

Using Children's Picture Books to Introduce Climate Change Pedagogies in Teacher Education

Wendy Simms, Vancouver Island University
Kelly Hall, Cowichan Tribes
Lindsay J. McCunn, Vancouver Island University
Marylee Holmes, Nanaimo Ladysmith Public Schools
Liz Simms, Independent Scholar
Heather Thompson, Independent Scholar
Ana Vieira, Vancouver Island University

ABSTRACT

The *Accord on Education for a Sustainable Future* recognizes that Canadian teacher education programs have a social and ethical responsibility to respond to the climate crisis. The Accord outlines six principles—the importance of Indigenous ways of knowing, being, and doing; relationality; social justice; well-being; advocacy; and hope. A sample of picture books was identified and systematically reviewed to help operationalize the principles of the Accord. Each book was scored on how visible the principles were, and factors for climate anxiety were identified as present/absent. The analysis of picture books through the lens of climate anxiety responds to a gap in the research. A curated list of 60 picture books is offered to introduce pre-service teachers to best practices in climate change education. When teachers know what to look for, they can carefully and intentionally select a collection of picture books to anchor challenging conversations about the climate crisis, climate emotions, climate action, and climate justice.

Keywords: climate change education, picture books, teacher education, climate anxiety, hope

RÉSUMÉ

L'Accord sur l'éducation pour un avenir durable reconnaît que les programmes canadiens de formation des enseignants ont la responsabilité sociale et éthique de répondre à la crise climatique. L'Accord décrit six principes : l'importance des modes autochtones de connaître, d'être et d'agir, la relationnalité, la justice sociale, le bien-être, le plaidoyer des droits et l'espoir. Un échantillon de livres d'images a été sélectionné et examiné de manière systématique afin de contribuer à la mise en œuvre des principes de l'Accord. Chaque livre a été noté en fonction de la visibilité des principes, et les facteurs d'anxiété climatique ont été identifiés comme présents ou absents. L'analyse des livres d'images sous l'angle de l'anxiété climatique comble une lacune dans la recherche. Une liste de 60 livres d'images a été établie afin de présenter aux enseignants en formation les meilleures pratiques en matière d'éducation au changement climatique. Lorsque les enseignants savent ce qu'ils doivent rechercher, ils peuvent sélectionner avec soin et intentionnellement une collection de livres d'images pour ancrer des conversations difficiles sur la crise climatique, les émotions liées au climat, l'action climatique et la justice climatique.

Mots-clés : éducation au changement climatique, livres d'images, formation des enseignants, anxiété climatique, espoir

INTRODUCTION

Children and youth are increasingly becoming aware of the climate crisis resulting in diverse emotional responses. Research on the affective dimension of climate change has increased considerably and a taxonomy of climate emotions has emerged (Pihkala, 2022). These include fear-based, sadness-based, and anger-based emotions, but also positivity-based emotions such as hope (Climate Mental Health Network, 2024). Young people are especially vulnerable to negative climate emotions and report adverse effects on their overall mental health (Galway & Field, 2023; Hickman et al., 2021; Schwartzberg et al., 2022).

Climate anxiety and eco-anxiety are terms being used in literature, media, and the health care sector to describe complex psychological responses to the climate crisis, even when there are no immediate or direct impacts (Clayton, 2020; Pihkala, 2020). While definitions of climate/eco-anxiety vary, Pihkala (2020) identifies the key elements to be negative emotions arising from future-related uncertainty, unpredictability, and uncontrollability. Some level of concern for the future is rational because it

activates coping processes and can lead to an adaptive response (e.g., seeking information, problem-solving, changing behaviour, helping others; Pihkala, 2020). Strong emotions can become motivational forces to respond to the threat of climate change in constructive ways (Clayton & Parnes, 2025; Ojala, 2013). However, young people especially can become overwhelmed by negative emotions and distance themselves or de-emphasize the seriousness of the climate crisis to cope with these emotions (Ojala, 2012b).

Designing non-judgemental and safe spaces for children and youth to talk about the climate crisis and recognize, voice, and process emotions with others is therefore a vital practice for Canadian teachers to learn (Galway & Field, 2023). It has been suggested that children's literature presents a valuable tool to discuss the climate crisis with students when resources are carefully selected and used to create dialogue (Benevento, 2023; Boggs et al., 2016). Boggs et al. (2016) argue that "literature can mediate anxiety by providing safe settings in which to consider frightening possibilities" (p. 669). Stories can counter the dominant doomsday narra-

tive by allowing us to imagine alternative futures (Oziewicz, 2022). Redmond (2024) argues the value of stories as a launching pad for “hope sparking dialogue” (p. 15) about the climate crisis and a space to acknowledge and process the diverse emotions that emerge. It is for these reasons that we explore children’s picture books as a mechanism for introducing climate change education (CCE) in teacher education programs (TEPs).

CLIMATE CHANGE EDUCATION: THE CANADIAN CONTEXT

As a signatory to the Paris Agreement, a legally binding international treaty on climate change, Canada made a commitment in 2016 to enhance CCE (United Nations Framework Convention on Climate Change, 2016). However, the curriculum of many provinces fails to communicate the impacts of climate change, mitigation strategies, and issues of climate justice (Schatz, 2021; Wynes & Nicholas, 2019). Climate change education is not explicitly included in the curriculum for many provinces, and when it is, course expectations are rarely action-oriented (Field et al., 2023).

Studies show that Canadian teachers report limited (if any) class time spent teaching climate change topics, despite recognizing CCE as the responsibility of the schools and all teachers (Field et al., 2019; Schwartzberg et al., 2022). Only a third of Canadian teachers believe they have sufficient knowledge and skills to teach about climate change, noting barriers such as lack of time, resources, and professional knowledge. Canadian students indicate that they want more information about climate change and are turning to social media platforms and the news to find it (Schwartzberg et al., 2022). One recommendation that emerged from this research on the Canadian context is that Faculties of Education need to ensure CCE is a central and required component of TEPs.

The glaring gaps in CCE within the Canadian education system may be attributed to jurisdictional issues, as provincial legislatures have exclusive authority over education (Environment and Climate Change Canada, 2025). However, the Government of Canada is currently working toward a national framework for

environmental learning, which may respond to the calls for mandatory K–12 and initial teacher education curriculum requirements (Environment and Climate Change Canada, 2025). Until then, TEPs take guidance from national policy commitments such as the *Accord on Education for a Sustainable Future* developed by the Association of Canadian Deans of Education (ACDE; 2022).

The Accord lays out the responsibilities accepted by Canadian TEPs, including the responsibility to ensure education for a sustainable future is a central and required component of course offerings (ACDE, 2022). Picture books have been used in TEPs to engage pre-service teachers in CCE and anchor challenging conversations related to the climate crisis, climate justice, and climate pedagogies (Axelrod et al., 2020). Inspired by this work, we asked: Which children’s picture books can be used to introduce Canadian pre-service teachers to CCE and the *Accord on Education for a Sustainable Future*? The purpose of this research was to operationalize the principles of the Accord in TEPs using children’s picture books.

THE ACCORD ON EDUCATION FOR A SUSTAINABLE FUTURE

The Accord recognizes that Canadian TEPs have a social and ethical responsibility to respond to the climate crisis and use the power of education to create change (ACDE, 2022). It outlines six principles of education for a sustainable future—the importance of Indigenous ways of knowing, being, and doing; relationality; social justice; well-being; advocacy; and hope. Here, we present the principles of the Accord and how they intersect with academic and educational conversations in CCE.

Indigenous Ways of Knowing, Being, and Doing

The Accord identifies Indigenous knowledge systems as the path toward a necessary paradigm shift in education for a sustainable future (ACDE, 2022). This echoes ongoing calls to action for CCE within Canadian contexts (e.g., Schatz, 2021; Schwartzberg et al., 2022). Gould et al. (2023) recognize that there are potential

dangers when researchers apply Indigenous perspectives to their work (e.g., incomplete understanding or inappropriate use). However, they acknowledge the value of incorporating broadly relevant lessons from Indigenous teachings. In this study, we seek to understand the shared values, beliefs, and practices that ground Indigenous “understandings, skills and philosophies developed by societies with long histories of interaction with their natural surroundings” (UNESCO, 2017, p. 8). To ensure this is done respectfully, we go beyond the Accord and draw from the published teachings of Indigenous leaders, wisdom keepers, and scholars to locate broadly relevant lessons that counter the dominant human-centred worldview (see Neidhardt & Neidhardt, 2018; Topa & Narvaez, 2022).

A fundamental characteristic of Indigenous worldviews reflects a belief that spiritual energies flow through everything in Nature, creating a web of interconnected and interdependent relationships to form a conscious living universe (Aikenhead & Michell, 2011; Snively & Williams, 2016; Topa & Narvaez, 2022). This worldview, sometimes referred to as a kinship or kincentric worldview, is grounded in a belief that Earth and all its life forms are sentient, and humans have a moral responsibility to protect the balance for future generations (Topa & Narvaez, 2022). When the world is viewed through this holistic lens of kinship, identities are intertwined with Nature/Land, community, the Ancestors, and future generations, and there is a responsibility toward the collective. Inherent wisdom from generations of living in close relationship with Nature emphasize harmonious relationships, taking only what is needed, respect for all forms of life, giving thanks, and having compassion for others (Snively & Williams, 2016). Topa and Narvaez’s (2022) book, *Restoring the Kinship Worldview*, identifies other common precepts of Indigenous worldviews such as non-hierarchical societies, mutual dependence, generosity, ceremony, gratitude, and the laws of Nature. However, much of the population does not hold a kinship view of the world, and there is a call to “recalibrate our societal norms to include Indigenous perspectives” (Neidhardt et al., 2018, p. 40) and use education to promote a different way of relating to Nature and community.

Relationality

The Accord recognizes that the thinking that is needed for this shift toward a kinship view of the world is fundamentally relational (ACDE, 2022). Relational paradigms aim to overcome modern dualistic thinking (e.g., separation of nature-human, mind-body, personal-collective), value non-human relations and perspectives, and consider human and non-human nature as fundamentally equal (Walsh et al., 2021). The Accord’s principle of relationality draws directly from Indigenous understandings when it acknowledges that “we are all related” (p. 8). However, it also draws from scientific understandings of relationality, specifically James Lovelock’s (2010) claim that life on Earth is a complex web of interrelated and interdependent living and non-living elements that function together as a living whole. These intersecting interpretations of relationality are also visible in CCE. For example, Oziewicz (2023) developed a climate literacy framework that identifies four domains of relationality—relations with the planet, especially the geophysical processes that enable all life; relations with non-human beings with whom we share the Earth; relations with human people, including strangers, ancestors, and future generations; and relations with human-created systems in which we participate, such as education and economy (p. 46). Both the Accord and Oziewicz’s (2023) framework apply the concept of relationality in ways that centre the well-being of the collective.

Well-Being

The Accord is grounded in a concern for the well-being of the web of life on Earth and the responsibility to care for “all our relations” (ACDE, 2022, p. 9). It acknowledges that the practices that promote flourishing of the planetary ecosystem are connected to practices that promote the well-being of individuals. This is also visible in CCE. For example, Oziewicz’s (2023) framework identifies four domains of care rooted in the four domains of relationality. Earth care requires us to actively confront planetary threats and build relationships with Earth. Kinship care invites us to examine all aspects of human-animal and human-plant relationships. People care

requires us to examine historic and contemporary social injustices and their intersectionality with climate change. Systems care requires us to reimagine and redesign human-created systems in ways that allow humans and non-humans to thrive. These four equally important vectors of care are offered with the understanding that “withholding, refusing, or limiting care in any one domain degrades our capacity to care in other domains too” (Oziewicz, 2023, p. 47). The inclusion of well-being in the Accord and within CCE frameworks extend climate solutions beyond environmental protection and into the overlapping spheres of personal and societal well-being.

Social Justice

The Accord recognizes that “just as all life on Earth is related, so are all human beings” (ACDE, 2022, p.8). It acknowledges that ways of thinking based on constructing hierarchies of greater and lesser worth have produced both the climate crisis and social injustices. However, dimensions of justice are often missing in CCE (Trott et al., 2023). Using a social justice lens requires a historical perspective and recognition of how colonialism and unequal power structures have created social, economic, and environmental injustices that remain disproportionately distributed (Finnegan & D’Abreu, 2024).

The Accord calls for a focus on ethical relationality through a social justice lens to identify our own location within societal systems and the intersectionality of race, class, gender, capitalism, and colonialism (ACDE, 2022). McGregor and Christie (2021) recognize that justice is the bridge between climate knowledge and climate action that is so often elusive in CCE. They argue the need to recognize that activism and civic engagement have a place in formal educational spaces. Students should therefore be viewed as agents of change, capable of engaging with difficult justice-related topics and expressing their dissent in diverse ways as they advocate for change (O’Brien et al., 2018).

Advocacy

Education has been identified as a critical path to fostering the changes in thinking and behaviour that are necessary to mitigate and adapt

to climate change. However, challenges have emerged in moving CCE beyond the existing focus on climate science and toward the development of values, attitudes, and skills required to find solutions (Monroe et al., 2019). The Accord interprets advocacy as “building coalitions to enact change and teaching the skills needed for coalition building and change-making” (ACDE, 2022, p. 9). Pedagogical frameworks identify advocacy as a critical element of CCE and call for the creation of learning pathways that motivate both individual and collective action as a mechanism to foster hope (Finnegan & D’Abreu, 2024).

Hope

The Accord acknowledges that education is fundamentally a hopeful exercise, and teachers and students must believe they can make a difference (ACDE, 2022). However, it is important to distinguish false hope, grounded in denial or distancing, from hope that is responsive to the climate crisis (Ojala, 2012a). Unlike hope grounded in denial, constructive hope can influence behaviour change and motivate individuals to engage in climate action (Ojala, 2012a). It requires individuals to first have a realistic view of the threat of climate change and then find ways to re-appraise it through a positive lens (Li & Monroe, 2019; Ojala, 2012a). Sources of constructive hope include trust in one’s own ability to make a difference and trust in other societal actors such as community members, politicians, and researchers (Li & Monroe, 2019; Ojala, 2012a). Hope must therefore be understood in complex relational terms (ACDE, 2022).

THEORETICAL FRAMEWORK

While the principles of the Accord guide all aspects of this research, our theoretical framework prioritizes hope because of our interest in responding to climate anxiety in children and youth (Galway & Field, 2023; Léger-Goodes et al., 2022) and the potential for hope to enable climate action (Mortreux et al., 2025).

This study acknowledges the affective elements of hope (i.e., hope as an emotional experience) but centres the cognitive processes (i.e., hope as a way of thinking). This interpre-

tation is based on Snyder's (2002) hope theory and the CCE frameworks that have applied or extended it. Hope theory identifies three key drivers of hope: goal-directed thinking, pathways thinking (i.e., developing strategies to meet these goals—waypower), and agency thinking (i.e., motivation to pursue these goals despite obstacles—willpower). Cultivating hope in CCE must therefore be grounded in constructing visions of an alternative future, planning numerous and flexible routes to this future, and building the knowledge and skills to enact these plans. However, there have been criticisms of the individualistic perspective of hope theory (Colla et al., 2022). The climate crisis requires a collective response and CCE is increasingly drawing from collectivist worldviews from Indigenous cultures. In a review of the central tenets of hope theory, Colla et al. (2022) propose adding an interpersonal element to address the limitations of hope theory. They call it WePower, an individual's sense of connectedness and ability to access social resources (e.g., knowledge and experience of others). This movement of hope theory toward a more collective understanding is also visible in Mortreux et al.'s (2025) conceptual model of hope as an enabler of climate adaptation, which distinguishes group factors, group hope, and group adaptation from personal ones.

Finnegan and D'Abreu (2024) take a collective and relational perspective in their framework for hope-based pedagogies (i.e., teaching practices that foster hope, advocacy, and resilience). Their concept of the hope wheel presents three practical elements to guide educators engaging in CCE: (1) handrails to hold on to—honesty about climate problems and solutions; awareness of self, others, and the more-than-human world; space to acknowledge climate emotions; and individual and collective action; (2) guardrails to be sensitive to—climate anxiety, mis-/disinformation and misconceptions, and false or unfounded hope; and (3) lenses to constructively engage students in hope-oriented CCE—complexity, justice, perspectives, creativity, and empathy (p. 2). The hope wheel framework aligns with our underlying assumption that constructive hope can be taught. Together, the principles of the Accord and our theoretical fra-

mework allow us to bridge policy, theory, and practice, and identify practical applications for our research.

METHODS

This study is situated at the intersection of human value systems, social injustices, and cultural worldviews. It is therefore critical to acknowledge the positionality of the researchers, who bring different lived experiences to this work.

Positionality

In this section, we hope to provide transparency in who is doing the research and what assumptions and biases we may bring to this work (Holmes, 2020). This will not dismantle the historical and ongoing injustices rooted in power imbalance (Zembylas, 2025), but we situate ourselves so readers can make their own judgement of the value of the knowledge that has been produced.

Wendy Simms (WS) is a white university professor of settler descent who teaches science and sustainability courses in TEPs at Vancouver Island University (VIU). As the lead researcher, she designed the study and wrote the initial draft of the manuscript. WS ensured First Nations, Métis, and Inuit authors were represented in the sample of books, and stories of marginalized communities impacted by climate change were included. She invited elementary teachers and colleagues with different backgrounds and perspectives to be co-researchers on this project. Kelly Hall (KH) is a Quw'utsun teacher, leader, scholar, and language revitalization researcher who lives by the ancestral teachings of *nutsu'maat*—one heart, one mind, one people, one community, one Earth. KH's educational research and professional work as a kindergarten teacher and school principal have focused on starting *hul'q'umi'num'* language immersion programs in First Nations schools on Vancouver Island. Lindsay McCunn (LM) is a white, cisgendered university professor of settler descent who teaches psychology at VIU and directs the Environmental Psychology Research Lab. Her research is published in several interdisciplinary journals that merge social science with

sustainability, community planning, and architecture. The late Marylee Holmes (MH) was a queer mom of four who brought years of social justice advocacy to her work. Her passion for nature and belief in the importance of connecting children to the natural world from an early age drove her work as an outdoor kindergarten teacher. Liz Simms (LS) is a retired non-Indigenous elementary English teacher whose 26-year career spanned Ontario, northern Quebec, and the Canadian Arctic. She has supported diverse learners from marginalized communities throughout her career, teaching English to Inuit communities and to Vietnamese and Syrian newcomers. Heather Thompson (HT) is a third-generation settler who recently retired from elementary school teaching to write children's picture books promoting social-emotional learning. She has supported diverse students throughout her 25-year teaching career in Ontario, British Columbia, and Alberta. Ana Vieira (AV) is a non-Indigenous university professor of Portuguese heritage who teaches literacy courses in TEPs at VIU. She was a design team member of VIU's literacy, language, and learning graduate program, developed under the guidance of Elders to support Indigenous language revitalization initiatives.

Data Collection: Sample of Picture Books

WS used key terms in online search engines and databases (e.g., bookstores, libraries) to identify picture books being recommended for CCE in an elementary context. She then purposefully chose a large sample of children's picture books suitable for the elementary context based on a set of criteria (i.e., criterion-based sampling; Patton, 2002). To be included in the study, a book had to: (1) be an English-language picture book, (2) be less than 100 pages, (3) feature at least some text/words, (4) be aimed at ages five–12, (5) have been published in the previous five years (i.e., January 2019–April 2024) to prioritize current understandings of the climate crisis, (6) have a book summary that indicated some connection to at least one of the principles of the Accord, and (7) be at least partially presented in a narrative format (i.e., could not read like a list of facts).

Book details and summaries available on publisher or bookstore websites were used to determine whether all seven inclusion criteria were met. If book summaries did not provide enough information, a book review published for an educational audience was read. Once a list of 150 books was compiled, a number determined by our research budget, gaps were identified and intentionally filled (e.g., additional Inuit authors). A sample of 159 picture books was then purchased for the study with the understanding that it was not a comprehensive list.

Data Analysis

Content analysis is a widely used method to analyze books, websites, curriculum, interview transcripts, public discourse, and more. The aim of content analysis is to find patterns and generate meaning from words and images (Hoffman et al., 2012; Hsieh & Shannon, 2005). This method has been used by educational researchers attempting to understand the direct and indirect messages being communicated in children's literature. For example, Martin et al. (2019) used content analysis to quantitatively score ecology-themed literature based on 12 dimensions. Darragh and Kelley (2022) used qualitative content analysis to explore how refugees are depicted in children's literature. Benevento (2023) used critical content analysis to examine existing power structures and inequities in CCE literature. In this study, we used a directed content analysis approach in that we began with existing frameworks (i.e., descriptions of the Accord principles and a list of known climate anxiety factors) and scored how visible they were in the words and images of the book. Directed content analysis is a deductive approach that provides a more structured process for qualitatively identifying instances of a phenomena in picture books (Potter & Levine-Donnerstein, 1999).

Principles of the Accord. Six members of the research team (WS, KH, MH, LS, HT, AV) were involved in scoring how visible the principles of the Accord were in each book ($n = 159$). They started by reading the Accord to build a strong understanding of the context of our work and the six principles. Then, using the Accord descriptions as the framework for analy-

sis, each researcher independently engaged in directed content analysis of all 159 books. They read each book multiple times, focusing on both text and illustrations, before scoring (on a scale of zero–10) how visible each principle of the Accord was to them. A score of zero indicated the principle was not visible, while a score of 10 indicated it was a dominant theme of the book.

As an example, an award-winning picture book about children marvelling at the wonders of nature received numerous zeros from researchers for the principles of social justice and advocacy. These principles, as described in the Accord, were not identified by researchers in the story, text, or illustrations during analysis.

Each researcher scored the books independently with no discussion or attempts at consensus-seeking. Variability in scoring was deemed an important factor to acknowledge and maintain because it reflected the reality that educators bring different perspectives to their work. A mean score was calculated for each principle, and standard deviation was recorded to provide transparency in scoring variability. Only books with average scores of 9.0 or higher were included in the curated list because scoring variability increased at a greater rate when average scores dropped below 9.0. We acknowledged that this meant moderately aligned books would be excluded, but we felt the longer the list, the less practical it would become for teachers and researchers.

It is important to note that there were ongoing conversations about whether it was appropriate to be assessing Indigenous resources, and who should be doing the assessing. Our dilemma aligned with ongoing academic conversations in the library sciences (see Hurley et al., 2017). We discussed options and sought outside guidance from Elders and a school librarian. We continually returned to the following outcomes: (1) identifying which books visibly portray Indigenous value systems will help non-Indigenous educators bring these under-represented voices and stories into their classrooms, and (2) the inherent values and teachings should be visible to non-Indigenous educators and students engaging with the resource. We offer positionality statements and researcher roles to provide transparency in who was doing the scoring and discuss the limitations of our methods.

Climate anxiety. Two members of the research team (LM, WS) were involved in analyzing the sample of books through the lens of climate anxiety. Specifically, analysis focused on identifying known vulnerability factors for climate anxiety in children (i.e., triggers that increase worry about the climate crisis) and known protective factors for climate anxiety in children (i.e., elements that foster hope). WS and LM created the list of known vulnerability and protective factors for climate anxiety based on current reviews of the research (Crandon et al., 2024; Léger-Goodes et al., 2022). Examples of the 14 vulnerability factors include unknown future risks, fear-based communication, government inaction, animals or humans in distress, and ignoring young people's concerns. Examples of the 19 protective factors include presenting alternative futures, hope-based communication, youth activism, children and youth as key stakeholders, and accurate information about climate change.

The 33 factors became the framework for directed content analysis. LM, as our environmental psychologist, was the lead on the climate anxiety portion of this research. She independently read each book ($n = 159$) multiple times, focusing on both text and illustrations, before recording presence/absence for each factor. For example, illustrations of animals caught in plastic pollution or seeking human help with worried expressions were recorded as the vulnerability factor “animals in distress.” Even a seemingly minimal presence counted because a child's emotional reaction could be triggered by that element.

Once the curated list of books was determined—based on scoring of the Accord principles—WS independently analyzed all 60 books with scores of 9.0 or higher for the presence/absence of climate anxiety factors. Percent agreement with LM's analysis for this subset of books (i.e., 60/159) was 94.9% and Cohen's kappa was 0.86, indicating a “strong level of agreement” (McHugh, 2012, p. 279). As a result, no consensus-seeking occurred. Frequencies were calculated for the sample of books based on LM's analysis.

Book categories. Three members of the research team (WS, KH, LS) were involved in identifying book categories. We began with fa-

miliar categories (e.g., fiction, non-fiction) and used Stewart and Correia's (2021) five categories of non-fiction. However, this system proved challenging to apply, particularly when it came to Indigenous resources. After much discussion, and consultation with a school librarian and an Elder, we chose to identify books in ways that were more relevant to the study goals. Three categories of books emerged as important to distinguish in CCE: books with multiple under-represented or marginalized voices (MUV); authentic Indigenous resources (IR) with First Nations, Métis, or Inuit authors/illustrators; and informational texts (INFO) outlining the causes and consequences of climate change. These categories were not seen as mutually exclusive, and not all books fit into these categories.

RESULTS

The purpose of this research was to operationalize the *Accord on Education for a Sustainable Future* by creating a curated list of picture books that visibly portray the principles. Table 1 presents 60 picture books that scored an average of 9.0 or higher for at least one of the Accord principles (highlighted grey), along with the number of vulnerability factors (VFs) and protective factors (PFs) for climate anxiety that are present in each. For each authentic Indigenous resource (IR), the distinct identities of First Nations, Inuit, or Métis authors and illustrators are acknowledged. Informational texts (INFO) and books with multiple under-represented voices (MUV) are also recognized (see discussion). The books with the highest overall scores (i.e., sum of all six principles) are found at the top of the curated list, often because they scored 9.0 or higher for multiple principles.

Table 1 highlights 16 books with average scores of 9.0 or higher for Indigenous ways of knowing, being, and doing (IWKBD). The identities of First Nations, Métis, and Inuit authors and illustrators are acknowledged to situate the distinct teachings. *Sila and the Land* received a score of 10 from all researchers for visibly portraying Indigenous ways of knowing, being, and doing.

Sila and the Land also had the highest average score for visibly portraying the principle of relationality, followed by *If Bees Disappeared*, *Be a Good Ancestor*, and *We Are Water Protectors*. Table 1 highlights 13 books with average scores of 9.0 or higher for the principle of relationality.

Healing Breath: A Guided Meditation through Nature for Kids had the highest average score for the principle of well-being. *Sila and the Land* scored the second highest. *Coco's Fire: Changing Climate Anxiety into Climate Action* had the third-highest score. Table 1 highlights six books with average scores of 9.0 or higher for the principle of well-being.

The picture books with the highest average scores for social justice were *Our Future: How Kids Are Taking Action*, *The Activist*, and *Nibi's Water Song*. Table 1 highlights seven books with average scores of 9.0 or higher for the principle of social justice.

Three books received a score of 10 from every researcher for the principle of advocacy—*Butterflies Belong Here*, *Our Future: How Kids Are Taking Action*, and *No World Too Big*. Table 1 highlights 23 books with average scores of 9.0 or higher for the principle of advocacy.

The principle of hope had 19 books with average scores of 9.0 or higher. *To Change a Planet*, *We Have a Dream* and *Dear Earth...From Your Friends in Room 5* were tied for the highest score, while *Old Enough to Save the Planet*, *Something, Someday*, and *Our Future: How Kids Are Taking Action* were tied for the second-highest score (Table 1).

Almost every picture book analyzed ($n = 159$) included at least one known protective factor for climate anxiety (98.7%). Almost half of the books included 10 or more protective factors (44.0%). One book, *We Have a Dream*, included all 19 protective factors examined (Table 1). The most common protective factors identified in the sample of books were hope-based or optimistic communication (79.2%), healing the division between humans and nature (75.5%), and balancing negative information with positive information (68.6%). Table 2 shows frequencies for all protective factors, with examples of books from the curated list.

Table 1

Curated List of Picture Books that Visibly Portray at Least One of the Principles of the ACDE Accord on Education for a Sustainable Future

Book Title with the identities of First Nations, Inuit, and Métis authors and illustrators, if present	IWKBD	Relationality	Well-Being	Social Justice	Advocacy	Hope	VFs	PFs
<i>We have a Dream</i> ^{MUV}	7.8±2.0	7.7±2.6	8.2±2.5	9.0±1.7	9.8±0.4	9.5±0.8	10	19
<i>Autumn Peltier, Water Warrior</i> ^{IR} • Anishinaabe/Métis, Turtle Mountain Band of Ojibwe Indians (C. Lindstrom) • Anishinaabe, Kettle and Stony Point First Nation (B. George)	9.7±0.5	8.0±1.7	7.7±2.4	8.7±1.8	9.3±1.2	7.8±1.8	1	13
<i>Sila and the Land</i> ^{IR} • Inuit (S. Angalik) • Kanien'kehakah Nation (A. Roundpoint) • Métis (L. DuPré, H. Finney)	10.0±0.0	9.7±0.5	9.3±0.9	6.0±3.0	7.5±1.5	8.5±0.8	4	13
<i>Our Future: How Kids Are Taking Action</i> ^{MUV}	6.7±2.9	7.2±2.6	8.3±1.7	9.5±1.2	10.0±0.0	9.3±1.0	11	18
<i>We Are Water Protectors</i> ^{IR} • Anishinaabe/Métis, Turtle Mountain Band of Ojibwe Indians (C. Lindstrom) • Tlingit, Haida (M. Goade)	9.7±0.8	9.5±0.8	7.7±2.3	7.7±1.9	8.5±2.3	7.5±2.0	7	13
<i>I am the Elwha</i> ^{IR} • Non-Indigenous (L. Peelen, L. Timmermans) • Coast Salish, Klallam (R. Elofson)	8.3±2.3	8.0±1.7	8.7±1.8	5.8±3.3	7.3±2.8	9.2±1.2	5	14
<i>No World Too Big: Young People Fighting Global Climate Change</i> ^{MUV}	5.8±3.3	7.0±2.4	7.2±1.8	8.2±1.7	10.0±0.0	9.0±1.3	6	16

Book Title with the identities of First Nations, Inuit, and Métis authors and illustrators, if present	IWKBD	Relationality	Well-Being	Social Justice	Advocacy	Hope	VFs	PFs
<i>Walking Together</i> ^{IR} • Mi'kmaw Nation, Eskasoni First Nation (A. Marshall) • Anishnaabe, Saugeen First Nation (E. Kewageshig)	9.5±0.8	8.2±2.2	8.2±2.0	6.2±3.5	6.8±1.8	8.0±1.4	0	5
<i>If You Take Away the Otter</i>	6.8±2.6	9.3±0.8	6.2±2.4	7.0±3.1	8.0±1.1	9.0±1.4	6	7
<i>Climate Action: What Happened and What We Can Do</i> ^{INFO}	4.3±3.9	8.2±2.3	8.0±1.5	7.2±3.6	9.8±0.4	8.7±1.0	14	17
<i>111 Trees: How One Village Celebrates the Birth of Every Girl</i>	3.8±3.9	7.2±1.9	8.3±2.1	9.0±1.7	8.5±2.3	9.0±1.3	3	12
<i>Be a Good Ancestor</i> ^{IR} • Lake Babine Nation, Nak'azdli Whut'en, Lhts'umusyoo (Beaver) Clan (L. Prince, G. Prince) • Cree (C. Joseph)	9.2±1.0	9.5±0.8	8.8±0.9	4.7±4.3	6.2±3.5	7.3±2.2	0	5
<i>Nibi's Water Song</i> ^{IR} • Anishinabe, Kitigan Zibi Anishinabeg (S. Tenasco) • Chippewa and Potawatomi, Rama First Nation, Moose Point First Nation (Chief Lady Bird)	6.2±2.9	6.0±2.4	8.5±1.3	9.2±1.2	8.2±2.1	7.2±2.9	1	7
<i>The Global Ocean</i> ^{INFO}	3.3±3.1	8.8±1.3	7.5±3.0	7.0±1.8	9.2±1.6	9.2±1.6	2	16
<i>Old Enough to Save the Planet</i>	3.7±4.5	7.5±2.9	8.5±1.5	5.8±4.0	9.8±0.4	9.3±0.8	3	15
<i>The Tantrum that Saved the World</i>	2.8±3.4	7.5±2.3	8.0±1.9	8.5±1.8	9.5±0.8	8.2±1.3	9	17
<i>Blue Camas, Blue Camas</i> ^{IR} • Non-Indigenous (D. S. Marcotte) • Kainai Nation (A. Koski)	9.7±0.5	8.8±1.0	7.3±1.5	9.0±1.3	4.8±3.6	4.7±2.8	7	6

Book Title with the identities of First Nations, Inuit, and Métis authors and illustrators, if present	IWKBD	Relationality	Well-Being	Social Justice	Advocacy	Hope	VFs	PFs
<i>Fantastically Great Women Who Saved the Planet^{MUV}</i>	4.5±2.9	6.0±3.1	7.7±2.1	7.7±1.6	9.3±1.2	9.0±0.9	8	12
<i>Something Happened to Our Planet: Kids Tackle the Climate Crisis</i>	1.7±3.2	8.5±1.6	8.3±1.4	7.2±1.9	9.5±0.8	8.7±1.2	1	16
<i>The Heart of a River</i> • Non-Indigenous author working alongside the Sinixt First People to bring awareness to their story	9.7±0.5	8.8±1.0	6.3±1.5	8.2±1.8	4.8±3.0	5.5±2.0	5	7
<i>The Artist</i>	2.7±1.8	5.7±1.6	8.0±1.7	9.2±1.0	9.3±0.8	8.5±1.4	11	11
<i>Stand Like a Cedar^{IR}</i> • Nle?kepmx, Syilx, and Métis (N. I. Campbell) • Coast Salish (C. Victor)	9.8±0.4	9.2±1.0	8.0±1.5	5.0±2.6	4.7±4.2	6.7±2.8	0	8
<i>We Are Better Together</i>	3.8±4.0	6.8±1.9	8.0±1.0	6.7±2.3	8.7±1.5	9.2±1.0	0	8
<i>The Girl Who Planted Trees</i>	4.0±3.3	6.8±2.3	8.3±1.1	6.5±3.4	8.2±1.5	9.2±1.2	0	13
<i>Meet Your Family^{IR}</i> • Métis (D. Bouchard, K. Cameron)	9.5±0.8	9.2±1.6	8.0±1.3	4.2±3.3	5.2±2.6	6.8±1.8	0	1
<i>A Kids Book about Climate Change^{INFO}</i>	3.8±3.4	7.5±1.5	6.7±1.9	9.0±1.1	8.2±1.8	7.3±1.5	8	15
<i>Change Is in the Air: Carbon, Climate, Earth, and Us^{INFO}</i>	2.7±3.0	9.0±1.1	7.5±1.5	5.5±3.3	8.8±1.3	9.0±0.9	0	8
<i>Mnoomin Maan'gowing / The Gift of Mnoomin^{IR}</i> • Anishinaabe (B. Luby) • Anishinaabe, Wasauksing First Nation (J. M. Pawis-Steckle)	9.8±0.4	9.3±1.0	8.2±1.6	2.7±3.1	5.3±2.5	7.0±1.8	0	1

Book Title with the identities of First Nations, Inuit, and Métis authors and illustrators, if present	IWKBD	Relationality	Well-Being	Social Justice	Advocacy	Hope	VFs	PFs
<i>Greta and the Giants</i>	2.7±2.3	7.5±2.3	6.5±2.4	7.7±2.1	9.3±1.2	8.7±0.8	11	18
<i>Our World Out of Balance: Understanding Climate Change and What We Can Do</i> ^{INFO}	2.8±2.9	9.0±1.3	6.8±2.9	6.3±3.3	8.8±1.0	8.0±1.5	3	16
<i>Climate Action: The Future Is in Our Hands</i> ^{INFO}	2.7±2.6	8.0±1.4	6.3±2.4	7.2±1.5	9.5±0.5	8.2±1.5	5	16
<i>To Change a Planet</i>	2.3±2.7	7.3±2.2	7.0±0.8	6.3±2.4	9.0±1.5	9.5±0.5	2	10
<i>The Last Straw: Kids vs. Plastics</i>	1.5±2.0	8.0±1.4	7.5±2.3	6.3±2.3	9.2±1.2	8.5±1.5	14	17
<i>Harlem Grown: How One Big Idea Transformed a Neighborhood</i>	2.7±2.5	7.0±1.8	8.2±2.1	6.3±3.1	7.7±2.4	9.2±0.8	0	13
<i>Berry Song</i> ^{IR} • Tlingit, Haida (M. Goade)	9.2±1.0	7.7±2.1	8.0±1.7	3.2±2.3	5.3±3.7	7.0±1.0	0	5
<i>Say Something</i>	1.3±2.0	5.8±3.8	8.2±1.2	7.5±2.9	9.3±0.8	8.0±1.4	0	4
<i>Something, Someday</i>	2.8±2.1	5.3±3.3	8.3±0.9	4.8±3.2	8.8±0.8	9.3±1.0	7	12
<i>The Bee Mother</i> ^{IR} • Gitksan (B. D. Huson) • Métis (N. Donovan)	9.7±0.8	9.3±0.8	6.3±1.7	3.7±2.6	3.8±3.9	6.7±2.7	0	1
<i>Black Beach: A Community, an Oil Spill, and the Origin of Earth Day</i>	1.5±3.7	7.8±2.2	6.5±1.3	5.8±2.5	9.5±0.8	8.2±1.5	6	18
<i>Our House Is on Fire: Greta Thunberg's Call to Save the Planet</i>	2.3±3.6	6.3±3.1	7.2±1.9	6.3±2.9	9.5±0.8	7.5±2.2	8	8
<i>Butterflies Belong Here</i>	0.8±1.6	6.2±3.1	8.0±1.3	5.2±3.5	10.0±0.0	8.8±0.8	1	13
<i>Stand Up! Speak Up! A Story Inspired by the Climate Change Revolution</i>	2.8±4.0	4.8±3.5	6.8±2.1	6.5±3.9	9.5±0.8	8.5±1.6	1	10

Book Title with the identities of First Nations, Inuit, and Métis authors and illustrators, if present	IWKBD	Relationality	Well-Being	Social Justice	Advocacy	Hope	VFs	PFs
<i>We Learn from the Sun</i> ^{IR} • Métis (D. Bouchard, K. Cameron)	9.8±0.4	8.3±1.6	7.5±1.7	3.7±2.3	3.3±1.8	6.2±1.8	0	2
<i>Sofia Valdez, Future Prez</i>	1.7±4.1	6.0±3.2	7.2±1.5	6.3±3.0	9.3±0.8	8.2±1.0	4	17
<i>Mario and the Hole in the Sky: How a Chemist Saved Our Planet</i>	1.7±4.1	7.5±2.0	6.5±2.8	5.0±4.1	8.8±1.6	9.0±1.7	4	11
<i>Oolichan Moon</i> ^{IR} • Nisga'a, Ts'msyen (S. Beynon) • Nisga'a (L. Trimble)	9.8±0.4	7.8±1.6	7.5±2.0	3.8±2.9	4.3±2.9	5.0±2.2	0	2
<i>If Bees Disappeared</i>	1.7±2.1	9.7±0.8	7.2±1.8	4.2±2.6	7.8±1.9	7.7±1.4	2	7
<i>Zero Waste</i>	3.0±4.1	5.8±2.9	6.8±1.7	4.3±3.1	8.7±1.2	9.0±1.3	6	16
<i>Dear Earth...From Your Friends in Room 5</i>	1.2±2.0	5.3±2.7	6.7±2.0	5.2±2.7	9.5±1.2	9.5±0.8	0	14
<i>The Wolf Mother</i> ^{IR} • Gitksan (B. D. Huson) • Métis (N. Donovan)	9.5±0.8	8.2±1.0	6.3±0.9	3.3±2.2	3.5±2.6	6.2±1.8	0	1
<i>Amara and the Bats</i>	0.3±0.8	7.7±1.9	7.2±1.3	3.5±3.9	9.0±1.3	8.2±1.2	4	15
<i>Coco's Fire: Changing Climate Anxiety into Climate Action</i>	2.2±3.4	5.5±2.7	9.2±1.2	3.7±4.3	7.7±1.6	7.5±1.6	2	14
<i>Walking Trees</i>	0.3±0.5	6.2±2.7	9.0±1.0	5.2±3.3	6.5±2.1	7.8±1.6	1	4
<i>One Blue Whale in Ten Thousand: Why Biodiversity Matters</i>	1.8±3.0	9.3±1.2	6.7±2.2	3.2±4.3	6.2±2.9	6.3±2.7	1	4
<i>Sometimes I Feel Like a River</i> ^{IR} • Indigenous ancestry (D. Daniel)	5.7±2.3	7.5±2.5	9.0±1.0	2.7±2.0	1.8±2.1	5.5±1.6	0	1

Book Title with the identities of First Nations, Inuit, and Métis authors and illustrators, if present	IWKBD	Relationality	Well-Being	Social Justice	Advocacy	Hope	VFs	PFs
<i>Sus Yoo / The Bear's Medicine</i> ^{IR} • Cree/Dakelh (C. Gauthier)	9.3±1.0	7.2±1.7	7.2±1.7	2.2±2.4	0.8±2.0	4.8±2.6	0	1
<i>The River that Flows Beside Me</i>	3.3±3.0	9.2±1.0	6.5±2.4	3.0±4.0	4.3±2.3	3.8±3.2	0	12
<i>Healing Breath: A Guided Meditation through Nature for Kids</i>	3.3±2.3	5.8±2.5	9.9±0.4	3.0±2.8	1.7±2.1	6.0±2.1	0	2
<i>Maybe</i>	0.8±1.3	2.8±2.7	7.2±2.5	3.5±3.3	5.2±3.6	9.0±1.1	0	2
<i>Ruby Finds a Worry</i>	0.5±1.2	2.0±3.1	9.2±1.5	3.7±3.7	3.2±4.0	5.8±2.7	0	3

Note. IWKBD: Indigenous ways of knowing, being, and doing

VFs, PFs: Number of vulnerability factors (VFs) and protective factors (PFs) for climate anxiety

IR: Indigenous resource (i.e., First Nations, Métis, or Inuit author or illustrator)

MUV: Multiple under-represented or marginalized voices represented in a single book

INFO: Informational text

Table 2
Protective Factors for Climate Anxiety Visible in the Sample of Picture Books (n = 159)

Protective Factor	Frequency	%	Example Books
Hope-based or optimistic communication	126	79.2	<i>Maybe</i>
Healing the division between humans and nature	120	75.5	<i>Sila and the Land</i> ^{IR}
Balancing negative information with positive information	109	68.6	<i>Climate Action: What Happened and What We Can Do</i> ^{INFO}
Presenting alternative futures	89	56.0	<i>Climate Action: The Future Is in Our Hands</i> ^{INFO}
Acknowledgement or validation of views and/or feelings	88	55.3	<i>Coco's Fire: Changing Climate Anxiety into Climate Action</i>
Children and youth as key stakeholders	83	52.2	<i>No World Too Big: Young People Fighting Global Climate Change</i> ^{MUV}
Agency, empowerment, or action-based communication	78	49.1	<i>Stand Up! Speak Up! A Story Inspired by the Climate Change Revolution</i>
Accurate information about climate change provided	77	48.4	<i>Our World Out of Balance: Understanding Climate Change and What We Can Do</i> ^{INFO}
Youth activism/young people making a difference	70	44.0	<i>Autumn Peltier, Water Warrior</i> ^{IR}
Social support for pro-environmental behaviours	68	42.8	<i>Something Happened to Our Planet: Kids Tackle the Climate Crisis</i>
Problem-focused coping skills/attitudes or behaviours that mitigate the problem	67	42.1	<i>Butterflies Belong Here: A Story of One Idea, Thirty Kids, and a World of Butterflies</i>
Collective community action, making a difference as a group	64	40.3	<i>Black Beach: A Community, an Oil Spill, and the Origin of Earth Day</i>
Multiple perspectives shared	57	35.8	<i>Our Future: How Kids are Taking Action</i> ^{MUV}
Tangible pro-environmental behaviours that can be implemented by children	54	34.0	<i>Dear Earth...From Your Friends in Room 5</i>
Place-based solace or connection with nature (i.e., place identity, sense of place, place attachment)	49	30.8	<i>Berry Song</i> ^{IR}
Meaning-focused coping (e.g., scientists finding solutions, historical perspective)	47	29.6	<i>Mario and the Hole in the Sky: How a Chemist Saved Our Planet</i>
Emotion-focused coping skills	33	20.8	<i>Healing Breath: A Guided Meditation through Nature for Kids</i>
Government change	32	20.1	<i>Zero Waste</i>
Focus on science or technology to solve problems	13	8.2	<i>Change Is in the Air: Carbon, Climate, Earth and Us</i> ^{INFO}

Note. MUV: Multiple under-represented or marginalized voices in a single book
IR: Indigenous resource (i.e., First Nations, Métis, or Inuit author or illustrator)
INFO: Informational text

Of the books that were analyzed (*n* = 159), over a third showed no known vulnerability factors for climate anxiety in children (38.4%). When vulnerability factors for climate anxiety were identified, they were most often in small numbers (i.e., one to three per book; 32.7% of the sample). Less than a third of the books had between four–14 vulnerability factors (28.9%). *Climate Action: What Happened and What We Can Do* and *Kids vs. Plastics: What Happened and What We Can Do* included all 14 vulnerability factors examined. However, it is important to note that these books also held 17 protec-

tive factors. In almost every picture book analyzed (96.9%), vulnerability factors for climate anxiety were balanced or outnumbered by protective factors. The most common vulnerability factors for climate anxiety identified in the sample of books were unknown future risks/risks to future generations (47.2%), scarcity of resources (31.4%), and fear-based communication (25.8%). Table 3 shows the frequencies of all vulnerability factors examined, with examples of books from the curated list.

Table 3
Vulnerability Factors for Climate Anxiety Visible in the Sample of Picture Books (n = 159)

Vulnerability Factors	Frequency	%	Example Books
Unknown future risks and/or risks to future generations	75	47.2	<i>If Bees Disappeared</i>
Scarcity of resources (e.g., food, fresh air, water)	50	31.4	<i>Nibi's Water Song</i> ^{IR}
Fear-based communication	41	25.8	<i>Our House Is on Fire: Greta Thunberg's Call to Save the Planet</i>
Children and youth's responsibility to mitigate climate change	34	21.4	<i>Old Enough to Save the Planet</i> ^{MUV}
Government inaction or ineffectual/insufficient response	32	20.1	<i>A Kids Book About Climate Change</i> ^{INFO}
Mourning or strong feelings of loss in response to environmental change, severed connection, or place loss (i.e., solastalgia)	31	19.5	<i>The Heart of a River</i>
A sense of hopelessness and/or lack of efficacy or resources for action	28	17.6	<i>Coco's Fire: Changing Climate Anxiety into Climate Action</i>
Ignoring young people's concerns	23	14.5	<i>Something, Someday</i>
Loss of culturally important places and/or loss of cultural identity	20	12.6	<i>We Have a Dream</i> ^{MUV}
Humans in distress	19	11.9	<i>111 Trees: How One Village Celebrates the Birth of Every Girl</i>
Animals in distress	19	11.9	<i>The Last Straw: Kids vs. Plastics</i>
Risk of negative social outcome for behaving sustainably	13	8.2	<i>Fantastically Great Women Who Saved the Planet</i>
Displacement/forced migration	11	6.9	<i>The Tantrum that Saved the World</i>
Social divide (e.g., colonization, climate refugee conflict)	10	6.3	<i>Blue Camas, Blue Camas</i> ^{IR}

Note. MUV: Multiple under-represented or marginalized voices in a single book

IR: Indigenous resource (i.e., First Nations, Métis, or Inuit author or illustrator)

INFO: Informational text

DISCUSSION

The *Accord on Education for a Sustainable Future* recognizes that sustainability must be a central and required component of TEPs (ACDE, 2022). The results of this study can help operationalize the Accord by offering a curated list of picture books that visibly portray the six principles of education for a sustainable future—the importance of Indigenous ways of knowing, being, and doing; relationality; well-being; social justice; advocacy; and hope. The list also identifies vulnerability and protective factors for climate anxiety to promote critical conversations about climate crisis pedagogies (Alvey, 2020; Monroe et al., 2019). While Boggs et al. (2016) offer a tool to examine CCE picture books based on writing style, illustrations, scientific accuracy, and science- and justice-based considerations, we extend these discussions by analyzing picture books through the lens of climate anxiety. Children and youth may be at greater risk of experiencing climate anxiety than adults (Clayton, 2020), therefore it is critical that teachers become aware of the potential triggers for climate anxiety to build best practices in CCE (Finnegan & D’Abreu, 2024).

Picture Books as Climate Change Education Resources

We, like many others, promote children’s literature as a means of nurturing dialogue about climate change and climate justice, identifying and processing climate emotions, fostering productive coping mechanisms grounded in hope and climate action, and discussing best practices in CCE (Axelrod et al., 2020; Benevento, 2023; Boggs et al., 2016; Oziewicz, 2022; Redmond, 2024). We argue that a carefully selected collection of picture books can introduce pre-service teachers to climate crisis pedagogies by providing windows, sliding glass doors, and mirrors—metaphors suggested by Rudine Sims Bishop (1990). Bishop’s groundbreaking work has had a significant impact on literacy theory, practice, and research (McNair & Edwards, 2021) and we highlight below how it is relevant to CCE.

Windows. Picture books can present new perspectives to the reader, becoming windows that offer views into worlds that may be

real or imagined, familiar or distant (Bishop, 1990). Introducing CCE to Canadian pre-service teachers requires windows into the lives of individuals and communities experiencing the seemingly distant impacts of climate change, right now. Four books that assembled multiple under-represented or marginalized voices, denoted as MUV in Table 1, offer multiple windows to initiate conversations about the disproportionate impacts of the climate crisis. For example, *We Have a Dream, No World Too Big: Young People Fighting Global Climate Change*, and *Our Future: How Kids Are Taking Action* share numerous inspiring stories of youth activists from around the world—how they have been negatively impacted by climate change and how they are engaging in climate action. These MUV books address the criticisms that materials written for a younger audience often have limited representation of the human consequences of climate change (Axelrod et al., 2020; Benevento, 2023; Boggs et al., 2016). Diverse voices are essential for bringing social justice into CCE, a lens that is often missing in Canadian classrooms (Schwartzberg et al., 2022). Using picture books to introduce CCE in TEPs can create an entry point for pre-service teachers to bring climate justice into their practice (Axelrod et al., 2020). However, this study revealed that social justice was one of the least visible principles in children’s picture books, suggesting that teachers must actively search for resources with this lens.

Windows into human experiences can also help pre-service teachers recognize diverse climate emotions and develop practices that foster “hope-sparking dialogue” (Redmond, 2024, p. 2). Oziewicz (2022) argues that stories are a tool that nourish and mobilize hope by allowing us to imagine alternative futures and believe they are possible. Hope was one of the most visible principles in the sample of picture books analyzed in this study and appeared inextricably linked with stories of action and advocacy. Redmond (2024) introduced four textual markers of hope that pre-service teachers can look for in stories to anchor hope-sparking dialogue—finding motivation for change, believing change is possible, planning a path forward, and having the agency to act. These four markers can be found in the diverse stories of youth activists as-

sembled in the MUV books mentioned above, or in the fictional stories of characters developing constructive coping mechanisms to manage their negative emotions. For example, *The Tantom that Saved the World* and *Black Beach: A Community, an Oil Spill, and the Origin of Earth Day* centre on young characters who experience negative climate emotions before finding hope through action.

Whether real or imagined, windows into human experiences with the climate crisis can prompt critical conversations about the interconnectedness of hope and action. Redmond (2024) argues that teachers need to rethink hope as a spark to ignite climate action, and picture books provide a valuable resource for starting these critical conversations in TEPs.

Sliding glass doors. Windows can also be sliding glass doors that we walk through to become part of whatever world has been created or recreated by the author (Bishop, 1990). In CCE, we aim for windows to become doors when we take an action-oriented interpretation of hope (Finnegan & D'Abreu, 2024). This type of constructive hope requires learners to first have a realistic view of the threat of climate change and then find ways to re-appraise it through a positive lens (Li & Monroe, 2019; Ojala, 2012a).

This aligns with *An Educator's Guide to Climate Emotions*, a report written by a team of teachers, researchers, and mental health clinicians in consultation with youth climate leaders and climate psychology professionals (Climate Psychology Alliance North America, n.d.). The guide offers a variety of approaches for working with climate emotions in educational settings and highlights the need for all teachers to have a realistic understanding of the forces driving climate change, the nature and sites of climate impacts, and the most effective methods of addressing these causes and consequences. Picture books with this type of information, however, are often absent in CCE (Benevento, 2023). The six informational picture books in Table 1, denoted as INFO, can be used in TEPs to model the use of informational texts in CCE and locate limitations in pre-service teachers' own understanding of the climate crisis (Axelrod et al., 2020). Lack of knowledge is a known barrier to Canadian teachers bringing climate change

into their practice (Field et al., 2019; Schwartzberg et al., 2022).

Stories of others' advocacy work can become doors to climate action by allowing a positive reframing of the climate crisis (Ojala, 2012a; Oziewicz, 2022). Advocacy was the most visible principle in the sample of books analyzed for this study. Books like *To Change a Planet*, *Say Something*, and *Stand Up! Speak Up!* introduce the concept of advocacy to a younger audience. Others offer inspiring stories of young people advocating for Nature (e.g., *Autumn Peltier*, *Water Warrior*) or caring for community (e.g., *Harlem Grown*), historical instances where humanity has addressed seemingly hopeless environmental issues (e.g., *Mario and the Hole in the Sky: How a Chemist Saved our Planet*), alternative narratives about the future (e.g., *Our Future: How Kids Are Taking Action*), and examples of nature's resilience (e.g., *If You Take Away the Otter*). Other sources of positive reappraisal can be found in the stories of characters gaining trust in their ability to make a difference (e.g., *Butterflies Belong Here*, *The Activist*) and trust in other societal actors, such as community members (e.g., *Walking Together*), politicians (e.g., *Zero Waste*), and scientists (e.g., *Change Is in the Air: Carbon, Climate, Earth, and Us*). These picture books can foster constructive hope by allowing readers to imagine alternative futures and identify pathways to get there. They invite teachers and students to walk through these doors into a world of climate action.

Mirrors. When lighting conditions are just right, a window can also be a mirror, reflecting ourselves and others as part of a larger human experience (Bishop, 1990). It is therefore critical that marginalized groups see themselves reflected in CCE resources in authentic ways. Climate change education requires mirrors to prompt reflection on how personal and societal values, beliefs, choices, and behaviours are contributing to the climate crisis, and offer alternative ways of being in relation with the world. Picture books written by First Nations, Métis, and Inuit authors allow non-Indigenous educators to explore worldviews grounded in values such as relationality, respect, reciprocity, and responsibility. This can provoke educators to question the human-centred and hierarchical thinking that dominates society today. As de-

noted as IR in Table 1, 18 Indigenous resources provide access to inherent teachings rooted in a kincentric way of being in relationship with Nature (see Topa & Narvaez, 2022). For example, illustrations in *Berry Song* and *We Are Water Protectors* depict the intertwining spirits of human and non-human beings, highlighting interconnectedness and interdependence. *Meet Your Family* presents relationality more literally in a series of poems about Mother Earth, Father Sky, and more. *Sila and the Land* is the story of a young girl receiving lessons from the Land, including “only take what you need,” “taking the long view,” and “always stand up for what is right.” It is a book that offers broadly relevant lessons from multiple Indigenous knowledge systems. Many of the teachings offered in the Indigenous resources listed in Table 1 provide teachers an ideal entry point to CCE in early elementary, when the focus should centre on care, stewardship, responsibility, interconnectedness, and emotions (Climate Psychology Alliance North America, n.d.).

Finally, the books listed in Table 1 offer mirrors that can help pre-service teachers honestly assess gaps in their own understanding of the climate science and reflect on their own climate emotions. Making sense of the climate crisis while envisioning the pedagogical challenges of engaging students in the topic can cause pre-service teachers to experience diverse emotional responses and coping strategies (Alvey, 2020). Children’s picture books can be used to create a safe space to engage in difficult conversations and identify gaps and concerns.

Limitations and Future Research

This study has several limitations that should be considered. First, the study was designed to identify CCE resources for a broad audience (i.e., TEPs across Canada), which does not honour Indigenous teachings grounded in the traditional territory from which they emerge. Second, we did not consider the potential for picture books to be viewed as a replacement for the oral teachings of Indigenous Elders and Knowledge Keepers. Elder teachings emphasize that reconciliation requires the presence of Elders and Knowledge Keepers to ensure the inherent wisdom of their culture connects

past, present, and future. The authentic Indigenous resources listed in Table 1 can support these teachings, but should not replace them. Third, while our goal was to operationalize the Accord, the challenge of reviewing Indigenous resources from diverse cultural systems was amplified by our reliance on the short descriptions (ACDE, 2022).

Additionally, this study is limited by the reliance on commercially available picture books and use of online search engines with key words centred on book recommendations. The sampling method occurred without consideration for *who* was deciding which resources were valuable. This approach likely perpetuated the historical amplification of white privileged voices over diverse and under-represented voices. Finally, using the six principles of the Accord as the framework for analysis meant that climate science was not a direct consideration. This may have inadvertently perpetuated the scarcity of informational texts being used in CCE (Benevento, 2023).

Future research should explore Indigenous value systems as a potential protective factor for climate anxiety and create a CCE resource assessment tool that incorporates factors for climate anxiety.

CONCLUSION

It is vital that Canadian educators are introduced to hope-based pedagogies and learn how to critically assess CCE resources through the lens of climate anxiety. This study offers a curated list of picture books that can help bring CCE into TEPs and operationalize the ACDE *Accord on Education for a Sustainable Future*. The list includes 60 picture books that visibly portray the principles of the Accord—the importance of Indigenous ways of knowing, being, and doing; relationality; well-being; social justice; advocacy; and hope. The list denotes informational books, authentic Indigenous resources, and books with multiple under-represented voices to respond to calls to action in CCE. With almost a third of the books written by First Nations, Métis, or Inuit authors, the curated list also supports the Truth and Reconciliation Commission of Canada (2015) calls to action in education (specifically, #62–65). Finally, the list includes vulnerabi-

lity and protective factors for climate anxiety to encourage the design of learning spaces where climate emotions are acknowledged and managed, and productive coping mechanisms are fostered. The analysis of picture books through the lens of climate anxiety extends the climate literacy research and promotes the critical assessment of CCE resources.

ACKNOWLEDGEMENTS

We acknowledge Stz'uminus Elder, Arthur Jim, whose teachings continued to emerge long after we spoke. We acknowledge VIU Elder-in-Residence Auntie Marlene Rice (Hwiem'), whose guidance continually pushes faculty to reflect on their assumptions and practices. We thank Meg Ross, MLIS, for sharing her learnings as a school librarian tasked with curating Indigenous and non-Indigenous resources for a First Nations community. Finally, it is with great sadness that we acknowledge the unexpected passing of our colleague and friend, Marylee Holmes. Marylee's big heart, big smile, and big voice changed the lives of many people in our community and beyond, and she will not be forgotten.

FUNDING STATEMENT

This research was supported by a Climate Change Education in Teacher Education (CCE-TE) Accelerator grant.

REFERENCES: PICTURE BOOKS LISTED IN TABLE 1

- Angalik, S., Roundpoint, A., & DuPré, L. (2022). *Sila and the land* (H. Finney, Illus.). Taking!TGlobal.
- Artis, Z., & Greenspan, O. (2024). *A kids book about climate change*. DK Books.
- Beaty, A. (2019). *Sofia Valdez, future prez* (D. Roberts, Illus.). Abrams Books for Young Readers.
- Beynon, S. (2022). *Oolichan moon* (L. Trimble, Illus.). Harbour Publishing.
- Bouchard, D. (2021). *Meet your family* (K. Cameron, Illus., J. Jones & N. Jones, Trans.) Medicine Wheel Education.
- Bouchard, D. (2020). *We learn from the sun*. (K. Cameron, Illus.). Medicine Wheel Education.
- Buhrman-Deever, S. (2020). *If you take away the otter* (M. Trueman, Illus.). Candlewick Press.
- Campbell, N. I., (2021). *Stand like a cedar* (C. Victor, Illus.). Highwater Press.
- Celano, M., & Collins, M. (2023). *Something happened to our planet: Kids tackle the climate crisis* (B. Madanasinghe, Illus.). Magination Press.
- Craig, M.-R. (2022). *We have a dream* (S. Khadija, Illus.). Magic Cat Publishing.
- Daniel, D. (2023). *Sometimes I feel like a river* (J. Bisailon, Illus.). Groundwood Books.
- Dealey, E. (2023). *Dear Earth...from your friends in room 5* (L. Uribe, Illus.). Harper-Collins Children's Books.
- Drummond, A. (2023). *Zero waste: How one community is leading a world recycling revolution* (A. Drummond, Illus.). Farrar, Straus & Giroux Books for Young Readers.
- Gauthier, C. (2019). *Sus yoo: The bear's medicine* (C. Gauthier, Illus., D. Alexis & T. Austin, Trans.). Theytus Books.
- Gay, M.-L. (2024). *Walking trees* (M.-L. Gay, Illus.). Groundwood Books.
- Goade, M. (2022). *Berry song*. (M. Goade, Illus.). Little, Brown & Company.
- Gorman, A. (2023). *Something, someday* (C. Robinson, Illus.). Viking.
- Guillain, C. (2023). *The river that flows beside me* (J. Empson, Illus.). Words & Pictures.
- Hart, C. (2024). *The girl who planted trees* (A. Suvorova, Illus.). Nosy Crow.
- Herbert, M., & Mann, M. E. (2022). *The tantrum that saved the world*. North Atlantic Books.

- Hillery, T. (2020). *Harlem grown: How one big idea transformed a neighborhood* (J. Hartland, Illus.). Simon & Schuster Books for Young Readers.
- Hood, S. (2021). *The last straw: Kids vs. plastics* (C. Engel, Illus.). Harper.
- Hopkinson, D. (2020). *Butterflies belong here: A story of one idea, thirty kids, and a world of butterflies* (M. So, Illus.). Chronicle Books.
- Huson, B. D. (2021). *The wolf mother* (N. Donovan, Illus.). Highwater Press.
- Huson, B. D. (2024). *The bee mother* (N. Donovan, Illus.). Highwater Press.
- Joyner, A. (2020). *Stand up! Speak up! A story inspired by the climate change revolution* (A. Joyner, Illus.). Schwartz & Wade Books.
- Kirby, L. (2021). *Old enough to save the planet* (A. Lirius, Illus.). Magic Cat Publishing.
- Levy, D. (2024). *Change is in the air: Carbon, climate, earth, and us* (A. Boersma, Illus.). Bloomsbury Children's Books.
- Lindstrom, C. (2023). *Autumn Peltier, water warrior* (B. George, Illus.). Roaring Brook Press.
- Lindstrom, C. (2020). *We are water protectors* (M. Goade, Illus.). Roaring Brook Press.
- Luby, B. (2023). *Mnoomin maan'gowing: The gift of Mnoomin* (J. M. Pawis-Steckley, Illus., M. A. Corbiere, Trans.). Greenwood Books.
- Marcotte, D. S. (2023). *Blue camas, blue camas* (A. Koski, Illus.). Heritage House Publishing.
- Marshall, A. D., & Zimanyi, L. (2023). *Walking together* (E. Kewageshig, Illus.). Annick Press.
- McKibben, B. (2022). *We are better together* (S. Lewis, Illus.). Henry Holt & Company.
- Metcalf, L. H., Dawson, K. V., & Bradley, J. (2023). *No world too big: Young people fighting global climate change* (J. Bradley, Illus.). Charlesbridge.
- Meyer, W. (2021). *Healing breath: A guided meditation through nature for kids* (B. Jacobs, Illus.). New World Library.
- Minoglio, A., & Fanelli, L. (2021). *Our world out of balance: Understanding climate change and what we can do*. Blue Dot Kids Press.
- Pankhurst, K. (2020). *Fantastically great women who saved the planet*. Bloomsbury Children's Books.
- Pearkes, E. D. (2024). *The heart of a river* (N. Lytle, Illus.). Rocky Mountain Books.
- Peelen, L., & Elofson, R., (2020). *I am the Elwha* (L. Timmermans, Illus.). Strong Nations.
- Prince, L., & Prince, G. (2022). *Be a good Ancestor*. (C. Joseph, Illus.) Orca Book Publishers.
- Percival, T. (2019). *Ruby finds a worry* (T. Percival, Illus.). Bloomsbury Children's Books.
- Reynolds, E. (2021). *Amara and the bats* (E. Reynold, Illus.). Atheneum Books for Young Readers.
- Reynolds, P. H. (2019). *Say something* (P. H., Reynolds, Illus.). Orchard Books.
- Ridley, S. (2024). *One blue whale in ten thousand: Why biodiversity matters* (V. Mineker, Illus.). Wayland-National History Museum.
- Rusch, E. (2019). *Mario and the hole in the sky: How a chemist saved our planet* (T. Martinez, Illus.). Charlesbridge.
- Simon, S. (2021). *Climate action: What happened and what we can do*. Harper.
- Singh, R. (2020). *111 trees: How one village celebrates the birth of every girl* (M. Ferrer, Illus.). Kids Can Press.
- Smith, N. (2023). *The activist* (N. Smith, Illus.). Kokila.
- Soontornvat, C., & Bell, R. J. (2022). *To change a planet*. Clarion Books.
- Stevens, G. (2021). *Climate action: The future is in our hands* (K. Rewse, Illus.). Scholastic Press.

- Stith, S., & Stith, J. (2023). *Black beach: A community, an oil spill, and the origin of Earth Day* (M. Lechuga, Illus.). Little Bee Books.
- Strauss, R. (2022). *The global ocean* (N. Donovan, Illus.). Kids Can Press.
- Tenasco, S. (2019). *Nibi's water song* (Chief Lady Bird, Illus.). North Winds Press.
- Tucker, Z. (2019). *Greta and the giants: Inspired by Greta Thunberg's stand to save the world* (Z. Persico, Illus.). The Quarto Group.
- Williams, L. (2021). *If bees disappeared* (L. Williams, Illus.). Roaring Brook Press.
- Wilson, J. (2019). *Our future: How kids are taking action* (J. Wilson, Illus.). Second Story Press.
- Winter, J. (2019). *Our house is on fire: Greta Thunberg's call to save the planet* (J. Winter, Illus.). Beach Lane Books.
- Wortzel, J. D., Champlin, L. K., & the Group for the Advancement of Psychiatry–Climate Committee. (2021). *Coco's fire: Changing climate anxiety into climate action* (L. K. Champlin, Illus.). Future Perfect.
- Yamada, K. (2019). *Maybe* (G. Barouch, Illus.). Compendium.
- Axelrod, Y. D., Ives, D., & Weaver, R. (2020). We are all learning about climate change: Teaching with picture books to engage teachers and students. *Occasional Paper Series*, 2020(44), 37–47. <https://doi.org/10.58295/2375-3668.1367>
- Benevento, S. V. (2023). Communicating climate change risk to children: A thematic analysis of children's literature. *Early Childhood Education Journal*, 51(2), 201–210. <https://doi.org/10.1007/s10643-021-01294-y>
- Bishop, R. S. (1990). Mirrors, windows and sliding glass doors. *Perspectives: Choosing and Using Books for the Classroom*, 6(3), ix–xi.
- Boggs, G. L., Wilson, N. S., Ackland, R. T., Danna, S., Grant, K. B., Yond, B. F., & Lor, T. H. F. (2016). Examining children's books on climate change. *The Reading Teacher*, 69(6), 665–675. <https://www.jstor.org/stable/44001394>
- Clayton, S. (2020a). Climate anxiety: Psychological responses to climate change. *Journal of Anxiety Disorders*, 74. <https://doi.org/10.1016/j.janxdis.2020.102263>
- Clayton, S., & Parnes, M. F. (2025). Anxiety and activism in response to climate change. *Current Opinion in Psychology*, 62, 101996. <https://doi.org/10.1016/j.copsyc.2025.101996>
- Climate Mental Health Network. (2024). *Climate emotions wheel*. <https://www.climate-mentalhealth.net/wheel>
- Climate Psychology Alliance North America. (n.d.). *An educator's guide to climate emotions*. <https://www.climatepsychology.us/educators-guide-climate-emotions>
- Colla, R., Williams, P., Oades, L. G., & Camacho-Morles, J. (2022). "A new hope" for positive psychology: A dynamic systems reconceptualization of hope theory. *Frontiers in Psychology*, 13, 1–15. <https://doi.org/10.3389/fpsyg.2022.809053>

REFERENCES

- Aikenhead, G., & Michell, H. (2011). *Bridging cultures: Indigenous and scientific ways of knowing nature*. Pearson Canada.
- Alvey, E. (2020). Deferral, agency, and hope: Pre-service social studies teachers making sense of the pedagogical demands of engaging climate crisis. *Journal of Social Studies Education Research*, 11(3), 18–45. <https://jsse.org/index.php/jsse/article/view/1864>
- Association of Canadian Deans of Education. (2022). *Accord on education for a sustainable future*. <https://csse-scee.ca/acde/wp-content/uploads/sites/7/2022/03/Accord-on-Education-for-a-Sustainable-Future-1.pdf>

- Crandon, T. J., Scott, J. G., Charlson, F. J., & Thomas, H. J. (2022). A social-ecological perspective on climate anxiety in children and adolescents. *Nature Climate Change*, 12(2), 123–131. <https://doi.org/10.1038/s41558-021-01251-y>
- Crandon, T. J., Scott, J. G., Charlson, F. J., & Thomas, H. J. (2024). A theoretical model of climate anxiety and coping. *Discover Psychology*, 4(1). <https://doi.org/10.1007/s44202-024-00212-8>
- Darragh, J. J., & Kelley, J. E. (2022). “So many hopes”: A qualitative content analysis of children’s picture books that portray refugees. *Reading Horizons*, 61(3), 20–44. https://scholarworks.wmich.edu/reading_horizons/vol61/iss3/3
- Environment and Climate Change Canada. (2025). *Towards a national framework for environmental learning – What we heard report*. Government of Canada. <https://www.canada.ca/en/environment-climate-change/corporate/transparency/consultations/national-framework-environmental-learning/what-we-heard-report.html#toc3>
- Field, E., Schwartzberg, P., & Berger, P. (2019). Canada, climate change and education: Opportunities for public and formal education. *The UNESCO Courier*, 2019(3), 31. <https://doi.org/10.18356/77d332cc-en>
- Field, E., Spiropoulos, G., Nguyen, A. T., & Grewal, R. K. (2023). Climate change education within Canada’s regional curricula: A systematic review of gaps and opportunities. *Canadian Journal of Educational Administration and Policy*, 202, 155–184. <https://doi.org/10.7202/1099989AR>
- Finnegan, W., & D’Abreu, C. (2024). The hope wheel: A model to enable hope-based pedagogy in climate change education. *Frontiers in Psychology*, 15. <https://doi.org/10.3389/fpsyg.2024.1347392>
- Galway, L. P., & Field, E. (2023). Climate emotions and anxiety among young people in Canada: A national survey and call to action. *Journal of Climate Change and Health*, 9, 100204. <https://doi.org/10.1016/j.joclim.2023.100204>
- Gould, R. K., Martinez, D. E., & Hoelting, K. R. (2023). Exploring Indigenous relationality to inform the relational turn in sustainability science. *Ecosystems and People*, 19(1). <https://doi.org/10.1080/26395916.2023.2229452>
- Hickman, C., Marks, E., Pihkala, P., Clayton, S., Lewandowski, R. E., Mayall, E. E., Wray, B., Mellor, C., & van Susteren, L. (2021). Climate anxiety in children and young people and their beliefs about government responses to climate change: A global survey. *The Lancet Planetary Health*, 5(12), e863–e873. [https://doi.org/10.1016/S2542-5196\(21\)00278-3](https://doi.org/10.1016/S2542-5196(21)00278-3)
- Hoffman, J. V., Wilson, M. B., Martínez, R. A., & Sailors, M. (2012). Content analysis: The past, present, and future. In N. K. Duke & M. H. Mallette (Eds.), *Literacy research methodologies* (pp. 28–49). Guilford Publications.
- Holmes, A. G. D. (2020). Researcher positionality - A consideration of its influence and place in qualitative research - A new researcher guide. *International Journal of Education*, 8(4), 1–10. <https://doi.org/10.34293/education.v8i4.3232>
- Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, 15(9), 1277–1288. <https://doi.org/10.1177/1049732305276687>
- Hurley, D. A., Kostecky, S. R., & Aguilar, P. (2017). Whose knowledge? Representing Indigenous realities in library and archival collections. *Collection Management*, 42(3–4), 124–129. <https://doi.org/10.1080/01462679.2017.1392805>

- Léger-Goodes, T., Malboeuf-Hurtubise, C., Mastine, T., Gagnéux, M., Paradis, P. O., & Camden, C. (2022). Eco-anxiety in children: A scoping review of the mental health impacts of the awareness of climate change. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.872544>
- Li, C. J., & Monroe, M. C. (2019). Exploring the essential psychological factors in fostering hope concerning climate change. *Environmental Education Research*, 25(6), 936–954. <https://doi.org/10.1080/13504622.2017.1367916>
- Lovelock, J. (2010). *The vanishing face of Gaia: A final warning*. Basic Books.
- Martin, N. M., Hageman, J. L., Montgomery, S. E., & Rule, A. C. (2019). A content analysis of thirty children's picture books about ecology. *Journal of STEM Arts, Crafts, and Constructions*, 4(1), 83–120. <https://scholarworks.uni.edu/journal-stem-arts/vol4/iss1/5/>
- McGregor, C., & Christie, B. (2021). Towards climate justice education: Views from activists and educators in Scotland. *Environmental Education Research*, 27(5), 652–668. <https://doi.org/10.1080/13504622.2020.1865881>
- McHugh, M., L. (2012). Interrater reliability: The kappa statistic. *Biochem Medica*, 22(3), 276–282. <https://pmc.ncbi.nlm.nih.gov/articles/PMC3900052/>
- McNair, J. C., & Edwards, P. A. (2021). The lasting legacy of Rudine Sims Bishop: Mirrors, windows, sliding glass doors, and more. *Literacy Research: Theory, Method, and Practice*, 70(1), 202–212. <https://doi.org/10.1177/23813377211028256>
- Monroe, M. C., Plate, R. R., Oxarart, A., Bowers, A., & Chaves, W. A. (2019). Identifying effective climate change education strategies: A systematic review of the research. *Environmental Education Research*, 25(6), 791–812. <https://doi.org/10.1080/13504622.2017.1360842>
- Mortreux, C., Barnett, J., Jarillo, S., & Greenaway, K. H. (2025). Hope as an enabler of climate change adaptation. *Communications Psychology*, 3(147), 1–9. <https://doi.org/10.1038/s44271-025-00291-w>
- Neidhardt, J., & Neidhardt, N. (Eds.). (2018). *Groundswell: Indigenous knowledge and a call to action for climate change*. Strong Nations Publishing.
- Neidhardt, N., Mowatt, G., & Everstz, T. (2019). Rooted: Staying grounded amidst a changing landscape. In J. Neidhardt & N. Neidhardt (Eds.), *Groundswell: Indigenous knowledge and a call to action for climate change* (pp. 30–49). Strong Nations Publishing.
- O'Brien, K., Selboe, E., & Hayward, B. M. (2018). Exploring youth activism on climate change: Dutiful, disruptive, and dangerous dissent. *Ecology and Society*, 23(3), 42–54. <https://doi.org/10.5751/ES-10287-230342>
- Ojala, M. (2012a). Hope and climate change: The importance of hope for environmental engagement among young people. *Environmental Education Research*, 18(5), 625–642. <https://doi.org/10.1080/13504622.2011.637157>
- Ojala, M. (2012b). How do children cope with climate change? Coping strategies, engagement, and well-being. *Journal of Environmental Psychology*, 32, 225–233. <https://doi.org/doi:10.1016/j.jenv.2012.02.004>
- Ojala, M. (2013). Coping with climate change among adolescents: Implications for subjective well-being and environmental engagement. *Sustainability*, 5(5), 2191–2209. <https://doi.org/10.3390/su5052191>
- Ojala, M. (2023). Hope and climate-change engagement from a psychological perspective. *Current Opinion in Psychology*, 49, 1–6. <https://doi.org/10.1016/j.copsyc.2022.101514>

- Ojala, M., Cunsolo, A., Ogunbode, C. A., & Middleton, J. (2021). Anxiety, worry, and grief in a time of environmental and climate crisis: A narrative review. *Annual Review of Environment and Resources*, 46, 35–58. <https://doi.org/10.1146/annurev-envi-ron-012220-022716>
- Oziewicz, M. (2022). Planetarianism now: On anticipatory imagination, young people's literature, and hope for the planet. In M. Paulson, J. Jagodzinski, & S. Hawke (Eds.), *Pedagogy in the Anthropocene: Re-wilding education for a new Earth* (pp. 241–256). Palgrave Macmillan. https://doi.org/10.1007/978-3-030-90980-2_12
- Oziewicz, M. (2023). CLICK framework. *Climate Literacy in Education*, 1(2), 44–52. <https://doi.org/10.24926/cle.v1i2.5438>
- Patton, M. Q. (2002). *Qualitative research and evaluation methods* (3rd ed.). SAGE.
- Pihkala, P. (2020). Anxiety and the ecological crisis: An analysis of eco-anxiety and climate anxiety. *Sustainability*, 12(19), 7836–7855. <https://doi.org/10.3390/SU12197836>
- Pihkala, P. (2022). Toward a taxonomy of climate emotions. *Frontiers in Climate*, 3, 1–22. <https://doi.org/10.3389/fclim.2021.738154>
- Potter, W. J., & Levine-Donnerstein, D. (1999). Rethinking validity and reliability in content analysis. *Journal of Applied Communication Research*, 27, 258–284.
- Redmond, C. B. (2024). The HOPE framework: A literacy strategy for identifying hope in narratives as a response to young people's eco-grief. *Climate Literacy in Education*, 2(1), 14–22. <https://doi.org/https://doi.org/10.24926/cle.v2i1.6231>
- Schatz, K. (2021). *Where we stand: The integration of climate change education in Canadian schools*. P15. <https://www.bccic.ca/wp-content/uploads/2021/11/FINAL-Climate-Change-Education-in-Canada.pdf>
- Schwartzberg, P., Stevens, J., & Acton, K. S. (2022). *Canadians' perspectives on climate change & education: 2022*. <https://lsf-ist.ca/wp-content/uploads/2023/03/Canadians-Perspectives-on-Climate-Change-and-Education-2022-s.pdf>
- Snively, G., & Williams, W. L. (2016). *Knowing home: Braiding Indigenous science with Western science, Book 1*. University of Victoria. <https://pressbooks.bccampus.ca/knownhome/>
- Snyder, C. R. (2002). Hope theory: Rainbows in the mind. *Psychological Inquiry*, 13(4), 249–275. https://doi.org/10.1207/s15327965pli1304_01
- Stewart, M., & Correia, M. P. (2024). *5 kinds of nonfiction: Enriching reading and writing instruction with children's books*. Routledge.
- Topa, W., & Narvaez, D. (Eds.). (2022). *Restoring the kinship worldview: Indigenous voices introduce 28 precepts for rebalancing life on planet earth*. North Atlantic Books.
- Trott, C. D., Lam, S., Roncker, J., Gray, E. S., Courtney, R. H., & Even, T. L. (2023). Justice in climate change education: A systematic review. *Environmental Education Research*, 29(11), 1535–1572. <https://doi.org/10.1080/13504622.2023.2181265>
- Truth and Reconciliation Commission of Canada. (2015). *Truth and Reconciliation Commission of Canada: Calls to action*. https://ehprnh2mwo3.exactdn.com/wpcontent/uploads/2021/01/Calls_to_Action_English2.pdf
- UNESCO. (2017). *Local knowledge, global goods*. unesdoc.unesco.org/ark:/48223/pf0000259599
- United Nations Framework Convention on Climate Change. (2016). *The Paris Agreement*. https://unfccc.int/sites/default/files/resource/parisagreement_publication.pdf?download

- Walsh, Z., Böhme, J., & Wamsler, C. (2021). Towards a relational paradigm in sustainability research, practice, and education. *Ambio*, 50(1), 74–84. <https://doi.org/10.1007/s13280-020-01322-y>
- Wynes, S., & Nicholas, K. A. (2019). Climate science curricula in Canadian secondary schools focus on human warming, not scientific consensus, impacts or solutions. *PLoS ONE*, 14(7), 1–21. <https://doi.org/10.1371/journal.pone.0218305>
- Zembylas, M. (2025). Rethinking positional-ity statements in research: From looking back to building solidarity. *International Journal of Research and Method in Education*, 1–13. <https://doi.org/10.1080/1743727X.2025.2475762>