



How Should We Respond to Our Changing Earth?

ENGAGING STUDENTS IN CRITICAL INQUIRY FOR GLOBAL ENVIRONMENTAL CITIZENSHIP



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✍ **Maria Vamvalis**
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Engaging our students in meaningful explorations of core environmental issues is a fundamental mandate of our times. How might we frame curricular expectations and learning goals where students are invited to think deeply and meaningfully about relevant planetary issues and disciplinary concerns that supports the development of active, global citizenship?

As an educator in Toronto, Ontario, Canada with a passion for nurturing global perspectives and responsibility grounded in local actions, I have spent the last two decades thinking deeply about the best ways to create transformative moments of teaching and learning in both formal and informal educational contexts.

“Relating the climate change crisis to my personal life was memorable because it helped me see how climate change is impacting my life. It made me think really hard about my daily actions and routines and how I must make a difference on this issue.”

Grade 7 student

Central to the process of engaging in transformative teaching and learning is the ability to foster deep understandings that prompt a shift in thinking and being. Uncovering bias, allowing our current worldview to be disrupted and facing



“ Sometimes learning about the realities of the global environmental crisis made me feel very scared. At some points, I felt like crying. At other times, when I saw the most inspiring and sustainable responses, I couldn't help but smile and feel motivated.

Grade 7 student

complexity and seeming intractability can be deeply uncomfortable processes. Yet how do we best hold the tension of ambiguity in the work of social change and confront complexity together?

The stance educators and programme leaders employ is so fundamental to the kinds of understandings and competencies that will ultimately be furthered through a learning process. What are the approaches that emerge in these times as most supportive to a stance of nurturing shift in thinking and being? What key frameworks and tools can we employ in our work as educators to facilitate meaningful social change that transcends transmissive and unconscious initiations into a dominant worldview but instead support independent thought and the careful consideration of multiple perspectives?

One of the key challenges that must be addressed as educators resides in how to both spark curiosity, wonder and passion for learning, yet also explicitly teach students the necessary tools of quality thinking as they engage in meaningful inquiries into relevant issues and explorations.

“ This project isn't just about the final grade. It's about becoming a better and more thoughtful learner as well as becoming someone who can really make a change for the better.

Grade 7 students

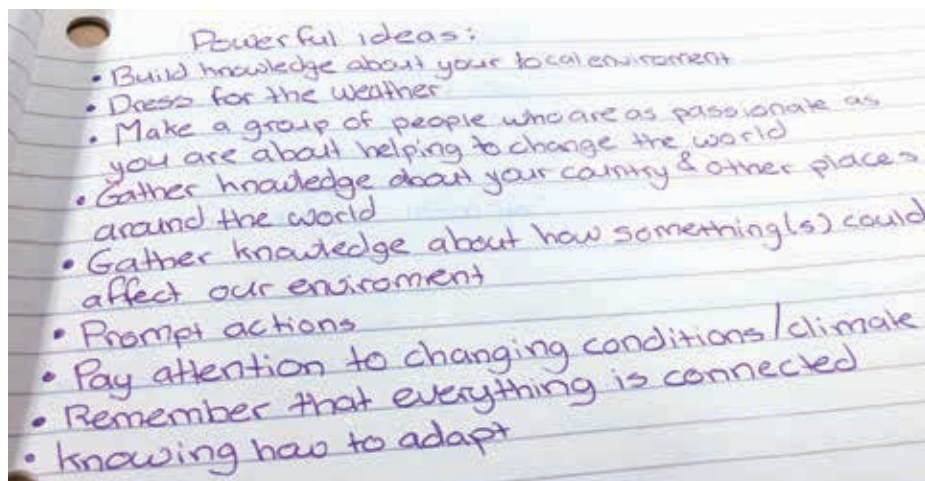
What are the key intellectual tools necessary to engage in a consequential inquiry and how can educators support the development of these core thinking competencies? How do we help students make the best decisions, use credible evidence to support and justify their choices and develop key thinking dispositions such as perseverance, empathy and open mindedness?

In my work as an educator for almost two decades, I have found that one of the most powerful frameworks teachers can employ to support the development of quality thinkers has been carefully developed through the Critical Thinking Consortium (www.tc2.ca), a Canadian not-for-profit organisation that has been in existence for almost three decades.

↓ Students engaged with creating compelling 'messages to the world' that communicate powerful ideas that will help us to respond sustainably to our changing Earth.



One of the key challenges that must be addressed as educators resides in how to spark curiosity, wonder and passion for learning



Five key intellectual tools that invites deeper thinking



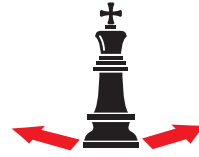
Background knowledge



Criteria for judgement



Thinking vocabulary



Thinking strategies



Habits of mind

“ I have learned how to use evidence and accurate facts to support my conclusions, which strengthened my arguments for taking action on the environment. I felt that my thinking became deeper and I started to make important connections between ideas.

Grade 7 student

Through ongoing reflection, conversation and refinement, the organisation has identified the five key intellectual tools that are always in operation whenever we are engaged in a problematic situation that invites deeper thinking:

- 1 **background knowledge**
(the key disciplinary concepts, knowledge and big ideas),
- 2 **criteria for judgment**
(supporting sound decision making by using criteria as the means through which we will make our decisions),
- 3 **critical thinking vocabulary**
(concepts such as bias, justification, reasoning and evidence),
- 4 **thinking strategies**
(the thousands of heuristic tools and devices we use to help us decide, such as a Venn diagram, rating scale or pro-con chart)

5 **habits of mind**

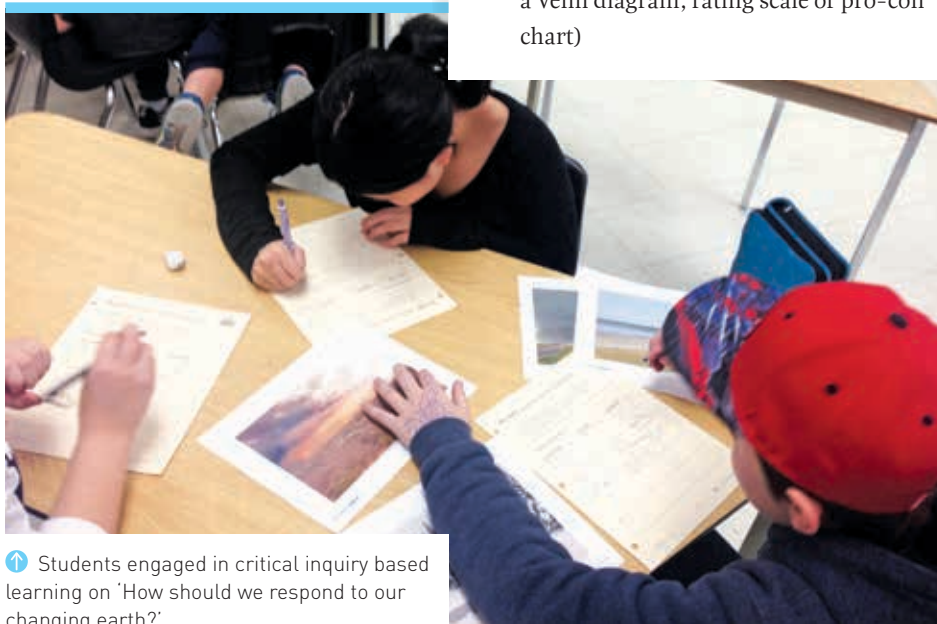
(the key thinking dispositions that support sound decision making such as the ability to consider diverse perspectives, paying attention to detail and being flexible in our thinking).

Shifting from a traditional stance of teaching content and then perhaps having a chance to thinking about that content to a stance where think is the methodology through which we engage in the learning process supports the development of student ability to think critically and deeply about global issues and concepts. The focus then shifts to developing reasoned judgments by using the intellectual tools needed for quality thinking.

While there are diverse approaches to inquiry-based learning, including discovery-based inquiry, curiosity-fueled inquiry and research-based inquiry, focusing on an approach that emphasises critical inquiry sustains student learning by scaffolding the key thinking tools students need to engage in an inquiry-based challenge. In the critical inquiry based unit that the students quoted in this piece engaged with, the critical challenge was to create a compelling ‘message to the world’ that communicates powerful ideas and inspiring examples that will help us to respond sustainably to our changing Earth.

Students engaged in two different lines of inquiry: one that asked,

What can we learn from effective responses to the natural environment?, while the second had students consider, **Which sustainable responses inspire us to take action? ”**



↑ Students engaged in critical inquiry based learning on ‘How should we respond to our changing earth?’



The students were required to engage in the overarching inquiry challenge, **“How should we respond to our changing Earth?”**

It was awe-inspiring to see student capacities for thoughtful engagement with important environmental issues . . .

“ I have developed new skills through this process, one of which is to actually now notice the environment and the problems facing my community and our world. I have gained knowledge on a lot of environmental issues and I learned a lot about how we can change things and what we are actually doing to water, landforms, climate and vegetation patterns. I now know how to find credible geographic evidence and use that to send a strong message to people about the importance of taking action today.

Grade 7 student

The thinking students did throughout the unit allowed them to consider their challenge on an ongoing, iterative basis. Throughout the inquiry process, students gathered information, deepened their understanding, revisited initial ideas and shared their evolving thinking through conversations, class discussions, lesson responses and reflections in their personal ‘Thoughtbooks’ (a space where students could track their evolving thinking about the overarching inquiry questions). This supported a more robust understanding of core geographic and environmental concepts within an authentic context.

A stance of critically inquiring into a real-world set of problematic situations

and issues allowed me to explicitly nurture the development of the critical, creative and collaborative thinking tools that students required to engage in the overarching inquiry challenge, *How should we respond to our changing Earth?* It was awe-inspiring to see student capacities for thoughtful engagement with important environmental issues grow and develop in unexpected and meaningful ways. Every single student, at the end of the unit, stated that they now felt a responsibility to take on climate change in their respective communities.

A video about the experience was made and can be viewed at:

<https://vimeo.com/206659956>