

Climate literacy project findings



We are **grateful** that this work has taken place on the **unceded* and traditional territories** of the Katzie, kʷikʷəłəm (Kwkwetlem), xʷməθkʷəyəm (Musqueam), Qayqayt, Semiahmoo, Skwxwú7mesh (Squamish), Tsawwassen and Səlilwətaʔ/Selilwitulh (Tsleil-Waututh) Nations. Unceded means this land was never surrendered, relinquished, or handed over in any way.

We sincerely **thank** the following for their significant contribution: the Climate, Literacy, Education, and Skills Working Group; all participants in the focus groups, interviews, and related conversations; SFU Sustainability and the Centre for Educational Excellence; the Pacific Institute for Climate Solutions and Nastenka Calle Delgado; our Research Assistant, Sooji Choe; and VPRI Communications & Marketing.

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Co-lead and data collection: Dr. Janet Pivnick, CEE

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Project co-led by



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Context

This document outlines the outcomes of a project that implements **Goal 1 of SFU's Strategic Sustainability and Climate Action Plan** for 2025: "increase climate and sustainability literacy among faculty, staff and students through learning and teaching". The project aligns with SFU's What's Next priorities and the Embedding Sustainability and Climate Action (ESCA) framework. It was co-led by Dr. Maria Spiliotopoulou, Manager, Regenerative Systems Education, SFU Sustainability, and Dr. Janet Pivnick, Educational Developer, Centre for Educational Excellence, who also co-authored this document.

We directly engaged 130 people and reached many more. In brief, we:

- Conducted research on embedding sustainability in learning opportunities for everyone at SFU, and mapped the system of sustainability and climate education in our university;
- Identified best practices in Canada and globally through research, personal contact with other Canadian universities, and our active membership in AASHE and SDSN Canada working groups;
- Coordinated an advisory group composed of SFU students, staff, and faculty; and
- Conducted a university-wide needs analysis which included five focus groups on all three campuses and 29 interviews with SFU community members, including eight student groups ([Embark Sustainability](#), [SFU350](#), [Disability and Neurodiversity Alliance](#), [Students of Caribbean and African Ancestry](#), [First Nations Metis and Inuit Student Association](#), [SFPIRG](#), [Graduate Student Society](#), and [Simon Fraser Student Society](#)), Faculty For the Future, the Dean of Environment, and many faculty and staff invested in climate work, from units such as Health and Counselling Services, SFU Library, APSA, Career and Volunteer Services, Continuing Studies, and International Student Services.

Outcomes, findings, and recommendations are presented below by Goal 1 Action.

Goal 1 – Action 1 (climate and sustainability literacy baseline audit)

Aiming to gauge the level of climate and sustainability literacy in the SFU community, we developed a baseline audit survey that can be relaunched biannually to measure progress. We first reviewed similar surveys from other higher education institutions and then worked with SFU community members and groups such as Embark, SFU350, and Faculty For the Future. The survey takes 10-12 minutes to complete and is designed to result in anonymized and aggregated data. An ethics exemption letter was received in May 2023. The initial launch ("baseline") is currently on pause.

Goal 1 – Action 2 (opportunities for learning for everyone at SFU)

The findings of the needs analysis, in implementation of this action, are grouped by themes: perceptions of climate literacy, vision for a climate literate SFU, and recommendations for achieving this vision.

Perceptions on climate literacy at SFU

Participant perceptions ranged from pride for SFU being an emerging leader in terms of community engagement and ranking positions, to SFU demonstrating siloed and inadequate sustainability approaches, not unlike other educational institutions or large organizations. While several participants

mentioned their frustration with the perceived absence of strong leadership or low-to-moderate levels of baseline climate knowledge at SFU, many highlighted that some climate action is “hatching”.

Vision for a climate literate SFU

Participants unanimously agreed on the importance of climate and sustainability literacy and recommend the prioritization and meaningful support of the integration of sustainability learning across SFU. They envision a university in which sustainability is streamlined and embedded into the learning and work of all students, staff, and faculty with a lens of Justice, Equity, Diversity, and Inclusion (JEDI) and a lens of Decolonization and Reconciliation.



Word cloud generated from data on vision

General recommendations

Participants recommend embedding sustainability across the curriculum and in employee professional development (PD) in the following ways:

- By making it a priority for the university and within each faculty/unit;
- By supporting instructors in connecting sustainability to their field and in communicating and disseminating their teaching and learning practices;
- By requiring all students to take a related course (potentially a Faculty of Environment course);
- By fostering partnerships among student groups, faculty, and staff for impactful climate learning opportunities; and
- By providing incentives for staff (not necessarily financial) to engage in climate-related PD.

Recommendations for climate learning design and development

Among the following proposed **principles of learning**, the first one stood out as the most frequently mentioned priority, nearly by all participants:

- JEDI, Decolonization, and Reconciliation
- Systemic and long-term thinking
- Collaborative / Participatory (incl. empathy, relationship-building, and open-mindedness)
- Change-driven, Responsibility and Accountability, Sense of community (at SFU/locally)
- Transdisciplinarity and interdisciplinarity
- Community and place-based (be mindful that "place" doesn't necessarily mean "local", think of international students and staff).

In terms of **content**, the Head - Heart - Hands model¹ (*Knowing + Feeling + Doing*) is a good fit for what participants believed the SFU community needs, i.e., to:

- Learn the foundational knowledge/science
- Relate one's work and personal life to it and engage with it in meaningful ways
- Learn about action and how-to/practical applications



Participants identified the following as the most important **skills and competences** to acquire or develop within the context of sustainability and climate learning:

- Decolonizing learning
- Critical thinking and two-eyed (or multi-eyed) seeing
- Systemic and long-term thinking
- Individual and collective responsibility, stewardship
- Activism skills (incl. fundraising, navigating policy, and having a dialogue)
- Informed debate
- Emotional intelligence and emotional relational skills (incl. self-care, dealing with difficult emotions, compassion, empathy, active listening, patience, and curiosity)
- Resilience and crisis management

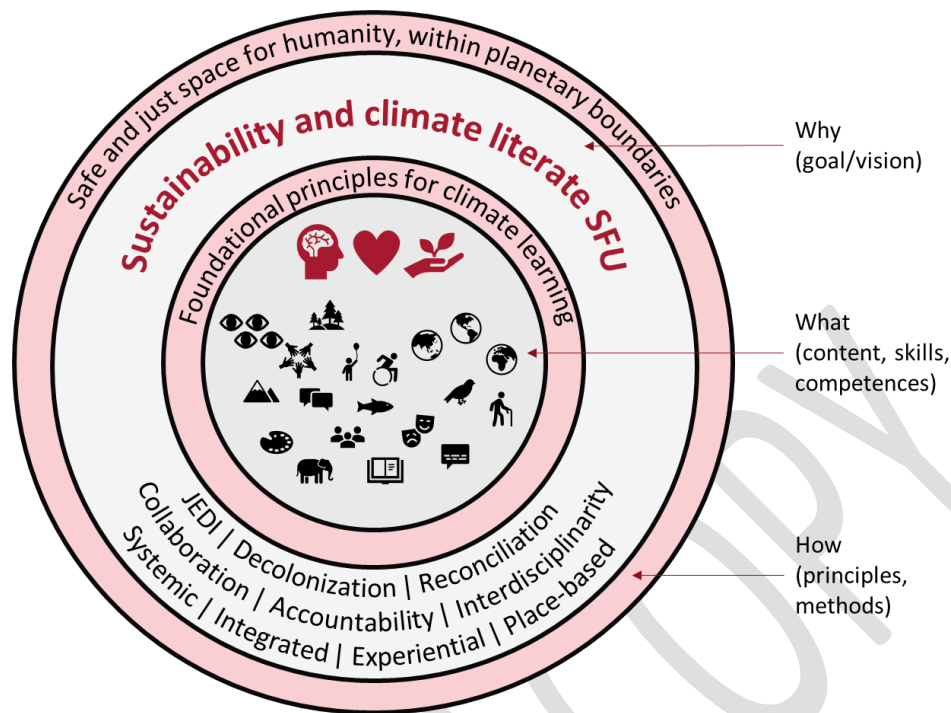
The above findings and the participants' calls to action align well with the sustainability competences identified in the literature², as well as with SFU's university-wide [educational goals](#) (2022), the Educational Goals for Academic Programs, and the educational goals [assessment plan](#).

Lastly, in terms of the **format of learning**, participants overwhelmingly wanted experiential, respectfully collaborative, and conversational approaches, and short and impactful learning modules, in an inclusive and accessible format, i.e., hybrid and with a wide range of learning and evaluation methods.

The following **visual summarizes** the engagement findings and can provide a **compass** for climate learning design and impact evaluation at SFU while ensuring SFU community input is being considered.

¹ Islam, M. A., Haji Mat Said, S. B., Umarlebbe, J. H., Sobhani, F. A., & Afrin, S. (2022). Conceptualization of head-heart-hands model for developing an effective 21st century teacher. *Frontiers in Psychology*, 13, 968723.

² See for example: [Wiek 2011](#), Global Council for Science and the Environment [framework](#), [Evans 2019](#), and [AASHE 2023](#).



Notes: this framework was inspired by the doughnut economics model; it is not a formal framework, nor is it endorsed by SFU; “place-based” has a broad meaning and intends to honour everybody’s lived experience.

Our recommendation for moving climate learning forward

Our recommendation is to provide an umbrella for related existing initiatives, enriched with flexible pedagogical tools that students, student groups, staff, faculty, or other instructors can adapt based on their learning and teaching context and needs. We propose the design and development of:

- A database of educational resources and tools;
- Adjustable modules, mini-lessons, workshops, etc.;
- Guides with recommendations for activities, assignments, workshops, slide decks, etc.; and
- A customized process of “design thinking in education”³ that SFU instructors can use in climate teaching in conjunction with an EDI and Decolonization lens and a whole-systems lens.

The above should be also informed by the baseline audit survey and an inclusive design process and be followed by the development of a community of practice (interest already exists among the SFU community). We have concluded significant preparatory work for curriculum design by collecting, reviewing, and curating related research and other pedagogical resources. An informal repository is available to the SFU community [here](#) (details and disclaimers can be found in the website’s Home Page).

³ See for example: [Luka 2014](#) and this [Harvard infosheet](#).

Appendix

This document presents detailed analysis of the community input based on data collected from a university-wide engagement process on enhancing sustainability and climate literacy at SFU.

Data analysed and document compiled by Maria Spiliotopoulou.

Vision for a climate literate SFU

Participants envision a university community in which:

- Sustainability is infused at all levels, including across the curriculum, along with JEDDI
- Community members are aware and care – a shift in mindset towards transformational change
- There is collective power and both individual and collective responsibility
- The impact of decision-making is visible and acted upon accordingly
- Lived experience and traditional knowledge are celebrated and harnessed
- Co-learning and collaboration are integrated into everyday practice
- Sustainability and climate learning opportunities lead to new a-ha moments and facilitate action

Suggestions and requests

- Provide incentives for staff and faculty to be able to participate, given their workload, and link the climate training to their well-being directly (e.g., give half a day off, a micro-credential, etc.)
- At least include one module in employee onboarding and orientation, or integrate it into other (mandatory) training for *all* levels of management and instructors
- Embed sustainability in workplans and connect it to every unit's priorities/goals
- Embed sustainability across the curriculum
 - Faculty/Instructors: need to connect their field/discipline with sustainability literacy and skills and embed those in their courses – CEE educational developers can help
 - Learn how-tos from the experience of other institutions, e.g., through networks and Canadian or international groups SFUS is participating
 - Require all students to take a REM or SD course as part of their major
- Partner with student groups: e.g., host fun intro workshops on campus outdoors or short climate info sessions throughout the year, and create and support climate-related CCR activities (see the example of partnerships for the Changemakers program)
- Incentivize student participation with food, prizes, certificate, credits, etc.
- Invite students in sustainability events where they can connect and network with staff and faculty; and design the events in inclusive ways that allow this
- *Ensure all students graduate with a basic understanding of climate science and justice*

Specific support requested by and for faculty

Once the university prioritizes this work and the Deans give the go-ahead, faculty will need support:

- Develop a “faculty champions” network / faculty Community of Practice (CoP) – learning from each other is a good approach for faculty (suggested by about one third of the faculty involved or interviewed)
- Ensure approaches of working with faculty are context-adjustable, “faculty are not a monolith”
- Modules for all disciplines: “living” material, adaptable, easily updatable (a resource hub).
- Develop a Climate Teaching Fellows program (like the existing TF program) – for 1:1 check-ins and ongoing teaching development and support for tools, pedagogy, etc.
- Support faculty in adding sustainability-related keywords in course outlines
- Support faculty in advocating for integration of a sustainability and climate-related criterion in their tenure promotion evaluation
- Provide financial incentives to embed sustainability into their L&T (like [this initiative](#) - see more such initiatives in the [repository](#), or like SFU's [TILT funding support](#) for teaching inquiry)
- Support faculty in course promotion and overall communication of their teaching and research

General need mentioned by all: improve communication and dissemination of teaching and learning.

Content / Skills / Competences / Learning format

Content and skills suggestions (in no particular order)

- Indigenous content
 - Traditional Ecological Knowledge (generally content from traditional Knowledge Holders)
 - Worldviews
 - Decolonialism / Decolonization
- Climate/Sustainability/Earth science basics
 - Study climate change impacts and connect to the land
- Climate justice, racial justice, and other types of justice (content from BIPOC folks)
- Complexity and navigating complex systems (incl. post-humanism, post-modernism, post-anthropocene)
- Climate solutions / real-world applications *“that apply to the world we want to live in”*
 - Unlearn superficial/2000s sustainability trends
 - Individual, institutional, and collective action
- Compelling personal narratives as a relational approach to help attitude and behaviour change
- Options and strategies for individual and collective action / civics basics, e.g., organizations, policies and political engagement, options for climate work/jobs, etc.
- What SFU is doing and how to get involved
- Hope and dealing with climate anxiety (incl. having difficult climate conversations)
- Media literacy (navigating misinformation, plus language to communicate effectively)
- Regional, National, Global movements (incl. UN SDGs, UNDRIP, and Global South content)
- History, Culture, Art of or on climate and sustainability

Format

- Need for experiential and hands-on approaches to learning (>50% of participants requested this)
- Collaborative/group/conversational work is valued – but along with some individual work for learning and reflection

- Short and impactful
- Support advance planning (not major last-minute changes, or week-by-week reveal of material)
- Cohort-based to build trust and foster relationships
- Learning circles to break hierarchical structures – along with peer-to-peer and CoP

Methods

- Videos
- Engaging visuals
- Art
- Storytelling / first-person narratives
- Series of webinars (not just one) and recordings
- Conversations, ideas/examples exchange, and debates/collective problem-solving
- Options for in-person (not just virtual)
- Podcasts
- Well curated and well communicated readings (not just academic articles)
- Self-reflection opportunities, engaging the affective/heart space (“pedagogies of discomfort”), slowing down
 - Related: techniques to self-assess
- Nature walks, outings, contemplative spaces
- Hands-on / experiential / applied learning
 - Examples, case studies
 - Collective/collaborative activities
 - Meetups with university labs, local professionals, and local grassroots who work on climate solutions
- Use of accessible and inclusive platforms (not just email, not just Canvas)
- Database that's Creative Commons and accessible post-cohort
- Gamification
- Annual event/symposium



Resources collected

An **informal repository of resources** collected has been curated and is available to the SFU community here: <https://sites.google.com/view/resourcesforsustainabilityedu>. It contains four pages:

- Transdisciplinary resources for sustainability learning and teaching
- Sustainability learning and teaching in the disciplines
- Sustainability education resources & initiatives at SFU
- Sustainability education in other higher education Institutions

Please note that these lists of resources have been curated but not pedagogically designed by an educational developer, nor vetted by Simon Fraser University. **Additional information and disclaimers, as well as photos from the focus groups, can be found in the website's [Home Page](#).**



Photos from the Celebratory and Wrap-up event, November 16, 2023, Burnaby campus