversation disappointed.

What is worth noticing, for the purposes of this paper, is that hundreds of people lobbied the State to get SB-13 (Tribal History/Shared History) passed so as to break a pernicious curricular silence. That was good work, but the curricular silence about Indigenous history and lives did not just dissipate as a result of that work. It interrupted the policy silence on this matter, inspired the development of curricular materials about Indigenous history and presence, and perhaps emboldened some teachers to try more Indigenized curricula. However, 100 miles away from the

state capitol, the silence persisted and proved it was capable of swallowing up the advocacy behind SB-13.

Often too stubborn for my own good, I did as I was asked. I approached the superintendent a couple of weeks later with several examples of ITEK curriculum that had been developed by the nine federally recognized tribes of Oregon for high school and middle school science teachers. I also provided a list of Indigenous authors whose works would represent Native voices in ELA classes while still upholding common core state standards for ELA coursework within our state. The principal responded first with confusion (possibly because he had forgotten he asked for these things) and then annoyance. He said he would look at the materials. I had no confidence that he would.

Notice that complying with a State mandate to include lessons about Indigenous history and culture involved work that had little to do with developing lessons. I had the lessons and curricular materials. The bigger challenge was navigating an inchoate disinterest and deflection of such inclusion. This resistance kept changing form.

Story 2: Surveillance

Later in the year, I encountered a more active and insidious form of resistance in response to a 3-week long unit on the American Indian Civil Rights movement. The objective of the unit was to modernize depictions of Native American culture and to emphasize the fluid nature of Native identity. I did this, in part, by introducing Gerald Vizenor's (2008) concept of "survivance" and examples of modern Indigenous art. During the third week, in the middle of one of the lessons, I received a phone call patched directly to my classroom. We had been told this would only happen during class in the event of an emergency and/or matters affecting students' health or safety. The students also understood this was exceptional and potentially urgent. So, I stopped what I was doing and took the call.

Rather than a concern for students' well-being, it was a request for a meeting with the principal. When I asked what the meeting would be about, the district office manager replied, "You'll see when you get here." I assented and told her I would come during the upcoming preparation period. She said I should come immediately and that they would be sending a stand-in who would watch my class.

I learned that there had been community complaints about my American Indian Civil Rights lessons. Consequently, the principal informed me that going forward, he wanted me to submit detailed, structured lesson plans for administrative approval and that I would change the curriculum, which members of the community had voiced concerns about or which the administration believed would create strife within the larger community. I offered assurance that there was nothing within the content of my coursework which I could not justify, whether for its accuracy, alignment with state standards, age appropriateness, the role it filled within the greater unit, or how the lesson developed usable skills for the students. But there was no provision for recourse, justification, or counter-proposals.

I requested examples of the curricular content community members had found objectionable. It turns out that the previous week, one of my students mentioned our discussion of the 1973 occupation of Wounded Knee by the American Indian Movement (AIM)[5] activists to his parents. That lesson made reference to the work of Leonard Peltier, an imprisoned Ojibwe activist and AIM leader who was later convicted of killing two FBI agents.[6] The student's guardian had

called the principal with a complaint that my curriculum had a political agenda and referred to it as "anti-American." This accusation functioned as what Calderón (2014) refers to as a colonial palimpsest,[7] an action which reinforces the notion that, because education has always been delivered in a specific way, it must continue to be performed in that manner.

Upon hearing this concern, the administrator made reducing the guardian's distress his highest priority. It is possible he did this because he had his own career concerns. Principals do not have a labor union and are dependent on the School Board's goodwill to retain their position. In a small town like this one, the majority white School Board is composed of local citizens who talk to community members on a regular basis. Complaints like this can circulate quickly and mobilize much broader resentments. Whatever his reasons, rather than supporting a curriculum that at times centered local Indigenous community priorities and perspectives, thereby unsettling taken-for-granted settler futurities, the principal attempted to compel a return to habituated avoidance of discussion of Indigenous perspectives on local and U.S. history, thus insulating settler futurities from displacement or change.

The challenge I faced in this situation was not that I needed knowledge and lesson plans, nor was I only dealing with vague deflections from a single administrator. These deflections were themselves part of a more distributed social phenomenon, one entangled with local personalities and politics, institutionalized career ladders, pervasive white fragility,[8] and probably national social media campaigns seeking to paint inclusive k-12 curricula as a threat to the nation.

Story 3-Supports

The third and final story took place late in the year and focused on a lesson about Two-Spirit[9] persons. An articulation of the term that allows for the fluidity that such a dynamic term requires, while still offering a shared sense of community to allow support across that diversity is offered by Marie Laing (2021):

> Two-Spirit is rooted in the fact that there are common experiences that we have as Indigenous people whose genders and sexualities are deemed "other" by cis-heteropatriarchy; thus, having a word to describe those commonalities while also leaving room for our differences helps us communicate and build community. (pp. 22–23)

A few students in my junior-level social studies class identified as Two-Spirit and had been receiving questions from other students and faculty about what this meant. So rather than leave them alone to do that educational work, it felt important to bring this topic into the curriculum. The unit I developed for this purpose provided examples from multiple cultures where we see various forms of this third gender role emerge or gender fluidity occurs—the Tenino term Waxlha, the Takelma Xa'wisa, and the Assiniboine Winktan, to name a few (Indian Health Services [IHS], 2022). The unit also enabled me to introduce students to the more general concept of intersectionality and to have everyone reflect on the multiple intersections of identity in which they lived.

By this time, although I still submitted my lessons to the principal, he had ceased to review them as far as I could tell.[10] Nonetheless, I knew this topic was fraught with potential missteps. The distinctly Indigenous conception of "Two-Spirit" can easily be trivialized or subsumed in more Eurocentric conceptions of sexuality and gender identity. Also, having already experienced

pushback for teaching about Indigenous perspectives on U.S. history, adding the possibility of pushback against teaching in ways that also challenge heteronormative futurities caused me some concern.

To prepare for this, I crafted a carefully worded lesson plan, aligned my work with several state standards for social studies, and contacted my union representative to inform her that there may be a conflict between myself and administration in the near future. After hearing the details, she confidently assured me that this was the curriculum they were striving for at a state level and comforted me by saying that there should not be any strife brought about by the subject matter of this particular unit.

Feeling comforted but still trepidatious, I moved forward with the unit. There was no student push-back. The students who identified as Two-Spirit approached me excitedly after the first class in which I introduced the subject and shared their appreciation for making space for the discussion of the topic. They took some of the curricular materials and shared them with other students and faculty whom they knew to be receptive. In the following days, I received meaningful questions from my teacher-peers, as well as from students in other classes about the material. It felt constructive, and I felt hopeful about the growth of knowledge and understanding of this subject among the school community.

The week I taught the unit passed without incident, and I had begun to relax. Then I received a call in the middle of a morning class. Expecting the office manager or the principal, I was surprised to hear a voice I did not recognize. The person on the other end of the line launched without preamble into a slew of questions about what I teach in my classes, including accusations I was pushing a "gay agenda." It took a moment to discern that I was speaking with a parent of one of my students; the office manager at the front desk had forwarded a call to my classroom during my lesson. I informed the parent that I would be happy to speak with them, but I was teaching a class and said they needed to go through the proper channels. When they failed to acknowledge this redirection and kept interrogating me, I hung up the phone. Shortly after, I received a call from the principal to come to the office at my earliest convenience. During the next break, I called my union representative, printed out my lesson plans, and made my way to the office.

At the office, the principal greeted me warmly; he proceeded to ask how I felt lessons were going and how the students were responding to my content and style of teaching. I told him, honestly, that I felt they were responding well on both fronts and that the background I shared with many of my students enhanced the rapport we enjoyed. He nodded, then leaned forward and asked, "Do you know who I just got off the phone with?" I responded, "I believe so, as the Office Manager forwarded the call to my classroom while I was in a lesson."

He raised an eyebrow and asked a few probing questions about my unit covering Two-Spirit people and intersectionality. I did not sense a personal hostility to the topic, but he clearly did not like getting calls from angry parents. Rather than attempt to describe the unit, I reached into my bag, removed the lesson plans, laid them on his desk, and informed him that I had contacted the union prior to teaching this lesson and that I would be willing to answer any questions from community members at a more appropriate time than during the school day. I informed him that I had to go as I did not want to be late for my next class. I said I thought the lesson provided an important service, not just to the students in our school who identify as Two-Spirit, but to almost everyone else who wants to be supportive of them but does not know how. He did not reply but seemed weary.

This final episode illustrates another level at which curriculum formation was taking place in my experience that year. It was not just knowledge about topics like Two-Spirit identities that was informing my development of curriculum. Nor was it only the assemblage of community members threatened by this curricular content, a principal vulnerable to community discontent, the politics of a white majority rural school board, and global and local settler colonial and heternormative discourses operating in a manner that sought to suppress curricula that centered Indigenous history, lives, and values. There were also supportive institutional structures—like the Teachers Union, Indigenous activists changing State curriculum standards and policy, and widespread queer-positive political movements—that worked in ways that supported the curriculum I was teaching. My knowledge of how to access, cite, and feel supported by these organizations and movements amplified their constructive influence on the curriculum in my classroom.

Also, there were the students themselves who demonstrated their support for this curriculum by their engagement in discussions, materials, and assignments. They were a significant part of the material and affective reality of my teaching, arguably the most important part. The students were connected to their families, community networks, online communities that supported their development of personal and political identities, and to each other. Through my interactions with them, all of these connections were influencing the curriculum in my classroom. If I had not been listening to my students' discussions of their personal experiences, if they had not shared their Two-Spirit identification with me, and if I had not considered that seriously, I would likely not have taught the unit on Two-Spirit gender. So, in a very real way, the students and their network of relations authored part of that week's curriculum.

Conclusions and Implications

In their article, "Curriculum, Replacement, and Settler Futurity," Tuck and Gaztambide-Fernández (2013) introduce the concept of settler futurities to the field of curriculum studies. They point out how, from the earliest stages of the European colonization of this continent, settler society has been characterized by a doubled and contradictory desire to both absorb Indigenous knowledge and ensure the future of settler society through the erasure of and replacement of Indigenous lives, community, and reality. This pattern is reproduced in curricular politics when schools want the representation of Indigenous people in textbooks and teaching positions, but not in a way that challenges the inevitability of settler presence and claims to land.

The stories presented here corroborate their insights. The setting for the stories should have been ideal for the enactment of a curriculum that centered Indigenous knowledge, perspectives, and histories. A newly certified Indigenous teacher, graduate of a teacher education program that provided preparation to serve Indigenous students, had been hired by a school that served his tribal community, a school with an enrollment of approximately 50% Indigenous students. What followed was a pattern of contradictory settler desires. The district wanted Indigenous representation on their staff and maybe even access to the knowledge that came with that, but the limit of that enthusiasm was reached quickly once the curriculum began to decenter narratives of settler futurity and inevitability.

The curricula taught, it should be noted, was not exceptionally radical nor confrontational. It was not as ambitious as the rematriated curricula Tuck and Gaztambide-Fernández (2013) recommend. Nonetheless, the resistance to it was immediate, relatively shrill, and distressing in its

scope. It was more than student discomfort, which was minimal. The resistance to teaching critically about settler colonialism in this high school manifested as an assemblage of parent affect, administrator anxiety, popular political discourse, and institutional power relations. This assemblage, although a collection of disparate elements whose form shifted over time, nonetheless had coherence and consistency of effect. It sought to silence teaching that centered Indigenous experience and knowledge.

The analysis embedded in the stories was crafted to build upon and extend Tuck's and Gaztambide-Fernández's (2013) critique of the way settler futurities are privileged in curricular practice and scholarship by looking closely at a first-year teacher's encounter with pushback against curricula that refused the hegemony of settler futurities. They highlight the protean and distributed nature of that resistance, the way it was embedded in material context and in local social and political discourses, and the way countervailing supportive material and social influences on the teacher's curricular decisions were also fluid and distributed. Rather than think of the presence of settler colonialism in curricula as a single thing, such as a misconception, misrepresentation, or even the absence of representation or specific concepts, the stories presented suggest it is something more resilient—a complex mix of social and institutional processes through which settler futurities continually reassert themselves.

Thought of in this way, the curricula of settler colonialism can be understood as having an agential character, an agency that is both discursive and material and that extends well beyond the classroom or even school building. Support for such an agential view of ideas and things can be found in the Indigenous studies literature (e.g., Deloria, 1999; Garroutte & Westcott, 2013; Marker, 2018, etc.). For example, Dr. Vanessa Watts (2013) writes "Non-human beings are active members of society. Not only are they active, they also directly influence how humans organize themselves into that society" (p. 23). Contemporary philosophers of science have also written about non-human agency (Barad, 2007; Braidotti, 2019; Latour, 2014; Rosiek et al., 2020; etc.).

This view of curricula also dovetails in important ways with several tenets of Tribal Critical Race Theory (Brayboy, 2005). For example, as colonization is endemic to society, the necessity to understand colonization and, by extension, settler colonialism as a shifting assemblage begins to allow the endemic nature of colonialism to take on a coherency. As Indigenous people occupy a liminal space, the stories above articulate a response to what happens within a settler colonial society when educators attempt to center Indigenous knowledge and experience.

Storytelling as a practice of theory is also essential in tracking the agential nature of curricula and settler colonialism's influence on our curricular practices beyond discrete lesson planning. Embedded within the work we ask teachers to do to challenge settler grammars (Calderón, 2014), which presume settler superiority, and preserve narratives of settler futurity that are unsettled by the continuing presence of Indigenous peoples in North America, counter-storytelling allows us to articulate how educators engage with systems of settler colonialism and challenge the presumption of the inevitability of settler futurities.

Rather than thinking of the curriculum as a set of facts, concepts, or integrated understandings, separate from the dynamic social and political processes that endorse or support certain kinds of learning, it seems more empirically accurate to think of the curriculum as the whole of this dynamic, resilient, agentic assemblage of ideas, institutional structures, and ideological processes. Trying to interrupt the hold settler futurities have on public school curricula, therefore, will not just be a matter of including new content. It will require developing counter-agency by connecting to a relational network of different institutional structures, social connections, place connections, and ideas that is sustainable long term. This could be as simple as

connecting with a teachers union or listening closely to students, or it might involve the forms of rematriation Tuck (2011) proposes, such as listening to ideas in a community, connecting to generational elders, or infusing Indigenous cosmologies and relationships to the land in one's curriculum.

This view of the curricular manifestations of settler colonialism has significant implications for the way we think about preparing teachers. The complex agential forces of settler colonialism are constantly at work in the academic spaces teachers inhabit. Teachers should be made aware of this. It is not enough that teachers know the truth about Indigenous history and tell that truth to their students when schools are spaces in which those truths are not always welcomed. Future educators also need to be prepared to navigate the social and institutional pushback that will likely emerge when settler futurities defend themselves. This requires building relationships with alternative Indigenous futurities, futurities which actively promote Indigenous epistemologies, metaphysics, and culture. Not a practice that is additive but rather transformative. The possibility of an agency that runs counter to that of settler colonialism makes possible a complex network not simply waiting to respond but one that is always in place and operates with the alacrity and fluidity of settler colonialism itself.

We see two affirming ways this could and should take place. First, the agential view of curriculum presented in this paper counsels against compartmentalization of our understanding of curricula itself. The complicated practical politics of teaching against the grain of settler colonialism should be acknowledged and addressed in teacher education programs. Doing so should not, however, be reduced to providing teachers with strategies for dealing with the political blowback that can come from refusing settler futurities, as if the inclusion of specific curriculum content is one thing and the material and affective work of navigating school politics is a separate thing. Instead, the kind of experiences related in this article suggest the need for an expansion of our understanding of curriculum itself, beyond the classroom, beyond discreet content knowledge, beyond individual student experience, and beyond even hidden curricula. Teachers would be better prepared for the work of refusing settler colonialism in schools if they understood curriculum as a complex mix of material, political, and affective relations of which particular knowledge claims and learning objectives are a small part.

This leads to a second useful affirmation that refusing settler colonialism in schools requires developing counter-agency through building relational connections beyond ourselves. The image of a single teacher arriving at a school with curricula that will transform students' lives is naive and unrealistic. Frankly, this image shares too many features with settler colonial missionary fantasies of progress and uplift. Unfortunately, that is still the image around which many of our teacher education programs seem to be built. The curricular face of settler colonialism is just that, a face, a part of something larger, part of a constantly evolving assemblage of material and institutional arrangements, individual attitudes, and dreams of settler futurity that are not dispelled or displaced easily. It evolves and actively resists the introduction of other visions of living and learning in our schools. Preparing teachers to refuse settler colonialism in our teaching, therefore, will require more than individual acts of critical consciousness and political will. It also needs to involve helping teachers learn how to become a part of something much larger than ourselves, practically building a network of institutional and social relations, locating sources of material support and security, and establishing personal connections in the communities that can help us sustain a practice of refusal that is as relentless and adaptive as settler colonialism itself. This may seem like asking a lot to enable what looks like a relatively simple inclusion of Indigenous histories, contemporary lives, and hopes for the future in k-12 curriculum. This

inclusion, however, is not simple at all. It is a necessary component of transformation. Settler colonialism is right to be afraid of it, but we should not be afraid to do this work.

Notes

1. We use the word assemblage to refer to complex relational phenomena involving divergent ontological elements (e.g., ideas, affects, discourses, economics, etc.) that cohere in some self-replicating manner and that often demonstrate agentic qualities (Bennet, 2010; Mazzei & Jackson, 2017). The contemporary usage of this term in the social sciences can be traced to the work of Deleuze and Guattari (2009), though not without some controversy (Buchanan, 2015; Nail, 2017; Weheliye, 2014). The first concern is that the term is often used too loosely, to refer to any collection of materials and processes. Here our usage of the term is consistent with Ian Buchanan's (2015) more precise view that "the assemblage is a 'living' arrangement … the assemblage is purposeful, it is not simply a happenstance collocation of people, materials and actions, but the deliberate realization of a distinctive plan (abstract machine)" (p. 385). The second concern is that the philosophies associated with the term have been used in a manner that reinscribes settler colonialism and Indigenous cultural genocide either by uncritically celebrating colonialist expansion, extraction, and abstraction (Byrd, 2011; King, 2017; Todd, 2016), by ignoring the way Indigenous thinkers have long presumed the existence and significance of a variety of forms of non-human agency (Rosiek et al., 2020; Watts, 2013), or by insisting on the ideal of subjectless social analysis that disallows arguments grounded in the experience of identity-based oppression (King, 2017; Weheliye, 2014). We are aware of these critiques and find them valid yet, like many, still find the term useful (Honeyford & Watts, 2020; Nxumalo, 2021; Weheliye, 2014) and explicitly use it in a manner that critiques colonialism, acknowledges Indigenous theories of non-human agency, and explicitly grounds our analysis in an Indigenous teacher's experience of systemic silencing.
2. Sapsik'ʷałá program began in 2002 to address the need for American Indian/Alaska Native (AI/AN) teachers. The program collaborates with all Nine Federally Recognized Sovereign Indian Nations of Oregon and the UOTeach master's program to deliver a pathway for Indigenous people to become teachers within their communities. (https://education.uoregon.edu/sapsikwala)
3. SB-13 was endorsed by the Oregon Department of Education (ODE). Once passed, they were provided funds to assemble a team of experts to develop k-12 Native American Curriculum for inclusion in Oregon public schools and to provide professional development to educators on how to use and extend the curriculum within their classrooms. This was understood to apply to all k-12 curricula, not just social studies curricula.
4. This discussion had already happened at the state level, among the advocates for the Bill. Legislative subcommittees and state level education boards had acknowledged the necessity for Indigenous education outside of a social studies lens.
5. It needs to be noted here that recent scholarship on the AIM movement and tribal nationalism movements generally, have been critiqued meaningfully for their lack of engagement with historical and contemporary sexism (Ramirez, 2007). Mentioning these critiques is important because failing to do so risks naturalizing these patterns of heteropatriarchy. Related, examples of Indigenous women who have been leaders in decolonizing politics over the last century were provided later in the unit, so AIM was not the only example of this kind of organizing presented to the students. The students also worked with course materials regarding the "Idle No More" Movement founded in 2012 by Jessica Gordon, Sylvia McAdam, Nina Wilson, and Sheelah McLean.
6. The evidence of Peltier's guilt was weak, and for this reason, many organizations have called for his release including Amnesty International, the Southern Christian Leadership Conference, The Robert Kennedy Memorial Foundation for Human Rights, and others.
7. A manuscript or piece of writing material on which the original writing has been effaced to make room for later writing but of which traces remain.
8. Referring here to both the white fragility as it manifested in specific white parent responses to reports of the curricula about history told from an Indigenous perspective and to general specter of possibility of broader white backlash that seemed to concern the principal.
9. Indigenous gender identity has been more complex than the familiar western gender binary since pre-contact. It is relatively recently that this difference has been given a name by Indigenous activists. At the 1990 Native American Gay and Lesbian conference in Winnipeg, Manitoba, Canada Fisher River Cree Elder Myra

Laramie introduced the term Two-Spirit. Since its introduction (Wilson, 2010), Two-Spirit has become an identity category that many Indigenous LGBTQIA2S+ people have begun to identify with as a way to signal and identify simultaneously with both their Indigeneity and their queerness (Wesley, 2015). Indigenous articulations of gender are complex and multilayered. They cannot be reduced to most contemporary whitestream conceptions of gender and sexual diversity that may have a surface overlap (Wilson, 2010). Hundreds of Indigenous identities are coming together across geopolitical regions to develop and negotiate Two Spirit identities; the definition and understanding of this term must remain fluid.

10. Given his multiple duties as principal and district superintendent, he likely did not have the time for managing curriculum at such a fine grained level.

References

Alexander, M. (2010). *The new Jim Crow: Mass incarceration in the age of colorblindness*. New Press.

Barad, K. (2007). *Meeting the universe halfway: Quantum physics and the entanglement of matter and meaning*. Duke University Press.

Bennett, J. (2010). *Vibrant matter: A political ecology of things*. Duke University Press.

Braidotti, R. (2019). *Posthuman knowledge*. Polity Press.

Brayboy, B. M. J. (2005). Toward a tribal critical race theory in education. *The Urban Review, 37*(5), 425–446. https://doi.org/10.1007/s11256-005-0018-y

Buchanan, I. (2015). Assemblage theory and its discontents. *Deleuze Studies, 9*(3), 382–392. http://dx.doi.org/10.3366/dls.2015.0193

Byrd, J. A. (2011). *The transit of empire: Indigenous critiques of colonialism*. University of Minnesota Press.

Calderón, D. (2014). Uncovering settler grammars in curriculum. *Educational Studies*, *50*(4), 313–338. https://doi.org/10.1080/00131946.2014.926904

Coulthard, G. S. (2014). *Red skin, white masks: Rejecting the colonial politics of recognition*. University of Minnesota Press. https://doi.org/10.5749/minnesota/9780816679645.001.0001

Deleuze, G., & Guattari, F. (2009). *Anti-Oedipus: capitalism and schizophrenia*. Penguin.

Deloria, V. (1999). *Spirit and reason: The Vine Deloria, Jr., reader.* Fulcrum.

Dunbar-Ortiz, R., & Gilio-Whitaker, D. (2016). *"All the real Indians died off": And 20 other myths about native Americans*. Beacon Press.

Garroutte, E., & Westcott, K. (2013). The story is a living being: Companionship with stories in Anishinaabe Studies. In J. Doerfler, N. J. Sinclair, & H. K. Stark (Eds.), *Centering Anishinaabeg Studies: Understanding the world through stories* (pp. 61–80). Michigan State University Press.

Harjo, L. (2019). *Spiral to the stars: Mvskoke tools of futurity*. University of Arizona Press.

Honeyford, M. A., & Watt, J. (2020). Practising place-thought and engaging in critical place inquiry in a public park: Listening, letting go, and unsettling our writing pedagogies. In K. Toohey, S. Smythe, D. Dagenais, & M. Forte (Eds.). *Transforming language and literacy education: New materialism, posthumanism, and ontoethics* (pp. 32–53). Routledge.

Indian Health Service. (2022). *Two-Spirit*. U.S. Department of Health and Human Services.. https://www.ihs.gov/lgbt/twospirit/

Jackson, S. (2023). The place of world history in South Dakota's failed 2021 Social Studies Standards revision process. *World History Connected*, *20*(1), 1–23. https://doi.org/10.13021/whc.v20i1.3527

Johnson, S. R., & Jacob, M. (2022). Educating for Indigenous futurities: Applying collective continuance theory in teacher preparation education. *Transmotion*, *8*(1), 176–208. https://doi.org/10.22024/UniKent/03/tm.978

King, T. L. (2017). Humans involved: Lurking in the lines of posthumanist flight. *Critical Ethnic Studies*, *3*(1), 162–185. https://doi.org/10.5749/jcritethnstud.3.1.0162

Kulago, H. A. (2019). In the business of futurity: Indigenous teacher education & settler colonialism. *Equity & Excellence in Education*, *52*(2-3), 239–254.

Laing, M. (2021). *Urban Indigenous youth reframing two-spirit* (1st ed.). Routledge. https://doi.org/10.4324/9781003094296

Latour, B. (2014). Agency at the time of the anthropocene. *New Literary History*, *45*(1), 1–18. https://doi.org/10.1353/nlh.2014.0003

Marker, M. (2006). After the Makah whale hunt: Indigenous knowledge and limits to multicultural discourse. *Urban Education*, *41*(5), 482–505.

Marker, M. (2018) There is no place of nature; there is only the nature of place: Animate landscapes as methodology for inquiry in the Coast Salish territory. *International Journal of Qualitative Studies in Education*, *31*(6), 453–464. https:/doi.org/10.1080/09518398.2018.1430391

Mazzei, L. A., & Jackson, A. Y. (2017). Voice in the agentic assemblage. *Educational Philosophy and Theory*, *49*(11), 1090–1098. https://doi.org/10.1080/00131857.2016.1159176

Mitchell, R., & Rosiek, J. (2006). Professor as embodied racial signifier: a case study of the significance of race in a university classroom. *Review of Education, Pedagogy, and Cultural Studies*, *28*(3-4), 395–379. https://doi.org/10.1080/10714410600873274

Nail, T. (2017). What is an assemblage? *SubStance*, *46*(1), 21–37. https://doi.org/10.1353/sub.2017.0001

Nxumalo, F. (2021). Disrupting anti-Blackness in early childhood qualitative inquiry: Thinking with Black refusal and Black futurity. *Qualitative Inquiry*, *27*(10), 1191–1199. https://doi.org/10.1177/10778004211021810

Pratt, A. B. (2021). Teaching curriculum theory as a Baradian apparatus. *Educational Philosophy and Theory*, *54*(12), 2029–2042 https://doi.org/10.1080/00131857.2021.1972415

Ramirez, R. (2007). Race, tribal nation, and gender: A native feminist approach to belonging. *Meridians*, *7*(2), 22–40. https://doi.org/10.2979/MER.2007.7.2.22

Rosiek, J. (2019). Critical race theory meets posthumanism: Lessons from a study of racial resegregation in public schools. *Race Ethnicity and Education*, *22*(1), 73–92.

Rosiek, J., & Kinslow, K. (2016). *Resegregation as curriculum: The meaning of the new segregation in public schools*. Routledge.

Rosiek, J. L., Snyder, J., & Pratt, S. L. (2020). The new materialisms and Indigenous theories of non-human agency: Making the case for respectful anti-colonial engagement. *Qualitative Inquiry*, *26*(3–4), 331–346. https://doi.org/10.1177/1077800419830135

Sabzalian, L. (2019). *Indigenous children's survivance in public schools* (1st ed.). Routledge.

Sawchuk, S. (2021, May 18). What is Critical Race Theory, and why is it under attack? *Education Week*. https://www.edweek.org/leadership/what-is-critical-race-theory-and-why-is-it-under-attack/2021/05

Shear, S. B., & Krutka, D. G. (2019). Confronting settler colonialism: Theoretical and methodological questions about social studies research. *Theory & Research in Social Education*, *47*(1), 29–51. https://doi.org/10.1080/00933104.2018.1541428

Smith, L. T. (2005). On tricky ground: Researching the native in the age of uncertainty. In N. K. Denzin & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (pp. 85–107). Sage.

Stevens, S. M. (2021). On native American erasure in the classroom. In J. E Cohen, S. D. Raynor, & D. A. Mack (Eds.), Teaching race in perilous times (pp. 23–39). SUNY Press.

Todd, Z. (2016). An indigenous feminist's take on the ontological turn: 'Ontology' is just another word for colonialism. *Journal of Historical Sociology*, *29*(1), 4–22. https://doi.org/10.1111/johs.12124

Tuck, E. (2009). Suspending damage: A letter to communities. *Harvard Educational Review*, *79*(3), 409–428. https://doi.org/10.17763/haer.79.3.n0016675661t3n15

Tuck, E. (2011). Rematriating curriculum studies. *Journal of Curriculum and Pedagogy*, *8*(1), 34–37. https://doi.org/10.1080/15505170.2011.572521

Tuck, E., & Gaztambide-Fernández, R. (2013). Curriculum, replacement, and settler futurity. *Journal of Curriculum Theorizing*, *29*(1), 72–89.

Tuck, E., & Yang, K. W. (2012). Decolonization is not a metaphor. *Decolonization: Indigeneity, Education & Society*, *1*(1), 1–40. https://jps.library.utoronto.ca/index.php/des/article/view/18630

Vizenor, G. R. (1999). Manifest manners: Narratives on postindian survivance. University of Nebraska Press.

Vizenor, G. R. (2008). Survivance: Narratives of Native presence. University of Nebraska Press.

Watts, V. (2013). Indigenous place-thought and agency amongst humans and non-humans (First Woman and Sky Woman go on a European world tour!). *Decolonization: Indigeneity, Education & Society*, *2*(1), 20–34. https://jps.library.utoronto.ca/index.php/des/article/view/19145

Weheliye, A. G. (2014). *Habeas viscus: Racializing assemblages, biopolitics, and Black feminist theories of the human*. Duke University Press.

Wesley, D. L. (2015). *Reimagining two-spirit community: Critically centering narratives of urban two-spirit youth* (Publication No. 1032939263) [Master thesis, Queen's University]. QSpace: Queen's Scholarship & Digital Collections. https://qspace.library.queensu.ca/bitstreams/7e4b3989-5774-4f26-a42f-5449214b79a3/download

Whyte, K. P. (2013). On the role of traditional ecological knowledge as a collaborative concept: A philosophical study. *Ecological Processes*, *2*(1), Article 7. https://doi.org/10.1186/2192-1709-2-7

Whyte, K. (2018). Settler colonialism, ecology, and environmental injustice. *Environment and Society*, *9*(1), 125–144. https://doi.org/10.3167/ares.2018.090109

Wilson, A. (2010). How we find ourselves: Identity development and two spirit people. *Harvard Educational Review*, *66*(2), 303–318. https://doi.org/10.17763/haer.66.2.n551658577h927h4

Ancestral Computing for Sustainability
Learning From Indigenous Mothering While (Re)Birthing Computing Education Toward Indigenous Futurities

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Dedication

To all life forms whose wombs grow ideas, seeds, life for the communal wellness of Earth and the next seven generations.

Letter to un Retoñito Floreando,[1] Copitzin[2]

NOQUICHCONETL DIVINO, my greatest teacher, tierra sagrada, cielo divino, Tlazohcamati for offering me the deep privilege and sacred opportunity to live and learn by your side. You have taught me to imagine the world through your eyes and to give my inner child the opportunity to play, as if for the first time. Little, big growing tree, this journey together is largely the inspiration for this paper, and the path that I walk as your Nantzin.[3]

Te escribo estas pocas palabras con mucho amor y cariño, respeto, por la persona que eres.[4] In these pages, my hope is to share how you, Copitl, have inspired lessons in Indigenous Mothering so others, like computing education curriculum theorizers, can have the opportunity to see what our story of relational accountability for the stewardship of Earth is like. I trust that computing education curriculum theorizers and developers can dignify the universes of Indigenous epistemologies in education through these insights we humbly offer.

In writing this manuscript, I had a few considerations: What experiences are okay to share in public? For what purpose? How might I approach your consent, Copitl, in sharing this information? Is it even possible? I ask your forgiveness, Copitzin, if any unintended harm is done by these words. You are young and not yet old enough to consent to use your name in this manuscript. Therefore, we use anonymized versions of these stories to protect you from unintended harm. After careful consideration, including communications and active dialogue with our elders,

I offer this collection of stories to inform curriculum development for computing education as a way of nurturing Indigenous futurisms. May we continue to walk the flowery path of our ancestors, with dignity for all.

With love, Nantzin

Introduction

Indigenous Mothering is a sacred responsibility that nurtures generations of hope by preserving and revitalizing ancestral knowledge systems in times of spiritual, psychological, and physical warfare of white settler colonialism (Brant, 2023; Fiola, 2015; Keelan-Peebles, 2023; Ocampo, 2023; Revilla, 2021; Wall Kimmerer, 2013). This offering is a writing of critical reflexivity for nurturing Indigenous futurities in computing education curricula. In general, computing education curricula is in dire need of an ethical compass. April Lindala, Indigenous scholar and co-researcher of a research project I will later describe, posed a statement at one of our writing retreats that left me wondering, "Computer science education needs a womb." As a research team at this writing retreat, we pondered on how we might form that Indigenous womb for computing education over time.

Hence, I ask: How might Indigenous Mothering practices offer computing education, an otherwise military child, a radical rebirthing in a nurturing womb that intentionally centers the protection of children and Earth for future generations? Exploring the fortitude of Indigenous Mothering to understand how one might center relational accountability in computing education and production can promote sustainable, Indigenous futurities. As an example of exploring Indigenous Mothering in computing education, I offer my critical reflexivity of my first-time Indigenous Mothering as a Xicana Indigenous scholar, one of a team of Black and Indigenous researchers of Ancestral Computing for Sustainability[5] (ACS), a research project that interweaves seemingly disparate worlds of Indigenous Studies and computing education for Indigenous resurgence and the protection of Tlalticpac, Nahuatl word for Earth (Lopez-Quiñones et al., 2023; Moreno Sandoval, 2014, 2017, 2019).

My grandmothers' spirits live in me. Their language and worldview are grounded in Nahuatl cosmology and Earth-based (agricultural) practices. While Spanish language and culture were forced on us during the 500+ year colonial period, Nahuatl language and cosmologies remain grounded in subtle and sometimes overt ways. For example, to use a pick to loosen soil, neither my grandmothers nor parents use(d) the Spanish word "pico." Instead, they use "talachi/talache," which means to lift the earth's skin, and use their hands to feel the quality of the soil before planting seeds for the season. In doing so, they have instilled in me the importance of observing and engaging with the seasons and foods as if they were our relatives. I have heard my grandmother talk to the boiling water while cooking beans in a clay pot. One of my grandmother's metaphors for living has deepened my critical reflexivity; she stated: Cuando apuntas el dedo a alguien, te regresan tres a ti (When you point a finger at someone, three fingers point back to you.). For as far as the eyes can see and ears can hear, my family has spent their lifetimes tending/relating to the Earth. We are macehualli, commoner agricultural peoples from what is now known as Zacatecas, Mexico. For three generations, my family made the pilgrimage up North from Mexico to the United States to work as braceros (temporary agricultural workers), continuing to tend/relate to Earth in the best ways we know how. For over forty years, my parents have continued to scavenge for recycled material on the streets and in the dumpsters of local restaurants. In doing so, the

teaching I received was to minimize waste in landfills, conserve energy, promote ancestral memories of zero waste societies, and transform other people's trash into resources to make a living.

My family has shaped my worldview and research practice. I am part of a nourishing, unapologetically decolonial research team that facilitates Indigenous Motherhood by centering research as ceremony (Wilson, 2008) while being intentional about decolonizing time (Patel, 2015) and unlearning settler grammars in education (Calderón, 2014). To this end, I illustrate how Indigenous Mothering can offer computing curriculum theory a framework from which to engage Ancestral Computing for Sustainability (ACS) toward Indigenous futurities in computing education.

As a way of theorizing curriculum (Lee & Soep, 2023; Tuck, 2011), I apply the dynamics of Indigenous Motherhood throughout the article in ways that center children in the decisions one makes for communal wellness across environmental, social, and economic experiences. To this end, I ask what if:

- formal education institutions sharpened their ethos to challenge computing and its practices from war-mongering and capital gain over the collective well-being of all people and the planet?
- in consideration of a new ethos, computing education was offered a new beginning in a womb of radically unapologetic Indigenous Motherhood?
- we re-evaluated computing in support of Indigenous parenting as it asserts Indigenous futures and nurtures what Zapatista philosophy (Malott, 2008) promotes: a world where all worlds co-exist with dignity?[6]
- we imagine the design of curricula that produces and uses computer science hardware in socially and environmentally sustainable ways that consider the next seven generations?

These aforementioned questions prompt curriculum writers to consider the foreseen and unforeseen consequences of computing production in current times. This requires the unpopular questioning of the all-pervasive gadgets and the iterations of computing hardware we have come to depend on.

While the focus is on curriculum writers, curriculum studies are but one point in a constellation of factors that mitigate students' experiences in schools. The computing industry, for example, might set the tone for computing education. Similarly, economic demands for computing gadgets might supersede curricular advances in ethical and sustainable computing. Other factors are the professional development of educators and their resources to roll out radical ideas and calls to action like the ones presented in this paper. Whichever the case, Indigenous futures in computing education must be experienced as a village-like approach to living and learning—meaning, every point in the constellation of learning matters—especially when making decisions that impact the next seven generations (Doxtater, 2016).

This article offers an opportunity for readers to experience writing unconventionally. From this point forward, I invite you to leave off the usual expectations regarding the flow of academic papers. This is intended to be more of a conversation where the reader can reflexively participate rather than predictable approaches to writing that presume the reader to be an empty, passive receptacle to be filled by this knowledge (Calderón, 2014). In addition, this paper offers its readers an opportunity to imagine Indigenous Motherhood as a vessel, sustainer, and giver of life for

grounding Indigenous futurities through computing education.

In exploring the rich tapestry of Indigenous Motherhood, I adopt a lens that transcends traditional and biological confines. Indigenous Motherhood (Lavell-Harvard & Anderson, 2014; Lutz et al., 2022; Prior et al., 2023; Raval, 2023) is multifaceted. It extends beyond the physical act of giving birth and challenges the limitations of gendered and heteronormative frameworks. Indigenous Mothering extends beyond individuals with wombs, including those who embody motherhood through childbirth as well as those who nurture and guide future generations. It takes a village to raise the future. In embracing this more encompassing perspective, I strive to create a space that respects the varied paths and identities within Indigenous Motherhood, fostering a narrative that is reflective of the diverse and interconnected web of Indigenous life and futurities.

Learning from Indigenous Motherhood

Nelson et al. (2022) describe Indigenous Mothering as it relates to pre- and post-settler colonialism. They explore "how rematriating can allow us to begin not always with the story of settler colonialism but with a story grounded in place and motherhood" (p. 5). Indigenous Motherhood and land reclamation go hand-in-hand. For example, when mothers give birth aided by trees,[7] this birthing gives the baby an instant connection to Earth and place and tree relatives. Rematriating the land can include giving land back to the stewardship of Indigenous Nations for land restoration and communal wellness. For example, Sogorea Té Land Trust[8] is the first urban Indigenous women-led land trust in Lisjan territory (East San Francisco Bay Area). Their programs include reclaiming stolen land, growing medicine gardens and foods, distributing this produce to elders in the community, and revitalizing Indigenous languages and cultural practices. Rematriating Indigenous Motherhood may include a variety of cultural practices based on Native science of health and wellness—for example, (a) using a *rebozo* (shawl) during pregnancy, birthing, and baby carrying, (b) Indigenous chestfeeding, revitalizing ancestral foodways for baby's first foods, and (c) singing songs in Indigenous languages. These ancestral practices promote healthy bonding between baby and parents, but also environmentally sustainable practices.

One example of this rematriation of Indigenous Motherhood can be seen in the trilingual lullaby that I created with my Nahuatl teacher, Huitzilmazatzin, while breastfeeding Copitzin. As a first-time mother, and scholar warrior, it brings me great pleasure to share this song with you in Nahuatl, Spanish, and English. The lullaby was inspired by a vision I had while I was breastfeeding my Little One to sleep. I saw a White River flowing in a continuous motion from-and-to Mother Earth, passing through my body and into my baby's. The breastfeeding, the pearly-moon-glow-colored river is voluptuous, cascading over great valleys when my Little calls her. Other times she is soft and gentle in the quietness of her rejuvenation. All the rivers of breastfeeding mothers join the Great Mother Blue Ocean. These are the sacred ebbs and flows of breastfeeding. In a similar ebb and flow, the song's original form, which can be seen in the first column, begins in Spanish, moves to Nahuatl, and ends in English. The two additional columns are Spanish and English translations of the original lullaby. Notice the relationship between Indigenous Motherhood and the intimate connection with land and water. I use this lullaby to invite my baby to sleep, nurturing his cognitive and socio-emotional development and our sacred attachment. We give life to each other in this beautiful ecology of co-existing as we prepare to meet in the dream world.
May this lullaby nourish you, too.

Zan Xitēmiqui, A Trilingual Lullaby[9]

Duérmase mi niño	*Duérmase mi niño*	*Sleep, my child*
Duérmase mi bien,	*Duérmase mi bien, Sólo*	*Sleep, my love,*
Zan xitēmiqui	*sueña*	*Just dream*
Īcuexānco monān,	*En el regazo de tu madre,*	*In your mother's lap*
White river flow	*Fluye río blanco*	*White river flow*
Moon glow, moon glow	*Luz de luna, luz de luna*	*Moon glow, moon glow White*
White river flow	*Fluye río blanco*	*river flow*
Moon glow, moon glow	*Luz de luna, luz de luna*	*Moon glow, moon glow*

Indigenous Motherhood can also help us reimagine how computing education can be accountable to environmental protection and sustainability. Dawn Marsden (2014), a single Indigenous mother, was called to build a sustainable intergenerational starship society in which she delineated fifteen principles to nurture Indigenous Motherhood and the Protection of Mother Earth. These principles include the following: 1) center a spiritual-based living, 2) integrate interconnectedness, 3) nurture environment-centered thinking, 4) move towards self-sufficiency and self-discovery, 5) recognize the gifts in everyone, 6) engage in apprenticeship training, 7) assert self-determination, 8) find communal sources of food and water, 9) strengthen relationships in community, 10) work towards free trade and gifting, 11) adopt restorative justice approaches to conflict, 12) revitalize public rites of passage, 13) consistent circle talk, 14) consensus-making, and 15) leadership from below as opposed to top-down hierarchies (Marsden, 2014, pp. 215–230). Notice how Marsden centers cooperative living in a complex world. By including "strengthening relationships in community," "consistent circle talk," and "adopt restorative justice approaches to conflict," she acknowledges that Indigenous Motherhood does not exist in a vacuum.

Marsden's fifteen Indigenous Mothering principles can be applied to Ancestral Computing for Sustainability in ways that computing educational theorists and curriculum writers can ground for computing production. Despite the intentions of raising healthy children, life within white settler colonialism can bring about unforeseen challenges. This reality posits that asserting self-determination and experiencing joy is a radical, subversive act. Drawing from ancestral knowledge systems, Marsden's principles for Indigenous single mothering in a fragmented world offer us a third space where one draws from the deeply rooted ancestral knowledge systems despite and in the face of white settler colonialism.

These theories and practices of Indigenous Motherhood invite me to imagine: *What if formal education institutions sharpened their ethos to challenge computing and their practices from war-mongering and capital gain over the collective well-being of all people and the planet?*

Computing Education and Consumption within White Settler Colonialism

Computing education is deeply embedded within white settler colonialism and reproduces colonial harms and practices of extraction and consumption. Carroll-Miranda et al. (2023) contend that "advanced global capitalism has humanity to the brink of self-destruction" (p. 144). The extraction of wealth and natural resources in the 21st century is the continuation of conquest of Indigenous populations across the globe (Bruyneel, 2007). Advanced global capitalisms' aggressive extraction has systematized ongoing genocide/ecocide that is annihilating not only Indigenous communities (Crook & Short, 2020; Dunlap, 2021; Kahn et al., 2014) but has a total

disregard for the sacredness of our spaces and all other sentient beings that inhabit this earth. Moreover, "computing has expanded its invasive and extraction nature to the innermost regions of self, creating an Age of Disruption embodied by a form of technological madness" (Stiegler, 2019 as cited in Carroll-Miranda et al., 2023, p. 144). Computing education in its current form promotes imperialism and a reliance on extractivist economies making healthy ecosystems that have been sustained for millenia and the health of future generations nearly impossible to imagine.

In addition to questions about producing computing, there are other questions to be raised about computing consumption. At times, Indigenous parenting may be confronted with difficult questions related to digital technology.

Table 1 - Questions about Computing Consumption from General Parenting and Indigenous Parenting Viewpoints

General parenting questions may include:
1. When is screen time appropriate for children?   2. How much is too much screen time for children?   3. What digital programming content is appropriate for children?   4. Rather than *consuming* digital technology, what about *producing* digital technology through practicing coding, hardware and software production, web, and game development?
Centering Indigenous Parenting, I ask:
1. To what extent might avid digital technology use override children's interest in playing outside with un/structured learning time in Mother Earth?   2. How might the consumption of digital technology interfere with a child's spiritual well-being that can be centered on interdependence with Mother Earth?   3. How might digital technologies encourage the expectation of quick commodification of learning/consumption? At what price? For whom?   4. How is our physical health/general well-being prioritized while using digital technology, especially for long periods of time? (sleep deprivation, loneliness, EMF/radiation exposure, addictive qualities of over-consumption, comparisons of oneself to social media presence affecting self-esteem and identities, emotional turmoil, being treated as a babysitter, quick solution to lack of village surrounding us, considering a relationship with time—e.g., being connected with the land has a unique temporality vs. technology, which has a different rhythm, how to navigate in healthy ways, hypersensitization vs seasons)   5. How might digital technology impact relationships between people in the flesh?   6. How might we encourage children to produce computing when computing education remains a servant to a myopic sector of the world's population?   7. How might one reconcile (or not) with participating in computing production, including but not limited to data storage and supercomputing centers, that inevitably accumulates e-waste in poor communities and creates toxicity for Earth?   8. Is training for a high-paying job in the tech industry worth the unintended consequences of contributing to the digital toxicity of the world?   9. What options do I have for my five-year-old, Indigenous, brown-skinned son to set him up for success in the future? Is computing education as it is today one of those choices?

Indigenous epistemologies exist in various temporalities that are *not* centered on capitalist production and the severing of people's interdependence with place-based relationships. For example, slow cooking and slow processing are valued. We may feel pressured to "be more efficient" with time spent on life's activities from a capitalist point of view. It may take up to a year or more to prepare for the first hunt with relatives, passing down oral traditions of planting seeds and cooking, etc. Similarly, Ancestral Computing for Sustainability can center place-based relationships and relational accountability that embeds a constellation of factors that relate to teaching and learning computing education. For example, these factors may include positive ancestral identity formation, renewable energy, upcycling of computing hardware, localized cooperative economies, etc. How might computing educators, industries, and curriculum writers learn from Indigenous Mothering for the well-being of the next seven generations? What if, as part of considering a new ethos, computing education was offered a new beginning in a womb of radically unapologetic Indigenous Motherhood?

Ancestral Knowledge Systems

To understand how ancestral knowledge can inform computing, we can look to examples of ancestral knowledge, many of which are embedded in and shared through our stories, our songs, our foods, and our cooking. Ancestral knowledge systems are also intimately connected to Indigenous Motherhood. Nelson et al. (2022) tells of her grandmother reminding her to help others in her journey of Indigenous Motherhood. Elders are keepers of traditional ecological knowledges.

I fondly remember the long stories that the elders in my family shared in the kitchen, by the wood-burning stove. The stories about walking hundreds of miles over the years, shepherding cattle with the help of dog companions, crossing rivers, observing "*el lucero*"/Venus in the sky as a compass for planting seeds and harvesting, preparing and consuming ancestral foods, relying on the interdependence of life-giving elements to walk in the world as an *arriero*.[10] My maternal grandmother, Nana Lencha, was sought out by families in the village for her knowledge of healing and birthing. She was a bone-setter and midwife. She birthed some of her own children, unassisted, and often massaged dislocated bones into place. These knowledges about living and learning are precious and must be an accessible reality for children and the future of computing.

Another example of insights into millenia old ancestral knowledge systems is found in The Florentine Codex Book 6 Chapter 18, the *Huehuetlahtolli*. This volume was written by Nahua Indigenous people in Central Mexico. It was commissioned by Spanish clergy who were interested in learning about the worldview of Nahua Indigenous peoples. It is one of the codices that survived the burning of books during the colonial period. The *Huehuetlahtolli* includes an excerpt in which "rulers admonished their [children]" when they had reached the age of discretion. The excerpt reads:

> Hear well, … O my [child], the earth is not a good place. It is not a place of joy, it is not a place of contentment. It is merely said it is a place of joy with fatigue, of joy with pain on earth; so the old men went on saying. In order that we may not go weeping forever, may not die of sorrow, it is our merit that our lord [sic] gave us laughter, sleep, and our sustenance, our strength, our force, and also carnal knowledge in order that there be peopling. (Sahagún, ~1547/2012, p. 93)

The ancestral knowledge in this excerpt is akin to the Spanish adage, "*no hay mal que por bien no venga*."[11] Education does not exist in a vacuum. What we have learned from the global COVID-19 pandemic is that the personal, professional, and academic experiences of students interweave themselves in all aspects of their lives.

Drawing from ancestral knowledge systems, we raise the question of how we might include aspects of personal development in computing education as a way of nurturing positive ancestral identities. This approach nurtures students' connections to place-based (Tuck & McKenzie, 2014) learning modalities, regarding Earth as a relative reflected in one's unique footprints for we are Earth, and Earth is us (Bayha, 2018). I think of these words shared in the *Huehuetlatohli* when I imagine you, Copitzin, when coming of age, old enough to read these words with a careful meaning, hopefully, reflective of the intentions in writing them. Even though we may experience present-day colonialism in our everyday lives, we can also do what undocu-poet Yosimar Reyes[12] teaches us, to *document joy in times of despair* (Y. Reyes, personal communication, May 28, 2020). In one of his writing workshops with college students, he asked us to respond to a writing prompt: "Tell me the story of the year you discovered your power." In this exercise, he invited us to juxtapose our power with possible experiences of despair as a radical act that nourished self-determination. Systemic oppression relies on manipulative tactics to silence racialized communities in ways that impact mental/physical/emotional/spiritual wellbeing. Discovering our power and joy is a radical act, one that requires jedi-training,[13] and one that has been passed down for generations as a means of survival, and beyond towards *thriving* in the world. Though Earth is "not a good place," we can commit to joy as a radical act of love. Nana Lencha was orphaned at a young age and grew up in the aftermath of the Mexican Revolution, a time of political unrest and violence, as she recalls. She learned to sing at a young age and passed down songs to her children and grandchildren. I still sing Nana Lencha's song of joy:

> *Paloma blanca de cinco colores:*
> *blanco, amarillo, morado, nevado y azul. Y al verla tenía el buche blanco,*
> *el pico amarillo, la cola nevada y el copete azul. Paloma blanca, que vienes del norte,*
> *con tus anchas alas, volas para acá.*
> *¡Qué viva la generación, qué viva el placer,*
> *qué viva el amor*
> *y vámonos a pasear!*[14]

My grandmother also shared joy in times of despair. This approach is not to be confused with toxic positivity in which one is encouraged to disregard systemic oppression as a made-up reality that can be wished away somehow. Rather, being intentional about experiencing radical pleasure while naming settler colonialism and acting on one's agency to transform internalized colonization, for example, can revolutionize how one might live in one's body—individually and collectively. By living in this dialectic, a liminal place of nepantla,[15] one might walk in this process toward the horizon of co-liberation.

Copitl, when you were a two-month growing seed in my womb, we slept next to Nana Lencha, tu bisabuelita,[16] who was on her last days. She was 99 years living on this Earth, having raised almost a dozen children and buried almost half of them. She was a healer who taught me so much about body, heart, mind, and spirit awareness. On one of those last nights of her life next to us, I had a dream that she passed down some of her weathered feathers to you—from the eldest

to the youngest members of our clan. Her words were short as one of her living philosophies was "habla poco, di verdades."[17] *She passed on her life experiences to you in those feathers.*

> *Baby and I are so grateful to have spent the last night of my grandmother's life sleeping in bed with her at home, cuddling. I felt her slowly take off her preciosas plumas de quetzal and sew them neatly onto our baby's developing wings. We are like a bird clan of Huejucar, Jalisco and La Colonia Benito Juárez, Jerez, Zacatecas. May she continue to soar, singing songs of freedom.*

> *We love you Abuelita Lencha.*

> *Tlazohcamati huei for your beautiful presence in our lives.*

I was able to spend time with my Grandmother while my son was still womb-side. Strong connections are passed from generation to generation in this way. We also make our own mythology. As we take up the mantle of an elder in our communities, we look to the life and the leaving of our abuelas for guidance as much as for comfort. We codify memory into stories and pack it tidily with lessons essential for our children's thriving. What ancestral knowledge systems are passed down intergenerationally that are disregarded in computing education? How might students bring their whole selves, ancestrally, into the computing education classroom, and most importantly, feel empowered to produce computing from their unique positionalities?

Indigenous futurities in computing education protect, rather than jeopardize, ancestral knowledge systems, including First Foods. Another way to access ancestral knowledge systems in times of diasporic, colonial erasure of Indigenous epistemologies is through Indigenous food sovereignty. Navigating food consumption with eyes for sustainability, roots in ancestral healthways, and living as close to decolonized, generative economic models as possible can be daunting. Yet we see new solutions to old problems arising: we see everything from teaching resources that help home and community gardens flourish, to producing products geared toward certain populations with otherwise underserved (and costly, in the consumptive model) needs, to community groups working toward better frameworks that incorporate ancestral knowledge systems. I recall my very first memories in the kitchen and how trauma can be transformed with a commitment to healing and restoration of ancestral foodways:

> *At best, we meal plan together using cookbooks I've gathered over the years. We make our cooking time an offering to our bodies. We set intentions, burn medicine and dress up. We use old cooking tools like a molcajete and molinillo chocolate spinner. When we add salt to the food, we repeat our offering as if we were setting down tobacco or burning copalli. After all, our salt comes from the oceans or from Earth (tequesquite), depending on which salt we use. We also talk about how black beans, for example, nourish our bodies so that we can feel stronger and our brains can be better at problem-solving, imagination, etc. We've read Indigenous Eagle books for kids on Native Wellness like Tricky Treats*[18] *that tells about "everyday foods" and "sometimes foods."*

It can feel quite impossible to balance these factors in daily life, and imparting knowledge to little ones at different stages of development can stir up flurries of opinion. Yet there is ancestral knowledge here too, in the form of inherited oral traditions connected to family recipes and stories.

What if we *re-membered* that these ancestral foods are our relatives who never accepted colonial forces? Indigenous food sovereignty is movement toward maintaining human rights for self-determination, cultural knowledge, land stewardship, water rights, and biodiverse preservation of communal wellness through ancestral foodways. These movements are central to nourishing Indigenous Peoples and future generations, not only from a human standpoint but also from a more than human perspective. The industrialization of food harms all life forms. Revitalizing ancestral foods and foodways native to the region in communal contexts can promote climate justice, which seeks to rectify the violences caused by colonial forces responsible for climate change.

Indigenous futurities involve continuous focus on self-determination in ways that uphold Indigenous epistemologies as indispensable as all knowledges. In other words, if all epistemologies can sit in a circle and value one another, white settler colonialism would be dismantled as a dominant force over others. Furthermore, a place-based approach to Indigenous food sovereignty would honor the native foliage and fauna of each region—meaning Indigenous peoples who embody knowledge, living and protective systems of that place, would be considered the stewards for understanding how to nurture biodiversity and live sustainably (Deloria et al., 2018). Similarly, Valdovinos et al. (2020) share stories that include their abuelas passing on ancestral foodways to the future generations, and the bittersweetness of those stories encodes a sense of gravitas that seems to transcend generations.

To apply the severity of need to reinstate Indigenous epistemologies, curriculum theorizers can turn to one tenant of computing curricula that was introduced in an Advanced Placement (AP) Computer Science Principles course, which includes the impact that computing has in a global context, analyzing the benefits and harmful effects of computing. Eglash et al. (2020a/2020b) note that server farms that store memory and provide energy critical to Big Computing destroy ancestral lands with hydroelectric dams and other forms of resource "extraction." Preservation of Indigenous foodway systems, as well as the protection of Earth, is a very real cost. This cost is the responsibility of us all, but oftentimes falls on the shoulders of Indigenous Peoples across the globe. As such, computing education must center an ethical compass outside of its binary existence that includes a protection of Earth and Indigenous peoples who hold this stewardship for time immemorial.

What if we re-evaluated computing in support of Indigenous parenting as it asserts Indigenous futures and nurtures what Zapatista philosophy (Malott, 2008) promotes: a world where all worlds co-exist with dignity?[19]

Merging Indigenous Motherhood/Studies + Ethical Computing Education = Ancestral Computing for Sustainability (ACS)

ACS was largely co-created to explore some of the aforementioned Indigenous Parenting questions about how to responsibly coexist with current computing options. In addition, and perhaps more importantly, ACS challenges the epistemological foundations of computing education in ways that offer curriculum studies a womb to (re)birth Ancestral Computing for Sustainability. ACS is informed by Indigenous Motherhood and created with the intention to nurture Indigenous computing futurities that root ancestral knowledge systems and Earth protection as sacred practices for future generations. Below are some examples of computing harnessed for sustainability for children and Indigenous futurities:
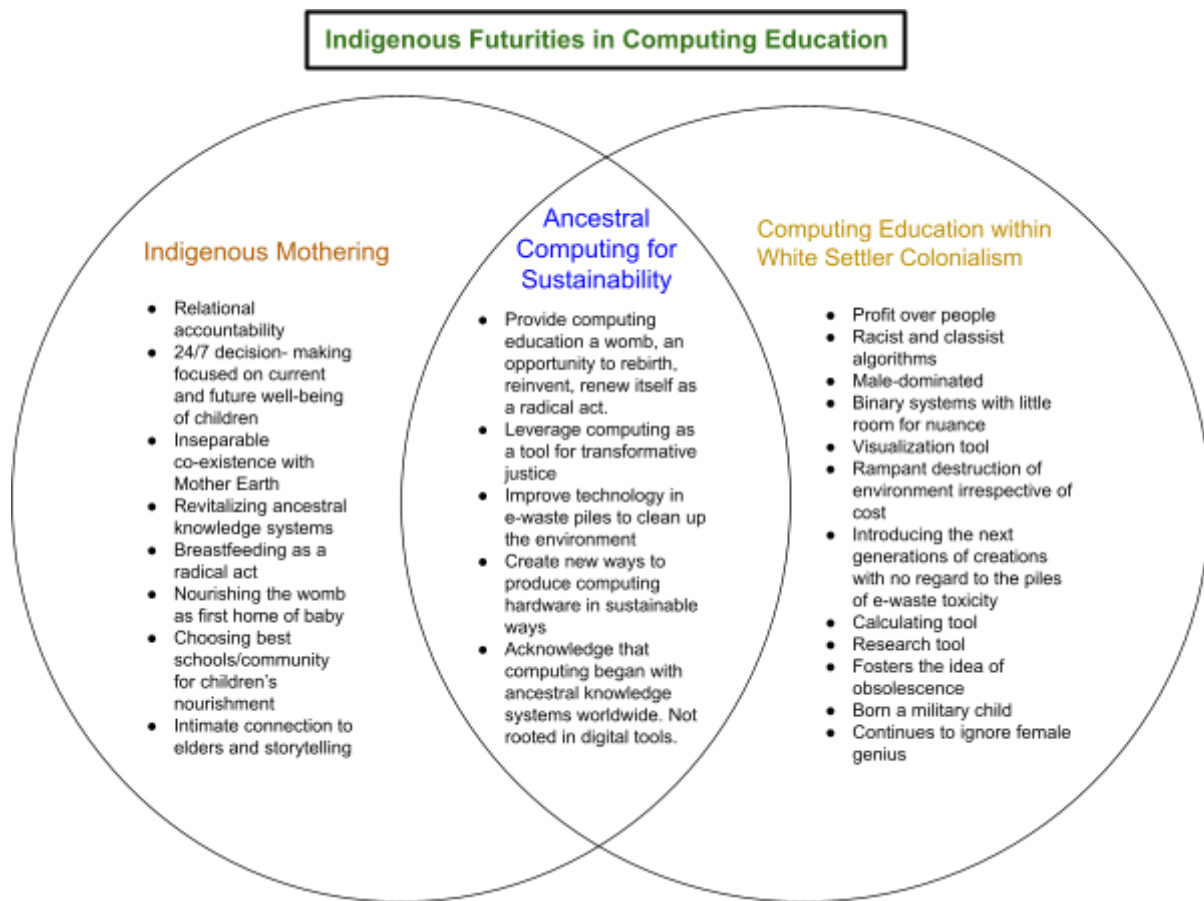
1. Gilberto Esparza of Mexico is a visual artist who combines science and recycled consumer technology found in e-waste piles, for example, to clean waterways. Esparza produces biotechnology to solve complex problems caused by the human footprint on Earth. He created Plantas Nómadas/Nomadic Plants (2008-2014), a robotic system that takes in contaminated water and breaks down toxic substances, while generating electricity, to clean local rivers.

2. Culturally Situated Design Tools (CSDT, found at csdt.org) hosts software that supports students' work with existing cornrow designs to develop new ones. Hair styles and treatments are often central to ancestral knowledge keeping, and democratizing access as well as holding cultural knowledge are both central to supporting decolonized, sustained generations to come.

3. CSforCA is an organization that promotes and supports computing education for California youth. They provide this list of interactive science museums: https://csforca.org/9-interactive-science-museums-to-visit-with-your-kids/

4. Elizabeth LaPensée's (2018) games "Along the River of Spacetime," "When the Rivers were Trails," and "Dialect" are Indigenous-centered digital games that center Indigenous epistemologies. See LaPensée et al. (2022) for a further theorization of sovereign games.

5. Nicole Turner's artificial intelligence equity lab fosters anti-racist and inclusive technological innovations.

6. Role-playing games like Coyote and Crow, a science fantasy role-playing game set in an uncolonized future, are produced by Native design teams.

Ancient Mexican computational thinking includes complex sustainable systems that may be reimagined, reinvented, and reinstated in today's time. For example, Mexican ancient civilizations observed and developed mathematical and astronomical systems that correlated with agricultural cycles, water management, social structures, archaeoastronomy, and other aspects of civilization. These systems were/are part of an ancestral identity that understands the interdependence of all life forms. How might we re-member this interdependence to promote a relational accountability in computing education? How might we re-member our relationships with the Star Nations to return to sustainable social and environmental structures? What may we be missing by not observing the cycles of these Star Nations, by remaining indoors, largely in light polluted urban centers?

Indigenous Mothering must be protected as one of the life-giving aortas of biodiversity. As mentioned earlier, April Lindala's comment on how computer science production needs a womb to rebirth and grow accountable to biodiversity and Earth protection remains more true than ever. As a military child, the initial productions of computer science profited from war-mongering and imperialist societies. We must hold computing accountable across social, environmental, and economic well-being. Refusing damage-centered research (for example, noting that Black and Indigenous women are too often erased from computer science education, see Tuck, 2009; Tuhiwai Smith, 2012) asserts affirmations of the spirit of Indigenous Mothering as part of Indigenous stewardship and communal wellness. Indigenous Mothering for ACS can help sustain both the abundance of Indigenous futurities and sustainable computer science production. The article closes with opportunities to expand Indigenous Mothering curricular lessons into professional development principles for educators across K12, higher education, and industrial contexts.

Indigenous Mothering is one of the foci in the active growth of Indigenous futures. When white settler colonialism does everything in its power to enact Indigenous physical and cultural erasure, Indigenous parenting draws from an older fountain of knowledge, which is ancestral knowledge systems (Moreno Sandoval et al., 2016) whose roots are older than systemic erasure. Therefore, unapologetically fierce Indigenous mothers can offer infinite possibilities of living, learning, and thriving with dignity. In particular, the moment-to-moment acts of creation and nourishment can offer computing curriculum developers a way of imagining ethical computing to protect Mother Earth and all her children, humans, and more than human relatives. Figure 1 illustrates the spaces in which Indigenous mothering, ACS, and computing education within white settler colonialism operate and intersect. In the next sections, I present a closer look at Indigenous Mothering and computing education within white settler colonialism.

Figure 1 - Indigenous Futurities in Computing Education

Indigenous Futurities in Computing Education

Indigenous Mothering

- Relational accountability
- 24/7 decision- making focused on current and future well-being of children
- Inseparable co-existence with Mother Earth
- Revitalizing ancestral knowledge systems
- Breastfeeding as a radical act
- Nourishing the womb as first home of baby
- Choosing best schools/community for children's nourishment
- Intimate connection to elders and storytelling

Ancestral Computing for Sustainability

- Provide computing education a womb, an opportunity to rebirth, reinvent, renew itself as a radical act.
- Leverage computing as a tool for transformative justice
- Improve technology in e-waste piles to clean up the environment
- Create new ways to produce computing hardware in sustainable ways
- Acknowledge that computing began with ancestral knowledge systems worldwide. Not rooted in digital tools.

Computing Education within White Settler Colonialism

- Profit over people
- Racist and classist algorithms
- Male-dominated
- Binary systems with little room for nuance
- Visualization tool
- Rampant destruction of environment irrespective of cost
- Introducing the next generations of creations with no regard to the piles of e-waste toxicity
- Calculating tool
- Research tool
- Fosters the idea of obsolescence
- Born a military child
- Continues to ignore female genius

Ancestral Computing for Sustainability is a place of encounter, dialogue, and birthing potential. It did not begin with digital tools. Ancestral civilizations across the world engaged in complex, creative problem-solving. Figure 1 juxtaposes "Indigenous Mothering" and "Computing Education within a White Settler Colonialism" as two opposing forces. Ancestral Computing for Sustainability creates a third space of liminality that intersects modes of possibility for Indigenous Futurities. It is important to note that Indigenous sovereignty of Indigenous futurities imagines a

long-haul process of shifting mindsets, active relational accountability, and continued local re-creations based on place-based learning. *What if we imagine designing curricula that produce and use computer science hardware in socially and environmentally sustainable ways that consider the next seven generations?*

Conclusion

At the time of this writing, I attended a stimulating play by Minna Lee at the San Francisco Playhouse entitled, "My Home on the Moon," about a Vietnamese American elderly woman, Lan, who watches her neighborhood dwindle to gentrification. Lan feared her pho restaurant was next to close. The plot twisted when Lan was encountered by an Artificial Intelligent BOT that offered her a special "grant" that would help her business boom in the ways she always dreamed of. Lan and her assistant, Mai, accepted the "grant" and unknowingly moved into a simulation designed by a corporation selling Artificial Intelligence. In this simulation, all their pho restaurant dreams came true, but the ancestral dreams they kept were not manifested in the virtual world. After learning that the "grant" project meant that Lan stay in the simulated world, Mai decided to return to a world where her struggles would continue, likely with more complexities. This play strongly encouraged us to consider the controversies of blindly engaging in virtual worlds, as enticing as they might seem at times. What are we losing when we fall prey to capitalist ventures at the cost of losing ancestral knowledge systems?

As I have modeled in this article, Indigenous Motherhood, computing education, and Ancestral Computing for Sustainability and Indigenous Futurities are interconnected, and this is a constant movement among the areas, rather than a unidirectional approach to these concepts. By beginning with Indigenous Motherhood, through storywork (Archibald, 2008), I posited that children, youth, relationships among humans, and the protection of Mother Earth are at the core of Indigenous epistemologies (McLaurin, 2022). Computing education within a white settler colonial framework and conception surmises a dominance over these natural laws and diminish the complexities of relational accountability down to binary systems that can deeply harm all life.

Figure 2 - Connective Tissues Between the Sequence of Constructs that Detail this Article
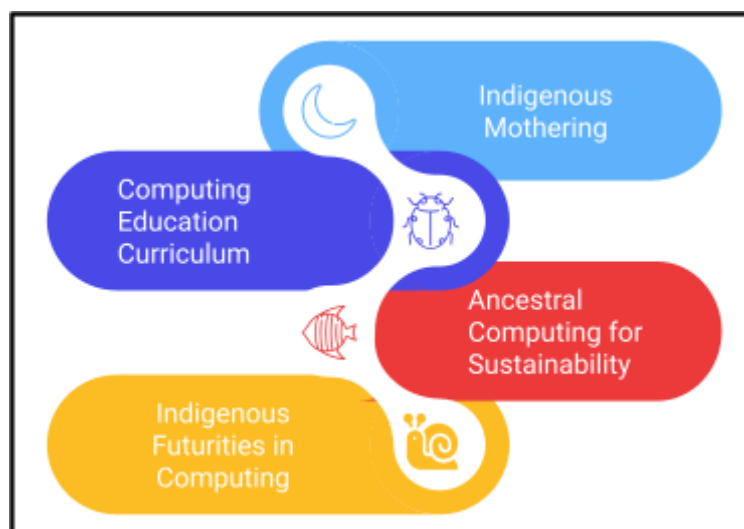
These pages offered a vision of what Indigenous Motherhood could be in current times by exploring four key questions that tease out the relationships between Indigenous Mothering, computing education and Indigenous futurities. Are you listening, computing education? The resiliency, inner strength, and wisdom of Indigenous knowledge keepers must be valued and regarded as a compass for the ethics and sustainability of computing production and consumption for all learners and producers. We will not turn a blind eye to communities that are overlooked and ecological environments that are decimated by toxic e-waste, mining needed to produce the hardware of computers, and the use of life-giving elements that are needed for massive data storage units. The network of Ancestral Computing for Sustainability makes visible the dangers of a large part of computing education and production today. We implore the readers, curriculum writers, computing industries, and educators to consider (re)birthing computing education in sustainable ways for future generations. Thank you again, Copitzin, for the continued lessons we will continue to learn as we hope to nurture a world where many worlds fit. May we continue to walk the flowery path of our ancestors moving toward co-liberation, with dignity for all.

Funding

Notes

1. Translation by Cueponcaxochitl: "My divine male son, ... sacred Earth, divine sky, blooming sprout."
2. Copitzin is the Nahuatl term for "dear firefly." Nahuatl is a Mexican Indigenous language with Uto-Aztecan roots currently spoken by approximately two million people.
3. Nantzin is the endearment Nahuatl term for "dear mother."
4. Translation by Cueponcaxochit: "I write you these few words with lots of love and respect for the person that you are."
5. The Ancestral Computing for Sustainability is a National Science Foundation-funded research team that includes Dr. Joseph Carroll-Miranda (Taino Arawak), Dr. April Lindala (Grand River Six Nations), Dr. Michelle Chatman (Mende, Yoruba, African American), Dr. Ebony Shockley (Black, African American, Maasai), Denise Cadeau, Dr. Jeffery Fleming (Black/African American), Dr. Fredric Ratliff (Black/African American), Dr. Alyssa Lopez Quiñones (Taino Arawak) and Marlen Martinez-Lopez (Trique Chicana). Together, we have envisioned and researched how to deconstruct and re-birth computing education for and by women of color. See decolonizing computing (Carroll-Miranda, et al, 2023) and centering Indigenous epistemologies in computing education (Lopez-Quiñones, et al, 2023).
6. Zapatista philosophy is born of resistance to corrupt and abusive tenants of the Mexican government. It centers Indigenous epistemologies as self-determination. Furthermore, considering Indigenous epistemologies of place, Abiayala (Keme & Coon, 2018) is one term used by the Kuna Peoples of present-day Panama to describe what is now called "The Americas."
7. For more information on Indigenous birthing practices, see United Nations Population Fund (UNFPA, 2019).
8. For more information, see Sogorea Té Land Trust (n.d.).
9. To listen to the lullaby sung by Cueponcaxochitl, click here
10. A person who is on foot and guides large numbers of cattle from one place to another, usually walking hundreds of miles over a period of weeks.
11. There isn't bad that good does not come from.
12. To learn more about Yosimar Reyes, see http://yosimarreyes.com/

13. In this case, jedi-training serves as an analogy for critical consciousness raising about dismantling white settler colonialism. Jedi training can also refer to adopting creative and dignified ways to heal from these systemic oppressions. Consider the wisdom of Yoda in George Lucas's Star Wars series. Yoda is presented as a wise individual who helps people live with dignity.

14. Translated by Nantzin: White dove of five colors: white, yellow, purple, snowy, and blue. And when they saw the dove, it had a white chest, a yellow beak, a snowy tail, and a blue crest. White dove, you come from the north, with your wide wings, you fly here. Long live the generation, long live love, long live pleasure, and let's go for an adventure!

15. Nepantla is a term by Chicana feminist Gloria Anzaldúa to describe a borderless place of the possibilities of freedom.

16. Your great-grandmother

17. Translated by Nantzin: "Speak little, speak truths."

18. See Eagle Books (https://www.cdc.gov/diabetes-ndwp/planning-guides/), a series of books for young people, written by Georgia Perez of Nambe Pueblo, New Mexico, and illustrated by Patrick Rolo and Lisa Fifield.

19. Zapatista philosophy is born of resistance to corrupt and abusive tenants of the Mexican government. It centers Indigenous epistemologies as self-determination. Furthermore, considering Indigenous epistemologies of place, Abiayala (Keme & Coon, 2018) is one term used by the Kuna Peoples of present-day Panama to describe what is now called "The Americas."

References

Archibald, J. A. (2008). *Indigenous storywork: Educating the heart, mind, body, and spirit*. University of British Columbia Press.

Bayha, M. (2018, November 6). We are the land and the land is us: Indigenous women accompany NASA campaign studying Arctic climate change. *Ask NASA Climate, Earth Expeditions Blog*. Retrieved on March 15, 2023 from https://climate.nasa.gov/explore/ask-nasa-climate/2824/we-are-the-land-and-the-land-is-u s-indigenous-women-accompany-nasa-campaign-studying-arctic-climate-c/

Brant, J. (2023). Confronting colonial violences in and out of the classroom: Advancing curricular moves toward justice through Indigenous Maternal Pedagogies. *Curriculum Inquiry*, *53*(3), 224–267. https://doi.org/10.1080/03626784.2023.2200809

Bruyneel, K. (2007). *The third space of sovereignty: The postcolonial politics of US-indigenous relations*. University of Minnesota Press.

Calderón, D. (2014). Uncovering settler grammars in curriculum. *Educational Studies*, *50*(4), 313–338. https://doi.org/10.1080/00131946.2014.926904

Carroll Miranda, J., Lindala, A., Moreno Sandoval, C. D., Terrell Shockley, E., Chapman, M., Cadeau, D., Fleming, J., Lopez Quiñones, A., Flores-Reyes, E., & Martinez Lopez, M. and (2023). Decolonizing computing and research as a third space of academic sovereignty. In K. Candace & J. Haynes Writer (Eds.), *Third-space exploration in education*. (pp. 144–159). IGI Global Publishing.

Crook, M., & Short, D. (2020). Developmentalism and the genocide–ecocide nexus. *Journal of Genocide Research*, *23*(2), 162–188. https://doi.org/10.1080/14623528.2020.1853914

Deloria, P. J., Lomawaima, K. T., Brayboy, B. M. J., Trahant, M. N., Ghiglione, L., Medin, D., & Blackhawk, N. (2018). Unfolding futures: Indigenous ways of knowing for the twenty-first century. *Daedalus*, *147*(2), 6–16. https://doi.org/10.1162/DAED_a_00485

Doxtater, E. (2016). *Art of Peace*. Everything Corn Husk.

Dunlap, A. (2021). Does renewable energy exist? Fossil fuel+ technologies and the search for renewable energy. In S. Batel & D. Rudolph (Eds.), *A critical approach to the social acceptance of renewable energy infrastructures: Going beyond green growth and sustainability* (pp. 83–102). Palgrave MacMillan.

Eglash, R., Bennett, A., Lachney, M., & Babbitt, W. (2020a, April). Race-positive design: A generative approach to decolonizing computing [Paper presentation]. Human Factors in Computing Systems Conference, Honolulu, Hawaii, United States. https://par.nsf.gov/servlets/purl/10182458

Eglash, R., Lachney, M., Babbitt, W., Bennett, A., Reinhardt, M., & Davis, J. (2020b). Decolonizing education with Anishinaabe arcs: Generative STEM as a path to Indigenous futurity. *Educational Technology Research and Development*, *68*(3), 1569–1593. https://link.springer.com/article/10.1007/s11423-019-09728-6

Fiola, C. (2015). *Rekindling the sacred fire: Métis ancestry and Anishinaabe spirituality*. Univ. of Manitoba Press.

Indigenous Corporate Training. (2024). *Indigenous peoples terminology: Guidelines for usage*. https://www.ictinc.ca/blog/indigenous-peoples-terminology-guidelines-for-usage

Kahn, J., D'Arcy, S., Weis, T., Black, T., Klein, N., & McKibben, B. (2014). *Line in the tar sands: Struggles for environmental justice*. PM Press.

Keelan-Peebles, J. R. (2023). *Te Aho Tapu: Matauranga a Maui preservation of ancient knowledge through practice* [Doctoral dissertation The University of Waikato]. University of Waikato Research Commons. https://hdl.handle.net/10289/15793

Keme, E., & Coon, A. (2018). For Abiayala to live, the Americas must die: Toward a transhemispheric indigeneity. *Native American and Indigenous Studies*, *5*(1), 42–68. https://doi.org/10.5749/NATIINDISTUDJ.5.1.0042

LaPensée, E. (2018). Self-determination in Indigenous games. In J. Sayers (Ed.), *The Routledge companion to media studies and digital humanities* (pp. 128–137). Routledge.

LaPensée, E. A., Laiti, O., & Longboat, M. (2022). Towards sovereign games. *Games and Culture*, *17*(3), 328–343. https://doi.org/10.1177/15554120211029195

Lavell-Harvard, D. & Anderson, K. (2014). *Mothers of the nations: Indigenous mothering as global resistance, reclaiming and recovery*. Demeter Press.

Lee, C., & Soep, E. (2023). *Code for what? Computer science for storytelling and social justice*. MIT Press.

Lopez-Quiñones, A., Martinez-Lopez, M., Moreno Sandoval, C. D., Carroll, J., Lindala, A., Chatman, M., Fleming, J., Shockley, E., Cadeau, D., & Flores Reyes, E. (2023). Ancestral computing for sustainability: Centering Indigenous epistemologies in researching computer science education. *Techtrends*, 67, 435–445.

Lutz, A., Lee, S., & Bokayev, B. (2022). Intensive mothering in the time of Coronavirus. *Journal of Social Issues*, *79*(3),997–1021. https://doi.org/10.1111/josi.12515

Malott, C. S. (2008). *A call to action: An introduction to education, philosophy, and native North America*. Peter Lang.

Marsden, D. (2014). Indigenous principles for single mothering in a fragmented world. In D. Lavell-Harvard & K. Anderson (Eds.), *Mothers of the nations: Indigenous Mothering as global resistance, reclaiming and recovery*. (pp. 213–246). Demeter Press.

McLaurin, V. (2022). Protestors or protectors? Critical Race Media Literacy and news coverage of the Dakota Access Pipeline activism. In J. Cubbage (Ed.), *Critical race media literacy: Themes and strategies for media education* (pp. 54–72). Routledge.

Moreno Sandoval, C. D. (2014, March 13). Ancestral computing for sustainability. *Equity Alliance.* https://equityalliance.stanford.edu/content/blog-ancestral-computing-sustainability-cueponcaxochitl-dianna-moreno-sandoval

Moreno Sandoval, C. D. (2017). Critical ancestral computing for the protection of Mother Earth. In C. Coulter & M. Jiménez-Silva (Eds.), *Culturally sustaining and revitalizing pedagogies: Language, culture and power* (pp. 25–40). Emerald Publishing Limited. https://doi.org/10.1108/S1479-368720150000029004

Moreno Sandoval, C. D. (2019). *Ancestral knowledge meets computer science education: Environmental change in community.* Palgrave Macmillan.

Moreno Sandoval, C. D., Mojica Lagunas, R., Montelongo, L., & Diaz, M. (2016). Ancestral knowledge systems: A conceptual framework for decolonizing research in social science. *AlterNative: An International Journal of Indigenous Peoples*, *12*(1), 18–31. https://doi.org/10.20507/AlterNative.2016.12.1.2

Morrison, T. (1992). *Playing in the dark: Whiteness and the literary imagination.* Harvard University Press.

Nelson, C. A., Zape-Tah-Hol-Ah Minthorn, R., & Shotton, H. J. (2022). *Indigenous motherhood in the academy*. Rutgers University Press.

Ocampo, D. (2023). *Where we belong: Chemehuevi and Caxcan preservation of sacred mountains*. University of Arizona Press.

Patel, L. (2015). *Decolonizing educational research: From ownership to answerability*. Routledge.

Prior, S., de Heer, B., & Maas, M. (2023). Navigating structural inequalities of mothering in the academy during COVID-19. In J. M. Ryan (Ed.), *Pandemic pedagogies: Teaching and learning during the COVID-19 pandemic* (pp. 112–127). Routledge.

Raval, V. V. (2023). Toward a decolonial parenting science through centering majority world parenting: A commentary on "Parenting culture(s): Ideal-parent beliefs across 37 countries." *Journal of Cross-Cultural Psychology*, *54*(1), 30–35. https://doi.org/10.1177/00220221221134915

Revilla, A. T. (2021). Attempted spirit murder: Who are your spirit protectors and your spirit restorers? *Educational Foundations*, *34*(1), 31–46. EJ1307646.pdf (ed.gov)

Sahagún, B. D. (2012). Florentine Codex: General history of the things of New Spain. Book 6: Rhetoric and moral philosophy (2nd ed., C. E. Dibble & A. J. O. Anderson, trans.). School of American Research and the University of Utah. (Original work published ~1547)

Sogorea Té Land Trust. (n.d.). *Rematriate the Land Fund*. https://sogoreate-landtrust.org/rematriate-the-land-fund/

Tuck, E. (2009). Suspending damage: A letter to communities. *Harvard Educational Review*, *79*(3), 409–428. https://psycnet.apa.org/doi/10.17763/haer.79.3.n0016675661t3n15

Tuck, E. (2011). Rematriating curriculum studies. *Journal of Curriculum and Pedagogy*, *8*(1), 34–37. https://doi.org/10.1080/15505170.2011.572521

Tuck, E., & McKenzie, M. (2014). *Place in research: Theory, methodology, and methods*. Routledge.

Tuhiwai Smith, L. (2012). *Decolonizing methodologies: Research and Indigenous peoples*. Zed Books.

United Nations Population Fund (UNFPA). (2019, February 14). *Born at the end of a rope: Embracing indigenous childbirth traditions to save lives*. https://www.unfpa.org/news/born-end-rope-embracing-indigenous-childbirth-traditions-save-lives

Valdovinos, M. G., Rodríguez-Coss, N., & Parekh, R. (2020). Healing through ancestral knowledge and letters to our children: Mothering infants during a global pandemic. *Genealogy*, *4*(4), Article 119. http://dx.doi.org/10.3390/genealogy4040119

Wall Kimmerer, R. (2013). *Braiding sweetgrass: Indigenous wisdom, scientific knowledge and the teachings of plants*. Milkweed editions.

Wilson, S. (2008). *Research is ceremony: Indigenous research methods.* Fernwood.

Embracing Epistemological Collisions as Sites of Critical Indigenous Pedagogy
Insights From Partnering for Diné Curriculum Building

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WE, THE AUTHORS OF THIS ARTICLE, are three educators united by a shared commitment to supporting the self-determined educational goals of the Navajo Nation. In particular, we are committed to the education of Diné (Navajo) youth. As one way of living out these shared commitments, we have been collaborating for three years. The principal aim of our current work is to build, implement, and assess a curriculum for which the overarching purpose is to promote positive character and identity development—as understood within a traditional Diné perspective—among youth who attend the Navajo Nation's tribally controlled Pre-K-12 schools. Throughout this article, we refer to this effort as the "Diné curriculum-building project," even as we understand that promoting Diné character and identity development is much broader, more complex, and inextricably intertwined with other aspects of Diné language and cultural knowledge than the phrase "character education" might initially imply.

A complementary aim of our work is to enhance our own and other educators' professional learning through shared inquiry into our collaborative processes. The overarching question that guides our current inquiry is, "How can universities partner with Indigenous nations in support of their sovereignty and self-determination?" At present, we are responding to our shared question by collaborating on the Diné curriculum-building project and by documenting our evolving processes for collaboration on this and other projects. By combining the Diné curriculum-building project with shared inquiry, we seek simultaneously to (1) advance the Navajo Nation's educational goals, (2) learn how we can collaborate with increasing effectiveness in support of those goals, and, along the way, (3) generate in-depth understandings of how universities can

partner more effectively with Indigenous nations than the shallow or extractive ways universities typically engage with Indigenous peoples.

To this inquiry, we bring overlapping, yet distinctive, aspects of our identities and experiences. Each of us is a committed, lifelong learner and professional educator. Hollie began her professional career as an elementary educator on the Navajo Nation before entering academia. Dorthea also began her career as an elementary educator before transitioning to higher education and then into an educational leadership role for the Navajo Nation. Logan began his career as a Latin and music teacher before entering academia. At the same time, we have differing lived experiences associated with other aspects of our identities. Notably, Hollie and Dorthea were raised on the Navajo Nation as Diné people and through Diné philosophies, while Logan was raised primarily amid the diverse European American cultures of North Dakota, where his ancestors homesteaded and where he presently resides.

Although our various professional and personal identities both intersect and diverge in various ways, we understand our collaboration as a mutual effort to sustain a partnership that includes but is not limited to university-based representatives of Predominantly White Institutions (PWIs) (i.e., Hollie and Logan) and a professional representative of an Indigenous nation (i.e., Dorthea). Our efforts at partnering are informed by numerous intellectual bases, including the scholarship of decolonizing and Indigenous educational research methodologies and the predominantly Western school-university partnership movement.[1] This literature influences our understandings of what it means to partner and the potential usefulness of partnering in order to advance our mutual commitments.

At the same time, however, we are aware that collaborative efforts involving representatives from universities and Indigenous communities constitute a distinctive niche within the school-university partnership literature. Unfortunately, with some notable exceptions (see Norman & Kalt, 2015), prior attempts at engagement between non-Indigenous university partners and Indigenous peoples lack a compelling track record of success, and some have even caused lasting harm to Indigenous peoples (Ambo, 2023). Given these understandings, we acknowledge a distinctive need for care in our collaboration. We recognize our efforts to partner as creating a context within which clashes in our understandings have the potential to cause harm—or, if recognized and learned from—to forge a stronger partnership that is increasingly effective in advancing our shared commitments and, ultimately, in supporting the education of Diné youth.

Through our first years of learning to collaborate, we have consciously striven to think and act in ways guided by characteristics that are valued in Diné epistemologies. Each of us, however, has also been immersed in the epistemological underpinnings of Western schooling, the institution which frames the Diné curriculum-building project. As such, in our efforts to build and implement curriculum focused on Diné character building and identity—which have traditionally been taught in Diné homes and communities, and aspects of which we seek to promote in the Navajo Nation's schools—we routinely encounter moments when Diné and Western epistemologies appear to come into conflict. Such moments sometimes leave us unsure about what to say (or not say), or how to proceed. As we understand them, these moments carry potential either for harm or for significant new learning and unlearning. In the course of our deepening collaboration, we have learned to recognize such moments as *epistemological collisions* (Kerr, 2014)—moments in our work when Diné epistemologies challenge the educational institution rooted in Western epistemologies.

As we partner, we have striven to become increasingly attentive to epistemological collisions and to embrace these moments as vital opportunities to learn together. Yet these kinds of moments are rarely discussed in the predominantly Western literature on school-university

partnerships. Neither is there an abundance of examples in the extant literature on Indigenous character education curriculum-building for K-12 schools. A key premise of our article, therefore, is that deeper understandings of recognizing and embracing epistemological collisions as sites of critical Indigenous pedagogy are needed if contemporary efforts at engagement between universities and Indigenous nations are to succeed in supporting Indigenous sovereignty and futurity where others have caused harm in the past.

The purpose of this article is to share insights about how we embraced epistemological collisions as opportunities to learn through critical Indigenous pedagogy. To accomplish this purpose, we first review literature that grounds our understanding of what it means to partner for Indigenous futurities, as well as literature that frames our understanding of the relationship between Western educational paradigms and Indigenous epistemologies. We examine how this relationship sets the stage for epistemological collisions at times when university-based representatives attempt to engage with Indigenous nations, as in the case of our collaboration. We describe how we have approached our collaboration through Indigenous methodologies, then share representative stories of three epistemological collisions we have experienced in the course of this collaboration. We conclude by discussing our article's contributions and reflecting upon some implications of this work.

Conceptual Underpinnings

In our work, we are guided by a shared understanding of what it means to partner for Diné futurity—our understandings are anchored in Diné epistemologies. However, our efforts are complicated by the structure of Western educational PK-12 schooling. As such, the concepts of Indigenous futurity, the prevailing Western educational paradigm, and Diné epistemologies are all central to how we make sense of our collaboration. In the following subsections, we briefly review these conceptual underpinnings that guide our work.

Partnering for Indigenous Futurity

The overarching commitment that guides our collaboration is a commitment to the Navajo Nation's self-determined educational goals—a commitment implying that we are theorizing an Indigenous futurity. Such theorizing demands much more than imagining a future for Indigenous people; it requires deep examination of what is assumed to be knowable, the styles of thinking by which knowledge is assumed to be attainable, the types of epistemological practices that prevail, and the logics behind present actions—and how all these assumptions are legitimized by, or guided toward, specific futures (Anderson, 2010, as cited in Goodyear-Kaʻōpua, 2019; Kulago, 2019; Tuck & Gaztambide-Fernández, 2013). In these understandings, any collaboration, such as ours, that proclaims to be working toward supporting Indigenous futurity requires a grounding in Indigenous understandings of futurity.

Yakama and Tulalip scholars Craig and Craig (2022) explained Indigenous futurity in terms of the Tulalip concept of huyadadčəł. As they struggled together in the goal of creating space for Indigenous knowledge within public education, Craig and Craig were reminded of huyadadčəł by a family elder, which the elder explained as being their people's way of life. The elder reminded them, "You already know the way" (Craig & Craig, 2022, p. 30). The authors explained that

huyadadčəł is a call for them to maintain their ancestral lifeways as the foundation, throughline, and future to help build their family and communities—supported by the power of a community of ancestors who protected their lifeways and presently call upon them to teach the future generations.

As Craig and Craig (2022) explained, "Our ancestral ways of life are already within us and are waiting to be accessed and enacted" (p. 30). Similarly, our co-author Dorthea once described how her work is guided by the need to protect Diné lifeways. Dorthea described her work as being rooted in ancestral knowledge and in taking action to support a Diné futurity. She stated, "It's what our grandmas and grandpas prayed about, for us to become someone who will help our People." In our discussions of Indigenous futurity as we go about creating a Diné curriculum for character and identity development, we do not focus on how the Diné community could look in a future where American standards and values dominate. Instead, we discuss how we can contribute to a Diné futurity already in motion but disrupted by settler colonialism.

In addition to the Tulalip concept of huyadadčəł, the Haudenosaunee Two Row Wampum provides another conceptual understanding that we utilize as we theorize what it means to support Indigenous futurity. Kanien'keha:ka language teacher Tsiehente Herne (Kulago & Herne, 2022) describes the Two Row Wampum:

> The Two Row Wampum is a living treaty: a way that the Haudenosaunee and Dutch established an agreement for their people to live together in peace in which each nation was to respect the ways of the other and to discuss solutions to the issues that came before them. The Haudenosaunee made a belt to record a peace agreement between the two nations. The belt has two purple rows running alongside each other representing two boats. One boat is the canoe with the Haudenosaunee way of life, laws, and people. The other is the Dutch ship with their laws, religion, and people in it. The boats were to travel side by side down the river of life. Each nation is to respect the ways of each other and would not interfere with the other. (p. 204)

Herne uses the Two Row Wampum to help her high school students remember that, as Indigenous people, they are always living in the Haudenosaunee row with the European ship in the other row. They must remember that they are rooted in the row that leads to the continued existence of their lifeways, laws, and people. She also states that the students need to remember that, in the current context, they also need things from the European ship such as Western education, but they should always keep their balance between the two. We draw on the Tulalip and Haudenosaunee examples to demonstrate how within Indigenous ways of knowing, futures are already in progress and are described or understood in ways that are distinct to each nation.

Indigenous Epistemology Amid a Western Educational Paradigm

During my time in Haudenosaunee territory,[2] I (Hollie) have been learning about Haudenosaunee ways of knowing and working to build relationships with people and communities. An important lesson I have learned comes from the Two Row Wampum. The Two Row Wampum's design embodies an enduring belief that Western and Indigenous lifeways can coexist peacefully and perhaps even strengthen one another. However, the Two Row Wampum's creation predates the settler colonial context of the United States, which Tuck and Yang (2012) inform us

"is different from other forms of colonialism in that settlers come with the intention of making a new home on the land, a homemaking that insists on settler sovereignty over all things in their new domain" (p. 5). The violence that happens during the disruption of the Indigenous relationship to land is epistemic, ontological, and cosmological and is not temporary and so, settler colonialism becomes a structure (Tuck & Yang, 2012; Wolf, 2006). Thinking through the idea of the Two Row Wampum, settler colonialism wants to own the river and eliminate the Indigenous canoe.

In its manifestations involving the education of Indigenous peoples, the prevailing Western educational paradigm has historically destroyed the balance implied by Herne's (Kulago & Herne, 2022) interpretation of the Two Row Wampum—a balance upset by the dualist epistemologies that shape much of Western education. Some scholars trace the origins of contemporary approaches to Western education to Cartesian dualism, which separates mind, body, and nature and makes possible the claim of a "non-situated, universal, God-eyed view of knowledge" (Todd & Robert, 2018, p. 61). This assertion of separateness extends to a further distinction between spirit and matter associated with the position that "man was able to understand the mechanizations of nature and control nature" (p. 61).

These dualistic understandings have contributed to the rise of Western scientific knowing as a dominant epistemology in contrast to which other epistemologies have been positioned as inferior. Quechua scholar Sandy Grande (2015) described how Western epistemology has come to be reflected in the "deep structures of the colonialist consciousness" (p. 99) and how this consciousness provides the epistemological and axiological foundations of Western education. Grande asserted that the deep structures of the colonialist consciousness, as they are manifested in schools, tend to promote independence, achievement, humanism, detachment from local and personal knowledge, and separation from nature. In this Western educational paradigm, land is regarded merely as an object—property that is assumed to be without spirit or relationship. This assumption pervades the logics of settler colonialism wherein the elimination of the native is the goal (Wolfe, 2006) and which separates Indigenous peoples' spiritual, physical, and emotional relationships with land, community, and knowledge. Colonialism has formalized the hegemony of Western knowledge through a Western schooling system (Meyer, 2008; Pihama & Lee-Morgan, 2018; Todd & Robert, 2018).

In contradistinction to the Western educational paradigm, Kulago et al. (2023) describe Indigenous epistemologies:

> Broadly speaking, Indigenous epistemologies emphasize wholeness (physical, emotional, spiritual, and intellectual), interconnectedness to land (in all its forms and entities), and relationship with others (family, communities, and nations). Knowledge, in this holistic framework, tends to be both subjectively determined and collectively accountable (Kulago et al., 2021). Indigenous scholars see knowledge as fundamentally relational and community as the primary setting for Indigenous education (Wilson, 2008; Cajete, 2015). (p. 70)

Whereas Western education emphasizes independence, achievement, and detachment, Indigenous education is rooted in values of wholeness (Kulago et al., 2023). Indigenous education emphasizes survival of the individual and community through Indigenous knowledges and intelligences passed down throughout the generations (Cajete, 2015; Craig & Craig, 2022; Kulago & Jamie, 2022; Simpson, 2014).

These themes of Indigenous education are echoed widely across recent scholarly literature. For example, Tewa scholar Cajete (2015) states that Indigenous education's main goal is to find face, heart, and foundation so that Indigenous youth know themselves, their relationships, and their position in continuing their Indigenous lifeways. A foundational understanding of Indigenous education is that "the wholeness of the community depends on the wholeness of its members" (Cajete, 2015, p. 36). Margaret Kovach (Plains Cree and Saulteaux ancestry, as cited in Windchief & San Pedro, 2019) refers to this as "self-in-relation" because it "frames knowledge as a coproduction located in the development of ourselves in relation to others" (p. xvii). Indigenous education's primary concern, therefore, is to educate young people in a way that "nurtures a new generation of Elders—of land-based intellectuals, philosophers, theorists, medicine people and historians" who embody their peoples' intelligences (Simpson, 2014, p. 13). Nishnaabeg scholar Leanne Simpson (2014) summed up the goals of Indigenous education, stating that a Nishnaabeg Elder was one who embodied the knowledge and intelligence of the Nishnaabeg because they lived as Nishnaabeg. In other words, Indigenous education is a lifelong process that has no beginning or ending but is always present and taught through the language, the land, in community, and in action as one lives through their Indigenous epistemologies.

Our Approach to Collaborating

In the prayers and ceremonies of Diné ancestors, the pathway to Diné futurity already exists, and the journey is already underway. In our work, we seek to support this futurity even as we partner from different individual positionalities and institutional roles. Despite our differences, we understand the overarching purpose of our work similarly to the Two Row Wampum for how we can partner for Diné futurity and how we can utilize university resources as we strategize, think, and practice collaborating together in ways guided by the logics already set in motion for a Diné existence. In our work, we approach this shared inquiry through Indigenous and decolonizing methodologies and with awareness of the fraught history of university engagement with Indigenous peoples. In Indigenous methodologies, settler colonialism is understood as being continuously reified through Western education and research practices and policies, thereby threatening Indigenous sovereignty, knowledge, languages, livelihood, and relationships to land.

Tribal Critical Race Theory posits that colonization is endemic to American society, meaning that "European American thought, knowledge, and power structures dominate present-day society in the United States" (Brayboy, 2005, p. 430), including American education. Given these understandings, Indigenous scholars have critiqued Western research for its "cognitive imperialism" (Battiste, 2000), instead creating and utilizing Indigenous methodologies to guide collaborations involving university-based scholars. According to Hill and Coleman (2019), Indigenous methodologies can guide such collaborations because they:

> aim to assert the dignity and value of Indigenous knowledge traditions and insist that healthier relationships between Indigenous communities and Western university-based research institutions will demand recognition of the distinctive contributions Indigenous ways of knowing can make. (p. 339)

As a way of demanding such recognition, Hill and Coleman advanced five principles within a framework—using the Haudenosaunee Two Row Wampum treaty as a guide—for engaging in

"cross-cultural, cross-epistemological research relationships" (p. 340). The five principles include: relationships are dialogical, importance of place-conscious ceremony, equity within distinctiveness, internal pluralism and diversity, and sharing knowledge, not owning it (Hill & Coleman, 2019, p. 341). This model:

> urges scholars to move away from extractive models, whereby researchers in the sailing ship raid the culture and laws of the Indigenous canoe and to focus instead on developing new models of sharing the river with Indigenous communities in ways that are relationally respectful and accountable. (Hill & Coleman, 2019, p. 344)

Later in the article, we share how we engage the principles of this model in our work and conclude that this is a good starting point for engaging partnerships. Specifically, we attend to the epistemological underpinnings of the Diné and Western education that help us reach deeper understandings of how to partner and collaborate to support Indigenous futurity.

Decolonizing and Indigenous methodologies provide researchers the basis to engage in partnerships with Indigenous communities in ways that are meant to benefit the Indigenous community and to value Indigenous ways of knowing. In our work, although we are aware of the rich literature on partnerships, we intentionally strive to use the phrase "we are partnering" wherever possible, rather than "we have a partnership," because we believe that our work together is a verb, always in action, and alive in our consciousness, rather than a noun—static, objective, and distant. Specific to our project's context, we work to ground our partnering in Diné epistemologies.

At the root of Diné ways of knowing is relationality as encompassed by the concept of k'é. K'é is the concept that describes our familial relationship to other humans, natural entities, and deities (Kulago, 2011). The Diné Character Building Standards have a focus on relationships, and the curriculum, more specifically, has a focus on k'é. While we work to support the Diné curriculum building project rooted in k'é, we also work to partner and research through k'é. This means that we come together with the best intentions to support Diné youth within schools (a Western educational structure) by shifting values away from the "deep structures of the colonialist consciousness" (Grande, 2015, p. 99) because they counter and constrain Diné epistemologies.

In our efforts to partner, we are critically aware that each of us has experienced the Western education system in our own way and thus are able to understand the Diné curriculum-building project also through a Western perspective. Indeed, we continue to experience Western education through our professional work in educational institutions. In one sense, we have all successfully navigated Western education, earned degrees, and ultimately chose to situate our professional work within this system. Yet we strive to navigate our collaboration as critical scholars.

When we came together to partner, we were all conscious of the colonizing and detrimental processes of Western education upon Indigenous peoples. We knew that the "governmental policies and educational policies toward Indigenous peoples are intimately linked around the problematic goal of assimilation" (Brayboy, 2005, p. 429). For this reason, we intentionally collaborate to create a Diné-centered curriculum. And while we have been intentional about centering Diné knowledge and goals in this work, we occasionally find ourselves inadvertently going through the motions of Western colonizing practices that assume neutrality in the everydayness of school, pedagogy, and curriculum building. When we consider our practices through the deep structures of colonialist consciousness, we can pinpoint, feel, and/or relate experiences to ways they have manifested in our own educational experiences, transferring those

critical insights to our partnering. With these insights, we have learned that we can interrupt the flow of those structures in certain ways. This learning has created increasing space for epistemological collisions to occur throughout various moments of critical self-reflection, in discussions between us (the co-authors/project partners), and during interactions and work with the Diné teacher participants. These moments of epistemological collisions deepen our understanding of how to partner and work in ways that center Diné epistemologies.

Our Analytic Focus: Epistemological Collisions as Sites of Critical Indigenous Pedagogy

While both Western and Indigenous epistemologies can guide education and educational institutions, conflicts between these ways of knowing tend to occur in Western education institutions as "epistemological collisions" in which the "mechanistic assumptions of modernist ontologies are challenged by Indigenous perspectives based in contrasting ontologies" (Kerr, 2014, p. 92). Kerr (2014) explained that "modernist epistemological commitments emerge with and through the structures of coloniality, and it is through this intersection that the challenges of bringing Indigenous perspectives meaningfully into educational spaces are fully understood" (p. 92). An epistemological collision does not occur merely because an Indigenous perspective exists but because of an "embodied ethical challenge of Indigenous peoples to colonial violence and silencing in real places" (Kerr, 2014, p. 92). In other words, because Western educational institutions are colonial institutions, these institutions' epistemological commitments go unchecked unless other epistemologies are present, arise, and assert themselves.

Critical Indigenous pedagogy provides a mechanism through which Indigenous epistemologies can be present, arise, and assert themselves in ways that challenge the Western educational paradigm. Kulago and Jaime (2022) described how frameworks for critical Indigenous pedagogy (e.g., Garcia & Shirley, 2012; Grande, 2015; Jacob, 2013; Lee & McCarty 2017; Shirley, 2017) generally integrate three components: 1) deconstruct, disrupt, and scrutinize power relations and colonizing processes; 2) center, reclaim, and empower Indigenous languages, culture, and knowledge; and 3) promote community accountability, sovereignty, community- and nation-building efforts. They assert that sites of critical Indigenous pedagogy can be spaces where "the perpetuation, cultivation, and revitalization of Indigenous languages, community, and lifeways continue our Indigenous existence" (Kulago & Jaime, 2022, p. 8) and offer as examples:

> classrooms in which truthful histories and narratives are shared and Indigenous knowledges and languages are centered; gardens where traditional planting techniques and lessons are utilized; gatherings where ceremonial processes, prayers, and teachings happen; bodies that practice dances, languages, and lifeways; [and] movements that protect lands and water from ecological destruction. (p. 8)

Saponi Ska:rù:rę'/Tuscarora scholar Richardson (2011) articulated how some Western learning philosophies, such as constructivism, purport to be open to the inclusion of Indigenous epistemologies through frameworks such as culturally relevant pedagogy, which may use cultural knowledge as a vehicle for mainstream concepts but continues to use inclusion as enclosure that "contains Indigenous epistemologies within a materialist philosophy" (p. 332). He claimed that, when the philosophical foundations of educational theories go "unnamed or critically examined, the theoretical formulation for the inclusion of Indigenous epistemologies becomes not simply a

container, but an active form of neutralizing Indigenous intellectual traditions" (p. 333). Richardson's considerations underscore the significance of embodying and thinking through Indigenous philosophy when epistemological collisions occur—lest the sites of these collisions become violent if left unattended. The sites of critical Indigenous pedagogy manifest because of our responsiveness to the goals for the Diné curriculum and our goals for partnering to support Indigenous sovereignty within the reality of Western educational institutions.

Collisions and Insights: Epistemological Collisions as Sites of Critical Indigenous Pedagogy

In our collaboration, we strive to amplify Diné voices in the very places—such as curricula for PK-12 schools—where they have so frequently been silenced in the past. As we have listened to elders speak about Diné philosophy, and facilitated discussions with Diné teachers about standards, curriculum, pedagogy, and other educational considerations, we have heard histories of colonial violence. The elders' stories have served to underscore the importance of crafting a Diné character building curriculum grounded in Diné ways of knowing. As our own perspectives, assumptions, and questions have surfaced throughout our regular meetings and interactions, we have felt epistemological collisions occurring and, over time, we have learned to respond to them collectively by recognizing them as potential sites of critical Indigenous pedagogy and opportunities for important learning and unlearning that supports our shared commitments.

In the following section, we engage storytelling (from first-person point-of-view) as a way to share teaching, learning, and healing moments where we confronted epistemological collisions and transformed them into sites of critical Indigenous pedagogy. Stó:lō scholar Archibald (2008) describes seven principles that make up an Indigenous storywork theory for sharing Indigenous knowledge to bring together the heart, mind, body, and spirit through storytelling. As partners, we share stories about our experiences with each other through respectful, reverent, responsible, and reciprocal ways that support our learning and a holistic understanding of our positionalities. Then, we re-center Diné epistemologies in our work. We share these stories because we see sites of critical Indigenous pedagogy in each one because they embody an understanding of the context, the centering of Indigenous knowledge, and action towards supporting Diné furturities. The epistemological collisions we experienced provided us with insights into sensitivities that might otherwise go "unnamed or critically examined" (Richardson, 2011, p. 232). As we embrace these moments, we learn and unlearn, striving to steer our learning into work that supports Indigenous futurities. These are only a few stories out of many we could have related, but we share them here in order to illustrate how epistemological collisions can give rise to learning that supports Indigenous futurities.

Logan's Collision: Problematizing the Neutrality of "Useful" Tools

In Summer 2022, we gathered with Diné elders, educators, and community members at the Navajo Education Center in Window Rock, Arizona. Following introductions and a prayer of convocation, we witnessed the elders' teachings about the lifelong process involved in the character development of a Diné person. Then, as the workshop's facilitators, Dorthea, Hollie, and I worked with teachers, assisting them as they synthesized what they had learned from the elders

into a framework to articulate the essential components of character development of Diné youth that they believed could and should be taught in PK-12 schools.

Soon enough, teachers had constructed a working draft of a curriculum framework, organized according to grade levels, and we set out to build a model lesson plan based on the framework. Our plan was to craft the first one or two lessons together, using a common template, then teachers would break into work groups to develop lessons across all grades PK-12.

In preparing to facilitate this portion of the workshop, Hollie and I had proposed to Dorthea that we use Understanding by Design (Wiggins & McTighe, 2005), often called "Backwards Design"—a commonly utilized process and template for curriculum-planning and one with which we were both familiar. In a prior faculty position, Hollie had taught teacher candidates to plan using Backwards Design, while I had been taught to use that same framework during my first year as a middle school teacher. I recall that we laughed together during our planning meeting because (it seemed to me) that we both had the same idea at the same time—let's use Backwards Design!

When we presented the framework to teachers, however, there was no laughter. Just as I had done countless times in my own classroom, I passed out thick, binder-clipped stacks of paper that seemed to communicate the seriousness of the business we were about to undertake. This time, it was photocopies of the Backwards Design template and the standards for which we were building curriculum. Hollie and I tag-teamed a brief explanation of the framework to the teachers. Straightforward, logical, aimed at desired outcomes, and useful, right? Let's go ahead and get started…

We got LOTS of questions—questions about how to use the framework, questions about whether it was like other frameworks, but perhaps most significantly, a question about the framework's nickname.

> *Backwards Design? Why is it called that? There is nothing backwards about this process. There is nothing backwards about Diné character development, either.*
> *Hm… Good point. Well, it's really just about beginning to plan with a clear end in mind—the standards, goals, outcomes, the vision…*
> *But why "backwards"? That's not Diné. That's not US. And why all the square boxes on the template? That's also not Diné.*
> *Hm… Another good point. I only brought photocopies of Backwards Design, though. And some of the teachers here like that choice because they've used it, too, and it's familiar. Now what?*

Teachers went to a whiteboard we had placed in the room, and they began to draw. They sketched multiple different conceptual frameworks that we could use for Diné curriculum planning. One was represented by a circle, another by a corn stalk. They then began to compare and contrast these frameworks with the Backwards Design framework. The insight was quick to come: these frameworks were more alike than different. They had many similar ideas, expressed in different terms and formats, yet we seemed to agree on the substance of the process we needed to pursue. So, what should we do now?

We considered rejecting Backwards Design altogether. We also considered adapting the framework by relabeling its components in the Diné language—mapping Diné concepts onto Western ones. Ultimately, though, we settled on reframing it in the context of a shared understanding that Backwards Design could be a powerful tool for doing the work of Diné character building while satisfying the demands of a federally mandated Western educational

system. We could use this Western tool, but not on its own terms. Rather, we could intentionally steer its power into the service of perpetuating Diné knowledge and lifeways through the institution of schooling.

Each time I recall my experience of this epistemological collision, I am reminded to proceed with gentleness, care, and due caution throughout this work, particularly as we establish ways of working. I am reminded how quickly a widely used planning tool, such as Backwards Design, can so quickly dominate our ways of working without even being noticed—imposing its taken-for-granted logic of knowing through the unstated assumption that it is commonsensical, every day, routine, inevitable. Through the vitally important moment we experienced together in Window Rock, we learned to problematize Backwards Design, even as we intentionally adapted it to serve the educational aims of our context.

Hollie's Collision: Valuing the Spiritual Connection to the Work

We had been partnering for over two years by the time I, Hollie, felt the depth of where I fit within the partnering work as an individual and as a representative of a Western education and research institution. I am Diné and was raised through Diné philosophies that guided my family's lived experiences every day. I grew up in a small community located near the location of the NNDODE in Window Rock, AZ. I attended public school there and have worked within the community as an elementary teacher, a high school athletic coach, and with NNDODE and other tribal offices. I now live 2,000 miles from home and work for Penn State University where I can count the number of Diné people I know on one hand (not including my children). However, I continue to organize my research agenda around the needs of the Diné youth specifically and Indigenous communities generally.

When we started our first Diné character building curriculum workshop in the summer of 2022, we began the two-week long workshop with stories/teachings from the elders. The first thing the elders did was pray for the work that would be done to support our Diné youth and communities. This resonated with me because, although I know that this is how gatherings get started in my home community, I was now there as a representative of an institution where such things do not happen. It was beautiful to me to know that work I was doing through Penn State University was being prayed for on our own lands, in our language, and for our people. To me, this is an important protocol that positioned us in relationship with the future that is already in motion and brought us and our work together in a spiritual relationship.

However, as we continued with the work after the summer workshop, and into the monthly teacher meetings, our written agendas often lacked that important beginning. We noticed this after a few meetings in which at least one of the teachers would ask if we started with a prayer. In the moment, we would say no, and often, Dorthea would do it or ask one of the elder teachers to pray. This had me thinking about how we write agendas and begin our meetings/sessions without a spiritual component within the university and through Western education institutions where there is separation between "religion" and state legally, but also within the Western paradigm meaning, our physical self is detached from anything spiritual. It is contradictory to believe that our spiritual selves are not implicated in these spaces when thinking through Diné ways of knowing.

During one of our partner planning meetings, we were preparing the agenda for our next meeting with the teacher participants. I said, "Oh, we better include a prayer at the beginning. We've been forgetting that, and someone usually asks about it." Dorthea and Logan agreed, and I

went on to say, "Who should we ask to do it?" We sat there for a few seconds. Then, Dorthea said, "What about you?" I was taken aback by Dorthea's suggestion because I never considered this option. I felt as though the institutional parts of my identity cracked like a shell I was trying to outgrow suddenly, and my Diné identity got called to attention like it had never been before in a professional setting. I believe I giggled and then said, "Ummmm, okay, I can do it." So, we wrote it into our agenda, and I had some work to do. I contacted my mom, and she and Dr. Audra Platero, Principal of Tséhootsooí Diné Bi'Ólta', helped me create a prayer for the Diné curriculum-building project, the wellbeing of our Diné youth, and all who come together to do the work.

When I reflect on the feelings I experienced in that instance, I realize that it had the potential to be an epistemological collision that could have inflicted violence on my Diné identity if I let the Western epistemology that is supported by the institution of research lead me to say no. That move would have perpetuated the paradigm that views a separation of the spirit and subjectivity from research as necessary. It would have supported a move towards settler futurity in the research, the Diné curriculum-building project, and an assimilated mindset with my identity. However, my Diné identity and need to keep Diné character building at the front of my mind during this work led me to view Dorthea's suggestion as important. It was a very intentional decision for me that helped me gain a deeper understanding of what it meant to be a Diné researcher within a PWI and how the work to support Diné futurity and sovereignty implicated myself. It became a site of critical Indigenous pedagogy as my professional knowledge of colonizing educational research came to mind and ways that the Western paradigm works to separate the spiritual aspect from my work. I also understood how appropriate Dorthea's suggestion was because my personal identity knew my existence was also dependent on an existing Diné futurity, and I now have a prayer for my work to support Diné futurity.

Dorthea's Collision: Working in Education Means Confronting Western Structures

I, Dorthea, grew up in a time in my community where I can say there were a lot of elders. Today, those elders are very limited; there are very few, less than a handful left. I am grateful I was able to know my great-grandparents. Not so many people can honestly say that. I lived with my great-grandmother up until 1998. She passed away about the age of 86. My nalí, she passed away in 2010. My grandfather, he died of old age in 2008; he reached 102 years. My grandmother died in 2003 in a more tragic way. She was hit by a drunk driver. I was also able to see my Dad's nalí, her name was Asdzaa Tótsónii, and she died when I was 8 years old. I had that context during my formative years, when I was able to comprehend and remember things and ask questions. I am grounded in Diné teachings, and I know my language, culture, and spirituality because of that. I know who I am, where I come from, and I also know my purpose here on Earth.

Throughout my career with Western education, starting with going to college, I always found it difficult to understand "theoretical stuff" and to conceptualize certain things that were written and talked about in English. Reading the English language is still difficult. The only way that I could understand the things I was reading about in the university was to talk about it with somebody. I would present it to my parents and my elders because they were still living at the time when I was going through college. When I presented it, they would talk about their experiences and share stories of their understandings from their perspectives. They helped me understand it from within our traditional Diné context and then helped me relate it to the readings and concepts from my classes. I often wondered how they already knew all this theory that was written, when it

is not written down for them? So, thinking about those concepts from my Diné perspective, that's what helped me get through school. From then on, I thought about how important it was for our children to think in that capacity, where they really know who they are as Diné and can think through our ways for deeper learning and understanding.

When I got a job as a teacher, there was a point in my first year by October when I went home to my parents, and I said, "You wasted all your money. I'm not going back to teaching. It's so hard." I remember wanting to be the "cool teacher," but the students' behavior was not what I envisioned. I did not want to be too strict, but there also needed to be structured. The student behavior was terrible, and there was no respect. When I told my family that I wasn't going back, my mom asked, "So, what are your students really asking, and what are they wanting to learn? Where are they coming from? Understand that."

I asked my students, and their reasons made sense. They wondered why they had to go to school. They needed meaning and purpose. I decided to put it into the context from our Diné stories. I created a thematic unit around the Navajo Long Walk in which they did research to understand what the Diné went through, that our ancestors survived that experience so we can continue. Helping them understand their purpose from that perspective really helped them want to do well in school. I understood what they needed was a real connection to life to support their deeper learning and understanding.

When I decided to go back and do my graduate work, I ended up at Arizona State University and worked as a recruitment and retention specialist. I was tasked with supporting the Indigenous students on campus along with my colleague and another graduate student who had conducted research on this very subject. Again, we went through similar processes of identifying Indigenous students' needs and then helping them understand the systems and processes they needed to navigate to be successful in the university. We helped them interpret their place in the university from their own Indigenous ways of knowing. After this, I worked with the Navajo Nation Rural Systemic Initiative, which was focused on supporting students in math and science. This included working with researchers outside of the Navajo Nation to apply research and use data to inform teacher practice. This was difficult for me because the theoretical discussions about the research that informed the classroom practice were from outside of a Diné way of thinking. I would go home with huge headaches when all I wanted to know was what it meant and how it informed the way we should work with our students.

The way I was able to survive in that job and make sense of the information for our students was to talk with my husband in our language and discuss the theories from our ways of knowing. We would discuss stories elders told us, map out our thinking on flipchart paper, and then make sense of it all from our perspective so that I could then go and support the Diné teachers and students. From the experiences I have shared and the discussions I have with the co-authors, I can name specific instances where I have felt Western ways of thinking, education, and systems collide with my Diné ways. For me it creates a wakeup call for deeper understanding. It makes me step back, reflect, then look at the whole process again.

When I think about a collision, I think about two things bumping into each other hard and making a mess. From my previous experiences and in my role now, I feel like it's my job to figure out how to clean up this mess when creating Diné Character Building curriculum for Western education structures. I wonder what is the best way for us to create experiences that are meaningful for our children, and I make decisions and try to lead the project in that way. Throughout my life, I had the opportunity to go back to my family and talk out things I did not understand and was fortunate to have them help me understand it through our Diné ways. In the partnering work we

are doing here, my focus is on what is best for our Diné children's character development and, at the same time, working to understand the Western education frameworks of school accountability to help the teachers create a curriculum based on our Diné ways of being. I still have to go back to my family to discuss the work and gain deeper understandings.

Contributions and Implications

In our efforts to collaborate in a positive way, we strive to embody Hill and Coleman's (2019) principles previously listed by understanding that *relationships are dialogical.* As partners, our steps have been cautious and slowed by our critical consciousness as representatives of various professional positions and individual positionalities. In our partnering work, we center the needs of Diné partners, rather than university partners. When we started working together, Hollie and Logan asked the Navajo Nation Office of Diné School Improvement (NNODSI) what their needs were and what work should be supported. The NNODSI needed support in building research-based curriculum focused on Diné character building, and so our project works to address that need. As partners, we also work to recognize the *importance of place-conscious ceremony* and make efforts to respect that dimension through informed refusals and focal points. It is within the partnering processes guided by Diné ways of knowing where we have felt the hegemonic Western education structures reveal themselves, and we worked towards *equity within distinctiveness*. We as partners often shared and discussed our various perspectives and valued the *internal pluralism and diversity* that enriched our understandings and informed our decision making. Our focus on the processes of creating Diné character building curriculum helps us *share knowledge* that can be useful to others who partner to support Indigenous sovereignty and futurity.

Even with all these careful considerations, our stories reveal that there are still moments within our partnering work where collisions we experienced could easily have become moments of cultural destruction. Although we were initially caught off guard when these moments occurred, the more that we centered Diné philosophies and lifeways, the more consistently we found ourselves able to shift the collisions into sites of critical Indigenous pedagogy—valuable opportunities to learn together through self-reflection and dialogue. On the basis of these understandings, we advance our article's three key contributions.

First, our article contributes new insights into how to recognize and respond to moments of epistemological collision that can be channeled into significant learning experiences. The characteristics of these moments—points when ambiguity, uncertainty, or awkwardness might be felt—can serve as powerful bases for critical reflective practices for all partners and for university-based representatives, in particular. These moments get recognized and/or felt by partners who have critical understandings of the context of their work. With these characteristics in mind, partners can learn to notice and "lean in" (Rutten et al., 2024) to such moments as they occur, thereby becoming better equipped to mediate these moments toward Indigenous futurity. In our case, we complicated certain aspects of the school-university partnership literature that has emerged largely within a Western educational paradigm by engaging a critical Indigenous pedagogy that works to question, critique, and deconstruct practices that perpetuate settler futurity and colonizing research.

A second key contribution of our article is about what is necessary to transform epistemological collisions into sites of critical Indigenous pedagogy. It was not only the shared noticing of the moments but, within them, the steadfast assertion of deep Indigenous knowledge.

In the context of efforts at engagement between universities and Indigenous nations, this insight implies the need for highly skilled Indigenous knowledge holders and/or educational leaders, such as Dorthea, Hollie, and the teachers, whose conceptual understanding of Diné futurity was a steady presence throughout the work. Dorthea's skill as a facilitator of open, reflective dialogue enabled the unpacking of these collisions and the learning that resulted. This insight also implies the need for non-Indigenous, and/or university-based, partners to be willing to share their experiences freely with Indigenous partners, yet always with an eye toward supporting and centering Indigenous futurity. Sharing of our collisions prompted learning for all three coauthors about effective collaboration and, as such, contributed to the overarching goal of this project. The insight signals the potential for future partnering projects and inquiry that explores how Indigenous and non-Indigenous partners learn to co-facilitate collaborative processes through Indigenous perspectives.

This article's third key contribution is an illustration of how moments of epistemological collision can offer meaningful entry points to learning about partnering in ways that center the aims and perspectives of Indigenous partners so that there is the possibility of restructuring how Western institutions engage in partnering, collaborating, and researching. The learnings that happen within these sights of critical Indigenous pedagogy point to the depth and hegemonic practices of Western education that go unquestioned. Indigenous knowledges and perspectives cannot continue to be a topic of research, or contained within Western paradigms, but should inform the ways that partnering and educational research is conducted through Indigenous ways of knowing in support of Indigenous futurity.

As stated previously, Western educational institutions are colonial institutions, and the epistemological commitments go unchecked unless other epistemologies are present, arise, and assert themselves. We went into this work knowing that we would follow the lead of the needs of NNODSI and value Diné philosophies and ways of knowing. We also knew that we were creating a curriculum for school with content that does not necessarily align with Western educational structures. As we experienced and recognized these epistemological collisions, we saw opportunities that revealed important pedagogical sites. The depth of the learning that happened within these sites revealed important curricula that accentuated the decision to either deny or support Diné futurity.

Notes

1. Logan has contributed to such literature over the past several years (e.g., Dvir et al., 2023; Rutten et al., 2023a, 2023b, 2024; Rutten & Badiali, 2020, 2024; Wolkenhauer et al., 2020, 2022).
2. Penn State University is on the traditional homelands of Haudenosaunee and other Indigenous nations.

References

Ambo, T. J. (2023). Tribal community-university partnerships for Indigenous futures. In L. W. Perna (Ed.), *Higher education: Handbook of theory and research: Volume 39* (pp. 1–47). Springer.

Archibald, J. (2008). *Indigenous storywork: Educating the heart, mind, body, and spirit*. University of British Columbia Press.

Battiste M. (2000). Introduction: Unfolding the lessons of colonialization. In M. Battiste (Ed.), *Reclaiming indigenous voice and vision* (pp. xvi–xxx). University of British Columbia Press.

Brayboy, B. M. J. (2005). Toward a tribal critical race theory in education. *The Urban Review*, *37*(5), 425–446. doi:10.1007/s11256-005-0018-y

Cajete, G. A. (2015). *Indigenous community: Rekindling the teachings of the Seventh Fire.* Living Justice Press.

Craig, A. B., & Craig, C. M. (2022). Indigenous knowledges to transform public education. In C. Pewewardy, A. Lees, & R. Zape-tah-hol-ah Minthorn (Eds.), *Unsettling settler-colonial education: The Transformational Indigenous Praxis Model* (pp. 26–36). Teachers College Press.

Dvir, B., Rutten, L., Butville, D., & Wilson, E. (2023). Partnering to support K-12 instruction of difficult topics through inquiry-based professional learning. *School-University Partnerships*, *16*(2), 101–109. https://doi.org/10.1108/SUP-03-2023-0017

Garcia, J., & Shirley, V. (2012). Performing decolonization: Lessons learned from Indigenous youth, teachers and leaders' engagement with critical indigenous pedagogy. *Journal of Curriculum Theorizing*, *28*(2), 76–91. https://journal.jctonline.org/index.php/jct/article/view/366

Goodyear-Ka'ōpua, N. (2019). Indigenous oceanic futures: Challenging settler colonialisms and militarization. In L. T. Smith, E. Tuck, & K. W. Yang (Eds.), *Indigenous and decolonizing studies in education: Mapping the long view* (pp. 82–102). Routledge.

Grande, S. (2015). *Red pedagogy: Native American social and political thought* (Tenth anniversary ed.). Rowman & Littlefield.

Hill, R. W., & Coleman, D. (2019). The Two Row Wampum-Covenant Chain Tradition as a guide for Indigenous-university research partnerships. *Cultural Studies ↔ Critical Methodologies*, *19*(5), 339–359. https://doi.org/10.1177/1532708618809138

Jacob, M. M. (2013). *Yakama rising: Indigenous cultural revitalization, activism, and healing.* University of Arizona Press.

Kerr, J. (2014). Western epistemic dominance and colonial structures: Considerations for thought and practice in programs of teacher education. *Decolonization: Indigeneity, Education & Society*, *3*(2), 83–104. https://jps.library.utoronto.ca/index.php/des/article/view/21148

Kulago, H. A. (2011). *Diné youth define community: Finding routes to school and community partnerships* (Publication No. 3481058) [Doctoral dissertation, Purdue University]. ProQuest. https://www.proquest.com/docview/904661838?pq-origsite=gscholar&fromopenview=true&sourcetype=Dissertations%20&%20Theses

Kulago, H. A. (2019). In the business of futurity: Indigenous teacher education & settler colonialism. *Equity & Excellence in Education*, *52*(2-3), 239–254. https://doi.org/10.1080/10665684.2019.1672592

Kulago, H. A., Guernsey, P., & Wapeemukwa, W. (2023). "It feels fake": Decolonizing curriculum and pedagogy in predominantly white institutions. *Bank Street Occasional Paper Series*, *2023*(49), Article 7. https://doi.org/10.58295/2375-3668.1469

Kulago, H. A., & Herne, T. (2022). Centering Indigenous philosophies of community in family, community, and school engagement. In J. Garcia, V. Shirley, and H. A. Kulago (Eds.), *Indigenizing education: Transformative research, theories, and praxis* (pp. 185–211). Information Age Publishing.

Kulago, H. A., Wapeemukwa, W., Guernsey, P., & Black, M. (2021). Land, water, mathematics, and relationships: What does creating decolonizing and Indigenous curricula ask of us? *Educational Studies*, *57*(3), 345–363. doi.org/10.1080/00131946.2021.1892690

Kulago, H., & Jaime, A. (2022). Indigenous education, decolonization, and reinvigorating the work of our ancestors. *Oxford Research Encyclopedia of Education.* https://doi.org/10.1093/acrefore/9780190264093.013.1595

Lee, T. S., & McCarty, T. L. (2017). Upholding indigenous education sovereignty through critical culturally sustaining/revitalizing pedagogy. In D. Paris & H. S. Alim (Eds.), *Culturally sustaining pedagogies* (pp. 61–82). Teachers College Press.

Meyer, M. A. (2008). Indigenous and authentic: Hawaiian epistemology and the triangulation of meaning. In N. K. Denzin, Y. S. Lincoln, & L. T. Smith (Eds.), *Handbook of critical and Indigenous methodologies* (pp. 217–232). Sage Publications.

Norman, D. K., & Kalt, J. P. (Eds.). (2015). *Universities and Indian country: Case studies in tribal-driven research*. University of Arizona Press.

Pihama, L., & Lee-Morgan, J. (2018). Colonization, education, and Indigenous peoples. In E. McKinley & L. Smith. (Eds.), *Handbook of Indigenous education* (pp. 1–9). Springer. https://doi.org/10.1007/978-981-10-1839-8_67-1

Richardson, T. (2011). Navigating the problem of inclusion as enclosure in Native Culture-Based Education: Theorizing shadow curriculum. *Curriculum Inquiry*, *41*(3), 332–349. http://www.jstor.org/stable/41238490

Rutten, L., & Badiali, B. (2020). Why they teach: Professional development school teacher candidates' initiating motivations to become teachers. *School-University Partnerships*, *13*(1), 12-21. https://eric.ed.gov/?id=EJ1249340

Rutten, L., & Badiali, B. J. (2024). Enhancing the motivation to teach in the context of teacher shortages: Teacher candidates' perceptions of clinical educators' practices in a Professional Development School. *The New Educator*, *20*(1), 1–20. https://doi.org/10.1080/1547688X.2023.2277924

Rutten, L., Butville, D., & Dvir, B. (2024). Leaning into difficult topics: Inquiry communities as teacher professional learning for turbulent times. *Journal of Teacher Education*, *75*(3), 292–304. https://doi.org/10.1177/00224871241231543

Rutten, L., Butville, D., Smith, W. L., & Dvir, B. (2023a). Practitioner inquiry for turbulent times: Learning to take an inquiry stance toward teaching difficult topics through a teacher inquiry community. *Journal of Practitioner Research*, *8*(2), 1–19. https://digitalcommons.usf.edu/jpr/vol8/iss2/5/

Rutten, L., Wolkenhauer, R., Tekavec, K., & Burns, R. W. (2023b). Toward a common framework for describing professional development schools: A synthesis of PDS narratives, 2008-2022 [Paper presentation]. Annual Conference of the American Educational Research Association (AERA), Chicago, IL, United States.

Shirley, V. J. (2017). Indigenous social justice pedagogy: Teaching into the risks and cultivating the heart. *Critical Questions in Education*, *8*(2), 163–177. https://files.eric.ed.gov/fulltext/EJ1135616.pdf

Simpson, L. B. (2014). Land as pedagogy: Nishnaabeg intelligence and rebellious transformation. *Decolonization: Indigeneity, Education & Society*, *3*(3), 1–25. https://jps.library.utoronto.ca/index.php/des/article/view/22170

Todd K. L., & Robert V. (2018). Reviving the spirit by making the case for decolonial curricula. In N. Wane & K. Todd (Eds.), *Decolonial pedagogy* (pp. 57–72). Palgrave Pivot. https://doi.org/10.1007/978-3-030-01539-8_4

Tuck, E., & Gaztambide-Fernández, R. A. (2013). Curriculum, replacement, and settler futurity. *Journal of Curriculum Theorizing*, *29*(1), 72–89. https://journal.jctonline.org/index.php/jct/article/view/411

Tuck, E., & Yang, K. W. (2012). Decolonization is not a metaphor. *Decolonization: Indigeneity, Education & Society*, *1*(1), 1–40. https://jps.library.utoronto.ca/index.php/des/article/view/18630

Wiggins, G., & McTighe, J. (2005). *Understanding by design*. ASCD.

Wilson, S. (2008). *Research is ceremony: Indigenous research methods*. Fernwood Publishing.

Windchief, S., & San Pedro, T. (2019). *Applying Indigenous research methodologies: Storying with peoples and communities*. Routledge.

Wolfe, P. (2006). Settler colonialism and the elimination of the native. *Journal of Genocide Research*, *8*(4), 387–409. https://doi.org/10.1080/14623520601056240

Wolkenhauer, R., Rutten, L., Klock, H., Essick, K., McDonald, C., Morgart, E., & Lynch, M. (2020). Shared decision-making in times of change: Facing challenges through collaborative inquiry in a PDS partnership. *PDS Partners: Bridging Research to Practice*, *15*(3), 26–28. https://www.proquest.com/docview/2609120870?accountid=13158

Wolkenhauer, R., Rutten, L., Cunningham, A., & Yen, Y. (2022). Making an inquiry community the core of a PDS: Learning together across institutional boundaries and roles. *School-University Partnerships*, *15*(1), 64–69. https://eric.ed.gov/?id=EJ1346056

Securing our Futures through Land and Water Education
Developing an Indigenous Language Curriculum in a Tribal Nation Early Learning Program

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D EVELOPING CURRICULUM to support the education of Indigenous children in settler colonial models of schooling is an important effort toward decolonization to support children's everyday wellness and ensure thriving Indigenous futures (Brayboy & Lomawaima, 2018; Simpson, 2017). Such efforts denounce "the settler colonial curricular project of replacement, which aims to vanish Indigenous peoples and replace them with settlers, who see themselves as the rightful claimants to land, and indeed, as indigenous" (Tuck & Gaztambide-Fernández, 2013, p. 73). In this article, we depict ways in which an Indigenous early learning program and language department have enacted educational self determination through curricular development that centers Indigenous axiologies, ontologies, and epistemologies (AOE) or what in this project, we refer to in the Lushootseed language as cək̓ʷ-, təɫ, and hayəd kʷi gʷəshaydxʷs. We make sense of how scholarship has engaged AOEs to capture the complexity of indigeneity as it takes form locally in a Coast Salish Tribal Nation:

- cək̓ʷ- ⚘ straight, be right, correct (axiology)
  - *Remember the teachings/way of life.*

- təł ⚘ true/real (ontology)
  - *Our ancestors' lifeway survived thousands of years needing each other; how do we take what we already know and utilize the teachings?*

- hayəd kʷi gʷəshaydxʷs ⚘ know/learn about (epistemology)
  - *Learn, be humble, forgive, work together.*

We prioritize our discussion of how a localized framework of cək̓ʷ-, təł, and hayəd kʷi gʷəshaydxʷs drives an Indigenous early learning curriculum toward thriving futures as an example of our optimistic resistance of settler replacement (Tuck & Gaztambide-Fernández, 2013).

Examining efforts of erasure and replacement in practice, scholars have made clear that U.S. public schools have worked to eliminate Indigenous languages and cultures since the onset of boarding schools (Lomawaima & McCarty, 2006) and that assimilative aims continue as a core principle of school curriculum (Brayboy & Lomawaima, 2018; Masta, 2018; Sabzalian, 2019). With an understanding that schools are structured to advance settler colonialism (Brayboy & Lomawaima, 2018; Calderón, 2014; Wolfe, 2006), educators must consider ways communities have resisted these efforts to maintain and further develop systems of Indigenous education (McCoy & Villeneuve, 2020). Existing research depicts community efforts to center Indigenous AOEs in educational programing (Barajas-López & Bang, 2018; Brayboy & Castagno, 2009; Brayboy & Lomawaima, 2018; Hermes, 2005; Lee & McCarty, 2017; Lees & Bang, 2023; Marin & Bang, 2018; McCoy et al., 2017; Pacini-Ketchabaw & Taylor, 2015). This literature confirms that Indigenous AOEs, and pedagogical modes of teaching and learning, are very much present within Indigenous communities and that land-and-water-based education offers a construct for including Indigenous epistemologies in curriculum (Calderón, 2014; Hermes, 2005; Pacini-Ketchabaw & Taylor, 2015; Simpson, 2014) and teacher professional development (PD) (Calderón et al., 2021).

The early learning program featured in this research is embracing land-and-water-based curriculum development that is localized to the Coast Salish Tribal Nation's language and culture. The project centers the Nation's goal of Indigenous language/culture revitalization, and also meets state and federal licensing requirements for early learning. Our study examined the ways in which Indigenous language/culture teachers have developed a locally specific, land-and-water-based curriculum for children birth-to-age-five (b-5) to be implemented within a licensed early learning program, resisting the widespread shift toward standardization in Early Childhood Education (Adriany, 2018; Haslip & Gullo, 2017; Iorio & Parnell, 2015; Nxumalo et al., 2011). As an important aspect of this research, we depict the process of developing land-and-water-based curriculum to emphasize the significance of understanding processes toward decolonization. The development of a land-and-water-based language/culture curriculum focused on fostering relationships with land, water, and place supports children's holistic development connected to their community and serves as an example of Indigenous resurgence in practice (Deloria & Wildcat, 2001; Simpson, 2017) where an Indigenous community is determining the content and context of their children's education.

Beginning with Story

We begin the depiction of our curriculum development with a traditional Coast Salish story, *Her First Basket*, told by taqʷšəblu, Vi Hilbert. We do this for a few reasons. Opening with story grounds our work in cəkʷ-, təɬ, and hayəd kʷi gʷəshaydxʷs and hopefully guides the reader to consider our efforts through an Indigenous, Coast Salish perspective. It also represents our time together where we consistently revisited ancestral teachings, from humans and more-than-humans, to guide our work and often discussed teachings from traditional stories that helped to determine the curricular aims as well as content. *Her First Basket* is of particular relevance as, for us, the story depicts an iterative design process that offered reassurance as our own curriculum development took multiple forms and perseverance before coming to products we were satisfied with. It exemplifies Indigenous ways of teaching and learning that have guided our work throughout this process. Finally, this story is included in the developed curriculum, and sharing it here in its entirety offers insight into the curricular content and cəkʷ-, təɬ, and hayəd kʷi gʷəshaydxʷs we have worked to center within our learning environment.

Her First Basket told by taqʷšəblu, Vi Hilbert

Long ago, before the world became the way it is today, there was a little girl. This little girl had been born with an illness that made her actions awkward. She could not run like the other children. She thought her thoughts in a different way. She spent a lot of time alone, because the children did not want her to be on their team or in their group. They felt uncomfortable with her, because she was different.

One day, she was sitting alone at the foot of a tree, feeling very sad. This tree happened to be a cedar tree, which is called the Grandmother of the People, x̌paÿac in our language. From this tree came everything that the people needed in life long ago. The Grandmother Tree had taught the people how to take strips of her bark and make all kinds of mats and baskets and hats and even towels and diapers with it. She taught them how to make houses and canoes from her trunk. She taught them how to make themselves strong with her boughs. But there was one thing she had not taught them yet: how to make baskets that could hold water without leaking.

This was the tree that the little girl had sat down by. Lucky for her. The Tree looked down and said, "Granddaughter, you seem very sad." The Little Girl told the Tree all her troubles. That was one thing about the little girl: she could talk to the Tree very easily, unlike many people.

The Tree said, "Granddaughter, you are not only different; you are special. You will be a basket maker."

The Little Girl said, "How can I make baskets, when my hands are so clumsy that I cannot even catch a ball most of the time?"

The Tree said, "Practice and know-how. I will offer up the know-how, and you must offer up the practice. First, you need to go down to the river. You will find a place where my roots are exposed. You will take as much of my root as you need to make your basket."

The Little Girl said, "I don't even know how much that is."

The Tree said, "You will know."

So, the Little Girl went and got the cedar roots. There is a special name for them in our language, c̓apx̌. The Tree showed her how much root to take, how to prepare them for working and how to coil them around and stitch them tight to make a basket. The little girl worked hard. Her fingers were sore; her arms were sore; her patience almost ran out. She thought, "I can't give

up, or I might hurt the Tree's feelings. She is trying to be so nice to me, but I don't know if I can even make it to the end of this basket." The Tree smiled to herself. She knew what the little girl was thinking.

Finally, the basket was done. "There is one thing more," said the Tree. "You must go down to the river and dip up a basketful of water and bring it back to me." The Little Girl went to the river, dipped her basket full of water, and carried it back to the tree. Along the way, she could feel drops of water leaking out of the basket and falling on her legs. When she got back to the tree, her basket was almost empty.

"I walk so slowly because of my illness that all the water leaked out on my way back to you," she told the Tree.

"No," said the Tree. "Your basket was not tight enough. You need to take it apart and do it over." At first the Little Girl couldn't believe it. How mean, to make her take it all apart after all that work. But as she sat there, she gradually knew that she needed to take the basket apart.

"The second try is going to be just as bad as the first one," she said to herself. "I can't do this kind of work, because of my illness." Again, the Tree knew what she was thinking.

The little girl hardly heard her say, "The second one will be better than the first, because you know something now and you have practiced." It was almost as if the little girl had thought that herself.

Finally, the basket was finished for the second time. It looked very nice—even sides, tightly woven. "Now take it down to the river and dip up a basketful of water and bring it back to me." The Little Girl went down to the river, dipped her basketful of water and brought it back to the Tree. There was only a little bit of water on her legs this time. The basket was almost full, but not quite. "Not tight enough yet," said the Tree. "You need to take it apart and do it over."

The same thing happened all over again for a third time. Finally, the little girl brought back her fourth basket, and it stayed full. "I finished the basket now," she thought.

But then the Tree said, "You need to decorate your basket now."

"I don't know how to decorate a basket," said the little girl, almost crying. "I can't think of ideas like the other kids. I am not creative or smart, because of my illness."

"You can make a basket that holds water," said the Tree. "No one else can do that. Don't you think that is a smart thing to be able to do?"

"It's not because I am smart; it is because you taught me."

"And wasn't it smart of you to listen and to take it apart four times and never give up? So, for a design, just look around you. Take what you see, and make it yours."

The little girl looked around. The sun was shining and making her feel warm and happy. There was a dog walking by. He was a funny dog, always hanging around the village. From time to time, he would lie on his back with his feet in the air and bark. Everyone liked him. And there was a snake at her feet, sliding away from his old skin, with a beautiful pattern on his back.

The Tree said, as if she knew what the little girl was thinking, "Yes, you can put the sun and the dog and the snakeskin on your basket. That design will represent the thoughts and feelings that you are putting into your work. Then it will be a real basket, of the kind that we call spəču?."

The little girl learned how to put the designs on the basket. When she showed it to the Tree, she felt a warmth in her hands as she held it. "I will keep this forever," she said. "Whenever I am sad, I will look at it and think of all the things I learned from you."

"No," said the Tree, "You must take it back to your village and present it to the oldest lady. That is what people must do with the first things that they make from my gifts. They must pass them on."

"What will I say to the oldest lady? I can never think of anything to say to grown-ups."

"You will speak from your heart when the time comes."

The little girl went to where the oldest lady was staying. This lady was in a lot of pain from arthritis. She did not like to see the little girl who had such trouble moving, because that little girl reminded her of her own trouble. She had often said, "Little girl, go away; don't bother me." The little girl was afraid to talk to that lady, so she turned back to her own house.

She waited until the people were all gathered, and she told the head speaker that she had a little bit of work to do. And then she sat and listened to the songs of her the people at the gathering. Finally, the time came when the head speaker said, "This little girl has something on her mind."

She asked the head speaker to call the elder's Indian name. Then she said, "This is my first basket. It holds water without leaking. On it are the warm sunlight, the little dog who makes us laugh, and the snake leaving his old skin behind. These are all things that made me happy the day I finished my basket. I am giving this basket to you because you, like my teacher, have lived a long time and are wise, and like me, you sometimes need cheering up."

The old lady thought, "This little one understands how I feel. How could I have ever been so impatient with her?"

Time passed, and the little girl grew up. As she grew older, she helped many people through her basket making. She passed along the knowledge of how to make a basket watertight. She lived according to the teachings that the Tree and the elder lady (who became her friend) gave her. And she became a treasure to her people. It would be nice to think that her illness left her. But it didn't. She suffered from that illness all her life, and she accomplished all those things anyway.

We can still learn from her even to this very day. This story has no end, because her teachings have continued from long ago right up until now.

This story, *Her First Basket*, is one that holds teachings that guided our curriculum development process, the curriculum content, and pedagogical aspirations in our work with Indigenous children. We name the curriculum huyadadčəł, *our ways*, to convey how the curriculum design builds on the lifeways carried on from ancestors of this community since time immemorial. Like the little girl learning to weave, our process has also taken multiple efforts and benefited from the support, guidance, and patience of human and more-than-human teachers. We depict how "practice and know-how" are interspersed in our process where we gain practice by writing, implementing, and revising curriculum and draw on know-how from huyadadčəł. The story we tell spans just three short years of committed curriculum work and focuses on the efforts of a Coast Salish language department and early learning program with the involvement of an Indigenous scholar who works as faculty at a local university.

What we share here is embedded in a greater research project that utilized Critical Indigenous Research Methods (Brayboy et al., 2012) with multiple data sources including daily observations of classroom language teaching using Indigenous Culture-Based Education Rubrics (Demmert et al., 2014), interviews with language teachers and classroom teachers, observations of regular curriculum meetings, and curriculum artifacts. In Lushootseed, we call this:

- ptidgʷasəb ⸸ *think, think about, reflect, realize* (methodology). In connection with huyadadčəł, *our ways*
  - *This is how we will survive*

In this article, we depict our process of curriculum development focused on huyadadčəł and our ptidgʷasəb to understand how this work engaged our theoretical commitments and the daily experiences and positive development of both children and teachers. We engage this writing through our personal narratives and storying (Archibald, 2008) as they took form through a self-facilitated, audio recorded discussion. We come together as researchers, educators, and community members. Anna is a Waganakasing Odawa descendent with Scottish, German, Italian, English, and African American ancestry. She has experience as an infant, preschool, and kindergarten teacher and works as an associate professor in early childhood teacher education. Anna lives near the reservation and has been working closely with the community over the past three years. Michele is a Coast Salish tribal citizen and began her work as a receptionist and then teacher assistant in 1990 at the early learning program. She is currently the director of the language department, where she began working in 1997. Natosha is a Coast Salish tribal citizen and supervisor and teacher in the language department where she has been working since 2000. Natosha began her teaching in the early learning program and currently teaches high school Lushootseed. Michelle is also a Coast Salish tribal citizen and supervisor and teacher in the language department who also teaches high school Lushootseed classes. Michelle began working in the department in 1995 as a teacher in the early learning program. Elizabeth is a Zuni Pueblo citizen with Diné and Anglo backgrounds. She has been working as a Research Scientist and artist with OpenSTEM Research Group at University of Washington and provided support designing materials and collecting data as a Research Assistant with Western Washington University.

Next, we share the process we underwent in developing a tribally specific, land-and-water-based Indigenous language curriculum for children birth-to-age-five (b-5) and the resulting curriculum design that may inform others engaged in such work.

A Process for Developing Early Learning Indigenous Language Curriculum

This journey began when Anna was invited by the director of early learning to support a process of curriculum development between the early learning and language departments. There are two important points to consider in how this work began: 1) the early learning leadership expressed dedication to language and culture revitalization and put forth time and resources to engage that work, and 2) teachers were not the ones to ask for outside support. So, while the project had important support and administrative resources, there were also tensions. When asked about this during our reflective discussion, one of the language leaders stated,

> I thought, "Oh, okay, this lady's [Anna] going to come in here and start telling us what to do, and she's smarter than thou," just in my mind. But then as I got to know you, I was like, "Okay, she's not treating us like we're stupid." It was totally different. It was like you were genuinely here to help us get our stuff in order and to really help us out to get our program … to get our curriculum in shape … And I'm glad that you're Native … because you can relate to what we're going through from your own tribe. And if you bring a non-tribal in here, they're all about the … they're all about the outside.

This brief recollection and the relationship building between Anna and the language/culture teachers spanned months of work as the project took form. It included many ups and downs and expressed frustrations but was always guided by the dedication to children's thriving futures.

During this time of coming to know and trust each other we built our collective commitments and theoretical groundings that drove the curriculum design; like *Her First Basket*, the process was not easy, but we persevered, and with our continued efforts, our work strengthened.

Theoretical Framing

While each individual involved in the curriculum development process has contributed their own world views, a shared theoretical framework took form in year two of this project. While we each respected and valued each other's perspectives by this time, developing a theoretical aim of the curriculum project proved a necessary foundation that ultimately served as a source of support and motivation throughout the design and challenges of implementation. At this time, most of the staff were on work-from-home status due to COVID-19. The language department leaders who were working on-site decided to continue forward with the curriculum project and invited Anna back to the office to support the project. As we revisited the curriculum work that had been developed, we stepped away from content and worked to determine the scope of curricular experiences for children birth-to-age-5. Developing a scope and sequence had been an ongoing challenge for the language department as narrowing the complexity of Indigenous lifeways and drawing on huyadadčəł as a curriculum plan was arguably a paradoxical process. We spent extensive time discussing what it is Indigenous children in this community need to know and how learning their language guided their development toward thriving futures. A language leader recalled the shift in curriculum organization that resulted from our process:

> Before … our curriculum was we had it, but it wasn't in any kind of order. It wasn't as detailed as it is now. We did a lot of words, instead of trying to get kids to talk with phrases … We didn't have a lot of the cultural pieces that we do now. I mean, we had some, but that wasn't how we figured out how we were going to teach what the themes were going to be for the month. It seems the way that we did it, every year we were changing our curriculum.

As we worked to determine a curricular scope, we also discussed the pragmatic challenges of language instruction being limited to an hour each day with most classroom teachers offering limited, if any, extensions throughout the day (for a variety of complex reasons). Through this, we knew, as so many have named before (see Bang et al., 2014; Corntassel, 2012; Simpson, 2014, 2017), that to better serve Indigenous children we needed the curriculum to center land and water. We also agreed that integrating a land-and-water-based curriculum within the classrooms would require a process of decolonization (Smith, 2013; Tuck & Yang, 2012) as the primarily white classroom teachers expressed their concerns and pressure of having time to teach culture while feeling responsible toward kindergarten readiness (Iorio & Parnell, 2015). We recognized that, to integrate cək̓ʷ-, təł, and hayəd kʷi gʷəshaydxʷs within school-based education (Brayboy & Lomawaima, 2018; Grande, 2015; McCarty & Lee, 2014), we needed to consider the settler colonial constructs that drive both policy (Reyhner & Eder, 2017) and curriculum development (Calderón, 2014; Sabzalian, 2019) within the early learning program. Ultimately, we agreed that the best way to develop the huyadadčəł curriculum, while navigating the complexities of school-based education, was to begin with land and water (Bang et al., 2014; Cajete, 2015; Deloria & Wildcat, 2001; Simpson, 2017).

Development of the Unit Calendar

With shared principles determined, we developed a seasonal based curriculum calendar relevant to the Coast Salish Tribal Nation. Progressing with the school year, we asked "what happens ecologically and culturally during this time?" and discussed the important human and more-than-human lifeways that took place throughout each season. In this, we emphasized human and more than human lifeways as connected to and driven by the seasons. This included weather observations as an important skill to understand seasonality and the connected lifeways and was a different approach than what is often seen in early learning as disembodied, human-centric units that teach about weather and seasons as abstract phenomena. Figure 1 depicts the curriculum topics that were decided upon through these discussions.

Figure 1 – *Seasonal Curriculum*

It is important to note, this iteration of our work and the determined unit calendar was developed after a number of units had previously been created collaboratively between the language/culture and early learning teachers. This was a rebeginning to the curriculum initiative, this time led by the language department leadership team, and to launch the process, the language leaders each

wrote an initial unit. In doing this, we were able to further concretize our commitments to decolonization through land-and-water-based education within the planned curriculum.

As staff returned from COVID-19 related furlough, the curriculum writing was divided where each language teacher would draft the unit plan, bring it to the group for feedback, make revisions, and finalize the plans. Due to COVID-19 policies, these plans were taught remotely for the first iteration with language teachers pre-recording the lessons and early learning teachers implementing them with children. We received feedback on the developmental appropriateness of the curriculum and what activities were of most interest to the children and subsequently engaged in another round of curriculum revisions. This aspect was a challenge of coming to shared understandings between classroom teachers and language teachers of what developmental appropriateness should look like for an Indigenous early learning curriculum and what pedagogical supports were needed to support the implementation of planned experiences. The work here was productive in moving beyond colonial perspectives of child development and upholding community values and teachings to design appropriate learning experiences for young children. Like *Her First Basket*, our work was strengthened with each revision, and like the little girl in that story, the process of redoing was a challenge and sometimes frustrating.

## An Early Learning Indigenous Language Curriculum Framework

With the unit calendar determined and a process underway, we developed curriculum units that spanned the course of an academic year. Each unit is built on huyadadčəł: Values & Teachings; Past, Present, Always; Ecological Systems; Sharing and Gifting; Ceremony; Story & Song; Harvesting; Seasons; Traveling; Place & Territory. Figure 2 depicts huyadadčəł as curricular teachings through a metaphor of weaving; together, the teachings act as the tines that give structure to the curriculum basket and strengthening children's understandings of huyadadčəł through the seasons. The content and teachings woven through the seasons connect to established community lifeways.

Figure 2 - *huyadadčəł*
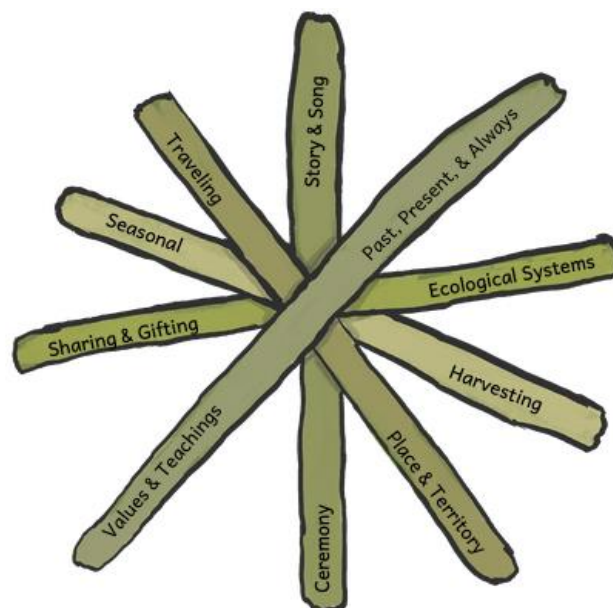
Each seasonal unit weaves through these teachings, building on each other over the course of the year. As the year goes on, the structure becomes stronger as the curricular pattern and teachings are repeated. Additionally, this calendar spans the b-5 continuum, so as children progress in their early learning program, their depth of understanding and language proficiency increases. This curricular approach is fixed in nature and not inquiry driven in a way that designs experiences based on in the moment interests and experience. The predetermined seasonal calendar places value on children's lived experiences and family knowledge systems as important in their school-based learning and ensures these lifeways continue into the future. Figure 3 portrays the curriculum design as it takes form through the seasonal calendar.

Figure 3 - *Weaving through the Seasons*
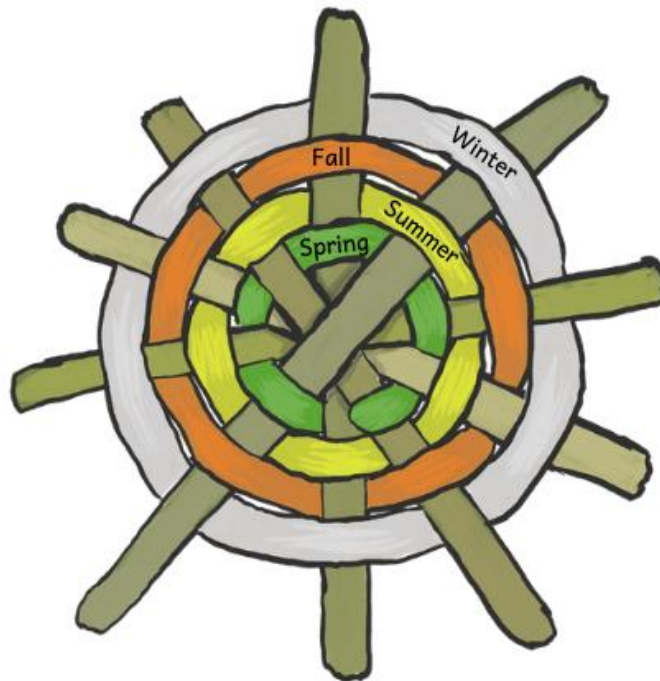
To offer an example of how the curriculum takes form in classrooms with young children, we offer an overview of the Hunting and Feasting: Big Game unit. Taking place in late fall, children learn about traditional and contemporary hunting practices of their community. Figure 4 details examples of how huyadadčəł take form through teachings across activities within a particular unit.

Figure 4 - *Unit Example*

One activity in this unit engages children in a dramatization of hunting utilizing a life-size print of elk and deer, as well as predator animals such a cougar and wolf that hunters must be mindful of. In this activity, children select the big game animal they will hunt and work to identify the correct animal track to follow and locate their game (see Figure 5).

Figure 5 - *Hunting Activity*

Through this activity, teachers foster children's developing understandings of complex ***ecological systems*** to identify the animal tracks, discuss the habitat of their hunting in the mountains, and understand the roles of predator species for both humans and more-than-humans. Before they begin tracking, teachers sing the "hunting" ***song*** with the students and discuss the ***ceremonial*** practices of asking permission to kill the deer/elk and expressing their gratitude and intent of using the game to feed their family. As children take on the role of hunter, they are asked to consider who they will ***share*** or ***gift*** the kill with, gaining ***teachings and values*** of taking only what you need and using all that is offered. Teachers work to make connections with the children's lived experiences by discussing who in their families hunt and reflecting across generations, ***past, present, and always***, by teaching how their ancestors hunted a long time ago (with spears and ***traveling*** by canoe into the mountains), that their families hunt now (with guns and by driving to the mountains), and that their people will always hunt and they too can become skilled hunters. This unit also integrates traditional and contemporary ***stories*** (see [Deer and the Changer](#)) that help children to further understand cultural values around hunting as well as foundational teachings to know who is ***harvested*** (deer and elk) in what ***season*** (fall). This aspect is integrated through circle discussions and also through the use of a storyboard map depicting the reservation and usual and accustomed territories (see figure 6) where children can become familiar with the ***place and territory*** where they reside and have treaty rights for hunting and gathering.

Figure 6 - *Map of Territory*

While the hunting dramatization and storyboard map activities are representational in nature, they offer opportunities for language teachers to engage the unit's phrases and vocabulary to support children's emerging language development through culturally and seasonally relevant and playful activities. Activity types vary throughout the year to include games (e.g., card matching, board games, scavenger hunts), arts (e.g., weaving, painting, building), Indigenous foods (e.g., teas, drying meat and fish, making jam), book making, and outdoor land-and-water-based activities. The latter include plant walks, beach walks, and culture-based seasonal activities such as washing canoes in the early spring or having a clam bake in early summer. We have also worked to bring the outdoors inside when the ecosystem around the early learning academy does not include plant relatives we are working to build relationships with. As an example, when learning about cedar and having no cedar trees in the area, the teachers harvest cedar boughs to then bring into the classrooms for a variety of learning experiences: making cedar prints, preparing cedar infused oil, and hanging cedar boughs above the doorways. Cedar is also offered as a resource to the classroom teachers, some of whom add it to their sensory tables, science and art spaces, and infuse into playdough (see Figures 7 and 8).

Figure 7 - *Cedar Infused Oil*

Figure 8 - *Cedar Infused Playdough*

The desire for classroom teachers to integrate the Indigenous language and curricular content throughout their classroom environment and daily activities, as depicted above, is a foundational aspect of the curriculum design toward language revitalization. The degree to which classroom teachers have done this is varied and will be further discussed in the following sections.

Reflecting on Our Process

Like *Her First Basket*, our process of curriculum development through a model of land and water education took patience, perseverance, and trust. We relied on the guidance of each other, our ancestors, and more-than-human relations. As we reflect on this process, we've done so with joy, hope for our futures, and gratitude for each other and the work we have accomplished collectively. The Indigenous language department in this project has engaged in curricular development for decades, so in this iteration, a driving question was: what would we do differently to further reach the department's goals of an early learning curriculum that cultivated language

acquisition? Focusing on what leveraged our capacity to complete a year long curriculum that is intended to last over time, one of the language leaders shared her reflections:

> I feel like there was a point where we felt empowered to just do what we've always wanted to do. And finally felt like we had that ability to be like, Hey, this is how it's going to go. This is how we want to write it. This is how it's going to be implemented. Not that it's been easy, but it was, I think it did help. I think having you [Anna] as an outside supporter of the project helped to ensure that we could implement it.

Two aspects of this reflection have repeatedly been discussed as important to the project's success: 1) deciding to "just do what we've always wanted to do," and 2) having an "outside supporter." With these structures, we were able to overcome previously faced challenges such as determining a seasonal unit calendar and sticking to it, following a unit planning framework and lesson plan structure, and committing to the curricular teaching discussed above as an effort of resurgence and self-determination. These commitments led to the fully developed curriculum with a localized, seasonally based, scope and sequence of learning experiences that consistently centers huyadadčəł. This is a shift in previously developed curriculum that often replicated colonial schooling that was present within the early learning classrooms. One of the language leaders depicted this difference:

> From what I've witnessed over the years of the curriculum, our department has had a lot of great ideas for what should have been taught in the classroom, but we didn't necessarily receive the support in the classroom of implementing it the way that we wanted to implement it. For instance, if we wanted to stick to our curriculum the way that we developed it, we would have teachers tell us, "Oh, I'm teaching sea life in the fall. So, can you do sea life then?"

Having an outside facilitator to support the work also proved valuable as outside support offered structure and accountability through regularly scheduled meetings and timelines, as well as understandings of both Indigenous education and early learning. This was strengthened as the project became grant funded and research based, which came with both resources and a framework for documenting the process.

Teacher Professional Development

Beyond building our relational adherence and structure for curriculum development, a variety of challenges have been present in this work. With a primary goal of language revitalization, we are excited about how land-and-water-based learning will propel children's language development and understandings of huyadadčəł through authentic, cultural, and seasonal based experiences. Indigenous language teachers enter their positions with a commitment to their language, and many have extensive understandings of huyadadčəł through their lived experiences and ancestral teachings that have driven the content of the developed curriculum. However, most have not had preparation specific to working with young children, frameworks of land-and-water-based education, or pedagogical approaches to teaching Indigenous language and culture. One of the language leaders offered an example of how this impacts classroom teaching:

A lot of people here don't know what age-appropriate work is for preschool, kindergarten, etc, etc. They come up with this big, fantastic lesson, but you've got 15 minutes, and it took 20 minutes just to explain how the game worked. … And if they did get a chance to play it, they got to play it for two minutes. You need to make activities that are not so in depth of instruction that there's no time for the kids to play. And we move so fast, they're really not going to get it anyway. So, you need to think of simpler lessons for the kids that are going to be repetitive over and over again.

With Indigenous language teachers in this community holding curriculum content understandings, we have recognized, and worked to integrate, professional development around Indigenous pedagogies, child learning and development, and land-and-water-based curriculum. This has taken form through our curriculum design meetings, classroom observations and in the moment coaching, and harvesting opportunities to prepare for curriculum activities. We see a need for integrating these aspects of teacher professional development through efforts of land education teacher professional development (see Calderón et al., 2021; Lees et al., 2022) where we support teachers' relationships with land and water while building their understandings of how to facilitate children's developing understandings and language skills through their interactions with the natural world. And while some of these efforts have been initiated, in practice and balanced with complex teacher demands, land-and-water-based professional development is challenging. One of the language leaders reflects on this after having resistance and logistical barriers to land-and-water-based professional development. In an effort to integrate pragmatic supports to foster more teacher learning on and with land and water, she offered,

Everybody should have a harvesting outfit, some harvesting shoes, some harvesting gear [in the office]. So, at any moment that the weather is good, there's no excuse for anybody needing to go back home. There's no excuse for nobody having a ride. There's no excuse. Put them sweats on, put that sweatshirt on, put them rain boots on, grab these gloves. If we have all of that here, then there's no excuse.

These experiences are necessary, and this notion was present in *Her First Basket*, where we see a child needing explicit teaching and pedagogical support to nurture her understanding. To do so, Indigenous teachers also need support, and while many come with content understandings and a depth of community teachings, others are re-learning the curriculum while simultaneously designing and teaching children. "It's not just the kids down there learning it. It's some of our staff that have never experienced Salmon Ceremony … you can't teach something if you've never experienced or have never read anything about it." Anna also reflected on how language teachers expressed their experiences of learning, planning, and teaching simultaneously:

We were doing the edits, and we were going over the feasting unit. I remember the feasting unit being very stressful with the teachers, and we're going over it, and I'm looking back to their reflections, and there were things like, "This was just too much. We need to shorten these stories. We need to not have the song." Whatever it was, things were too much and overwhelming. During our reflection, one of the teachers said, "I think, I remember feeling like that, but I don't really think it's about the curriculum. I think it's just because I was new, and that it doesn't actually feel like too much now." And it was such a beautiful

reflection and kind of validation for us of like yeah, it's a lot when you're doing it for the first time, like what's the teacher development that needs to take place?

Through these reflections, we have also identified where curriculum was planned with seasonal practices in mind that did not in fact align with the seasons. This has made clear where barriers exist in reaching our goals of more outdoor learning experiences for children and where our own knowledge of the local ecosystem and seasonal changes must grow. As discussed, we have found limitations in our planning due to the constraints of classroom-based learning and what topics are deemed important for children to explore vs. the local ecosystem where the early learning center is situated. However, the commitment to furthering land-and-water-based education with opportunities for children to learn outdoors has only grown through this experience. One of the language leaders depicted the desires with the barriers:

> Some of the stuff that we put in there wasn't the time of the season. But, what we wanted was the kids to be able to hands on experience what is really happening in that month; well, now we're having problems trying to find a Cedar tree; these are things that really do happen at that time, but we don't have any way of doing hands on with them because we have no transportation [to visit cedar trees]. And now that we're redoing things, we could put like no dandelions really come out at this time. So, I think it was all about trying to get [the kids] to do more hands on and be able to learn through that, through doing it instead of just seeing it on a picture.

Recognizing the areas where we have reached our curricular goals and where we need continued work has been an important part of our process. As the little girl in *Her First Basket* was supported by Cedar Tree and with desire to contribute to her community, we too were supported through this process in our shared goals to share this curriculum as a gift to children and families.

Conclusion

Developing an Indigenous early learning curriculum through a framework of land and water education has been an extended process that came with challenges and beautiful moments of celebration. An important take away for us through the experience has been the importance of continuing forward in this work while recognizing the imperfections. We recognize the limitations of a land-and-water-based model while children continue most of their learning indoors. We also know the limitations of teaching language with limited instructional time. And while we could continue naming our shortcomings, we see children using language and enacting their cultural teachings. As educators, our understandings have deepened through the curriculum development, and we see the positive impact on children. In the next phase of our research, we are examining how children are learning and using their Indigenous language and culture through the developed curriculum. For us, this is what Indigenous resurgence looks like in the everyday. Tuck and Gaztambide-Fernández (2013) put forth an important articulation of the ways in which Indigenous knowledges are taken up in curricular initiatives to secure settler futurities through the continued dispossession and replacement of Indigenous peoples. By taking on the call to develop this curriculum and doing so on our terms through huyadadčəł where "we felt empowered to just do

what we've always wanted to do," we reject constructs of settler replacement and enact educational sovereignty toward thriving Indigenous futures.

Statement of Support

References

Adriany, V. (2018). Neoliberalism and practices of early childhood education in Asia. *Policy Futures in Education*, *16*(1), 3–10. http://dx.doi.org/10.1177/1478210317739500

Archibald, J. (2008). *Indigenous storywork: Educating the heart, mind, body, and spirit*. UBC Press.

Bang, M., Curley, L., Kessel, A., Marin, A., Suzukovich, E. S., III, & Strack, G. (2014). Muskrat theories, tobacco in the streets, and living Chicago as Indigenous land. *Environmental Education Research*, *20*(1), 37–55. https://doi.org/10.1080/13504622.2013.865113

Barajas-López, F., & Bang, M. (2018). Indigenous making and sharing: Claywork in an Indigenous STEAM program. *Equity & Excellence in Education*, *51*(1), 7–20. https://doi.org/10.1080/10665684.2018.1437847

Brayboy, B. M. J., & Castagno, A. E. (2009). Self-determination through self-education: Culturally responsive schooling for Indigenous students in the USA. *Teaching Education*, *20*(1), 31–53. https://doi.org/10.1080/10476210802681709

Brayboy, B. M. J., Gough, H. R., Leonard, B., Roehl, I. I., Roy, F., & Solyom, J. A. (2012). Reclaiming scholarship: Critical Indigenous research methodologies. In S. D. Lapan, M. T. Quartaroli, & F. J. Riemer (Eds.), *Qualitative research: An introduction to methods and designs* (pp. 423–450). Jossey-Bass/Wiley.

Brayboy, B. M. J., & Lomawaima, K. T. (2018). Why don't more Indians do better in school? The battle between US schooling & American Indian/Alaska Native education. *Daedalus*, *147*(2), 82–94. https://doi.org/10.1162/DAED_a_00492

Cajete, G. (2015). *Indigenous community: Rekindling the teachings of the seventh fire*. Living Justice Press.

Calderón, D. (2014). Speaking back to manifest destinies: A land education-based approach to critical curriculum inquiry. *Environmental Education Research*, *20*(1), 24–36. https://doi.org/10.1080/13504622.2013.865114

Calderón, D., Lees, A., Swan Waite, R., & Wilson, C. (2021). 'Crossing the bridge': Land education teacher professional development. *Professional Development in Education*, *47*(2-3), 348–362. https://doi.org/10.1080/19415257.2021.1891957

Corntassel, J. (2012). Re-envisioning resurgence: Indigenous pathways to decolonization and sustainable self-determination. *Decolonization: Indigeneity, Education & Society*, *1*(1). https://jps.library.utoronto.ca/index.php/des/article/view/18627

Deloria, V., Jr., & Wildcat, D. (2001). *Power and place: Indian education in America*. Fulcrum Publishing.

Demmert, W., Hilberg, S., Beaulieu, D., Rawlins, N., Kamana, K., French, K., & Johnson, F. T. (2014). *Indigenous culture-based education rubrics*. Western Washington University.

Grande, S. (2015). *Red pedagogy: Native American social and political thought*. Rowman & Littlefield.

Haslip, M. J., & Gullo, D. F. (2018). The changing landscape of early childhood education: Implications for policy and practice. *Early Childhood Education Journal*, *46*(3), 249–264. https://doi.org/10.1007/s10643-017-0865-7

Hermes, M. (2005). "Ma'iingan is just a misspelling of the word wolf": A case for teaching culture through language. *Anthropology & Education Quarterly*, *36*(1), 43–56.

Iorio, J. M., & Parnell, W. (2015). *Rethinking readiness in early childhood education: Implications for policy and practice*. Springer.

Lee, T. S., & McCarty, T. L. (2017). Upholding indigenous education sovereignty through critical culturally sustaining/revitalizing pedagogy. In D. Paris & H.S. Alim (Eds.), *Culturally sustaining pedagogies: Teaching and learning for justice in a changing world* (pp. 61–82). Teachers College Press.

Lees, A., & Bang, M. (2023). Indigenous pedagogies: Land, water, and kinship. *Bank Street Occasional Paper Series*, *2023*(49), Article 1. https://educate.bankstreet.edu/cgi/viewcontent.cgi?article=1500&context=occasional-paper-series

Lees, A., Wilson, C., Swan-Waite, R., & Calderón, D. (2022). Centering Indigenous land education in teacher professional development . In C. D. Gist & T. J. Bristol (Eds.), *Handbook of research on teachers of color and Indigenous teachers* (pp. 531–548). American Educational Research Association.

Lomawaima, K. T., & McCarty, T. L. (2006). "To remain an Indian": Lessons in democracy from a century of Native American education. Teachers College Press.

Marin, A., & Bang, M. (2018). "Look it, this is how you know:" Family forest walks as a context for knowledge-building about the natural world. *Cognition and Instruction*, *36*(2), 89–118. https://doi.org/10.1080/07370008.2018.1429443

Masta, S. (2018). Settler colonial legacies: Indigenous student reflections on K-12 social studies curriculum. *Intersections: Critical Issues in Education*, *2*(2), 76–88. https://digitalrepository.unm.edu/intersections/vol2/iss2/4/

McCarty, T., & Lee, T. (2014). Critical culturally sustaining/revitalizing pedagogy and Indigenous education sovereignty. *Harvard Educational Review*, *84*(1), 101–124. https://doi.org/10.17763/haer.84.1.q83746nl5pj34216

McCoy, M. L., & Villeneuve, M. (2020). Reconceiving schooling: Centering Indigenous experimentation in Indian education history. *History of Education Quarterly*, *60*(4), 487–519. https://doi.org/10.1017/heq.2020.53

McCoy, K., Tuck, E., & McKenzie, M. (Eds.). (2017). *Land education: Rethinking pedagogies of place from Indigenous, postcolonial, and decolonizing perspectives*. Routledge.

Nxumalo, F., Pacini-Ketchabaw, V., & Rowan, M. (2011). Lunch time at the child care centre: Neoliberal assemblages in early childhood education. *Journal of Pedagogy*, *2*(2), 195–223. https://doi.org/10.2478/v10159-011-0010-4

Pacini-Ketchabaw, V., & Taylor, A. (Eds.). (2015). *Unsettling the colonial places and spaces of early childhood education*. Routledge.

Reyhner, J., & Eder, J. (2017). *American Indian education: A history*. University of Oklahoma Press.

Sabzalian, L. (2019). *Indigenous children's survivance in public schools*. Routledge.

Simpson, L. B. (2014). Land as pedagogy: Nishnaabeg intelligence and rebellious transformation. *Decolonization: Indigeneity, Education & Society*, *3*(3). https://jps.library.utoronto.ca/index.php/des/article/view/22170

Simpson, L. B. (2017). *As we have always done: Indigenous freedom through radical resistance*. University of Minnesota Press.

Smith, L. T. (2013). *Decolonizing methodologies: Research and indigenous peoples*. Zed Books.

Tuck, E., & Gaztambide-Fernández, R. A. (2013). Curriculum, replacement, and settler futurity. *Journal of Curriculum Theorizing*, *29*(1). https://journal.jctonline.org/index.php/jct/article/view/411

Tuck, E., & Yang, K. W. (2012). Decolonization is not a metaphor. *Decolonization: Indigeneity, Education & Society*, *1*(1). https://jps.library.utoronto.ca/index.php/des/article/view/18630

Wolfe, P. (2006). Settler colonialism and the elimination of the native. *Journal of Genocide Research*, *8*(4), 387–409. https://doi.org/10.1080/14623520601056240