Regenerative Capacities: Bringing social studies and Indigenous studies together for education that responds to climate crisis

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Abstract

This article summarizes the results of interviews concerning intersections found among social studies and history education, climate education, and Indigenous studies. We explore what may be involved in curricular and pedagogical reform that better features these intersections, and what considerations arise in approaching reform in schools, universities, teacher education, and decolonizing pedagogies. Following a literature review and explanation of our interview methods, we summarize current barriers and strengths in social studies and history practices, and their capacity to address critical issues related to climate crisis as well as decolonizing schools and universities. We conclude with suggestions for the future of teaching, teacher training, and educational research and how these may contribute to regenerative capacities that better honour the relationships between human and more-than-human beings, while remaining attentive to Indigenous imperatives.

Résumé

L'article résume les résultats d'entrevues portant sur les points d'intersection entre les domaines des études sociales et de l'enseignement de l'histoire, de la sensibilisation aux changements climatiques et des études autochtones. Nous explorons ce qui peut être impliqué dans la réforme des programmes et de la pédagogie pour mettre en valeur ces intersections, ainsi que les considérations qui surgissent dans le cadre de la refonte des programmes scolaires et pédagogiques. L'article aborde aussi les implications d'une telle réforme sur les écoles, les universités, la formation des enseignants et les approches pédagogiques décolonisatrices. Après une revue de littérature et un survol méthodologique, nous résumons les obstacles et les forces actuels dans les pratiques des études sociales et de l'histoire, de même que la capacité de ces domaines à aborder les enjeux critiques liés à la crise climatique ainsi qu'à la décolonisation des écoles et des universités. L'article se conclut par des suggestions pour l'avenir de l'enseignement, de la formation des enseignants et de la recherche en éducation, et sur un portrait de la contribution potentielle de chacun au maintien des capacités régénératrices qui honorent mieux les relations entre le monde humain et extra-humain, un processus qui exige notamment de demeurer attentif aux préoccupations des Autochtones.

Key-words: decolonizing, social studies, history education, climate crisis, Indigenous studies

Mots-clés : points d'intersection, réforme, décolonisation, études sociales, enseignement de l'histoire, crise climatique, études autochtones

Introduction

Schooling that anticipates and responds holistically to climate crisis requires, and can benefit from, the contributions of all subject areas. Our hope is to encourgage and work with teachers in social studies and history specifically, alongside interdisciplinary teachers at all levels, so they may see themselves as climate and environmental educators working against anthropocentrism.[1] Further, our goal is to reimagine social studies and history education (SSHE) to take this change seriously and centre the learning necessary to respond to local, regional, and international manifestations of climate crisis, while resisting and working against settler colonialism. In this article, we expand upon previous work that asked questions, and suggested some new directions that this orientation could take in the SSHE subject area (McGregor et al., 2021). We argue that the task is much larger than adding environmental topics to existing social studies curriculum, or teaching the history of climate more frequently. Our understanding of the need for curricular and pedagogical reform involves teaching in ways, and about things, that will support youth living well—as individuals and in communities—even while in relation to deep uncertainties associated with climate, and intersecting crises. This new SSHE may include learning how to affect policy change over time, the effectiveness of species protection measures based on historical examples, how Indigenous ontologies and cosmologies centre the more-than-human differently from Western worldviews, and/or how to manage emotions when feeling threatened or disheartened by climate loss. As one of our interview participants shared, the debilitating emotions associated with confronting this "wicked problem" (Scranton, 2015) is one of its most difficult features (Hickman, 2020), but also provides an impetus and vehicle for change:

> I have really tough days too, and days of despair, a lot of grief, and a lot of emotion. But also, you know what, there are these unbelievable regenerative capacities. So how do we center those so that we can be much more intentional and conscious and say, even in these scarred places, *what is possible*? (Interview participant)

Here we share our search for common goals, sources of knowledge and experience, resources, and learning opportunities that exemplify "regenerative capacities" in—and as a result of— social studies and history education.

We are settler scholars and graduate students affiliated with Queen's University, located on Anishinaabe, Haudenosaunee, and Huron-Wendat territory in Canada, or what is colonially referred to as Kingston, Ontario. The university is located on the edge of Lake Ontario, just south of the Canadian Shield region, at the confluence of the Cataraqui and St. Lawrence rivers and close to the US

border. We participate in this settler colonial institution that sits on land that was supposedly "purchased" from the nations whose relationships to place[2] and land were preeminent. That purchase, by the Crown from the Mississauga peoples in 1783, is not well documented, surely involved coercion, was based on significant ambiguity surrounding the amount of territory in question, and was followed by forcible displacement and exclusion of Indigenous peoples from these lands (Murray, 2018). We recognize that we have inherited intergenerational fiscal wealth, social capital, and white privilege from our settler ancestors who participated in similar displacements at the expense of Indigenous nations close by, and elsewhere. We are committed to learning about, and from, specific Indigenous knowledges, and ways of being through decolonizing practices called for by Indigenous communities, situated in the ancestral territories to which we relate.

As scholars and settlers relatively new to the field of research in environmental and sustainability education, we are interested in learning from and in relation to others, as our own theories, pedagogical approaches, and purposes emerge. Thus, we frame this research as a preliminary consultative effort. In 2022, Heather conducted 13 interviews with researchers and teacher educators about how to reimagine SSHE in relation to climate response, and what that might look like, feel like, and accomplish, in terms of learning outcomes. The scope and implications of the interview findings extend well beyond this manuscript, but we intentionally begin here with a specific focus on the current and potential role of Indigenous knowledges and ethical relationality (Donald, 2009) in SSHE for climate crisis readiness, action, and wellness. We believe that a defining feature of a reimagined SSHE is its openness, flexibility, and attention to Indigenous knowledges, relationships, and what Tuck et al. (2014) call land education[3]—which is why we have begun by sharing findings with this focus. We seek to identify: what goals these fields hold in common; what curricular reform that better features these intersections might look like; and, what considerations are raised for schools, teacher education, universities, and decolonizing pedagogies, broadly speaking. Following a literature review and explanation of our interview methods, the article proceeds by summarizing current barriers and strengths in SSHE practice in schools and universities. We conclude with suggestions for the future of teaching, teacher training, and educational research.

Conceptualizing Education that Responds to Climate Crisis

Recent literature features urgent calls for the reorientation of education towards environmental and sustainability education, climate justice, and climate crisis responsiveness (Andreotti, 2021; Assadourian & Mastny, 2017; Farrell et al., 2022; Karrow & DiGiuseppe, 2020; Nxumalo, 2017; Wallace et al., 2022). Climate crisis-responsive curriculum will necessarily entail a variety of approaches and insights, but here we focus on the intersection of SSHE with Indigenous studies and pedagogies. Echoing Indigenous and ally scholars who have worked in

environmental education well before us, educational reform should begin with and return to centring Indigenous histories, land-based knowledges, and futurities (Aikenhead & Michel, 2011; Cajete & Santa Clara Pueblo, 2010; Kulnieks et al., 2013; Simpson, 2002; Stein et al., 2022; Tuck et al., 2014; Tuck & Yang, 2012). Relevant policy justifications for this focus include Article 15 1. of the United Nations Declaration on the Rights of Indigenous Peoples (2007), which states: "Indigenous peoples have the right to the dignity and diversity of their cultures, traditions, histories and aspirations which shall be appropriately reflected in education and public information" (p. 14). As most teachers are well aware, Canadian jurisdictions are actively responding to the *Truth and Reconciliation Commission of Canada: Calls to Action* (2015) for "age-appropriate curriculum on residential schools, Treaties, and Aboriginal people's historical and contemporary contributions to Canada" (p. 289), often placing those new expectations in social studies and history curricula. In 2022, the Association of Canadian Deans of Education (ACDE) (2022) released an accord on Education for a Sustainable Future, in which they assert, "An Indigenous wholistic learning model for environmental pedagogy addressing spiritual, emotional, physical and intellectual development will ensure the paradigm shift necessary in education for a sustainable future" (p. 7). ACDE advocates for the centring of Indigenous knowledge systems and Indigenous pedagogies as sustainable environmental responses to climate crisis, and the pressing need for a deeper paradigm shift in education.

Beyond the policy-driven rationale for this focus, we acknowledge that human-caused and/or exacerbated environmental changes are interlocked with capitalism-extractivism; an adherence to Eurocentric rationality, which dichotomizes human from non-human; and settler colonialism—referred to by Stein et al. (2017) as "the house of modernity" (see also: Kerr & Amsler, 2022). Examined historically, white settlers in the Global North hold the greatest proportion of responsibility for these problems, while racialized and Indigenous communities around the world bear the worst consequences. We believe the future of our species must be a collective and just effort that honours individual and collective rights, responsibilities, and interdependencies. Addressing climate crisis without perpetuating injustice must concurrently dismantle the oppressive power structures of settler colonialism. There is an important material dimension to this, but our educational project is one of changing hearts, minds, and spirits, as we seek to promote care for life. It is essential to expose extractive ways of thinking, being, and doing that have led us, and the planet, to the present state; the same attitudes and practices cannot be trusted to lead us out of it. Instead, we need local solutions and practices that uphold greater ecological relations. These are often, if not always, a matter of knowledge held by Indigenous communities.

Therefore, as we consider increasing the emphasis on environmental relationality in social studies and history, we must work alongside reconciliation, decolonization, and Indigenization efforts—while continuing to critically examine the invitations and outcomes of those same efforts. We are cognizant that

scholars who study institutionally-located Indigenous education acknowledge that despite forward strides in policy, further design and implementation of reconciliation, Indigenization, and decolonizing initiatives would benefit from better critical analysis, theorization, and a willingness to engage in unlearning, as well as deeper system change (Ahenakew, 2017; Donald, 2019; Gaudry & Lorenz, 2018; Madden, 2019; Marker, 2011). For example, Erickson (2020) argues that conceptualizations of both the problem of climate change, and potential solutions, must be assessed to ensure recommendations are not simply re-inscriptions of capitalism and colonialism, and recommends questioning colonial forms of environmentalism by way of centring Indigenous experiences. Gram-Hanssen et al. (2022) likewise draw attention to the relationship between climate change and colonialism particularly given colonialism's link to capitalism, and postulate that engaging with all three, especially for "non-BIPOC people," is an issue of what they call "right relations" or active efforts to change uneven power relations, respectfully (p. 678). Pratt and Danyluk (2019) contend that reconciliation cannot be arrived at by changing curriculum, additional resources, or a one-time talk from an Elder. Madden (2019) uses the language of de/colonizing to underscore that decolonizing may involve both colonizing and decolonizing components, despite efforts to resist the seepage of colonial logics into these same efforts. Although we cannot write more here about how actions under the banner of reconciliation or decolonization are understood in the context of education, this provides some of the contours framing these debates, to serve as touchstones for further examination.

The work of bringing these mandates to realization demands fundamental shifts, not just changes to curriculum, lesson plans, and assignments. We are inspired by the regenerative capacities of Potawatomi scholar Kyle Powys Whyte's (2017) work, wherein he suggests:

> Indigenous climate change studies perform futurities that Indigenous persons can build on in generations to come. That is, our actions today are cyclical performances; they are guided by our reflection on our ancestors' perspectives *and* on our desire to be good ancestors ourselves to future generations. (p. 160, emphasis in original)

As will be illustrated below, we are looking for regenerative capacities that necessarily acknowledge the undervaluing of Indigenous epistemologies and ontologies by dominant settler educational approaches in Canada. At the same time, they must address the underrepresentation of climate change topics. In this effort we look to leverage the particular strengths of current processes and knowledge bases in social studies and history, as these subject areas are generally taught in schools, and extend those towards regenerative capacities in ways that address contemporary precarities. This will involve both continuity *and* change within the subject areas. Taken together we ask: What topics and approaches must decay in order to invite new ones? What do we wish to sustain? Who gets to choose, and who are the choices for? In searching for regenerative capacities

to answer these questions, we find hope in conversations with educational experts, and seek inspiration and cautionary tales, regarding how teachers and teacher educators are engaging, or failing to engage, with these issues.

Interview Methodology

We set out to interview researchers and teacher educators in SSHE and adjacent fields (see Figure 1 below) in order to gather observations of the field, and their experiences, ideas, and sources of inspiration. The intent of this qualitative inquiry was to identify 1) where, and with whom, work is already occurring in Ontario to infuse SSHE with environmental knowledges, dispositions, and competencies; and 2) what work is occurring in other fields, such as Indigenous land-based learning or environmental history, that may be adapted and brought more robustly into K-12 SSHE programs. As historically minded researchers, our hope is to build on and learn from existing efforts and capacities (McGregor et al., 2021). With approval from Queen's University's Research Ethics Board, Heather conducted 13 interviews with teacher educators and researchers primarily located in Ontario universities, or whose research is focused within the Ontario context. Prospective participants were identified through pre-existing professional networks. Although the recruitment of participants was not intended to be representative of higher education in Ontario, we engaged with a range of perspectives and locations including 8 universities, from 9 different locations.

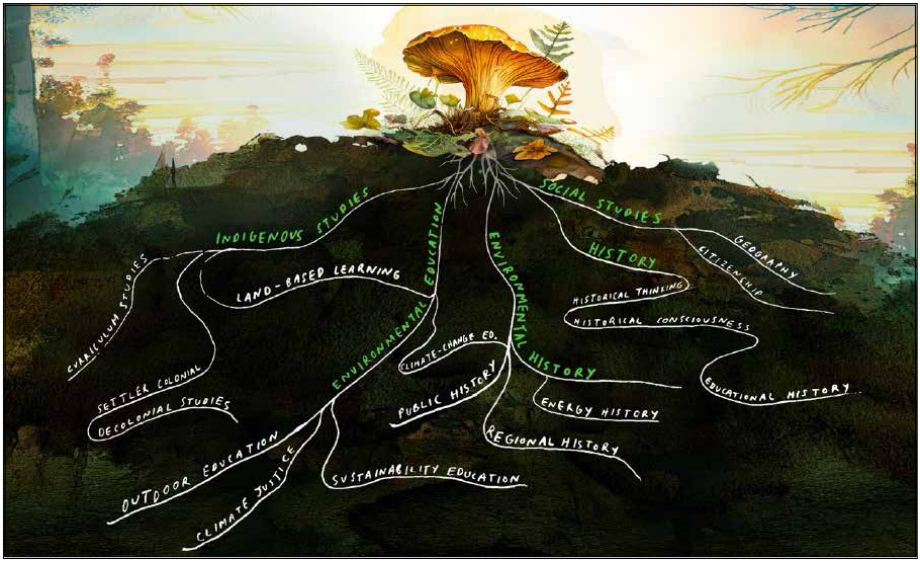

Figure 1: Visual representation of fields with which interview participants affiliate (Flavin, 2023).

The above figure visually represents the range of expertise we accessed through this set of interviews. We imagine the mushroom at the top as the fruit, or the findings, of our research labour. It was our primary aim to engage with experts coming from the hyphae (threads) of "Indigenous Studies," "Environmental Education," "Environmental History," and "Social Studies and History Education." From those four prominent hyphae, there are other mycelial (networked) offshoots that represent sub-fields, as well as related research and teaching areas the interview participants identify with and participate in (e.g., sustainability education, decolonial studies, historical consciousness, geography education). In this article, we feature findings from across all the interviews that focus on Indigenous knowledges and relationality, including interviews with two Indigenous-identified scholars who work in faculties of education and represent different Indigenous Nations and communities.

Each participant took part in one semi-structured interview that lasted approximately one hour. Open-ended questions invited the participant to describe how the environment and climate change arise in their courses, either intentionally or organically, and whether they observe environmental content in their other research, teaching, or professional development work. Strengths in the field(s) in which participants work were solicited, alongside intersections of their field(s) with SSHE. The interviews narrowed-in on potential overlaps, complementarities, and/or collaborations in response to the climate crisis. Participants were asked to consider what SSHE should focus on to prepare youth for a precarious future, particularly when considering issues of equity, social justice, reconciliation, and decolonization. Additionally, we sought ideas for topics, projects, classroom lessons, and/or activities that could fruitfully contribute to the priorities discussed. Our findings have been arranged into "barriers," "strengths," and "suggestions for the future," in an effort to distil and shift practice in the field. We pursue this arrangement while also recognizing that lived experience within these categories inevitably fail to adequately represent, contain, or differentiate from one another when faced in practice (one moment's barrier is another moment's strength, etc.).

Barriers to Centring Indigenous Perspectives: The Background

Thinking more broadly about the need for land literacy and our ability to make meaning and reinterpret what land is so desperately trying to tell us, I think, is greatly impeded by settler colonialism…
– Interview participant

Here in Canada, we don't like those uncomfortable conversations about how Indigenous people have been subjected to genocide and mistreatment, but the environment has been also subjected to genocide, really, so how do we bring that together?
– Interview participant

It must be understood that certain affordances and limitations provide a crucial backdrop to what is being shared here: our work flows through schools and universities that are settler colonial institutions, which continue to be shaped by, and contribute to, perpetuating systems of settler colonialism (e.g., profiting from stolen land, perpetuating Eurocentrism, excluding knowledges that threaten capitalism, etc.). We feel it is essential to acknowledge this, as it is impossible for us to avoid our roles in schools and universities that enact harm upon the land, as well as harm and exclusions upon learners, and largely disregard our responsibilities toward other species and living systems. Many of the specific ways this was expressed in our interviews will be familiar to readers, and have consequences more deeply felt than our words are able to convey. We bring attention to these colonial logics (Donald, 2009; 2019) and manifestations to avoid desensitization to them, and to work against them, again and again, in old and new ways, insofar as we can from our positions as white settler academics, and to create more space for Indigenous resurgence.

The presence of and potential for Indigenous perspectives in university and professional settings

When it comes to considering the potential for Indigenous land-based learning to intersect with SSHE in university settings such as teacher education, the relatively few Indigenous scholars who are employed by universities and the outsized pressure and responsibilities on them is a significant challenge. The barriers to involving Indigenous knowledge holders as co-teachers in university course instruction, if they are not university employees, is an example of how rigid institutions can be, even where they express commitments to reconciliation. Our participants shared other notable challenges with navigating discussions of settler colonialism, decolonization, and climate crisis, in light of potential student resistance, defiance, or classroom controversy. Early career professors are especially aware of the weight that course evaluations and perceptions of colleagues can have on whether they receive tenure. Tenured professors are not immune to backlash from students against anti-racist and decolonial teaching approaches. Additionally, harassment policies and procedures are not always robust enough to support faculty within their institutions.

One participant noted specifically that within university History departments, decolonizing theory is often absent, let alone prevalent. As a result, teacher candidates who hold undergraduate majors in History do not arrive in social studies or history teaching methods classes with enough preparation for unsettling colonial narratives or turning towards Indigenous ontologies and epistemologies. Other barriers involve token treatment of Indigenous knowledge within universities and schools, and the deep-rooted problem of Indigenous knowledge being viewed as static and stuck in the past. When institutions do make attempts to work towards decolonizing practices, they can lose meaning

if taken up superficially, or in a static way. For example, land acknowledgements should serve as important opportunities to connect history, land relations, and decolonizing imperatives. But, when there are expectations to engage in acknowledgement through a fixed script (as is the expectation in some schools and universities) in a way that does not include personal commentary or tangible actions reflecting present-day settler responsibilities, the practice loses meaning.

The readiness of non-Indigenous students and teachers to engage with Indigenous perspectives

Other barriers mentioned by interview participants involve non-Indigenous people navigating their positionalities and relationships to the land. Most participants raised the issue of non-Indigenous teachers feeling a range of uncomfortable emotions while working with Indigenous content, including paralysis and fear. Professors often hear settler teacher candidates state that because they are not Indigenous, they feel like they cannot take up certain topics within their classroom, or guide land-based learning. In many cases, students at all levels of education also seek to avoid feelings of discomfort, particularly when discussing difficult histories they may associate with Indigenous education. We heard evidence of outright rejection when it came to centring Indigenous content in higher education by teacher candidates who expressed white nationalist rhetoric while undermining an assignment focused on Indigenous cultural recognition.

Participants mentioned the whiteness and affluence of the climate change movement or environmental action groups as a barrier for involvement by racialized youth, or youth from a range of socio-economic and ancestral backgrounds. For example, one participant noted that students have informed them of being turned away from the school's environmental education club on the basis of not being critical enough (i.e., members needed to be vegan) to be "part of the solution." They question whether school or university environmental groups allow "white folks to feel good about themselves," rather than acknowledging their privilege and the connections between ecological harms and ongoing settler colonialism. For this reason, one participant expressed their hesitance to bring climate change to the fore in the classroom altogether, at the risk of prioritizing white suffering over the needs and calls to action from Indigenous communities.

In naming these conditions the "background" our intention is not to imply that they can be taken for granted, or that they are experienced in a uniform way. Indeed, we hope our work contributes to shifting attention toward ways in which settler colonialism shapes educational practices and collapses complex conversations, including those of environmental importance with those of settler interests. Here, the background is ever present, and must resist settler moves to innocence (Tuck & Yang, 2012). Additionally, these issues often intervene

actively in lived experience for some individuals, and, depending on how they are positioned, cannot be deferred to the background. In the next section we outline the issues that most closely relate to the intersection amongst climate change education, Indigenous knowledges, and history education.

Barriers to Centring Indigenous Perspectives in SSHE: The Foreground

The overarching barriers discussed above have implications for training teachers, providing professional development, and supporting educational change in school settings. In addition to the ways in which these dynamics affect everything in universities and schools, we identify several considerations linked directly to potential reforms within SSHE, and therefore foreground this inquiry.

Pedagogical limitations

Some of our participants discussed feeling inhibited as teacher educators by an unwillingness on the part of teachers and teacher candidates to approach history from critical, experiential, activist-, or future-oriented pedagogies. One noted that it is common for teacher candidates to want to build their content knowledge of history, and learn how to engage their students in analyzing primary sources within the classroom. However, very few are interested in land-based learning, and other pedagogical opportunities to bring in diverse perspectives and experiences of history (e.g., oral history, traditional stories) or mobilize history for present and future purposes. One participant observed that, speaking generally, social studies teachers at the elementary level seem to be more open to considering new approaches, whereas—in contrast—many high school history teachers respond that this is "not what they do" when introduced to unfamiliar ways of thinking and learning about history. SSHE that centres Indigenous cultural practices, ecological relationships, and embodied learning will be necessarily constrained if modes of knowledge engagement continue to be limited to fact-heavy slide decks, note-taking, and multiple choice questions.

Curricular limitations

Curriculum creates both affordances and barriers at all levels of education. As a result of the Truth and Reconciliation Commission of Canada, the focus on histories and present-day legacies of Indian Residential Schools in school- and university-based history curricula have increased. However, more than one participant reported that teacher candidates and teachers still lack basic knowledge of other topics related to Indigenous experiences over time, and do not arrive in class with critical perspectives on settler colonialism. Furthermore, residential school histories often exclude consideration for environmental

relationships, or they communicate an inevitability around separation between Indigenous communities and their territories. Even in stories that detail the removal of Indigenous children from community, there is still a lack of focus on how relationships to land was, and continues to be, disrupted through school attendance and other colonial interventions. Participants emphasized that learning about actions taken to redress historical and contemporary injustices towards Indigenous people have the potential to better connect students with climate crisis. In the process, students can be more comprehensively guided to think about how they are personally implicated and what actions on their parts may be warranted. Although curriculm is viewed by many as a barrier, in at least one case a teacher education program enacted significant overhaul to a curriculum methods course in social studies to reframe and centre Indigenous perspectives and worldviews, demonstrating that it can be a vehicle for change.

Some participants' anecdotal observations suggest in-service teachers are not receiving enough orientation to environmental education and Indigenous studies, and in some instances are not aware of curriculum and policy documents that can support them. These observations reveal a need for professional development opportunities for in-service teachers, focused on crucial intersections between environmental and Indigenous studies. Identifying these barriers—related to teaching and learning generally, and SSHE more specifically—is important to improving current teaching and learning practices and reimagining possibilities for the future.

Strengths within SSHE for Centring Indigenous Perspectives

Our participants viewed responding to climate crises, concurrent with the centring of Indigenous perspectives within school-based teaching and higher education, as a strong approach. We will touch on this before discussing the specific strengths of social studies and history as a subject area. The first strength involves the inherently intertwined nature of Indigenous education with environmental education (here we are referring to Indigenous education as practiced by Indigenous instructors through their own pedagogies, as opposed to only learning *about* Indigenous people in typical school settings). Where students in different educational contexts are accessing opportunities to participate in Indigenous-led land-based learning and outdoor education, they are being introduced to more diverse and preeminent ways of relating to the land, and more-than-human beings. Centring the land in these ways helps students experience the interconnectedness and interdependencies among species and place. As one participant shared with us, "When you're decolonizing, one of the gifts of engaging with distinct Indigenous perspectives is that you can talk about spirit, you can talk about the heart, you can talk about these things..." Another strength is that students at all levels of education are already expressing an awareness of climate change and its associated problems,

even if they are unsure of what to do about it. Higher education classes offer fertile sites to help students discover how to grapple with a changing climate. Discussions of climate change can be framed in ways that prioritize respectful land relations, acknowledge Indigenous insights, and feature Indigenous land protection initiatives.

Next we turn to discussing the strengths of SSHE for responding to climate crisis and centring Indigenous perspectives, as a foundation from which teachers, teacher educators, and researchers can expand. Five overall strengths were identified through our interviews, specifically at the intersection between SSHE and Indigenous knowledges: SSHE is inherently interdisciplinary, aims to teach questioning and critical thinking, invites multiple perspectives, features relationships, and contributes to a sense of place-consciousness.

Inherently interdisciplinary

Adequately attending to the multiple contributing factors and problems that are part of climate crisis, and proposing relevant solutions, requires an inherently interdisciplinary approach. Social studies already exists in the curriculum as a subject area that ideally brings together history, geography, civics, and politics in ways that can illustrate the complex and intersecting dimensions of environmental challenges. All aspects of social studies and history should be considered relevant to teaching climate topics, and teaching about how humans live well amidst significant change, rather than relegating environmental learning outcomes to geography alone.

Teaches questioning and critical thinking

SSHE, in its best forms, invites questioning, interpreting, and critical thinking in ways that challenge, rather than reproduce, the status quo and normative ways of knowing. Well-crafted prompts can produce shifts in perspective and allow for richer engagement with any topic, including climate crisis. For example, "how can we understand the decisions of different communities when their histories, contexts, and environmental conditions may differ from our own local community?"

Invites multiple perspectives

Within SSHE, most teachers recognize and demonstrate to students the benefits of considering multiple and diverse perspectives when attempting to understand the past. As noted, SSHE teachers are increasingly committed to including Indigenous perspectives and experiences in their lessons. Whether in research or teaching, SSHE often spotlights the question of whose voices are telling the stories and whose voices are being denied, ignored, and/or avoided—ideally seeking to include and amplify those marginalized voices.

Features relationships

SSHE examines relationships, and often features how power mediates those relationships. In moving away from anthropocentrism towards relationality with the more-than-human, and a pursuit of collective wellbeing over individualism, the importance of land relationships can surface. Indigenous epistemologies and ontologies centre relationships with other humans, more-than-humans, and the land. They often do so in ways that emphasize the generations who came before and the generations who will come after. This approach may better frame a worldview and historical consciousness in which the environment is centred.

Sense of place-consciousness

Conversations about climate change benefit from understandings of the past, present, and future, and opportunities for reflection on how we are situated in time, and that time is always passing. This pursuit clearly falls within the mandate of history teachers, but also is ideally combined with how time unfolds on *this land* and, in a holistic sense, in *this place* (Marker, 2018). More than simply emphasizing geography learning outcomes, in order to have a sense of place-consciousness there is a need to understand histories of the land from the perspective of the land. Through the addition of Indigenous perspectives, oral histories, and engagement with land as teacher, SSHE allows for just such an enhanced place-consciousness, which can then be applied to consider what the land, water, and more-than-human neighbours need from humans to experience sustainability into the future.

Suggestions for the Future

In pursuit of regenerative capacities for SSHE, suggestions in this section are grouped into two categories. The first represents those that will likely be familiar to social studies and history teachers. This is followed by content that is perhaps less familiar, given the training, resources, and current practices in the field.

Studying histories of disconnection and displacement

The past offers insights into what happens—culturally, linguistically, economically, etc.—when humans are disconnected from their ancestral lands. The consequences of displacement for humans, and for the land, are considerations that can be taken up alongside strategies to cope with times of great change. An example is learning about how Indigenous youth who were apprehended into residential schools, or into the child welfare system, were prevented from learning the place-based knowledges that would have enabled

them to live off the land, had they chosen to as adults; and, how some may still be able to reclaim these traditional skills through cultural-political actions.

Prioritizing environmental relations

SSHE could enable educators to help their learners confront why deep and reciprocal relationships with the environment are not a feature of some worldviews. They could be engaged in questioning how environmental challenges came to be, leading to an examination of how capitalism and resource extraction have shaped the values dominant in settler cultures. Or, by examining how some cultures take certain values for granted—such as the importance of of transferrable skills, and a willingness to relocate for employment opportunities—whereas other humans have not found such values helpful, desirable, or relevant to their families and livelihoods. Students may be invited to examine implications arising from different values that support a willingness to protect the ecological and land relationships on which we all rely.

Privileging Indigenous knowledges and local contexts

Indigenous knowledges provide a textured starting point for teaching local environmental histories, and/or human relationships to what are sometimes called "natural resources" over time. This is a simple but important way to bring in knowledges that work against anthropocentrism, that are local and continuously intertwined with specific ecologies, and that may also serve to deconstruct the privileging of written accounts over oral histories, or scientific accounts over community knowledges. Our findings suggest that educators start the work of developing intimate knowledge of the land they reside on by way of being outside, on the land, and not simply discussing land as an important but abstract Indigenous concept inside the classroom.

Taking a species-centred approach to curriculum

There is great potential in taking a species-centred approach to curriculum, with an emphasis on Indigenous knowledges throughout—instead of an anthropocentric, event-oriented curriculum. There are history books and undergraduate history courses that centre a species and explore how human relations with it have changed over time (e.g., Bonnell & Kheraj, 2022; Dean et al., 2017; Tsing, 2015). However, this approach is rarely considered or integrated in K-12 teaching. A participant shared a compelling example of a curriculum "bundle" (module and resources) developed by a teacher candidate that focused on ancestral teachings of salmon. The bundle provided an interconnected curricular map of considerations for studying salmon across various grade levels and subject areas, including culinary studies, ecosystems, and young adult literature. Such an approach offers students a layered perspective on the

relationship between humans and salmon, while also revealing the natural intersections between Indigenous knowledges and the challenges of the climate emergency. The participant who shared the example emphasized this link: "You really can't begin to scratch the surface of looking at our most vulnerable animal populations without being confronted by the limitations of climate change." Other examples shared with us in our interviews included the study of corn and the tracking of sweetgrass.

Below we share Figure 2, which illustrates our own interpretation of the vast potential in creating a species-centred curriculum, including the kinds of transdisciplinary themes that could be explored with different species.

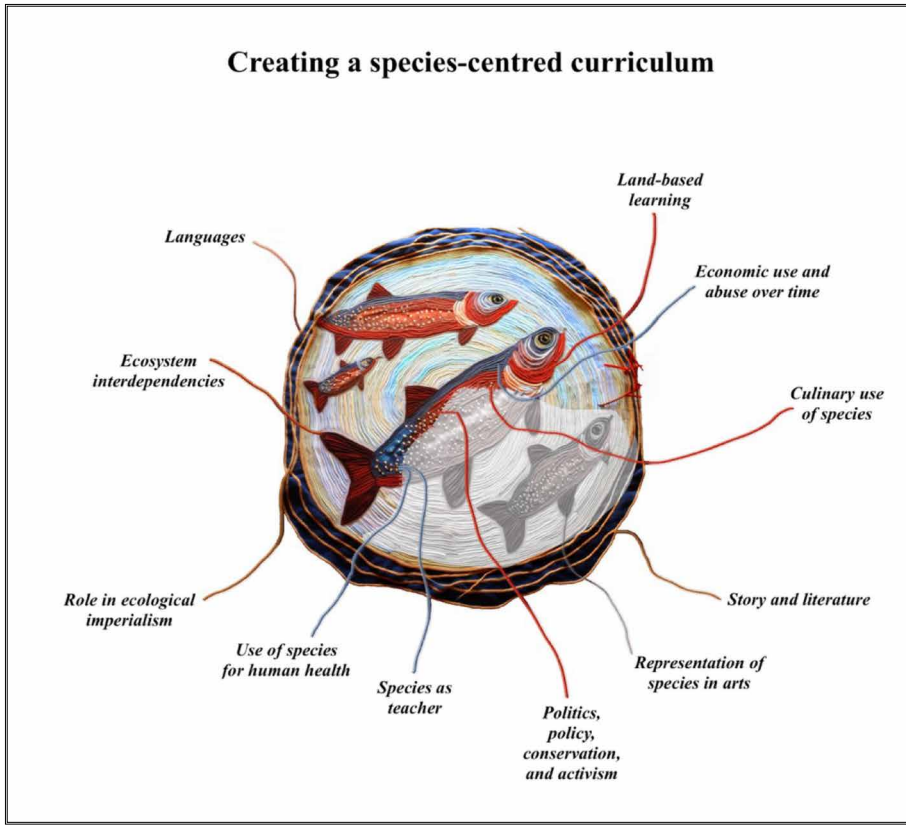

Figure 2: Creating a species-centered curriculum (Flavin, 2023)

Engaging futures thinking

In relation to teaching social studies and history, Kent den Heyer (2017) argues that teachers refer to the future superficially. He points out that in practice teachers

do not invest time in analyzing how the past shapes the present, or how what we know and do now will make various future scenarios more or less likely, and are dependant on how we interact with the driving forces at play (den Heyer, 2017). What we are adding here is that Indigenous communities intentionally privilege the generations to come in their understanding of their responsibilities to the Earth, often referred to as the seven-generation principle (Bell, 2020). Therefore, inviting students to understand how Indigenous communities, local to schools or universities, conceptualize human responsibilities to past and future generations, can be an important call to action. Futures thinking, which is prominent in climate fiction, documentaries, and academic publications, brings with it an emotional valence and by extension may engender hesitance on the part of teachers. As one of our participants explained:

> Arguably, to study the past does help us to at least locate ourselves today… but how is it that we can place equal importance on understanding: these are the systems we work within, and these are the limitations we work within. How, then, can we be very purposeful with imagining *realistic* futures? That sounds doom and gloom, but it is. It is that sense of realism and of grounding. I think that would be one of my biggest hesitations: how do we do that in a purposeful way, beyond fantasy and romanticization?

By retaining a focus on the fact that there are multiple possible future scenarios, and that we can engage and take action to interact with the driving forces that shape what future scenarios are likely to come to fruition, we can utilize any resulting hesitance that follows, along with any attendant emotions, by channeling them towards hopeful action. Taking climate futurities beyond fantasy and romanticization requires imaginative work to envision changing systems—to alter the forces behind what makes imagining alternative futures so difficult.

Dwelling in moments of spiritual ecological connection

Think of a moment when the Earth moved you—moved you to feel; moved you to learn; moved you to change. Think of that place you found yourself in, or that being you found yourself face-to-face with, when you began to have insight into the spiritual, the metaphysical, the more-than-human energy that exceeds language, rationality, even corporeality—that interrupts your business-as-usual. Some of us have previously written about moments or places that have given us these kinds of insights and experiences, and that we have allowed to interrupt us (McGregor et al., 2022). In doing this, we are actively tapping into our own pasts, our own sense of continuity; our own consciousness and perspectives, about where we have come from, and what meanings attach to those connections.

All classes—all programs—should make space for experiences and connections that nurture our interrelatedness with the planet (Bell, 2020). This is no less relevant or urgent for a math class, history class, art class, or an

English class, than for an environmental studies class. We must get outside; we must be in relation with our surroundings; we must dwell in the insights that come from recognizing, as Anishinaabe scholar Nicole Bell puts it, "we are the most insignificant beings on this planet because we cannot live without the life-givers […] yet the life-givers can exist without us, and perhaps the planet might be all the better" (2020, p. 68). Acknowledging spiritual elements to self and knowledge is to recognize students as whole and complex beings, and allows for a sense of connectivity to help ground knowledge claims.

Preserving and nurturing our willingness to struggle

Synthesizing the conversations we had in conducting this research, we recommend preserving and nurturing our willingness to struggle, individually and together. One of our participants expressed this well, in respect to learning ways to bring Indigenous pedagogies into their classes. They talked about unlearning the desire to be the expert, problem-solving teacher-educator, saying "I'm a few years ahead of the [teacher candidates] in my journey, but I'm also just alongside them." They went on to say, "everything that is around us is also teaching us […] learning *to be alongside* has been an important part of my journey, I think, for decolonizing and centring more Indigenous pedagogy." Learning what it means to teach, as environmental devastation comes upon us, is about learning to be alongside—and not in a way that shifts responsibility onto younger generations, but that signals how *we are in this together*.

Regenerative Capacities as We Look Forward

Together, we are deeply challenged to find ways to make our teaching meaningful as we scroll through, or experience first-hand, the news and research about environmental crises like flooding and forest fires, severe drought, coastal erosion, species extinction, forest clearing, and environmental racism. For some of us eco-care, eco-empathy, eco-compassion, and love for the Earth (Hickman, 2020) have long been a salient feature of our lives—not something new. Suffering brought on by technologies for wealth accumulation, at the expense of particular groups of humans and more-than-human beings, is also not new. Impatience with legal, economic, and social systems that are slow to change is an enduring feature of both environmental activism and decolonizing efforts, and will continue to be, long into the future. For us, it is easy to agree with Claudia Ruitenberg (2020), drawing from Lauren Berlant, that there is no "better and more devastating phrase and explanation than 'cruel optimism' for the paralyzing, self-sabotaging continuation of old habits in the face of current climate crisis and environmental degradation" (p. 833).

In bringing attention to these "old habits," and responding to the imperative to closely examine what contributes to continuity *and* change in human experience

over time, we foreground Indigenous and non-Indigenous, human and more-than-human, ethical relationality in our approach to social studies and history education. This effort will necessarily require a rebalancing of topics, content, and skills that we use to teach. Much must be let to decay, with urgency—and so be it. Ruitenberg (2020) laments, "we dither and totter, including in educational courses and programmes that promise some opportunity for redemption and transformation, but ultimately change nothing" (p. 833). In the spirit of departing from that old habit—in the face of old barriers, and leveraging the good that may be squeezed from precedents found in teaching and learning social studies and history—let unlearning and relearning happen alongside each other. Papaschase Cree scholar Dwayne Donald (2019) explains, "we are enmeshed in a series of relationships (human and more-than-human) that give us life," (p. 121) and we have much work to do to sustain them. As Bell (2020) teaches, each human has a responsibility to use our gifts for the goodness of all. Patty Krawec (Anishinaabe) (2020) invites settlers living in Canada to pick up their own "bundle"—the things precious to us and connect us to our relatives, histories, memories, stories, responsibilities, and cares—in moving towards "becoming kin" to Indigenous peoples: "look at those things with new eyes" (p. 20). We crave the regenerative capacities we associate with sustaining our relations, and applying our gifts, for the goodness of all life, and to look anew at our memories and stories. We propose that a starting point for SSHE teachers is to "pick up their bundles" in search of regenerative capacities that includes studying histories of disconnection—prioritizing environmental relations, centring Indigenous knowledges and local contexts, taking species-centred approaches, engaging in futures thinking, dwelling in moments of spiritual ecological connection, and preserving and nurturing our willingness to struggle.

Notes

1 We are developing lessons and other teaching resources for social studies and history classrooms, conducting curriculum analysis, developing extended theoretical analyses, and pedagogical suggestions based on the literature in history and other disciplines – and conducting interviews with experts (see: www.sshean.ca).

2 Here we are pointing towards the Indigenous conceptualization of place as theorized by Arapaho scholar Michael Marker (2018), including, but not limited to, "the complex social reality entangled with colonialism, the ecological history, and the cosmologies of Indigenous relationships to other-than-human and more-than-human ancestors" (p. 458).

3 It is important to note that Tuck et al. (2014) describe land education as shorthand for "land, water, air, and subterranean earth" and that these situated relationships are "diverse, specific, and un-generalizable" (p. 8). Land education can occur in urban spaces as well as those that are visibly

greener, and land pedagogies deal not only with the materiality of land, but the spiritual and emotional dimensions of relationships to land. These understandings of land are situated in collectivist Indigenous ontologies that defy settler colonial notions of property. This conceptualization of land education is described by Tuck et al. (2014) as distinct from the literature on place-based education that has been a prominent thread of the environmental education movement, and yet contributes to settler emplacement and futurity. Recognizing this citational and conceptual legacy, as outlined by Tuck et al., we also acknowledge that some Indigenous and ally scholars continue to utilize and extend the concept of place.

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