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Overcoming anthropocentrism

Experiences for learning history

*Heather E. McGregor** [a], *Sara Karn* [b]

[a]*Queen's University, Kingston,* [b]*McMaster University, Hamilton*

Abstract

History educators are well positioned to connect, or reconnect, young people to their environmental relations, if they can expand the purposes and vehicles for history learning. This effort may include historical thinking, while also moving beyond it towards better understanding and upholding our relationships to the planet. We offer history educators a set of considerations as they plan experiences for learning that bring environmental topics into their teaching, bridging between theoretical literature and practical guidance. The four facets of experiences for learning on which we focus are: 1) eco-emotional literacy, 2) nature connectedness through experiential learning, 3) storying, and 4) inquiry practices. All facets are characterized by understanding how the past, present, and future are connected in ways that move towards overcoming anthropocentrism. To illustrate the possible learning outcomes of this approach to history education, we describe a teaching unit entitled "What is the story of this watershed?"

Keywords

history education; social studies education; climate crisis education; experiential learning; watershed unit

1. Introduction

History teaching reform, curriculum change, and professional development continue to place emphasis on creating thinking classrooms, imbued with disciplinary approaches and skill development (Berg & Christou, 2020; Harris & Metzger, 2018; Lévesque & Clark, 2018; Seixas, 2017; Seixas & Morton, 2013; Stipp et al., 2017; VanSledright, 2014; Wineburg, 2001). Centring a Canadian perspective in this work, the hard-won and still-ongoing transition away from passive memorization of authoritative narratives marks a significant improvement in history education. We acknowledge successes in curriculum changes towards students becoming actively engaged in questioning, seeking multiple perspectives, constructing meaning, and communicating their interpretations (Brown, 2024; Clark, 2019, 2024; Lévesque & Clark, 2018). Improving student literacy and capacity in the methodologies used by historians, and others who employ knowledge from the past and stories of the past, is essential to learners' present and future participation in social and political processes. However, history as a discipline — which itself is not singular — is one system among many for organizing stories. And, it is not always the most important system in Canadian classroom settings where outcomes are also tied to social justice, decoloniz-

* **Contact:** Heather E. McGregor ✉ heather.mcgregor@queensu.ca
Faculty of Education, Queen's University, Kingston, Ontario, Canada

ing, citizenship and civic engagement, activism, and futures thinking (Clark, 2011, 2018; Cutrara, 2018, 2020; den Heyer, 2011, 2017; Miles, 2018; Osborne, 1995; Sears, 2011; Stanley, 2000; Taylor, 2018; von Heyking, 2006). If the cognitive/rational domain, and disciplinary approaches such as second-order historical thinking concepts, are the only focus of history education, it will be at great cost. Western-modernist knowledge dominance and its entanglement with Eurocentrism, capitalism, and anthropocentrism functions to exclude ways of knowing, being, and doing that are essential to living well (Bell, 2020; Brant-Birioukov et al., 2023; Donald, 2019; Stein et al., 2017). The urgency of addressing such exclusions is exacerbated by the current conditions of polycrisis (Mark et al., 2023).

As Indigenous scholars in the North American context have long advocated, attending to the interconnectedness of emotional, physical, intellectual, and spiritual learning creates more holistic and effective learning opportunities (Bell, 2020). Ensuring that learning is embedded within local ecological webs of relations is essential to both human and more-than-human wellbeing (Donald, 2019). Beyond teaching the whole person, history teachers can make visible and uphold human responsibilities for caring for our ecosystems and the other species with whom we share the land and water over time (Kress & Horn-Miller, 2023). Furthermore, outdoor practices including ways of paying attention, ways of reading and understanding the natural world, oral or non-academic ways of passing on situated knowledge from the past and about the past, and ways of making things from the earth are sorely missing from most schooling experiences (Bowers, 2001; Orr, 2004; UNESCO & MECCE, 2024). Apart from communicating a separation from the environment and ignoring our dependence on it, this is resulting in greater alienation of young people from nature and contributing to adverse psychological outcomes for children and youth (Chawla, 2020; Louv, 2008).

It is our contention that, as unfamiliar as it may feel, history educators are well positioned to connect, or reconnect, young people to their environmental relations, if they can expand the purposes and vehicles for history learning in their classrooms. As we have seen with the transition towards historical thinking in the Canadian history education context, to facilitate changes in practice, history teachers will require professional learning and supports, including accessible theoretical frameworks, pedagogical guidance, model lessons, content suggestions, and an ongoing professional learning community (McGregor, 2017; Sears, 2014). Within this suite of necessary supports, here we specifically illustrate what may be involved in curating experiences for learning in a history classroom focused on overcoming anthropocentrism, using a watershed unit as a thinking tool.

The contribution of this article is the identification of facets of experiences intended to overcome anthropocentrism, the theoretical background for those facets, and the practical implementation of teaching that achieves those facets. The four facets are: 1) eco-emotional literacy, 2) nature connectedness through experiential learning, 3) storying, and 4) inquiry practices. While such experiences for learning are still characterized as part of social studies and history education, by pursuing an understanding of how the past, present, and future are connected, they also mark a resistance to complacency in our current times. This resistance is necessary in the face of mental and physical health crises among youth, the urgency of loving the earth and treating the earth as if it is living, and pursuing a more just present and future for communities disproportionately affected by climate catastrophe and other global challenges. This article is intended as a bridge between theoretical literature and practical guidance, for an audience of history teachers, teacher educators, graduate students, and professionals involved in history teaching reform. We offer a set of considerations as they plan for the four facets of experiences for learning that include and move beyond historical thinking. Working with these facets is intended not only to bring environmental topics into history teaching, but also to direct teaching towards understanding and upholding the most important human relationships over time: our relationships to the planet. While we have not tested all of the specific elements of the watershed unit we describe here, it is intended to serve as a tool to think with, as readers look to refresh their approaches. For that reason, we selected a topic that is somewhat generic and transferrable to different places, while offering facets that are relatively new to history education in Canada.

This article is derived from a larger series of research initiatives undertaken by the Social Studies & History Education in the Anthropocene Network (SSHEAN), of which we are both founding members (Brant-Birioukov et al., 2023; Evans et al., 2024; Karn et al., in press; McGregor, 2019, 2023; McGregor et al., in review; McGregor et al., 2024; McGregor, Karn et al., 2022; McGregor et al., 2021, 2022). Beyond what we share in the present article, we are conceptualizing a larger the-

oretical framework for social studies and history education (SSHE) "in the Anthropocene."[1] Our research responds to the unprecedented environmental and equity conditions of our time that demand a refocus of the purpose of SSHE towards overcoming anthropocentrism. Anthropocentrism involves the planetary-scale subordination of nonhuman organisms, denying they have value in their own right (Kopnina et al., 2018, p. 115), and designating human needs and wants as superseding those of all other species, and the planet itself. There are particularly problematic forms of anthropocentrism among dominant populations in the Global North. For example, Stein et al. (2017) refer to "fantasies of ontological security," that presume human entitlements to autonomy, immunity, hierarchy, social mobility, property accumulation, law and order, universal knowledge, and human morality—without accountability for the cost of those fantasies to other beings (human, more-than-human, or environmental). Despite these persistent and resistant anthropocentric narratives, Stein et al. (2017) suggest that "it is both possible and necessary to develop critical analyses and pedagogical tools that make visible the multiple forms of violence inherent to the house that modernity built — that is, the true cost of its false promises" (p. 10). Retz (2022) has also argued that history education is an important site for reconsideration of the normative category of human, if human is now acknowledged as a force of nature.

Whether or not the exemplar we share here can facilitate a deep critique of modernity, coloniality, or human/more-than-human dualities, as we imagine it could, will depend largely on a teacher's willingness, preparedness, guidance, and curricular context. However, it is with this ultimate goal in mind that we offer a pedagogical approach that re-enlivens a compelling relationality with place through experience. We recognize the limitations of school systems as they are presently organized to overcome anthropocentrism, given its ubiquity and durability in dominant knowledge systems. Still, our position is that if history classrooms do not become spaces where environmental histories are explored experientially, it is implausible that the subject area will contribute meaningfully to addressing this existential tension.

Section 2 of this article describes the teaching conditions that teachers may face as they embark on this work, and reviews literature relevant to demonstrating the nuances of those conditions as well as some strategies for addressing them. Section 3 presents our theoretical framework, grounded in the literature, which identifies the four facets of experiential learning in history education classrooms oriented towards a changing climate. Section 4 offers the application of the four facets of experiential learning through a practical example — a watershed study taking place over several seasons. Here the theoretical discussion is enlivened through thinking with the lesson example, including mapping the four facets of experience to student learning outcomes. Finally, in Section 5 we outline how this article contributes to the ongoing reform of history education towards matters that are more deeply relational with the more-than-human.

2. Dynamics of teaching for climate crisis in social studies and history education

Teachers may not have engaged in learning environmental histories during their own education, or experienced learning in ways the climate crisis now demands (Hawkey, 2023). More demanding than new content, in taking up climate topics or environmental crises, teachers are confronted with challenges managing the many convergent and divergent demands associated with anxiety, difficult knowledge, and uncertainty (Garrett, 2017, 2019; van Kessel, 2020). In this section we discuss the inevitable dynamics teachers can prepare for, including: developing competencies in handling eco-emotions, such as but not limited to eco-anxiety; students feeling alienated from or scared of their environments; students being overwhelmed by the expectation that they help solve climate issues; or feeling angry and unsupported given the epistemological resilience required to handle how they are impacted by, or implicated in, climate justice transitions.

Climate change pedagogy research suggests that teachers develop competencies in handling eco-emotions so that these emotions do not become a barrier to learning (Atkinson & Ray, 2024; Hiser & Lynch, 2021; Ojala, 2013; Pihkala, 2020a, 2020b). Within history classrooms, ecological

1 We use this term to recognize the current epoch in which humans are the dominant influence on the Earth (Chakrabarty, 2009; Crutzen & Stoermer, 2000; Davis & Todd, 2017; Lewis & Maslin, 2015; Malhi, 2017), while acknowledging the term's limitations, including recentring the human species (Corfield, 2011) and implying that all humans are equally responsible for ecological damage (Moore, 2016).

emotions may surface at the teacher's or students' instigation, and in planned or unanticipated ways. Planned discussions may arise through interactions with Elders and/or Knowledge Keepers, viewing documentaries, or analyzing historical and contemporary evidence. Students may initiate conversations due to world events (e.g., forest fires, hurricanes, climate protests, Intergovernmental Panel on Climate Change report releases), personal and family experience, empathy and care for others or for justice, or during outdoor field trips. Student reactions to climate change may be overt (e.g., explicit expressions of climate anxiety) or covert (e.g., where the concern is not spoken of, but no less operative in terms of its impact on learning). Bringing an awareness that learning may be "experienced as a burden" (Garrett, 2017, p. 1), includes looking out for student reactions signifying resistance, trauma, the defended subject, and deep precariousness. Existential anxiety, mortality salience, and worldview threat may be triggered if learners acknowledge that "assumptions that dominate in Western societies are perhaps not viable in the long term given the context of climate catastrophe" (van Kessel, 2020, p. 135). Garrett (2019) argues that social studies educators can position themselves to address the devastating reality that the climate situation is much worse than we think by "providing spaces to articulate our reactions to them" (p. 613). According to Pihkala (2020b), teachers should view these situations as opportunities to proactively name, share, and channel emotions constructively to increase student emotional literacy and nurture hope. Van Kessel (2020) counteracts worldview threat with a set of pedagogical strategies: providing conceptual tools, narrating cascading emotions, carefully using humour to diffuse anxiety, employing language and phrasing that does not overgeneralize, and priming for tolerance (pp. 137-138). In the history classroom, examining evidence of how people in the past felt and expressed their emotions towards the environment has the potential to help students become more aware of their own emotions (Eisman & Patterson, 2022). Difficult conversations about present and future environmental conditions belong in school classrooms, as there are few other public spaces for youth to learn more, express their responses, and access supports.

As a result of their home and family circumstances or life experiences, teachers and their students may not have a great deal of prior exposure to nature, comfort with the outdoors, or environmental literacy, even in the spaces that they regularly inhabit (e.g., being able to name bird or tree species that they see regularly, being able to dress appropriately for weather conditions). Those from racialized communities may also experience racism and other barriers to spending time outdoors (Scott & Tenneti, 2021). Teachers may need to offer introductory coaching and modeling in outdoor knowledges, skills, and dispositions for some youth, alongside welcoming students with prior familiarity through camping or farm experience. Intentionally identifying students' varying starting points, addressing equity-related barriers, and accruing background information and content knowledge should be part of planning for climate topics in history.

Climate change lesson designs often strive to conclude on a hopeful note, or at least a busy one, by activating youth environmental or climate action (Evans et al., 2024). Climate action is an important strategy to engage students in making change, while serving to protect against despondency and depression (Schwartz et al., 2022). However, it can also leave learners feeling a great deal of responsibility and pressure (Galway & Field, 2023). Rather than communicating to learners that they carry individual or generational responsibility for "solving" the climate emergency, we suggest that history teachers look for ways to introduce learners to pre-existing groups, organizations, or communities that students can join in taking action or striving for change. This approach may be embedded with civic or citizenship education, and provides opportunities to learn about the history of environmental collective action—even more essential considering that, when historicizing the environmental crisis, students tend to emphasize individual actions and the capacity for technology to solve our problems rather than identifying the importance of engaging in collective action and civic engagement for societal transformation (Gripe & Sandahl, 2024). Furthermore, this demonstrates to young people that adults who arrived on earth before them are at least as concerned as they are and will not leave them to confront this wicked problem alone (McGregor, 2023).

Teachers may also look to the field of climate justice education and critical global citizenship education for guidance on how students may be differently impacted by climate topics and implications (Atkinson & Ray, 2024; Karsgaard & Davidson, 2023; McGregor et al., in review; Walsh et al., 2020). Such approaches call on teachers and learners to examine whether the challenges of addressing climate crisis will result in sustaining the very problematic human ways of knowing, being, and doing that have gotten us into this mess, and result in "multi-layered injustices" (Stein et. al., 2023, p. 990). Furthermore, resisting apathy in the face of catastrophe, climate justice ed-

ucation methods rest on the understanding that "the world is unfinished," (Misiaszek, 2023, p. 1264), the world is open to hope, thick reflexive praxis, collective action, and deep change (see also Cachelin & Nicolosi, 2022; Lin et al., 2023; Misiaszek, 2022). For example, tracing the causes and outcomes of collective political action movements, such as youth climate strikes, is an example of how historical study might contribute to questioning and confronting the unjust status quo (Karsgaard & Davidson, 2023). With the complex and overlapping dynamics of climate anxiety, difficult knowledge, outdoor learning, calls to action, and climate justice in mind, we intend to offer teachers a way forward through experiences for learning that fit with current teaching expectations and simultaneously serve to resist anthropocentrism.

3. Experiences for learning: A theoretical background for the four facets

We advocate for experiential learning that builds on the strengths of both environmental education and SSHE. In this section of the article, we highlight and connect with scholarly literature that upholds the four facets of experiential learning we have identified in this context. The value of learning through and from experience has been well-documented in educational research (Keeton & Tate, 1978; Kolb, 1984; Lewis & Williams, 1994; Moon, 2004; Silberman, 2007), despite persistent tendencies to revert to knowledge transmission approaches in traditional classroom settings. Twenty-first century technology makes it so that factual re-call and re-search (that is, searching for information or evidence that already exists) are widely accessible to students studying history (Wineburg, 2018). The influence of critical theories and critical pedagogies in education call for experiential learning as one tool to ensure education is a site of change — in the pursuit of freedom from oppression — rather than reproduction (Freire, 1970). We acknowledge that our orientation to experiential learning is built upon our learning from Indigenous pedagogues (Bell, 2020; Kulnieks et al., 2010), environmental pedagogues (Derby, 2015; Jickling et al., 2018; Monroe et al., 2019), and history educators (Atherton & Moore, 2016; Karn, 2024b; Marker, 2011; Wakild & Berry, 2018) who advocate for experiential approaches.

Youth need opportunities to enhance their confidence and competencies with various ways of exploring and making meaning, forming and maintaining relationships, solving problems, and discerning among multiple courses of action. SSHE that moves towards overcoming anthropocentrism, then, makes explicit the kind of experiences youth benefit from. In the course of intentionally engaging environmental content (e.g., environmental histories), as advocated for within recent history education scholarship (Adorno, 2022; Hawkey, 2023), SSHE may also facilitate the four facets identified here: 1) eco-emotional literacy, 2) nature connectedness through experiential learning, 3) storying, and 4) inquiry practices.

3.1 Engaging the affective dimensions

Emotions and feelings are part of learning (Immordino-Yang & Damasio, 2007), and SSHE can centre opportunities for students to identify and express their emotions, as well as make affective connections with nature. In recent years there has been significant recognition of the crucial role of attending to emotion in classroom environments to facilitate effective learning, particularly for navigating the challenges presented by climate crisis (Kretz, 2020). Within the context of history education specifically, "engaging emotion is essential to effective history instruction" (Neumann, 2019, p. 276). Humans are multidimensional beings with cognitive, emotional, and spiritual capacities which, when appropriately engaged and activated, can be utilized to enhance learning and growth. This is clearly acknowledged in Indigenous education paradigms related to lands colonially referred to as Canada (e.g., Bell, 2020), but no less relevant outside of them. Contrary to the ontological and epistemological tendency to devalue emotion in Western knowledge systems, emotions operate as sources of information and insight (Kretz, 2020). Students and teachers are always already bringing their emotional experience to the classroom (Kretz, 2020), including in SSHE (Garrett, 2017; Hawkey, 2023; Karn, 2024a; Sheppard & Levy, 2019). As such, all classrooms have an affective valence, with some forms of emotion enhancing learning and other forms working against learning. Consider, for example, the challenge of a distraught or threatened student's ability to absorb and process information effectively (Picard et al., 2004;

van Kessel, 2020). Attending to affective dimensions is essential to teaching well in any situation, but particularly in the face of climate emergency.

To encourage SSHE students to engage their emotions in healthy and productive ways for learning and empowerment, the ability to identify and share ecological emotions in respectful, supportive, non-dismissive, and non-judgmental environments is key (Chawla, 2020). When challenging emotions surface and are shared, they must be taken seriously and students should be encouraged to share those emotions (Ojala, 2013) and expand their emotional vocabulary. SSHE teachers may wish to offer students opportunities to learn to name the wide spectra of climate emotions, to regularly practice an emotional well-being check-in, and provide content warnings when appropriate (Pihkala, 2020b). Teachers may also consider reframing ecoanxiety as eco-empathy, eco-compassion, or eco-caring to emphasize connection, love, and relationships between humans, more-than-humans, and the Earth over time (Hickman, 2020). There are many benefits to pedagogies that openly invite emotions (Boler, 1999), and a reimagined SSHE classroom for the Anthropocene is no exception.

In terms of caring responses to ecoanxiety and the range of other emotions that may arise in SSHE classrooms, it can be helpful to highlight positive changes societies have made in the past and present to protect the natural world (Chawla, 2020; Hawkey, 2023; Pihkala, 2020a). Youth should be enabled to investigate that which is personally relevant to them, and meaningfully engage with others, thereby building social trust (Chawla, 2020). Through supporting SSHE students in collaborating on concrete climate change action, both empowerment and well-being are generated (Ojala, 2013). Working with groups and organizations can help ameliorate the sense of insufficient impact that often accompanies attempting to mitigate climate change harms through small personal changes to one's own, for example, consumption patterns. Taking meaningful action in local community contexts can foster a sense of efficacy and connection (Chawla, 2020; Chawla & Cushing, 2007; Field, 2017; Ojala, 2013; Schwartz et al., 2022; Trott, 2019; Woodbury, 2019). SSHE classrooms are particularly well-positioned to engage in these possibilities, as the subject of social studies includes a focus on civic education and there are rich opportunities in history to study and learn from social movements in the past.

3.2 Nature connectedness and competencies

Research demonstrates the positive health outcomes of living and learning in close proximity to green space and other species (Louv, 2008). The positive outcomes of nature connectedness span the cognitive to the behavioural, the physical to the emotional, the social to the environmental (Louv, 2008). As humans are animals, we need to be part of our ecosystems to be well, and to be preserved those ecosystems require us to be conscious of our interdependence with them. Furthermore, while many privileged populations on Earth currently have a degree, or many degrees, of insulation between their daily activities and the planet, future ecological changes or emergency situations are likely to demand competencies that those populations have not required recently (e.g., living with less electricity, repairing things rather than buying new, growing more food locally). Rather than viewing outdoor and environmental education as taking away instructional time that would otherwise be spent on traditional school subjects, every subject in school requires re-evaluation for its potential to contribute to learning outdoors, learning alongside and about other species, and learning how to care for oneself and others in nature. Despite innumerable objections and barriers that limit teachers' opportunities to take youth outside for learning (Pedretti et al., 2012), SSHE must do its part.

In particular, SSHE can contribute lessons on how humans have related to other species over time, and as economic or environmental conditions have changed. Such lessons can be taught just as powerfully — likely more powerfully — outdoors, in direct experiential relation to those real places and beings under study (Derby, 2015; Jickling et al., 2018; MacDonald, 2022), thereby reflecting in practice the importance of land-based education. As part of these outdoor experiences, students learn about dressing and packing appropriately for the conditions, pivoting activities depending on weather, acquiring skills for safe travel from experienced mentors, and learning respectful stewardship practices.

Indigenous-led land-based learning and mentorship are among the most important strategies for facilitating Indigenous language and cultural revitalization, which are crucial for advancing decolonization (Simpson, 2002; Wildcat et al., 2014), as well as protections for biodiversity and land-, species-, and water-defence (Tran et al., 2020). Land is viewed by many Indigenous peoples as first teacher, the basis of relationships, a place of reflection, and the setting for de-

veloping a holistic perspective (Bell, 2016; 2020; Bowra et al., 2021; Marker, 2018; Styres, 2011; Tuck et al., 2014). These potential learning outcomes, for Indigenous and non-Indigenous students, relate as much to SSHE as they do to outcomes associated with other subject areas. Land-based learning offers the opportunity to resist and transcend Eurocentric educational structures (Bowra et al., 2021), and experience ways of knowing, being, and doing that honour relationality. One way to begin is by questioning place-naming practices, language(s) used to describe land, and metaphors associated with place, while (re)encountering place informed by Indigenous knowledges (Brant-Birioukov et. al., 2023).

3.3 Storying

SSHE is a site where youth encounter stories. The word "story" is not used here as a synonym for fiction, although that is a form of story that may be present. Story represents the many techniques humans use to organize the meaning they make, and the importance of preserving the diversity of these storying techniques and the dexterity to move among them (Frank, 2010). Humanities-focused climate education "shows promise in engaging students through narrative, storytelling, and local community projects, and building upon climate communications research that similarly emphasizes a storytelling approach" (Siegner & Stapert, 2020, p. 522). In the face of climate crisis, we also require stories that expand conceptions of time and place to include deep history (Miles & Keynes, 2023; Retz, 2022; Riede, 2022), which allows us to consider "the depth of the predicament that confronts humans today" (Chakrabarty, 2018, p. 6).

Beyond making sense of — and responding respectfully to — accounts of the past or from the past, or individual testimonies (Simon, 2004), students in schools encounter the underlying "mythologies" that frame a worldview (Donald, 2019). This is not new, but we emphasize the opportunity to make this the focus of discussion in SSHE. Metacognitive engagement and explicit modeling with students about story listening might include etiquette or cultural norms, situated processes of evaluating truth(s) claims (such as peer review or critical questioning), and considering whether meaning should be determined explicitly or implicitly (and fixed or fluid, etc.) by the story teller, the story listener, or both in relation (Archibald, 2008). In particular, students will need to be attuned to how power operates within relations between differently socially-, politically-, and economically-positioned story tellers and listeners.

Furthermore, we are inspired by Arthur Frank's (2010) assertion that, "[n]ot least among human freedoms is the ability to tell the story differently and to begin to live according to that different story" (p. 10). Frank outlines how stories are relational actors that shape human consciousness, connect people into collectivities, offer diverse purposes through various genres, support dialogical interpretation, and nurture imagination. In North American Indigenous traditions, stories are gifts that enact the web of reciprocity that makes life possible (Archibald, 2008; Marker, 2019). Alongside understanding others, developing narrative competency and dexterity in SSHE supports the capacity for students to harness agency through narrating their own place in the flow of time and change (see also McGregor, Pind et al., 2022). Narrative competencies in more than one system for story listening, reading, telling, and writing are crucial skills for the Anthropocene (Derby, 2015).

3.4 Undertaking inquiry

The historical thinking movement in Canada is influential in reframing SSHE as a place to teach students how to do history (or engage in social study), rather than transmitting a series of dates and names to remember from history (Seixas & Morton, 2013; Seixas, 2009; 2017; Stipp et al., 2017). This curriculum reform is criticized for its potential retrenchment of Eurocentric knowledge systems (Cutrara, 2018, 2020; den Heyer, 2011, 2017), and for continuing to exclude other legitimate systems of making meaning from the past (Marker, 2011, 2019). However, if we understand this movement as tied to engaging students in forms of inquiry and critical thinking, without communicating that there is only one legitimate form (McGregor, 2017; Gibson & Case, 2019; Miles, 2018; Seixas, 2012), there is significant potential inherent in pedagogies that prepare youth to frame their own questions, investigate and apply evidence, wield crucial interpretive concepts, present accounts, or make their own judgments and decisions. Historical thinking can open students to a variety of forms of meaning-making about the past, while encouraging awareness of how considering diverse and multiple perspectives can help illuminate the rich complexities of historical narratives. Further, incorporating environmental perspectives, specifically, can strengthen students' critical thinking and historical understanding (Hawkey, 2023).

Not all approaches to inquiry are equivalent, and there are problems with superficial implementation of critical and historical thinking, let alone assessing for it (Gibson, 2021). Historical thinking is sometimes simply thematic analysis that is still delivered as a closed system to students using content transmission. Inquiry can be offered as re-searching; that is, having students find pre-determined correct answers through a simple information hunt. Rather, the form of inquiry advocated for here with respect to overcoming anthropocentrism is consistent with the definition of critical thinking that supports youth to synthesize or make judgments among multiple plausible choices on the basis of criteria (Bailin et al., 1999). There are a number of frameworks (such as the "Critical Challenges" approach used by The Critical Thinking Consortium, or the Four Dimensions of the C3 Framework for State Social Studies Standards) for lessons and classroom activities that facilitate inquiry based or critical thinking. Climate justice educator Maria Vamvalis (2022) strongly recommends meaningful forms of inquiry as a vehicle for constructive climate change education. One of the most important capacities in undertaking this kind of historical and critical thinking, but which is not frequently featured in the Canadian historical thinking literature, is the ability to frame one's perspective as embedded in a worldview and positionality.

4. Experiences for learning in practice: What is the story of this watershed?

To illustrate the possibilities of the four facets of experiences for learning in SSHE, we suggest a unit titled "What is the story of this watershed?," guided by this same inquiry question. Ideally, it would involve multiple lessons throughout the school year, during different seasons, and each lesson could range from one class period to an entire day. This unit has not been empirically tested, which is a future direction for our research. It serves here as a tool to think with as history educators reconsider the place of experiential pedagogies, nature connectedness, and climate responsiveness in their classes. For that reason, it is intentionally general, adaptable to various grade levels or even post-secondary, and transferrable from place to place. We are inspired by other watershed lessons, including a class inquiry into the source and destination of a creek, involving a student expedition to follow the creek, as well as creek map-making, and wildlife study (Sobel, 2008). We have also come across resources that would support learning about the Don River watershed, one of the most urbanized rivers in Canada that was declared "dead" and has been returned to life, or further from home, the Beltie Burn in Scotland, a recently restored river system.[2]

4.1 Setting up the unit activities

For this unit, teachers identify a local watershed that is easily accessible, and can serve as the iterative focus for learners. Site selection would consider watershed significance for local Indigenous communities, involve learning Indigenous language names of rivers, lakes, and wetlands, and inquire into cultural stories or oral histories of the watershed and surrounding ecosystems that would be appropriate to share with their students. To provide an example from our teaching and learning context in the area of Kingston, Ontario, Canada, we would spend time at the Cataraqui River watershed, located within a conservation authority that continues to expand its protected areas, especially to preserve habitat for species at risk like Snapping Turtles and Bald Eagles.

To set up the historical context surrounding the watershed, teachers identify several local experts on the watershed (such as civic planning, conservation, wildlife management, Indigenous knowledges, community recreation). Each expert may present to the students on the history of the watershed and human relationships with the water and its ecosystem over time. Archival

2 For more on these watersheds, visit this Don River interactive news story: https://newsinteractives.cbc.ca/features/2024/daylighting-rivers/; and watch this video on the Beltie Burn restoration: https://youtu.be/tWCQVU4_UvQ?si=3cXWj7QZRHuORt1y. Additional resources to support learning about watersheds may include this PBS Watershed immersive 360° video series: https://www.pbslearningmedia.org/collection/pivotal/t/watershed-stories-of-people-connected-by-water/; and the Anthropocene Curriculum's "The Watershed in Your Head" mapping: https://www.anthropocene-curriculum.org/contribution/the-watershed-in-your-head/.

materials, including historical maps, at the municipality, library, or other repository may serve to represent watershed changes over time. The purpose of this segment of the unit is to understand the life of the proximate water: where it comes from and flows to, how the size or direction and trajectory may have changed over time, pollution issues and clean-up efforts, species management, and human interactions. Students become aware of the environmental histories of the water under study, from various perspectives and orientations.

4.2 Experiential activities

Spending time within the watershed ecosystem on more than one occasion is essential. Field trips to the water are opportunities for teachers and students to practice preparedness for outdoor learning, including advance safety and accessibility considerations. During visits students can take walks, find a sit spot to reflect or engage in art practices, participate in species identification or phenology through recording their observations, and learn in unexpected ways from other people and beings. Students may engage in developing knowledge and skills related to water safety, water cycles, water testing, water as a means of transportation, flooding, pollution, treatment, erosion, and deposition. Students may consider the lifeways of different groups and other species who have been in relationship with the water ecosystem, including Indigenous peoples (e.g., How has the water been used as a means of transportation? What tools and knowledges have been used to test water over time?). Students may learn that traditional cultural practices and skills could still be of value, either in the same way that they were undertaken in the past, or with adaptations. This inquiry can continue back in the classroom through seeking additional resources or creating their own resources and materials to share with others.

While spending time outdoors, interacting with the water, students have the opportunity to attend to the mind, heart, spirit, and body. As students engage with their surroundings, they are encouraged to attune to their senses and different modalities for learning and being. For example:

- Sound and smell: What do we hear? What do we smell?
- Sight: What do we see in different seasons? What do we notice about outdoor light (brightness/shade)?
- Feelings/emotions: What do we feel when we are near the water? Do our feelings change outdoors?
- Physical bodies: What do we like/dislike to touch? How does the temperature affect us? How does the air feel?

Students may be invited to record their responses to these questions (writing, drawing, photographing), as they arise organically. Teachers and learners can benefit from a sensory processing pause to connect with water, reflect on how it makes humans feel, and consider how it shifts learning.

As we suggest multiple visits to the water's edge, teachers may iteratively prompt students to consider how the watershed ecosystem may have changed since the last time they visited (e.g., What are the biggest changes, and what are some other minor changes noticed during the visit? How did these changes impact the ways in which the group interacted with the water?). In this way the watershed ecosystem becomes a co-teacher, along with the learning community. While identifying the knowledge, skills, and competencies students have developed through the watershed unit, students can consider how these outcomes can help create better interactions with water moving forward (e.g., What might be the future story of the water? How can we participate in the next chapter of this water's story?).

4.3 Culminating project

The conclusion of the unit may feature and mobilize the outcomes of the inquiry that students undertake (in other words, the outputs from their experiences), or initiate a new action-focused project. Building on our caution above — about avoiding communicating to students that climate change or pollution is exclusively their problem to solve, but also giving them meaningful experiences of taking action in the world — working alongside community members may enrich

this culminating task. This might involve supporting or collaborating with a community-based organization, municipality, or water expert that students interacted with during their learning. Or the audience for a knowledge mobilization project could be the larger school community around that class. Example projects could include:

- Collaboratively designing and displaying a timeline and mural answering the unit's guiding question, what is the story of this watershed?
- Creating individual stories or artworks representing students' time spent with the watershed, and exhibiting them at their school during a special water consciousness-raising event.
- Signage, non-polluting art, or an installation made with natural materials could be left by the watershed for public viewing.
- A public social media campaign could inform local citizens about the watershed, such as through a "Did you know...?" series of posts about the history of the watershed, or by featuring questions about how water should be cared for and protected in the future.

All of these projects would build and consolidate students' narrative, communication, and project-management skills, as well as encourage them to gain experience with change-making and collective action.

4.4 Learning outcomes

Participation in this unit is intended to encourage students to value time spent outdoors through their interactions with nature during different seasons and in various weather conditions. We view this experiential practice as essential to overcoming anthropocentrism because humans who are not comfortable being outside will by extension likely have greater difficulty noticing, and acting in accordance with, their interdependencies with other species.

The learning outcomes we have in mind depend on recurring visits with the same local ecosystem, specifically intended to decentre current human use of local places and imagine other past and future ways of living well in them. By spending time in the same place, students have time to observe and reflect, and could, therefore, experience a deeper sense of connection to the watershed ecosystems and other species that were, and are, present there. Such a gradual, slow learning process is intended to nurture students' sensory awareness and affective responses to learning and interacting with nature. And, by learning more about a local place, students may be able to continue their relationship with that watershed and its more-than-human constituents beyond the timeframe of the unit.

Student learning in this unit involves being in relation with others, including human others (e.g., classmates, teachers, experts, knowledge holders) and other species within the watershed ecosystem. Consistent with SSHE learning outcomes in most jurisdictions, students may develop and apply skills related to listening to and sharing with others through discussions, modeling, and presentations. They may learn to honour a diversity of voices — human and more-than-human — and to find their own voice. There are also opportunities to practice with observation, trial and error, persistence, critical thinking, and reflection while working individually or collaborating in small and large groups. The variety of activities within this unit invite students to build from collective prior knowledge and experience as they consider the past, present, and future of the watershed.

To overcome anthropocentrism, students need exposure to narratives that resist human-centered notions of progress, and chronologies that are constricted to human development. In this unit, as students learn about past lifeways connected to a watershed, they may develop understandings of interactions between humans, more-than-humans, and the water ecosystems indicating that life was very different in the past and could be different again. By visiting the watershed during different seasons, students may also notice changes within a shorter span of time. Observing continuities and changes are likely to take place alongside listening to the stories of experts and knowledge holders, and exploring the different ways that human cultures explain connections between the past, present, and future — whether viewed as a linear unfolding, a continuum, a cyclical phenomenon, or other relationships. Understanding various ways of thinking about time, and one's place within the unfolding of time, is an important purpose for SSHE, as such learning can assist students in telling and enacting their own stories about the water ecosystem. Table 1, below, further elaborates the learning outcomes we associate with the watershed unit, according to each of the four facets of the experiences for learning we have described.

Table 1: Summary of unit learning outcomes and connections to experiences for learning

Learning outcomes	Connections to four facets of learning experiences
Valuing time spent outdoors, interacting with nature during different seasons and weather conditions.	Engaging the affective dimensions Nature-connectedness and competencies
Understanding past lifeways connected to a watershed, and interactions between humans, more-than-humans, and the water ecosystem at particular times, as well as changes and continuities over time.	Storying Undertaking inquiry
Developing processes of observation, trial and error, persistence, and reflection, individually as well as in small and large groups.	Nature-connectedness and competencies Undertaking inquiry
Working together with classmates to develop skills related to situated lifeways and sharing their learning with others through discussions, modeling, and presentations.	Storying Undertaking inquiry
Attuning to their senses and different modalities for learning and being.	Engaging the affective dimensions
Listening to the stories of experts and knowledge holders, and telling their own stories about the water ecosystem.	Storying

5. Hopes for the future of SSHE

We have outlined how nature-centred experiences for learning can contribute to a SSHE that is more holistic and better oriented to the relationships, dispositions, and informed perspectives that will be needed to live well in the context of climate crisis. These experiences must be shaped by a teacher's explicit and ongoing recognition of the challenging dynamics of teaching with difficult knowledge, and through their commitments to engaging the four facets: 1) eco-emotional literacy, 2) nature connectedness through experiential learning, 3) storying, and 4) inquiry practices. The watershed unit outlined here exemplifies how these objectives can be pursued through SSHE programming, in ways that may build from experiences already taking place and without requiring exceptionally different conditions for teaching than are experienced in many schools now. While it is too ambitious to suggest that history lessons such as this, in typical school settings, will overcome anthropocentrism in a broader sense at the societal or global level, we use the verb form of overcoming to signify our purpose in taking whatever action is within our professional and practical means, given current structures. This approach to overcoming anthropocentrism in the SSHE classroom is warranted in response to climate crisis, and especially in light of the dominance of historical thinking concepts in curriculum to the exclusion of other ways of knowing the past. We wish to emphasize the value of thinking about change over time as inherent to the human experience of the environment rather than exceptional to it.

One of the best potential sources of primary evidence and ideas for lesson topics that SSHE teachers have at their disposal is scholarly work in the field of environmental history, which has grown and diversified over the past several decades to engage interdisciplinary methods and sources (e.g., Isenberg, 2014; McNeill, 2010; Piper, 2013) and centre other species to work against human exceptionalism (e.g., Bonnell & Kheraj, 2022; Ritvo, 2004). Unfortunately, to date, from our experience much of this excellent research has not made it into K-12 classrooms in Canada for engagement by young learners. Teaching that centres environmental experiences for learning, no matter the topic, certainly demands more than an everyday slideshow or source analy-

sis activity. Especially as field trip policies are becoming more risk-averse and administratively burdensome, it is difficult to get out of the classroom. It takes time to build relationships with community organizations and co-plan lessons with visiting experts. Allocating time to this kind of interconnected, emergent, and sometimes unpredictable learning, instead of to more typical curricular topics and approaches in history, demands a flexibility and willingness to change on the part of teachers and department heads. When experiential learning takes time away from covering required curriculum topics, teachers may need to make a case for these choices to their administrators, students, and potentially to parents. And yet it is crucial at this juncture to make such brave decisions, and to engage in letting go of some of what we held on tightly to from the past; letting curricular content decay in favour of that which we need to grow, as is expected in any natural system. Teacher self-care, professional communities of practice, and ongoing collaboration with community partners are all important in this ecosystem, to nurture wellbeing even amidst unending pressures and expectations. Doing so may produce a SSHE that is framed by the crucial environmental relationships with which humans are interdependent — in the past, present, and future.

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ORCID iD

Heather E. McGregor https://orcid.org/0000-0002-7137-9041

Sara Karn https://orcid.org/0000-0003-2583-0556

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