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# SUPPORTING LEADERSHIP IN ENVIRONMENTAL, ENERGY, AND CLIMATE EDUCATION IN ALBERTA SCHOOLS

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Recommendations by Students for  
Alberta's Educational Leaders

September 2020



**ACEE** Alberta Council for  
Environmental Education  
ADVANCING ENVIRONMENTAL EDUCATION IN ALBERTA



**CGE**  
THE CENTRE FOR GLOBAL EDUCATION



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# PROLOGUE

This report is the work of Alberta students under 18 who are members of Alberta Youth Leaders for Environmental and Energy Education (AYLEEE), a youth leadership program created and supported by the Alberta Council for Environmental Education, with support by the Centre for Global Education.

Our recommendations stem from earlier work in 2016, when students from eight urban and rural high schools across Alberta considered the question: ‘How should Alberta schools show climate leadership?’ These students conducted a survey of Alberta youth to explore this question, capturing the thoughts of over 3000 participants. This was followed by using videoconferencing technology to engage over eight hundred students across the province in a full-day virtual town hall meeting. Senator Grant Mitchell, a guest speaker that day, called the process an “archetype of grassroots democracy.” As a part of this day, students also engaged in a dialogue with Premier Rachel Notley, on how Alberta schools could demonstrate Climate Leadership. Youth participated in breakout groups to address four critical areas in need of change: Curriculum, Student Learning, Infrastructure and Professional Development. Following these consultative processes, student leaders met in a writing workshop to craft the 2016 version of the original document.

The impetus for this updated draft came during a weekend retreat in October 2019, when current members of the Alberta Youth Leaders for Environmental and Energy Education (AYLEEE) decided to revisit the 2016 paper to ensure it reflected up-to-date thinking and opinions of Albertan students. In February 2020, nine students from across southern Alberta met for a day-long writing retreat to discuss progress and gaps since the 2016 paper was published. Based on this, they composed this updated 2020 version, with a reviewed and revised new set of recommendations for Alberta.



This paper outlines what students feel has been achieved since the publication of the 2016 paper, what still needs to be addressed, and new recommendations for embedding environment, energy, sustainability, and climate education in Alberta schools.

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## Reflections on Progress Since 2016

### *Curriculum and Student Applications*

The first step in environmental, energy, and climate leadership in Alberta schools - and a real solution to climate change - begins with climate and energy literacy. There have been no changes in the curriculum since 2016, so this has not been addressed. Previously, youth recommended course sections on climate change be developed and implemented to standardize and modernize the inadequate climate literacy throughout grades K-12. However, only one unit on this topic exists for tenth-grade students. The 2016 student recommendations need to be revisited to put a renewed effort into changing the Alberta curriculum.

### *School Infrastructure*

Since 2016, very few students have been involved when it comes to infrastructure initiatives and school-wide changes. It remains hard for students to have effective advocacy in their schools. Currently, we have to find a teacher to support us, do our own research, and spend time outside of school to develop and realize our ideas. Even when school infrastructure changes do happen, students are often left out of the process, even though it impacts them directly. Unfortunately, we feel that the principles set out in the 2016 student youth paper were never thoroughly implemented in schools.

### *Teacher Professional Development*

Since the last white paper was written in 2016, we have yet to see a significant change in the way our classrooms are run. In our current classroom model, the information we are given on environmental issues portrays them as insignificant or lesser-than other issues. However, these topics are far from irrelevant. In fact, this information is vital for our survival. It is therefore important that environmental education be more prominent in our learning. Teachers should have the opportunity to work with students, both in the way the school system operates and how and what students are taught. Their opinions should be valued by the school administration and their peers.

# CURRICULUM AND STUDENT APPLICATIONS

## 2016 Recommendations on Curriculum and Student Learning

### *Curriculum*

- A framework of Climate, Environmental, and Energy literacy should be integrated throughout ALL classes, from Kindergarten to Grade 12
- The curriculum should encourage hands-on opportunities that give students practical experience as they make a difference
- Teachers should be allowed enough time, support, and flexibility in their teaching so that students can learn about the environment, energy, and climate change in their everyday lives

### *Student Learning*

- Connect students to the environment through outdoor learning
- Engage students to develop and implement plans to decrease the carbon footprint created by their lifestyle and their school
- Encourage cooperation with community partners and industry to celebrate, finance and provide unique learning opportunities
- Create Student Advisory Committees that would give feedback on local and provincial levels

## Thoughts Moving Forward

### *Curriculum and Student Applications (note new section title to increase breadth of section)*

- A framework for climate, environmental, and energy literacy must be integrated throughout ALL classes, from Kindergarten to Grade 12
- Incorporate hands-on learning experiences that promote environmental stewardship and advocacy skills that can be applied to everyday life
- Introduce more opportunities for pilot projects related to climate education

**“I believe that currently in schools, there is not enough discussion about the environment, energy and climate change in classroom environments.”**

**– Naima Hassan, Queen Elizabeth High School, Edmonton**

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It is essential to forge a connection between students and the environment, so that they care about taking care of the planet. **In order to do this, we must make amendments to our school curriculum.** Although this has already been proposed in the previous white paper, we feel that the government can increase the attention and resources put toward this effort.

- First, we must connect students to the environment through well established, meaningful, and engaging outdoor learning that allows students to create personal connections to nature throughout all levels of education.
- Second, an environmentally enhanced curriculum needs to be mandatory in all schools, advocating for positive change that benefits society and the planet. The conversation can no longer be 'if climate change exists,' but rather 'how are we going to address climate change.' By adequately educating Alberta's youth, we can address this global problem, creating climate solutions and green initiatives.

- Third, an effective climate education should be interwoven throughout the entire curriculum. Climate change is not just a scientific issue, but an economic, political, health, and socio-cultural issue as well. We need to understand the complexity.



- Fourth, increase skill development to empower ordinary students to understand and address their concerns for the environment. This is best achieved through Interactive hands-on learning experiences as it leaves a lasting impact on students.

- Fifth, students need an opportunity to give meaningful input on local environmental issues and events within their community. Youth, through Student Advisory Committees, should have an opportunity to share their unique perspectives with decision-makers at their schools, in their communities, and at the provincial level.

- Finally, to further the engagement of students in the environment, programs should be put into place to get them thinking of innovative solutions, exposed to sustainability in the industry, and much more. These programs will be best if presented in a pilot form, to begin with, and then, with input from students and faculty members, the projects can evolve into a fully functioning and successful course or program for students to excel. A current program that this could be modelled off is the Green Certificate, which introduces students to new ways of learning about agriculture, while providing practical training and real-world certifications.

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The youth of Alberta strongly believe that there is room for improvement in the current curriculum. **Students taught in Alberta's schools may learn about some current climate change topics through extra-curricular activities or what we read and hear elsewhere, but the context is missing.** Why is this happening? What is the role of energy in our daily lives (both current and future)? What is the role of consumer demand for energy, and how can we reduce this demand? How can we solve the climate challenge while still ensuring a strong economic future? Do students really understand the sources of these problems?

We believe Alberta's education decision-makers need to address these questions and take a step back and look at what is being taught and establish what new topics and ideas are important to develop so that we can identify problems, and possible solutions, focusing on environment, energy and climate education.

**“The reality is that the future belongs to today’s youth. If they don’t know about these issues, their generation won’t know what to do, and they will most probably repeat the same mistakes current generations have.”**

**- Amaan Arif, Queen Elizabeth High School, Calgary**



*AYLEEE members meeting with the Alberta Minister of Education, Adriana Lagrange, March 2020*

# SCHOOL INFRASTRUCTURE

## 2016 Recommendations on School Infrastructure

- Engage students in reducing the consumption of energy and materials of their schools
- Help us learn how to produce our own energy and food in school
- Create a fund that schools could apply for relevant climate leadership projects

## Thoughts Moving Forward

- Secure sustainable funding for infrastructure projects
- Ensure the effective and efficient design of new schools and renovations for old schools
- Develop composting and recycling infrastructure for all schools
- Engage students in school infrastructure projects and ensure their voice is heard
- Partner with community and/or industry groups to provide extra money in the form of grants and funds to encourage student-led infrastructure initiatives inside schools
- Create a Student Environmental Advisory Committee for every Alberta school

**Proper funding for infrastructure projects could greatly help to improve school environmental impacts, provide practical learning opportunities for students, and provide healthier, greener spaces for students to learn and thrive.** Without the essential funding from the provincial government, schools will be unable to follow through with their green initiatives which will not only damage our climate, but also, the little climate education Albertan students receive.

There are two major causes of energy inefficiency in schools: heat loss and lighting. The effective and efficient design of new schools through utilizing design features such as triple pane windows, skylights, and overall more windows for natural lighting can greatly reduce these inefficiencies. As for older school buildings, replacing old heating systems, complementing traditional furnaces with greener systems, such as passive or active solar heating, and switching to LED lights are just a few upgrades that can be made to increase energy efficiency. **Implementing features such as these will reduce the impact of schools on the environment, make for more aesthetically appealing schools, and reduce the cost of utilities.**

**“I want to be part of the Energy Transition, building structures that power our schools, remove waste and grow our own food.”**

- JJ Dugan, Lacombe Composite High School

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Schools in Alberta also create a lot of waste and while some schools have taken action to reduce their waste and/or divert it, student education on waste reduction and infrastructure use is not consistent across all schools. Many schools don't have a recycling program, let alone a composting program, and in our view, new composting programs and initiatives that have been introduced across Alberta have drastically overlooked school systems.

**“When schools want to add green infrastructure to their existing school, there are many advantages to having the upgrade engage students.”**

**- Dalton Bonerts, Matthew Halton High School**

We recommend that as new schools are built or older schools are upgraded, students should be involved in the process as a learning opportunity and should be taught about the benefits of our school's infrastructure. For example, learning first-hand that natural lighting can increase student well-being and improved heating systems can stabilize temperatures, which has been proven to aid in concentration.

**In addition, we strongly advocate that the government encourage students to start their own initiatives, making it easier for students to put their input into the school renovations.** One way the government could help is to provide grants, education, and incentives, such as credits, for



Subashini T,  
'Sustainable Design,' Calgary

students who participate in making their school a more environmentally-friendly place. **One recommendation is that a student environmental advisory committee be part of the decision-making when it comes to infrastructure and budget changes.**

Overall, infrastructure is a vital step towards a greener future. Introducing more sustainable and ecologically focused school buildings can teach students not only about current problems, but also the solutions. The school environment is a great model of these changes, allowing students to gain access to new learning spaces and real-life sustainable opportunities.

# TEACHER PROFESSIONAL DEVELOPMENT

## 2016 Recommendations on Teacher Professional Development

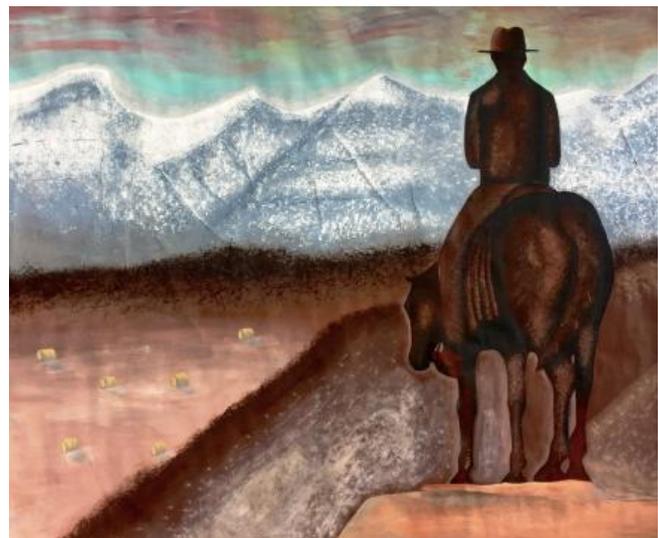
- Ensure that future educators know how to incorporate environmental, energy, and climate topics into their teaching
- Ensure that teachers already in the classroom have the skills they need to incorporate environmental, energy, and climate topics into their teaching

## Thoughts Moving Forward

- Educate teachers about environmental, energy, and climate topics
- Provide teachers with up-to-date resources for teaching about climate change and how it will affect our future

Currently, teachers are not receiving an education on important topics such as climate change and are therefore unable to inform their students accurately. In some cases, we feel that they have less knowledge than their students. Moreover, while teachers are doing their best with the resources they are provided, much of our formal climate education is coming from outdated resources that don't provide adequate or timely information.

Teachers need access to up-to-date resources so that ever-changing issues, such as climate change, can be taught in a straightforward and accurate way. Therefore, we suggest adding more environmental education to teachers' professional development. The proper education of teachers and the integration of new resources in the classroom will lead to a better understanding of issues among students while developing our environmental stewardship. **It is vital to prioritize teacher's access to sufficient, up-to-date resources to make sure education referring to climate change and energy is accurate and timely.**



Haleigh M., 'Man of Wisdom.' Cochrane

# TRANSPORTATION

*\*Transportation is a new section that was not present in the 2016 report.*

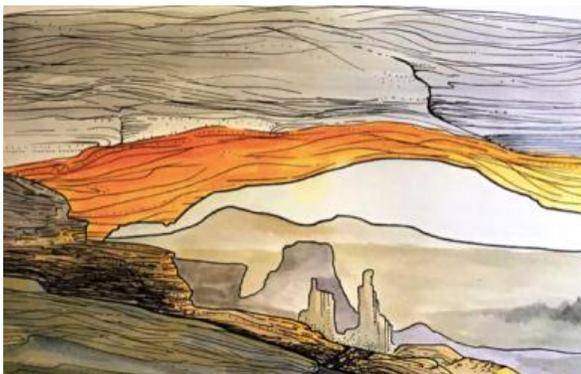
## Recommendations on Transportation

- Promote public transit and alternative transportation methods
- Use renewable energy and/or alternative fuel sources to minimize greenhouse gas emissions and air pollution from fossil fuels, and assist in mitigating possible health conditions
- Provide more opportunities for extensive, reliable, and affordable bus systems serving both urban and rural areas

## Thoughts Moving Forward

Public bus systems are beneficial in many ways. They help our environment, conserve natural resources, reduce air pollution, reduce wear and tear on city streets by reducing traffic, and aid in mitigating health issues. More specifically, one bus can carry as many people as 41 cars, with emissions per passenger-kilometre close to one quarter the level of cars and six times greater fuel efficiency. Buses are good because they take an average of 36 cars off the road transporting students to school. In Ontario, school buses transport 79% of students to school.

Current buses have a diesel engine, however, these are responsible for using 1 gallon of fuel every 6 to 10 kilometres. In the United States, school buses alone contribute to 9 million metric tons of carbon dioxide in the atmosphere. **Buses should be further modernized through using renewable energy and/or alternative fuel sources to promote a greater reduction in greenhouse gas emissions and other pollutants.** Additionally, diesel fumes contribute to many problems for students which can lead to or affect asthma, lung problems, heart problems, allergies or other general medical conditions. Therefore, **it is important to utilize more sustainable fuel sources to reduce health concerns.**



*Delaney B., 'Landscape,' De Winton*

Overall, schools have a responsibility to offer easy access to a safe and sustainable way for people to get to school. Buses are one of the safest forms of transportation and **The Government of Alberta needs to commit to sustainable transportation options across both urban and rural Alberta**, so that youth and families have opportunities to get to places (especially to and from school).

# CONCLUSION

We, the youth of Alberta, believe that climate change is the defining issue of our generation. Alberta Schools should show leadership in environmental, energy, and climate education but it is very clear that we are not there yet. **We, students in Alberta, agree that there is a concerning lack of education supporting student learning on energy, environment, and climate change issues in our classrooms and we call upon the education leaders of this province to heed our recommendations and ensure that Alberta youth have literacy on these topics.**

In this report, we outlined what we believe to be the key areas of improvement in Alberta's education system. **For our suggestions to be implemented, we need the support of Alberta's entire educational leadership, including all relevant school officials and school boards.** The implementations of these recommendations will not be simple and will take time to become entrenched in our way of life. The geographic, economic, and social differences between regions, not to mention funding issues, will undoubtedly play a role in delaying the development of large-scale reform. However, we can begin by realizing small-scale solutions within schools. This will allow for a gradual movement towards the necessary and extensive changes we have outlined for the curriculum and student applications, school infrastructure, teacher professional development, and transportation.

We also recognize our responsibilities in this area. Youth of Alberta must also actively champion and participate in bringing about these changes. We understand that the leadership required for Alberta schools is shared leadership, and we see the need for high levels of cooperation and collaboration among the many stakeholders that make up the educational system within this province.

We call upon the Minister of Education to reach out to the stakeholder groups and provide leadership and facilitation to the necessary conversations and action that will move us forward together. Collaboration between students, government, school boards and the other education leaders is vital to ensure that our recommendations are acted upon.

**By investing in environmental initiatives now, and ensuring that students are engaged in every step of the process, we can create a generation that not only have the knowledge and skills, but that have also been equipped with the tools to be a generation of leaders.** Education is the foundation of our society. It is vitally important that Alberta's educational leaders make the environment, energy, and climate action a top-priority.



"We are not trapped by our boundaries; instead we should support, pay attention, and open ourselves to the expanse of our skies and endless growth of our planet."

- Subashini T., Queen Elizabeth High School, Calgary

*Elaine H.*

Elaine H, 'Alberta,' Calgary