

Canada, Climate Change and Education: Opportunities for Public and Formal Education

Focus on Alberta Regional Report

A project of



With support from



Knowledge Mobilization Session Final Report *August 26, 2020* *Alberta*

About the Partners

Learning for a Sustainable Future (LSF) is a national charity founded in 1991 to promote, through education, the knowledge, skills, values, perspectives and practices essential to a sustainable future.

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About the Knowledge Mobilization Session

On Wednesday August 26, 2020, 47 stakeholders drawn from across Alberta, representing the education, government, academia, business, and non-profit sectors as well as teachers and youth participated in a virtual Climate Change Education Knowledge Mobilization Session.

The purpose of the session was to: share the national, provincial and Alberta specific findings from *Canada, Climate Change and Education: Opportunities for Public and Formal Education*, a national survey of over 3,196 Canadians; discuss emerging trends and opportunities for climate change education in Alberta; and develop strategies to strengthen climate change education in Alberta.

The session was facilitated by: Pamela Schwartzberg, President and CEO, Learning for a Sustainable Future (LSF); Dr. Ellen Field, Principal Investigator, Assistant Professor, Lakehead University; Samantha Gawron, Manager of Programs, LSF; and Jennifer Stevens, Program Coordinator, LSF. Small group facilitation was also provided by Elaine Rubinoff, Director of Programs, LSF and LSF consultants Dr. Karen Acton and Dr. Michele Martin.

Activities and discussions during the 2-hour facilitated session included the following:

- Welcome, land acknowledgement, and introductions from Pamela Schwartzberg, President and CEO, Learning for a Sustainable Future (LSF)
- Mentimeter poll to identify sectors represented in the session
- A presentation of the national climate change education survey report entitled *Canada, Climate Change and Education: Opportunities for Public and Formal Education* by Pamela Schwartzberg
- A presentation of the *Focus on Alberta Summary Report* by Dr. Ellen Field, Principal Investigator, Assistant Professor, Lakehead University
- Question and answer session on the Report findings
- Reflections on the most interesting and most surprising elements of the survey report moderated through Mentimeter
- Using Google Jamboard, small groups by sector (teachers/school boards/academia/education associations, federal/provincial/municipal government, business/foundations, NGOs, and youth) identified the current reality (helping and hindering forces) for climate change education in Alberta
- Using Mentimeter, participants brainstormed what needs to be done by the government, teachers/school boards/academia/education associations, businesses/foundations, youth, and NGOs to advance climate change education in Alberta
- In breakout rooms by sector (teachers/school boards/academia/education associations, government, business/foundations, NGOs, and youth) stakeholders developed action plans for advancing climate change education in Alberta
- Action planning debrief, sharing of LSF support, closing comments

This report captures the session and output from participants in the facilitated activities. To access the *Focus on Alberta Report*, and the Alberta Knowledge Mobilization Session report please visit this [link](#). To read the Full Report, Executive Summary and the video please visit: www.LSF-LST.ca/en/cc-survey. Pour lire le rapport complet, consulter le Sommaire et visionner la vidéo, visitez le site www.LSF-LST.ca/fr/cc-survey

About Learning for a Sustainable Future

Learning for a Sustainable Future (LSF) is a bilingual Canadian charity founded in 1991 by the National Round Table on the Environment and the Economy. Working with business, governments, school boards, universities, communities, educators, and youth across Canada, LSF acts as a connector, a resource, and a facilitator for change.

LSF's innovative programs and strategic partnerships are helping to reshape education policy and transform learning methods, empowering students to address the increasingly difficult economic, social, and environmental challenges of the 21st century.

LSF's Mission

LSF's mission is to promote, through education - the knowledge, skills, values, perspectives, and practices essential to a sustainable future.

LSF's Strategic Priorities

1. Advancing innovative education policies, standards and good practice
2. Reorienting teaching and learning toward active, responsible citizenship
3. Fostering sustainable communities that link education to informed action
4. Supporting collaborative initiatives, networks, and champions

LSF's Reach

LSF reaches over 225,000 Canadians each year through our programs. For more information on LSF programs please see below or visit: www.LSF-LST.ca

Our climate change programs include:

Resources for Rethinking database - www.R4R.ca

R4R is a free online database where educators can search for high-quality, teacher-reviewed, curriculum-matched lesson plans, videos, children's books, outdoor activities and apps/games on issues related to sustainability & climate change. Interested in outdoor learning for COVID-19? Visit www.R4R.ca/en/outdoor-learning

Professional Development - www.LSF-LST.ca/institutes

LSF's climate change Institutes provide educators grades 7-12 with climate science content as well as strategies, tools and resources to foster understanding, inspire student engagement, and motivate action as engaged citizens in their communities.

Youth Empowerment - www.OurCanadaProject.ca

Climate Change Youth Leadership Forums and Action Project Funding engage students in local climate change issues, equip them with the skills needed to take action, and empower them to make change in their communities.

Call to Action

What are the opportunities to foster climate change education in Alberta

This report details the findings from our national, provincial and Alberta specific survey data as well as the results of the collaborative activities and discussion at the Knowledge Mobilization Session. As a summary of these results, please review the following calls to action.

1. Leadership by Government

Federal

- Make public and formal education a pillar of federal climate policy. Canada as a signatory to the Paris Climate Change Agreement agreed to Article 12 which states “Parties shall cooperate in taking measures, as appropriate, to enhance climate change education, training, public awareness, public participation and public access to information, recognizing the importance of these steps to enhancing actions under this Agreement”
- Create a public awareness campaign that is science-based, similar to Dr. Theresa Tam re COVID-19, providing information and resources that are accurate and can be used, shared or built on
- Implement a national strategy to make formal climate change education mandatory, promoted through the Council of Ministers of Education Canada, working with the Canadian Teachers' Federation and other national groups representing public education stakeholders
- Translate complex scientific information into useful/simple language for the general public, practitioners, teachers and students to use
- Provide long-term stable funding to Indigenous-led education and NGOs for the development and delivery of climate change education programming

Provincial

- Do not turn climate change into a political issue, make it a bigger overall priority
- To address the barriers identified by Alberta teachers including: lack of time within the curriculum, structural barriers and lack of parental support, the provincial government should: revise curriculum to embed mandatory climate change curriculum across all subjects and grades (developmentally appropriate) to address the multiple dimensions of climate change; and create a public awareness campaign specifically for Alberta parents
- Update the current curriculum review panel and include people who have a wide range of perspectives and expertise in climate and low carbon future
- Include voices from stakeholders, including teachers and youth to co-create educational responses
- Link curriculum to government climate change adaptation/mitigation action and targets
- Support mandatory environment and climate change professional development for teachers
- Support and fund development of education resources that are interactive and hands on and ensure schools have access to them
- Support community projects around climate change mitigation to make climate change more visible to the public eye

2. Leadership by School Boards

- School boards should work together to create policies that make it clear that climate change education is a priority and is expected to be addressed. Boards should advocate on a political level and push for curriculum changes
- Support teachers who choose to incorporate climate change in their teaching when parental backlash to climate change education surfaces
- Engage and educate parents - find ways to integrate parents in the process and educate them about climate change (e.g., develop resources that students and parents can work on/do together at home)
- Support an interdisciplinary approach to climate change with climate change resources, knowledge and skills
- Focus district-wide and school-wide professional development on climate change knowledge, awareness and how to support students to take climate change action
- Support getting students outside of the school to create community connections
- Prioritize human rights and Indigenous knowledge/perspectives in climate change education/conversations
- Teachers should focus on teaching climate change regularly and repeatedly, including ways to work for systemic change
- Foster partnerships with community and NGO's to network, collaborate, and build community capacity

3. Build capacity of Teachers and Teacher Candidates

- To address the barriers identified by Alberta teachers (including lack of classroom resources/activities, lack of accurate information sources and lack of personal knowledge) school boards, the Alberta Teachers' Association and Faculties of Education should:
 - Help teachers find ways to implement climate change into the existing curriculum. Climate change affects everything and connections can be made to every subject and grade
 - Provide teachers and teacher candidates with access to reliable and up-to-date climate information, data and climate change classroom resources based on sound scientific evidence to ensure there is no 'debate' over whether it is real or not
 - Encourage educators to step outside and move beyond the four walls of the classroom, allowing for hands-on, project-based learning opportunities where students develop connections to the land, and develop a relationship with the land. These opportunities will enable students to advocate for the land
 - Form partnerships to help establish professional development opportunities, hands on learning opportunities for our students, field trips, resources and infrastructure support (e.g. outdoor classrooms and community gardens)
 - Make climate change education a priority and a mandatory part of all teacher candidates' courses and practicum placements

- Educators need to be working with government and other stakeholders to form a working group to look at curriculum and how we can integrate Education for Sustainable Development initiatives throughout all the different grade levels
- Create a mandatory interdisciplinary class on climate change in Faculties of Education

4. Empower Youth

- Give youth a place to share their voices, concerns and fears on climate change; engage in climate change advocacy; become educated on how policy making and discussion in government and schools boards operate; and have opportunities to connect with people to facilitate action
- Increase the accessibility of climate change knowledge for youth
- Facilitate youth agency through their ability to take action
- Youth should share their learnings and actions with their parents and adult networks to enable them to lead by example
- Address eco-anxiety through town halls/discussions/youth support groups (they can't engage if they're stressed)

5. Engage Business

- Business leaders should lobby government for policies that make climate change actions profitable (level the playing field)
- Incorporate climate change knowledge and proactive practices/standards into what they do. Set a positive example, and encourage/include others to do the same
- Communicate what they are doing with the public and showcase innovations. People tend to follow the lead of industry
- Take on a leadership role in climate change awareness, education and action
- Share their voice with government that climate change education is needed
- Rally for support of sustainable practices in their community
- Fund climate change education programs delivered by NGOs and community groups over the long term
- Provide co-op/mentorship/internship opportunities for students related to sustainability and climate change

6. Engage NGOS

- Work with government, schools, school boards, teachers and youth to provide climate change education
- Develop and deliver professional development for teachers to enable them to incorporate climate change into their teaching across subjects and grades
- Develop lesson plans and toolkits aligned to curricular outcomes to support climate change learning
- Create experiences for students to engage in climate change action
- Help move climate change from a political conversation to a scientific conversation
- Make information and research more accessible to parents and the public, focusing not only on the problem, but also the solutions
- Develop FAQs and tools for teachers to communicate the scientific evidence for climate change to students and parents

- Be a voice for change -work to empower youth to engage with stakeholders and government to voice their concerns and needs

7. Multiple voices and approaches

- Ensure Indigenous perspectives and voices are included in the dialogue, planning and action
- Facilitate partnerships between government, business, academia, youth and NGOs to undertake research, develop resources, share content, and utilize channels to help get the message out

About The Survey

The purpose of this national survey was to gain an understanding of Canadians' current levels of knowledge and perceptions of climate change and its risks, assess Canadians' views on how the education system should respond to climate change, and provide a snapshot of climate change education practice in Canada. The survey was conducted online through Leger Research Intelligence, who operate one of Canada's largest online survey panels of approximately 400,000 Canadians. In total, 2,191 responses were collected through Leger's survey panel (closed sample - CS) from the general public, parents, students, and educators. In order to reach a significant number (1,000+) of educators, the survey was also distributed via Learning for a Sustainable Future through an Open Sample (OS) which was publicly available. Since the OS data is not subject to the same controls as the Leger panel survey (CS), the OS results for educators are presented separately from the CS results in this study.

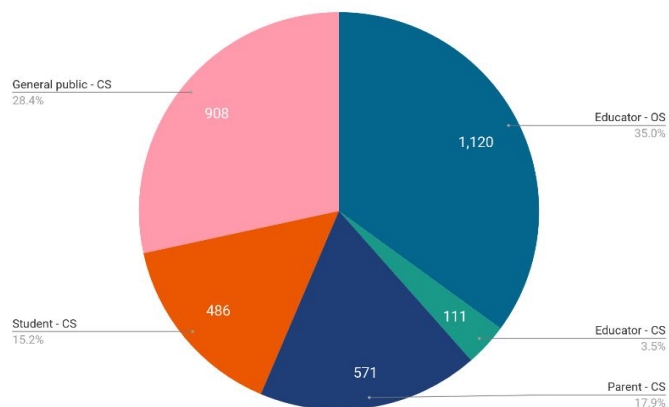
To access the *Focus on Alberta Report*, and the Alberta Knowledge Mobilization Session report please visit this [link](#). To read the Full Report, Executive Summary and the video please visit: <http://lsf-lst.ca/en/projects/key-themes-in-sustainability-education/cc-survey>.

Total respondents:
3,196

Languages:
English • French

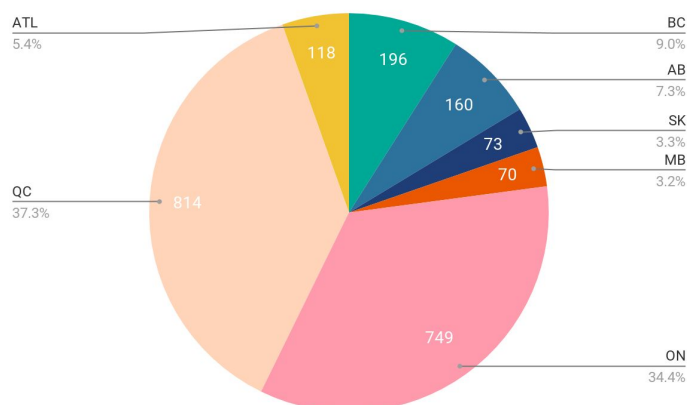
Target Audiences:
General Public in Canada
Parents of K-12 students
Youth in grades 7-12
Educators K-12

Total Respondents - National



n=3196 (Educator OS= 1120 Educator CS= 111, Parent CS=571, Student CS=486, Other CS=908)

Total Respondent - Provincial/Regional



n=2180 (BC=196, AB=160, SK=73, MB= 70, ON=749, QC=814, ATL=118)

National Survey Insights

Survey insights: Perspectives of Canadians*

- The majority of Canadians are certain that climate change is happening, they are concerned, and they believe there are risks to people in Canada.

Survey insights: Knowledge, Understanding and Information

- 43% of Canadians failed the climate change knowledge test
- Canadians are less sure about the causes and human impacts of climate change
- There is a significant gap between Canadians' perception of how well-informed they are and their actual knowledge
- Canadians trust scientists/academics the most
- Canadians get climate change information predominately from television news and documentaries

Survey insights: Impacts and Action

- 36% of Canadians reported that they have personally experienced the effects of climate change
- A majority of Canadians feel that climate change is causing or making droughts, hurricanes, wildfires, coastline erosion, river flooding, and severe winters worse
- Two thirds of Canadians are taking action to reduce climate change
- Only 30% of Canadians agree that new technologies will solve the problem without individuals having to make big change
- The majority of Canadians agree that, while personal actions are important, systemic change is needed to address climate change

Survey insights: Role of Education

- Canadians and educators agree that more should be done to educate young people about climate
- Only 1/3 of closed-sample educators and 59% of open-sample educators reported teaching any climate change
- For teachers who do integrate climate change content, most students experience 1-10 hours of instruction per year or semester
- Only 1/3 of closed-sample educators feel they have the knowledge and skills to teach about climate change
- All teachers should be teaching about climate change

Survey insights: Students

- 46% of students ages 12-18 are categorized as "aware," meaning they understand that human-caused climate change is happening, but they do not believe that human efforts will be effective

*Canadians = average of closed-sample respondents (students, parents, teachers, public)

Methodology - Alberta Region

To generate an overview of the province of Alberta, data has been visualized of the following:

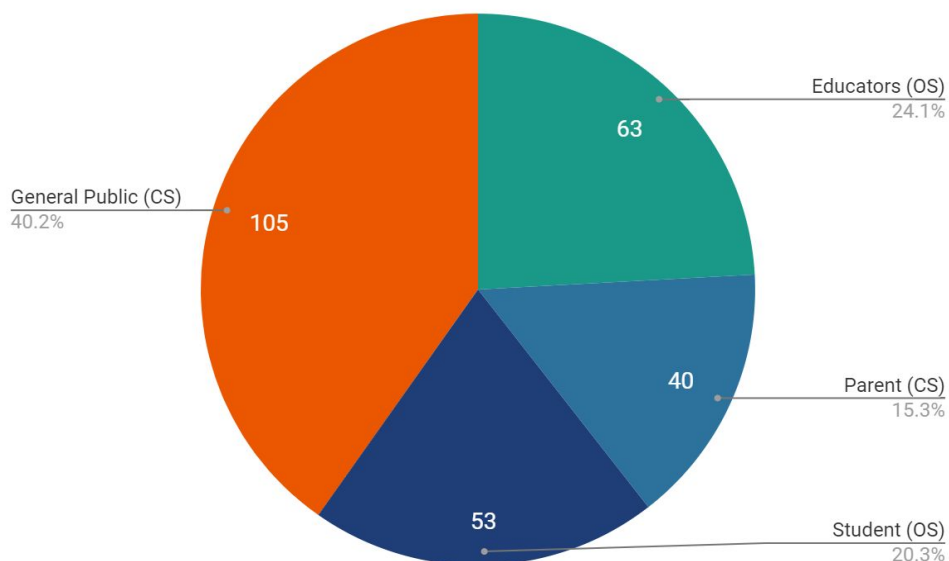
- Current levels of knowledge
- Perceptions of climate change and its risks
- Assess Albertans views on how the education system should respond to climate change
- Report on climate change education practice in Alberta

Due to not having a large enough sample size (>30) to report on from each respondent group in the closed-sample, data is pulled from both OS and CS data sets. The CS data is considered representative of the population and percentages are weighted accordingly. OS data is not considered representative of the population, because of the ability for respondents to opt-in, and is therefore not weighted. Throughout this report, we consistently drew on: Educator OS = 78, Student OS = 95 and General Public CS = 47. Throughout the analysis we make comparisons between provincial OS data and national CS data. These comparisons are illustrative and where there is provincial OS data, readers need to remember this is not representative data.

• Educators (OS) = 63	• General Public (CS) = 105
• Student (OS) = 53	• Parent (CS) = 40

Note: In some questions student (OS) may be included with <30 student responses but >25 responses for illustrative purposes only. In some questions the student numbers were too low to include for a reasonable data comparison.

Alberta Respondents



n=261 (Educator OS = 63, Student OS= 53, General public = 105, Parent (CS) =40)

Alberta Insights

Perceptions

I am certain climate change is happening

Across Alberta, the majority of respondents believe that climate change is happening. Among respondent groups, educators are the most certain that climate change is happening (93% reporting certainty). Parents and the general public in Alberta are less certain that climate change is happening compared to the national results. 84% of parents nationally feel certain that climate change is happening compared to 71% within Alberta. Similarly, 82% of the general public report feeling certain compared to 72% in Alberta.

Do you think climate change is...

Alberta respondents vary in their belief that climate change is human-caused. 68% of educators (OS) agree that climate change is human-caused, followed by just over half (54%) of students (OS). Less than one third of the general public accept that climate change is anthropogenic (28%) and only 20% of parents in Alberta. The percentage of students in Alberta (54%) who believe that climate change is human caused mimics the National results (54%); however the level of agreement among the general public respondents is 18% lower in Alberta compared to nationally, and the percentage of acceptance among parents is 23% lower.

I am concerned about the impacts of climate change

Overall, respondents in Alberta express less concern about the impacts of climate change compared to the national average. Educators in Alberta are the most concerned about climate change with 88% feeling concerned as compared to 96% educators (OS) nationally. Fewer members of the general public (62%) and parents (60%) report feeling concerned in Alberta compared to the general public (80%) and parents (76%) nationally.

There are risks to people in Canada from climate change

Educators in Alberta express a high level of awareness that there are risks to Canadians associated with climate change (90%). Just over half of parents in Alberta indicated that climate change poses risks to humans (55%), and slightly more members of the general public (61%). Parents and members of the general public in Alberta express a much lower level of awareness of the risks associated with climate change compared to the national average. The average number of parents who agree that there are risks in Alberta is 17% lower (55%) than the national average (72%). The difference in the general public is 18% (79% nationally vs. 61% for Alberta).

Knowledge, Understanding, & Information

Number of Correct knowledge questions

Parents and the general public in Alberta scored much more poorly compared to the national average with 69% of parents scoring between 0-4 in Alberta, compared to 43% nationally, and 63% of the general public in AB scoring in the lowest bracket compared to 41% nationally.

Educators had more success with only 19% answering 4 or fewer correctly compared to 13% nationally. Students in Alberta were more successful on the climate knowledge test, with 17% of respondents able to correctly answer between 8-10 questions (vs. only 10% nationally) and 33% scoring 0-4 correct vs 45% nationally.

How well informed do you feel about climate change?

77% of educators in Alberta feel very well or fairly well informed about climate change which is consistent with national educators (OS) at 75%. Students in Alberta feel significantly more informed on the subject of climate change (72%) compared to the national average (50%). In contrast, close to half of parents (48%) and the general public (52%) feel similarly informed. However, parents in Alberta report feeling more informed by 6% compared to the national average. This is particularly notable because parents in Alberta fared much worse on the climate knowledge test, compared to parents nationally.

On some issues, people feel they have all the information they need in order to form a firm opinion, while on other issues they would like more information before making up their mind. For climate change, where would you place yourself?

Responses to this question follow a similar pattern to the national results with the majority of respondents in each group indicating that they need more information in order to form a firm opinion on climate change. Students in Alberta reported an overwhelming need for more information in order to form a firm opinion (94%) compared to students in the national sample (84%). 83% of the general public, 84% of parents and 75% of open-sample educators also reported needing more information.

Trust in different sources of information

Overwhelmingly, respondents in Alberta hold the strongest amount of trust in scientists and academics for information about climate change at 64 %. NGO's, traditional media, and then the government were the next trusted sources for information with only 25%, 22% and 19% of respondents respectively trusting these sources. Trust was slightly lower for friends and family (18%), but lowest level of complete trust was in social media (7%). The pattern among Alberta respondents is similar to the national results except for trust in social media which was 6% less in Alberta compared to the national figures (13%).

Which of the following do you use to inform yourself about climate change?

In Alberta, the top four sources that people use to inform themselves about climate change are: documentaries, online news, conversations with others and television news. The top source of information differed between respondent groups. Educators cited documentaries and movies most often vs. students who chose online news and websites most often. The general public is most likely to turn to television news, and parents use conversations with friends and family most often to inform themselves. Patterns are similar between the national results and Alberta results, with documentaries, online news, conversations with others and television news coming out as the top four information sources in both samples.

Impacts & Action

I have personally experienced the effects of climate change

In Alberta, responses vary about whether or not respondent groups report having personally felt the effects of climate change. 62% of open-sample educators report having felt the effects as compared to 70% nationally. Less than ¼ of parents (22%) agreed as compared to 28% nationally. Only 28% of the general public report having felt the effects of climate change as compared to 27% nationally. Alberta respondents have a lower level of agreement to having felt the effects of climate change personally across the board.

I have personally taken actions to reduce my greenhouse gas use

The top five actions reported by Albertans to reduce GHG's were: installed energy efficient lighting, switched or unplugged appliances when not in use, installed a programmable thermostat, installed energy efficient appliances and drove less by walking or biking more.

The actions that occupy the top five in Alberta, and national responses are the same, it is only the order that they fall in that differs. In Alberta, the top action is installing energy efficient lighting, an action that comes third on the national list. Albertan's fifth top choice: driving less by walking or biking more, was chosen second most often nationally.

I believe my actions have an influence on climate change

Alberta respondents differ in their belief that personal actions have an influence on climate change. A large majority (79%) of open-sample educators feel that their actions have an influence on climate change compared to the general public (45%), parents (53%) and open-sample students (57%). Overall, Alberta respondents feel less sure that their actions have an influence on climate change compared to the National results. Every respondent group has a lower percentage of those who agree that their actions have an impact, the biggest contrast is seen in the general public with 55% agreeing nationally and 45% in Alberta.

I understand personal actions are important but systematic change is required to address climate change challenges

The majority of each respondent group in Alberta agree that systematic change is required to address the challenges of climate change. Educators (85%) and students (82%) feel the most strongly that systematic change is required in addition to personal actions, followed by the general public (74%), and 57% of parents agree. There are two key differences between Alberta's results and the national results. First, 76% of parents nationally recognize that systematic change is required to address the challenges posed by climate change, compared to 19% less agreement among parents in Alberta (57%). The second difference is seen with a larger percentage of students in Alberta acknowledging the importance of systematic change (82%) compared to the national results (74%).

New technologies can solve climate change without individuals having to make big changes in their lives.

A large majority in all respondent groups indicated that new technologies cannot solve climate change without individuals having to make big changes in their lives. Only 19% of open-sample educators in Alberta agreed compared to 18% nationally, 20% of parents compared to 24% nationally, and 25% of the general public compared to 26% nationally. Students are the group have the strongest belief that technology can solve climate change with 44% agreement in Alberta compared to 38% nationally.

Climate Change & The Education System

Do you think the education system (grades 7 - 12) should be doing more, less, or about the same as now to educate young people on climate change?

Alberta respondents are varied in their ideas about the school's role in climate change education. A majority of open-sample educators (71%) believe that the education system should be doing more to educate young people about climate change compared to 81% nationally. This number drops to just half of the general public (50%) in Alberta; compared to 63% nationally. Less than half of parents are in agreement (40%); compared to 57% nationally.

Climate change education is a high priority for schooling

Among Alberta respondent groups, educators (OS) were most in agreement that climate change is a high priority for schooling, with 62% agreeing compared to 67% nationally. Just over half of the general public agreed (50%) compared to 60% nationally. 51% of Alberta students agree that climate change education is a high priority for schooling compared to 57% nationally.

The largest difference is found between groups of parents. Nationally, 53% of parents agree that climate change education is a high priority compared to 21% lower agreement in Alberta (32%).

How many hours over a school year/semester would you typically spend covering topics related to climate change in your classroom

When asked how many hours over a school year or semester would educators typically spend covering climate change education, 35% of open-sample educators in Alberta are unsure of their coverage or indicated that it is not applicable to the subject they teach. 48% of educators spend 1-10 hours of instruction on climate change content compared to 34% of national educators (OS). Less than 25% of educators both in Alberta (18%) and nationally (OS=24%, CS= 10%) report teaching more than 10 hours per semester/year.

Do you cover climate change topics in any of the subjects that you teach? If yes, which subjects?

When asked which subjects (if any) climate change education is integrated, Alberta teachers cited science-related subjects most often, followed by social sciences. Language and physical education were next while arts and math were hardly cited as compared to national results.

I believe climate change education is the role of all teachers

71% of open-sample educators in Alberta believe that climate change education is the role of all teachers compared to 81% nationally and 16% strongly or tend to disagree in Alberta as compared to 6% nationally.

I feel I have the knowledge and skills needed to teach climate change education to my students.

Almost two-thirds of Alberta educators (62%) feel confident in their knowledge and skills to teach climate change education. Alberta open-sample educators feel more competent in their knowledge and skills than both groups of educators nationally. The national level of agreement among open-sample educators (55%) is 7% lower than Alberta (62%).

Climate change education should include ‘both sides’ of the debate equally

Educators have differing views on including ‘both sides’ of the climate debate equally. Nationally, 39% of open-sample educators disagreed with this statement whereas in Alberta 33% of open sample educators disagreed with this statement. The Alberta open-sample of educators had high self-reported confidence in knowledge and skills and did well on the climate change knowledge test. It is interesting that 53% feel that climate change should be taught as a debate, given the scientific consensus and the teachers knowledge and confidence. This may be a strategy that teachers have adopted for teaching a topic that does not seem to have public consensus in Alberta.

What are some of the barriers you have experienced when attempting to include climate change education into your classroom?

The top barrier that Alberta educators chose from a list of options when attempting to include climate change education into their classroom is lack of classroom resources/activities (37%) followed by lack of time (35%) and structural barriers (35%), lack of parental support (31%) and lack of accurate information sources (28%) and lack of personal knowledge (24%) were also highly cited by Alberta educators. Lack of parental support is cited much more often in Alberta (31%) compared to nationally (12%).

What support(s) do you need to teach climate change in your subjects?

When asked what supports are necessary to teach climate change education, Alberta open-sample educators chose climate change resources (73%), professional development on climate change education (66%), and information on climate science (63%). Over 50% of educators also asked for: national or provincial climate data (60%), curriculum policy (54%) and information on the economics and politics of climate change (51%). The most requested supports were identical between the national and Alberta specific responses.

Ladder of Engagement

Nationally, educators (OS and CS) make up the largest group of “empowered” respondents (59% and 46%). Parents represent the largest group of sceptics, with 21% of parents fitting into the category. The largest group of students represent a key audience for intervention defined as “aware,” almost half (46%) of students fit into this audience.

Questions and Answers

Q: (Seham) How is curriculum policy a barrier for teachers in teaching about climate change?

A: (Pam): Really the question is: Is climate change being taught or being required as core curriculum? If things are core curriculum then they are required to be taught and they become a priority for teachers to teach. There are hooks within the curriculum to teach about climate change. Certainly for LSF the focus for grades K-6 is on the building blocks of climate change, it's about weather and climate, it's about biodiversity, energy. From grade 7-12 where young people have the capacity to understand the concepts of climate change, we can talk about climate change in that broader context. Not just in science, but in social studies, language arts, arts and math. There are lots of opportunities to weave climate change in. Again, if this is a major issue facing human kind, do we need to have more connections in core curriculum for teachers to be able to address it?

Q: (Laura) Are there insights/thoughts as to why parents seemed to score lower than the general public in climate change knowledge and acceptance that it is human caused?

A: (Ellen) You would have to look at all sorts of other pieces around why is that understanding of climate change lower in those segments and not in other provinces. In the national report we do have a couple of lines looking at the economy in both Alberta and Saskatchewan, and there is reason to believe that if you work in certain industries it may be difficult to look at some of the human caused attributions of climate change, but from this data it is speculative as to causal reasons for why those numbers are lower. It could also be what people watch on TV, etc. but we don't have that specific data to answer that question.

Q: (Matthew) I am wondering about the role of political engagement? As you know, in Alberta curriculum policy is highly political and contentious.

A: (Pam) Politics plays a role in curriculum across the country. We know that curriculum change is a long process and we know that curriculum quite often is in place for a significant number of years. In some places 7-10 years is not uncommon to have the same curriculum in place. Across Canada there is a movement to move to student competencies and big ideas for curriculum. This has been the case with BC and Nova Scotia. I know that Alberta was on that path with the previous government. So yes, I would like to say that as much as we would like to think not, curriculum is set by provincial governments and provincial governments are political to some extent. I think it's an issue of great importance, and part of our reason for doing the survey and for holding these sessions. There are ways of addressing climate change education that includes all stakeholders, and it includes public education and formal education. Part of our purpose in undertaking the survey was in saying that if we expect people to adopt behaviour change to reduce their GHG emissions, they have to

understand the issue. What we are seeing clearly across the country is a lack of understanding of the issues. It's difficult to accept change if you don't know why you're changing.

(Ellen) I think the other piece too is that curriculum policy is really important but like Pam said it is slow to change. We have seen countries adopt core climate change curriculum quickly, including Italy, and parts of Pakistan. Canada has not seemed to be quick to move on that. It is also important to recognize the ability of motivated teachers. Educators don't need to wait for curriculum policy to change, there are links - if they are creative, innovative, and supported to do so. Many experienced educators will use curriculum as a roadmap and then look at student interest and they find ways to weave both together and to bring student interest to meet curriculum. So this means that we don't necessarily have to wait in order to ensure that more than 10 hours are being offered to students per semester or year.

What Stands Out to You About the National Survey Results?

(Comments generated via Mentimeter poll)

- 43% failed climate change knowledge test
- Hopelessness amongst youth
- Large percentage aware climate change is an issue
- The need for climate change education and that there is support for this being taught
- Number of responses indicating lack of knowledge of the causes of climate change
- Perception vs Awareness
- Data from Alberta is concerning
- Canadians need more information and resources
- The lack of support (professional/personal) for teachers to address and teach climate in the classroom
- Students don't feel that efforts will be effective to combat climate change
- Emphasis on systematic change and access to education
- Surprised about how people think they are informed when in fact they are not - only 14% got it right...
- Very few hours of instruction in schools
- It is interesting that Alberta and Saskatchewan have the lowest levels of awareness when they are the provinces whose industries impact climate the most
- Students are the key group
- How little Canadians who participated in the surveys actually know about climate change despite being aware and concerned about climate change
- That climate change education should be addressed by all teachers and parents
- Systemic change vs personal action.
- Awareness about climate change in AB & SK
- Climate literacy is very low
- Teachers do not feel confident teaching about climate change
- I'm surprised students don't have much information about the environmental impacts whereas youth should know this stuff as they are going to affect the future and youth are the ones who can bring a change
- Not surprising! We are not yet utilizing the education system fully to address this global challenge!
- Low success on climate change knowledge test
- Sad to see the stats about actual level of understanding.
- Students believe more than the general public in the use of technology to mitigate climate change.
- Teachers believing it is an important issue but not teaching climate change in their classes
- Public is open to information from scientists but not getting it from them directly

- 46% of youth 12-18 are not hopeful about positive climate change outcomes
- Importance of local action-based education

What was most interesting/surprising about the survey results?

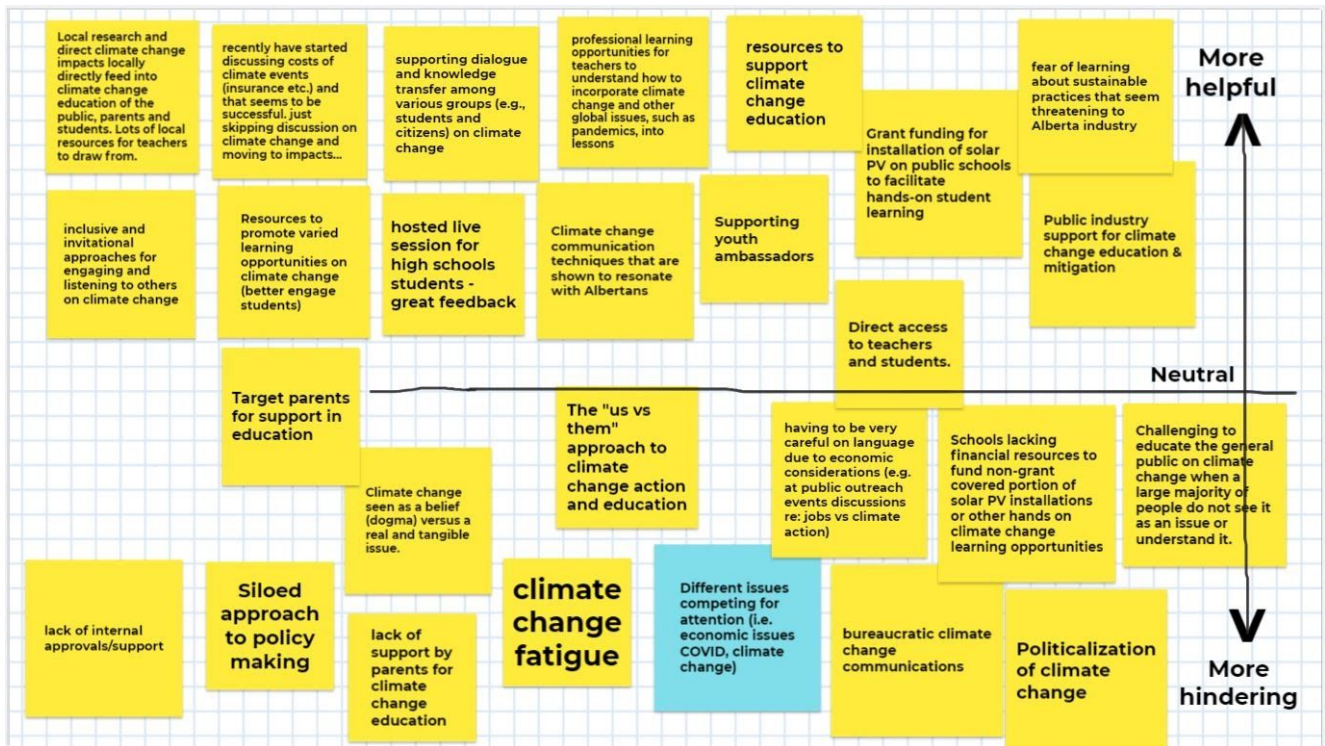
(Comments generated via Mentimeter poll)



Current reality: helping and hindering forces for climate change education

(by sector using Google Jamboard)

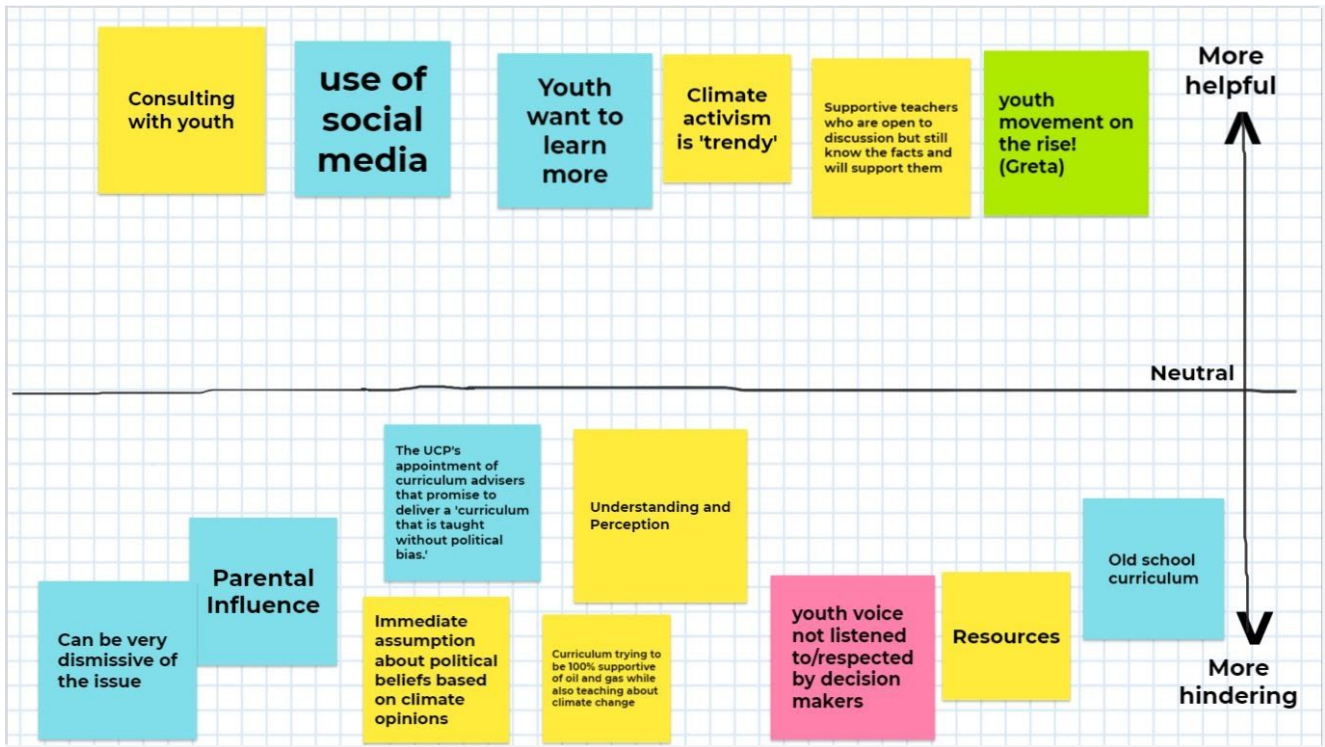
Government



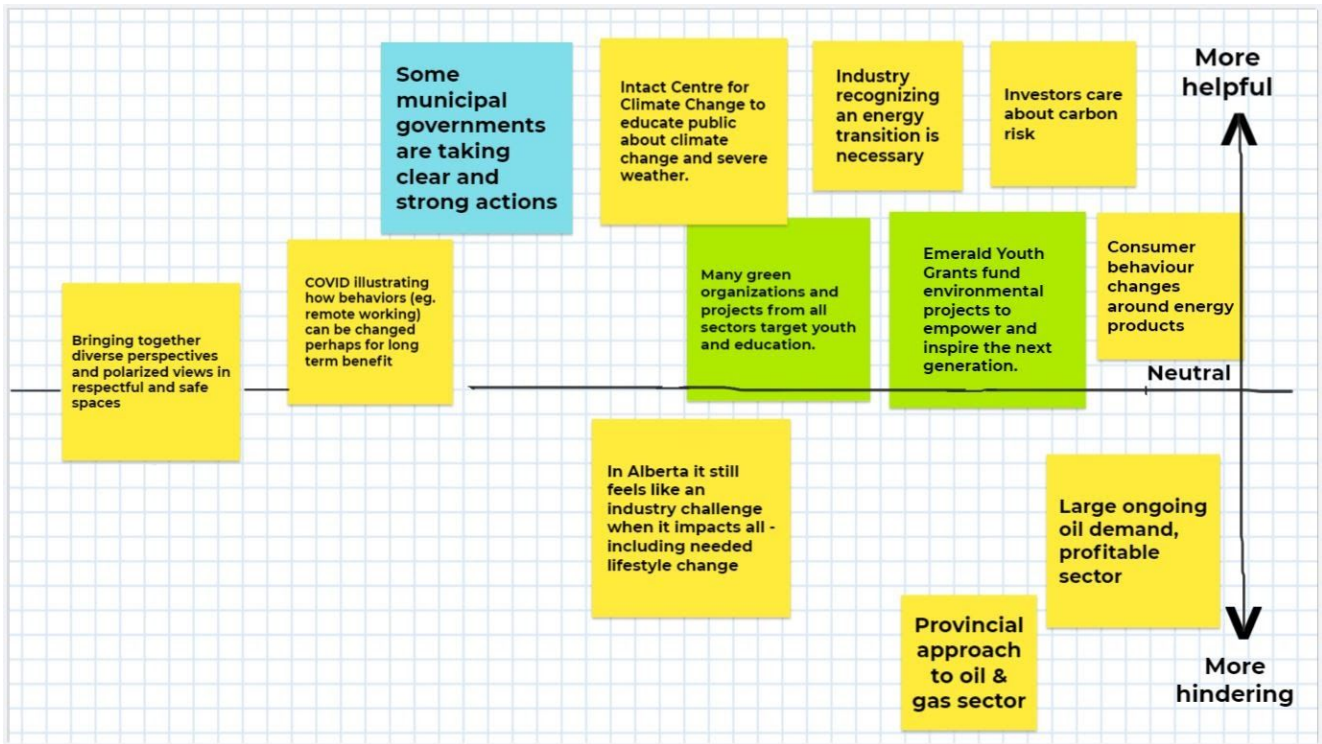
Teachers, School Boards, Academia and Education Associations



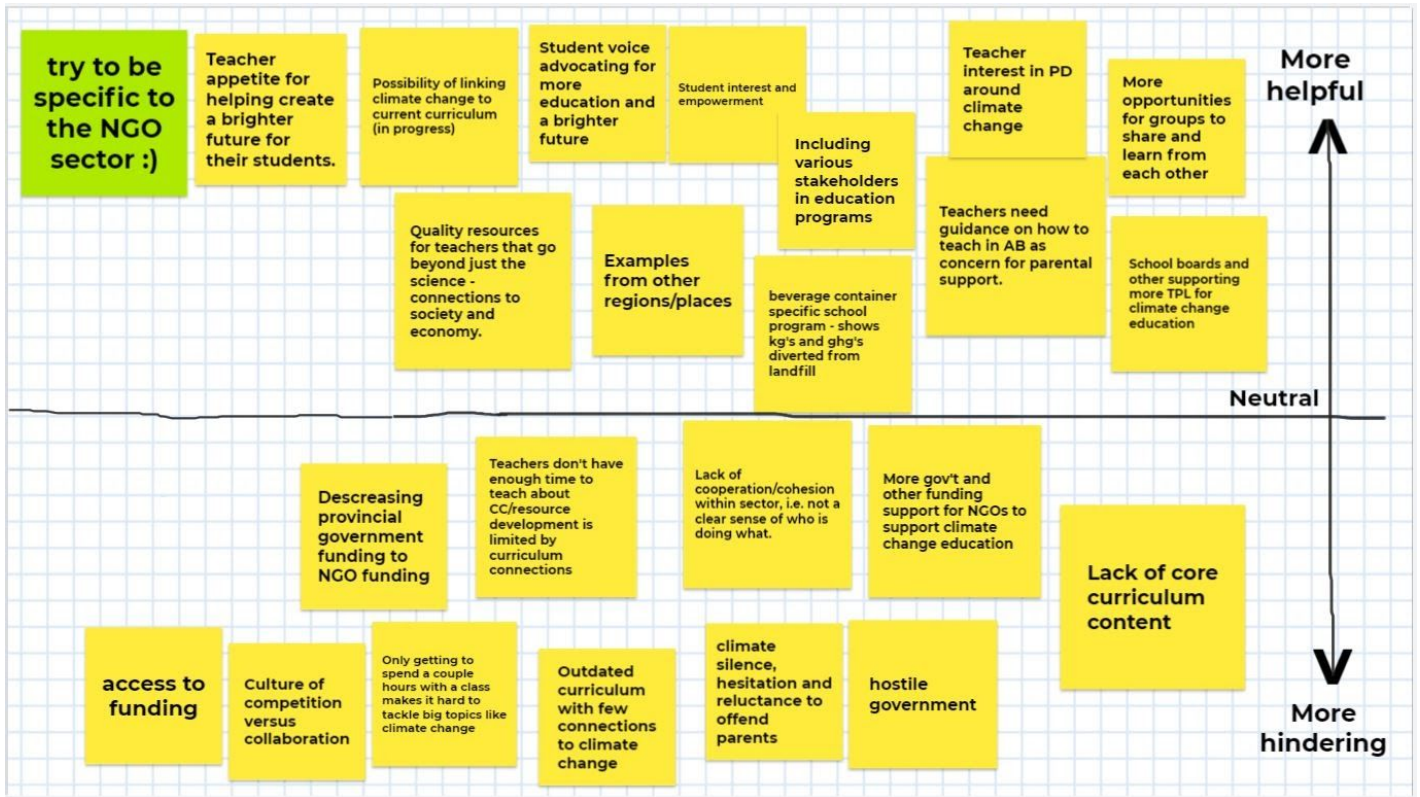
Youth



Businesses & Foundations



NGOs



What needs to be done to advance climate change education?

(Whole-group brainstorm using Mentimeter)

Government

Federal

- We need more rules governing the environment and decisions made need to look at environmental impacts
- Be firm in their approach about climate change. Government is too often trying to be 'neutral' on climate change. They will acknowledge that it is happening and say that they will take action, but don't actually do anything substantial
- It would be great to have someone similar to Dr. Theresa Tam providing information and resources at a federal level. Giving national information that is accurate and can be used/shared or built on

Provincial

Policy

- Provincial government should ensure the new Alberta curriculum mandates developmentally appropriate climate change curriculum across all grades and subjects
- Do not turn climate change into a political issue, make it an overall bigger priority
- Conduct a full curriculum review and address the significant role climate change plays in the k-12 curriculum
- Create meaningful and holistic curriculum that allows students to think critically and develop their own opinion
- Be more forward thinking when developing curriculum rather than focusing on and relating everything to one industry
- Ensure foundational concepts are included in curriculum to enable understanding of the broader concept
- Link curriculum to government climate change adaptation/mitigation action and targets
- Strengthen carbon pricing policy
- Ensure that the curriculum panel includes people who provide a wide range of perspectives and expertise in climate change and a low carbon future
- Listen to educators and specialist bodies first off!

Resources

- Provide more resources (educational materials and qualified contacts) for teachers
- Ensure schools have necessary resources to include climate change in lessons

Funding

- Fund incentives for low-carbon energy choices (electric vehicles subsidies, active transportation, energy efficiency improvements)
- Fund resource and activity development

Collaboration

- Make climate change a priority - include voices from stakeholders to co-create educational responses
- Support community projects around climate change mitigation to make it more visible to the public eye
- School boards and other education leaders should work together to create policies that support this type of learning - going beyond the classroom walls
- Provincial government should focus on how they can not only change the education system for youth, but also integrate parents
- Bring community into conversations

Teacher Training

- Continue support for climate change education by staffing positions directly related to engaging youth and educators
- Update teacher education quality standards to cover climate change in faculties of education

Teachers, school boards, academics and education associations

Policy

- Become involved on a political level and push for curriculum changes
- Implement specific climate change courses in all types of courses i.e. Science, social studies, art etc
- Support teachers who choose to incorporate climate change in their teaching when parental backlash to climate change education surfaces
- School boards should show teachers support helping to 'cut red tape' and allow teachers to go on field trips

Professional Development

- School boards should provide professional development on climate change
- Teachers should engage in professional learning to advance knowledge
- Focus district-wide and school-wide professional development on supporting students to take climate change action
- Support an interdisciplinary approach to climate change

Teaching

- Fight back, be creative, look for ways to teach climate change education
- Encourage students to start environmental projects and apply for grants
- Without a supportive curriculum, find ways to implement climate change into the existing one. Climate change affects everything and connections can be made to many curriculum expectations across subjects
- Not make it a 'debate' over whether it is real or not
- Encourage a project-based approach to climate change education

- Encourage educators to step outside and move beyond the four walls of the classroom, allowing for hands-on learning opportunities where students develop connections to the land, and develop a relationship with the land. These opportunities will enable students to advocate for the land
- Invite external professionals if teachers don't feel confident teaching the subject matter
- Teach it! Don't wait for curriculum to catch up
- Educate themselves
- Incorporate climate change into the classroom. Share news and keep the conversation in the forefront
- Have enough evidence for climate change

Collaboration

- Help bridge the gap among the government, educators, and general public
- Work with community partners
- Engage in dialogue to build understanding in parents
- School boards should work together to create policies that support climate change education - getting students outside of the school to create community connections
- Work with each other - teachers who are good at climate change education should share insight and continue to inspire others to 'take the leap' and teach climate change
- Collaborate with researchers and NGOs to develop after school programming and initiatives/clubs that encourage climate leadership

Resources

- More support from NGO's and professionals is needed in schools
- Work together to develop effective and feasible resources

Communication

- Role for universities to work with media to produce weekly/monthly segments to share basic climate change information and cover the science of climate change
- Academics should make climate change information publicly digestible
- Have open conversations with parents, teachers, and friends

Teacher candidates

- Ensure teacher candidates take mandatory climate change education courses
- Universities should give new teachers tools to teach climate change

Youth

- Consistently be open to discussion with students
- Encourage youth involvement and leadership
- Empower students
- Learn more about their role, beyond protests

Parents

- Come up with resources that students and parents can work on/do together at home

- Not only focus on students but also find a way to integrate parents in the process and educate them about climate change.

Youth

Speak Up

- Continue to be vocal. Talk about climate change with your friends and family to normalize discussing the issue
- Raise their voice, engage with parents
- Show that they are supportive of action to slow climate change on social media
- Ask questions and talk about it to educators
- Use their voices to 'change the dial' on the politics of climate change so that parents/governments begin to better understand that green energy is not their enemy!
- Educate adults! Share what they learn with their parents and adult networks
- They should talk to peers and create open and thought-provoking conversation

Get Involved

- Support school-level activism
- Be involved in projects at your school
- Become politically active
- Create spaces for youth to participate in discussions

Leadership

- Continue to participate in Fridays For Future
- Organize to push for the inclusion of climate change in lesson plans
- Find opportunities beyond the school if necessary
- Be leaders and advocate for more education
- Start student clubs on environment/climate change/sustainability

Be Bold!

- Demand action and discussion from their teachers, schools
- Advocate for more climate change education - join advocacy groups
- Ask good questions at school and at home
- Present to their school boards
- Speak out but also show they are working on things. Lead by example
- Hold previous generations accountable

Take Initiative

- Stay engaged and interested!
- Create groups or networks so they feel supported
- Take more time to learn and research about climate change as youth now have the privilege of easy access to information
- Educate ourselves and others, use social media to our advantage, talk about with others, take action

- Ask climate-related questions more often in class
- Take to social media, pester their teachers and administrators, take action in schools, organize
- Mobilize other youth
- Share their ideas and solutions that would work for them

Take care

- Verbalize their reality
- Focus on solutions, not problems
- Create hope about the future
- Take action

Business and Foundations

Partnerships

- Support partnerships
- Work with other sectors, Help provide resources
- Foundations could focus on climate change education support - both formal and public
- Support orgs that are already doing great work
- Work in partnership with schools and community organizations over the long term financially
- Rally for support for sustainable practices in their community

Politics

- Lobby for policies that make climate-change actions profitable (level playing field in the industry)
- Be courageous in adapting policies and practices for our changing reality
- Play a leadership role in climate solutions
- Take action regardless of politics or "public sentiment" around climate change
- Share voice with government that education is needed in climate change

Funding

- Provide adequate funding to NGOs to support their work
- Provide resources that educators can use to teach climate change
- Support education organizations working on climate change education
- Provide funding support for innovation
- Fund climate change education efforts
- Provide economic support to allow educators to take on action projects and field trips

Sustainable Practices

- Innovate to find solutions
- Offer products and services that are low-carbon and cost-effective
- Lead by example
- Take action to be carbon neutral/climate aware even if there is no government incentive
- Incorporate sustainable practices into their business model

- Identify not only the problem but brainstorm solutions
- being open to knowledge and possible actions on climate change
- Incorporate climate change mitigation into their own practices/business models
- Hold themselves accountable
- Incorporate climate change knowledge and proactive practices/standards into what they do. Set a positive example, and encourage/include others to do the same

Spread the Word

- Make accurate information more readily available to the general public
- Share what you're doing with the public. Especially in AB, people tend to follow the lead of industry
- Businesses can showcase innovations
- Take on a leadership role in climate change awareness, education and action.
- Allow free thought within the parameters of fact

Careers

- partnerships/fellowship for youth, educators
- support students in their innovative ideas
- providing opportunity for students to engage in real world innovative solutions

NGOs

Education Resources

- Find ways to incorporate climate change to support curriculum
- Provide high-quality professional learning for teachers
- Remove barriers for educators to take on more environmental education. Costs, safety, ease, etc...
- Develop lesson plans and toolkits aligned to curricular outcomes to encourage busy teachers to use them in their classrooms
- Many teachers are afraid of the response they'll get from parents, so give them the tools to communicate climate change effectively
- Create experiences that get students interested in the topic
- Develop FAQs for teachers providing sound scientific evidence for human accelerated climate change

Awareness

- Engage broadly with information rather than emotion
- Make their information and research more accessible to the public and not only focus on the problem, but also the solution.
- Continue to or enhance connection of research and information to the public, parents and youth
- Help move climate change from a political conversation to a scientific conversation

Advocate

- Work to empower youth to engage with stakeholders and government to voice their concerns and needs
- Be a collective voice for change
- Focus on solutions, not problems
- Preach outside the choir
- Grow the movement

Partnerships

- Work together
- Engage with students
- Work with gov't, schools, school boards, teachers and youth to provide this education
- Collaborate with the education sector, good social media presence can go a long way

Student Voice

- Support a sense of hope
- Help empower and support youth

Internal Operations

- Keep up the good work! It's a long road.
- Don't give up - your work, resources and opportunities are appreciated
- Understand the complexity - find solutions that address economics and energy reliability
- Stay current - it is easier for NGOs to be nimble than gov't's and school boards
- Support initiatives that will create awareness of climate change/education

Sectoral Action Plans

Government

BRAINSTORM

- Engage with partners and ngos
- Resources for teachers
- Employee education (all levels)
- Direction - support climate change plan
- Address climate change in future curriculum
- Direct engagement with Students/Youth
- Resource educators in government (not off side of desk)
- Funding support
- Consider other issues alongside climate changes, such as future pandemics
- Share climate data
- Gather and share success stories (hope)
- Promote awareness of good work being done to address climate change in local areas
- Networking for teachers
- Communicate climate information in a relevant and interesting way
- Build strategic partnerships with ngos/academia
- Find ways of making climate change non-partisan
- Scientific support for educators

PRIORITY ACTIONS

- Consider how to address priority global issues related to sustainability, including climate change (e.g., future pandemics, equity for all peoples/human rights, migration). Leverage what's happening with COVID-19, what we have learned about interconnectedness, and the fact that we can expect more pandemics on a more frequent basis because we're encroaching on habitats.
- Communicate climate information in a relevant and interesting way, considering the needs of the audience. Make local connections to the larger national and global context
- Engage directly with students by going into classrooms (in person or virtually). Students like novelty and teachers have limited time (compounded by the challenges of a COVID school year!) A 30 minute to 1 hr 15min session (depending on the age group) would go a long way. We need to see the time and energy for these small, yet direct actions, as valuable as direct components (not side of our desk) of our jobs

Teachers, School Boards, Academia and Education Associations

BRAINSTORM

- Teachers need to try to use the outdoors more to foster connections between students and land
- Develop feasible action plans to include climate change in curriculum
- Engage youth and encourage their agency to develop solutions
- Continue to build community hubs for climate education to serve schools and the wider community
- Work together to develop K-12 teaching resources to embed climate change in various disciplines
- Voice the concern for the essential need of an updated curriculum
- Connect teachers with existing organizations and climate change resources
- Connect schools to government targets and actions

PRIORITY ACTIONS

- Alberta needs an updated curriculum - and educators K- University need to collectively organize and get this on the agenda as a priority for the Ministry!
- Educators need resources, professional development, and encouragement to teach climate change. Teachers need to see climate change education is a priority, and know that there is Board support to help consolidate the resources available
- Educators need help to extend classroom learning outdoors. Students need to have a relationship with and appreciation of nature as a very foundational action in order to fall in love with the planet and care about protecting it
- Environmental education needs to be better integrated into other disciplines (more than science and social sciences) and also needs to link with current initiatives such as mental health and wellness, Indigenous education, and inquiry-based learning
- There needs to be an organized Climate Leadership model created at all levels, that includes mentorship

Youth

BRAINSTORM

- Increase the use of social media to raise awareness
- Bring in international student perspective
- Create open curriculum
- Encourage open discussion
- Encourage school districts to adopt a project-based approach to climate change education
- Support friends and family
- Encourage action and youth activism

- Learn about sustainability and put more emphasis on it
- Support youth in the movement (Youth Climate Justice Edmonton, Greta)
- Demand climate change education reform

PRIORITY ACTIONS

- Support education for adults and youth and ways to take action
- Support for teachers to allow students to think critically
- Adopt an interdisciplinary and intersectional approach to climate change education
- Integrate climate action into education

Businesses and Foundations

BRAINSTORM

- Advocate with government for strong carbon policy
- Develop e-newsletter articles to share information on climate change
- Look for options for carbon beyond combustion
- Report on energy transition activities
- Innovate for new sources of energy and energy efficiency
- Explain to customers the climate change value of certain products or services
- Engage in dialogue with educators
- Financially support NGO's that are currently offering education to ensure they are able to expand
- Engage/empower student on actions (small and large) that they can take to address climate change impacts
- Engage parents in their kids learning around climate change

PRIORITY ACTIONS

- Business to partner with credible organizations, providing funding to organizations to provide resource materials for educators, as it is not appropriate for business to do that work
- Engaging in dialogue with educators to provide balanced information. This is an industry and business challenge that must be addressed, but is also something that each individual can have a personal role in as well
- Support society-wide acceptance of climate change action and information- communicate actions taken by business to allow society to take stronger climate change action
- Teach kids about small actions that they can take to address larger challenges, and to bring parents along on this journey (e.g. ride your bike together somewhere instead of drive, choose local foods with smaller carbon footprint, eat a vegetarian meal once a week and cook

it together). Teach them how small choices can make bigger impacts and that they have ability to influence friends, family, peers

NGOs

BRAINSTORM

- Connect to current curriculum - provide license to teachers to incorporate climate change into their teaching
- Help to implement tools and resources educators can utilize in the classroom
- Leverage youth awareness to help them feel more empowered
- Help students develop projects to work on climate change in their schools
- Work together to help inform new curriculum
- Resources that help teachers feel confident in their teaching so remove barrier of parental concerns
- Change the narrative by lifting youth voice
- Provide professional development to teachers
- Take advantage of funding currently available through the Students Finance System (SFS)
- Find innovative ways to help schools finance hands on learning opportunities such as solar PV systems
- Focus on the future for students
- Empower students
- Provide opportunities for students to amplify their voices
- Create climate change resources for teachers
- Work together

PRIORITY ACTIONS

- As NGOs and adults, we must empower youth by both elevating their voices and giving them the opportunity to take action within schools and within the community so that they can alleviate some of their sense of hopelessness
- Create opportunities to participate in climate action
- Provide resources to support teachers, linked to current curriculum

Post- Session Participant Reflections...

- I'm most concerned that students feel powerless or have anxiety regarding the issue of climate change -definitely a group that needs support and resources on climate change action to feel empowered
- We keep plugging away in our little corners of the world. I wish we could have a government that could put politics aside and push forward with educational system change so we could better educate our children and youth about climate change and other critical global challenges we face as a society. Empowering our youth will be very critical for the future
- I found it incredibly surprising that parents in Alberta seem to have such low knowledge and acceptance of the reality of climate change
- Be targeted in your actions and desired outcomes. Identify what is possible and take clear action within that realm. For example, do you have the ability to influence parents? If so, that might be a good place to start
- Keep empowering our youth. Focus on action!
- Lots of good information to build the case for more teacher professional learning and climate change education
- Continue supporting teachers with teaching climate change by providing resources/lessons/presentations/experiences that link climate change into the curriculum for them

“

“I hope that the shock of this pandemic will jolt people out of their desire to ignore global issues like climate change. I hope our growing sense of urgency, of solidarity, of stubborn optimism and empowerment to take action, can be one thing that rises out of this terrible situation.”

”

Christina Figueres,
Former UN Executive Secretary for Climate Change,
Chief Architect of the Paris Climate Change Agreement

Participants

First Name	Last Name	Title/Position	Employer/Affiliation
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