

ECOLOGICAL APARTHEID: BUILDING CONNECTIONS AND A CHANGEMAKER MINDSET THROUGH SERVICE LEARNING

Michelle Heaton

The Fenn School, Concord, Massachusetts, United States

Abstract

In the winter term of the 2015-16 school year, fifteen Grade 6 students completed a unit on climate change to develop their ecological literacy, global citizenship, and identification as agents of change. The boys participated in a three-part unit sequence that coupled an existing inquiry-based science investigation with a project-based global service simulation and local service learning project. The data collected on comprehension, connection, and character attributes show that service learning is an effective teaching methodology for developing a changemaker mindset. In particular, the research brings to light the significance of personal connection to place and local service as a springboard for middle school boys realizing system-wide impact, global citizenship, action orientation, and leadership.

Introduction

Prevailing cultural, economic, and educational mindsets are fixed on the “apartness” of humans and nature. In order for educators to effectively prepare students to meaningfully engage in environmental problem solving as active global citizens, this mindset must evolve. If students learn to view themselves as part of natural systems - rather than apart from them - they can be empowered to act as responsible global changemakers. Apartheid, the Afrikaans word for “apartness,” is applied here to the relationship between students and ecology and illuminates the need for educational systems and pedagogy that cultivate connection to place.

Climate change is one of the thematic clusters of the UN Sustainable Development Goals, and is a global environmental issue that has been significantly exacerbated by ecological apartheid. Former Bolivian Ambassador to the UN, Pablo Solon, (as cited in Biggs, 2011) stated after the UN Conference on Climate Change, “we’re all part of one systemWe have to respect the

natural laws of this system . . . it's not only a matter of how big immediate reductions are, but how we change our relationship with nature.” If our goal is action and change, then as we teach about climate change it is critical that we enable students with learning opportunities that strengthen relationships with nature. To that end, my action research project examined pedagogical and curricular techniques aimed at bettering middle school boys’ scientific, cultural, and personal understanding of climate change; in turn, developing their skills and self-identification as active and empowered global citizens and changemakers. Action research was a well-suited methodology for this task as my goal was improving practice to enhance the experience and mindset of my students.

The guiding research question for my project was: *What is the effect of coupling a service learning project with an inquiry-based unit on climate change on developing 6th Grade boys’ changemaker mindsets?* As defined by the organization Ashoka (2015), a changemaker is “an individual with the skillset and connection to purpose that enable him or her to generate ideas and take initiative to effectively solve problems and drive positive change.” I was interested in examining the effectiveness of service learning, a strategy that strives to meaningfully compliment and strengthen classroom learning with service opportunities that benefit the broader community, as a tool for developing the specific attributes of a changemaker mindset.

Literature Review

Dr. Wilhelm Verwoerd (2015), author of *My Winds of Change* and plenary speaker at the 2015 International Boys’ Schools Coalition Annual Conference, used the term “ecological apartheid” when answering a question at the conclusion of his presentation, *Reconciliation lessons from Mandela*. It was the first time I had heard the term and it resonated deeply; the concept of human’s institutionalized and biased separateness from natural systems quickly became a grounding concept of my action research project. Like McGarry (2013), in his doctoral dissertation *Empathy in the Time of Ecological Apartheid*, I was interested in meeting the need for “methodological and pedagogical approaches to accessible forms of learning socially in the era of climate change and environmental degradation” (p. iii).

The separation of people and nature, perpetuated by traditional teaching methods and curricula in our educational systems, has been long examined. David Orr, Professor of Environmental Studies at Oberlin College, writes that the dominant form of education today, “alienates us from life in the name of human domination, fragments instead of unifies . . . separates feeling from intellect” (as cited in Louv, 2005, p. 223). Similarly, in his book *Childhood and Nature*, Sobel (2008) asks, “What’s the relationship between School and Mother nature? Are they getting divorced or are they committed to working on a long-term relationship?” (p. 1). In an attempt to mend this divide, educators have examined the relationship between methodology, knowledge, and character development. Louv (2005) reports in *Last Child in the Woods*, “A significant push is under way to further document the connection between outdoor learning, classroom-based environmental education, and academic achievement and stewardship behavior” (p. 223).

In preparing to teach a unit on global climate change to a science class of sixth grade boys, it became clear to me, like McGarry (2013), that “the symptoms of climate change can be traced to the prevailing disconnection in our public opinion or culture” (p. 8). I also realized that a purely scientific approach, one focused on conveying only knowledge and facts, to teaching climate change would likely maintain this separateness. In, *It’s Time to Teach Climate Change in School*, Shaw (2014) shares this same idea: “Teaching climate change shouldn’t be about preaching to our kids. A good science curriculum should empower students to ask their own questions and give them the tools to find and understand the answers themselves” (para. 6). The National Outdoor Leadership School (2015) elaborates on this point in *The Wilderness Educators Notebook*, noting, “the highest level of education is to help students develop habits of mind that help them both collect knowledge and figure out how to act on it” (p. 20). This method is particularly well-suited to an all-boys school where, according to Pollack (1998), “boys generally prefer to learn by doing, by engaging in some action-oriented task” (p. 247).

With goals of forging connections and empowering students as global changemakers, it was important for me to identify through background research, the characteristics that enable an ecological citizen’s habits of mind and capacity for social change. A need to cultivate empathy

emerged as an essential skill required of a changemaker mindset, one particularly significant in the education of boys. Thompson (2010) explains, “across cultures, if we want to change the world quickly, our best option is to raise emotionally literate boys who value understanding” (para. 2). Purposeful engagement and leadership also emerged as important components of both socially constructed learning and teaching boys (Dweck, 2006, p. 5). Joseph Cox (in Bradley, 2012), headmaster of the Haverford School, states, “if a boy believes what he’s doing is important, he’ll do it to the best of his ability. It’s up to faculty and administrators to realize that, and develop programs and teaching methods that create interest and a bond that promotes success” (p. 6). Similarly, in *Learning and Leading with Habits of Mind*, authors Costa and Kallick (2008) note, “ultimately engagement occurs through student interest, and we can only foster the conditions in which students’ interests might be piqued” (p. 135).

In *Teaching Values and Purpose for Social Change*, Beges (2015) shares, “there is no textbook for teaching social change, and the closer we can bring students to social problems – both inside and outside of the classroom – the more informed and effective they will be in developing solutions” (para. 1). In examining teaching methodologies that help bring students closer to the problem of global climate change - in turn, developing the habits of mind, or character attributes, of an engaged, socially-active global citizen - service learning proved to have well-documented benefits. A study by the Swiss National Science Foundation supports this action, concluding, “it is necessary that social and collective action be an integral part of any continuing education activity” (Sobel, 2008, p. 147). Similarly, developmental psychologist Marilyn Price-Mitchell (2015) notes, “teachers who weave meaningful service learning into their classrooms help students turn empathy into action” (para. 6). In her book *Service Learning*, Kaye (2004) elaborates:

Words come alive with meaning and purpose in service learning, leading to pro-social choices and internalized actions. The aim is to influence behavior for the good of the individual, and for this behavior to be extended into the community. Such personalization and transference adds purpose and meaning to education (p. 244).

Through service learning, we can think globally by acting locally; helping enhance critical thinking, make the abstract concrete, and develop an interdependent worldview (Kaye, 2004, p. 44).

With guiding concepts established, it was important to determine an appropriate research methodology for integrating service learning into curricula; specifically, making climate change science curriculum accessible, engaging, and empowering. The themes of action research - empowerment of participants, collaboration of participants, acquisition of knowledge, and social change - proved to not only serve these personal research objectives, but are modeled and reflected in the student planning of a service learning project at the core of my action (Ferrance, 2000, p. 9). As stated by political scientist, John Schaar (as cited in Costa & Kallick, 2008), “the future is not some place we are going to but one we are creating. The paths are not to be found, but made, and the activity of making them changes both the maker and the destination” (p. 31).

Research Context

The Fenn School is an independent day school in Concord, Massachusetts for boys in grades 4 to 9. The school’s motto, *Sua Sponte*, translates from Latin as, “on one’s own responsibility,” but the roughly 330 enrolled boys take it to mean, “it’s in your hands.” This “invitation for each boy to shape his own destiny,” coupled with the school’s core values of honesty, empathy, respect, and courage, underscores the education of the whole boy throughout the academic, athletic, arts, and extracurricular programs (Fenn, 2015).

The participants in my project were the students of one of my sixth grade science sections (ages 11 to 12 years.) The fifteen students in the section were heterogeneously grouped, yielding a diverse population of learning styles. I randomly selected one of my two sixth grade sections to be participants in my project in order to maintain a reasonable and cohesive sample size.

Informed consent was obtained from the fifteen student participants and their parent/guardians after the project was introduced in September. Students and parent/guardians were provided a

project information sheet and consent form. Returned signed consent forms acknowledged the project objectives, authorized use of photos and videos, and guaranteed anonymity of participants in the final presentation of results. Students and parent/guardians were also given the opportunity to opt out of the project without bias.

The Action

To investigate the impact of different learning methodologies on content comprehension, global citizenship, and a changemaker mindset, I added a two-part service learning component to an existing unit on climate change in my sixth grade science class. The first part of the new service component was a global climate summit simulation that challenged students to create sustainable action plans for an assigned country. In this public service simulation, the boys modeled actions of global changemakers, but their only direct action was presenting their theoretical plan to their peers as part of a mock climate summit. The second part of the new service component was the planning and implementation of a local service project. For this action, the boys chose to launch a school-wide educational campaign that conveyed facts about climate change and offered suggestions as to what our school community could do to make a difference. They created informational cards that were displayed in the napkin dispensers in the school's dining hall and projected digitally on the school's monitors. The boys also made a presentation at an all school meeting about climate change and helped organize a "Power Down Climate Change" service activity that enlisted school-wide volunteers to shut down electronics at Fenn before we dismissed for break. Each part of the unit had a duration of approximately two weeks, or roughly eight one-hour class sessions.

Data Collection

Data collection was mixed-method and divided into five phases of collection: pre-unit, after the three main curricular phases of the unit, and post-unit. An emphasis on qualitative data collection was appropriate for assessing knowledge, self-classification, opinions, and mindset related to climate change and changemaker attributes. Dividing the data collection into five distinct phases allowed any evolution in participants' mindset to be longitudinally tracked

through the planned progression of the climate change unit content and distinct teaching methodologies.

The central data collection methodology for my project was a questionnaire administered at four intervals throughout the action: pre-unit, at the conclusion of part one (The Science of Climate Change), at the conclusion of part two (The Global Climate Summit), and at the conclusion of part three (Service Learning Project.) The questionnaire consisted of mostly semi-structured (Likert scale, dichotomous, multiple choice) questions designed to assess students' developing content comprehension, perspectives, and changemaker mindset. An identical questionnaire was administered at each of the four intervals. The majority of semi-structured questions were developed to identify specific changemaker attributes. According to research by Bethany Alden Rivers, Alejandro Armellini and Ming Nie (2015), changemaker attributes for social innovation and social impact include: self confidence, perseverance, self-awareness, action orientation, innovation, empathy, reflective, communication, emotional intelligence, problem-solving, leader, values-driven. The questionnaire also contained three open response questions related to climate change, action orientation, and global citizenship.

Additional qualitative pre- and post-unit data were collected via interviews, an initiating Compass Points activity, and closing reflections. Semi-structured individual interviews were conducted with three students from the participant group at both the start and conclusion of the action. Interviews focused on qualitative data that explored students' self-identification as changemakers and global citizens. The Compass Points initiation activity and written closing reflections had a similar "big picture" focus, but were completed by all fifteen of the project participants. Interviews and pre and post activities/reflections ensured that the students' voices had ample opportunities for direct expression throughout the action.

Data Analysis

All data were read and coded for targeted attributes including action orientation, empathy, leadership, problem-solving, mindset, sense of place, and citizenship. Coded attributes were

sorted into four overarching categories: science knowledge, global citizenship, changemaker mindset, and connection to place.

Targeted attributes were tracked by individual participants over the course of the action and by frequency at set intervals. Longitudinal tracking allowed for each participant's individual experience to be analyzed over the course of the action. Individual student responses were first coded and categorized at each data collection interval. At the conclusion of the action, interval data were compared by student to note any changes over the course the unit. This technique allowed for preservation of participant voices in the final report, and validated the significance of each boy's individual experience. Student names were withheld to allow for anonymity in the final report.

In order to effectively address my research question, the frequency of targeted attributes was also analyzed at each data collection interval, as each interval was linked to a different teaching methodology. This categorical analysis reflects the combined responses of the entire participant pool. While statistical analysis performed here was less personalized, it provided an important backdrop by which an individual boy's experience could be measured.

Discussion of Results

Climate Change and Boys as Systems Thinkers

In *Boys of Few Words: Raising our Sons to Communicate and Connect*, Cox (2006) wrote, "in general, boys are much more invested of the world of things and actions than in introspection, seeking mastery of knowledge of systems and how things work" (p. 67.) Cox's words were validated early in my research. In our initial Compass Points activity, all but two boys expressed that what they needed to know about climate change was "how it worked," nine of the fifteen boys said they were most excited about "learning," and ten of the fifteen boys were worried about "what will happen" as a result of climate change. One boy shared, "I like knowing the answer to things," and "I want the world to stay how it is." Another astutely wrote, "I need to know what it is because people only help what they like and people will only like what they understand and people will only understand what they learn." Pre-unit, all but

one boy identified climate change as a “problem,” and all but two were optimistic that we could find a solution. Only seven boys believed their personal actions had any effect on climate change, while only three identified themselves as agents of change. The boys recognized the need to understand the complex systems of climate change, but most of them did not yet understand that simple changes within the system could make a big difference.

Pedagogy and the Changemaker Mindset

After teaching the science of climate change via lab-based methodology and real world data analysis, only three additional boys identified themselves as agents of change. Additionally, the number of boys who felt their actions could have a global impact actually dropped after this initial science unit. In contrast, after completing the unit’s service learning components, the surveys showed fourteen (all but one) of the boys identifying as agents of change; the fifteenth boy wrote on his closing reflection that he “could maybe be an agent of change in my town, but not globally because there are just too many people who do not listen to kids.” After service learning, twelve of the fifteen boys believed their actions could have a local or global impact.

Though the boys’ inherent drive for knowledge and learning was evident at the onset of the unit, it quickly became clear that effective learning requires more than just the conveyance and analysis of facts, even when reflective of real world problems. On the pre-unit survey, ten of the fifteen boys expressed that they had a low or moderate understanding of climate change. After studying the science of climate change, five of those ten boys expressed improvement in their comprehension. After the service learning projects, however, all fifteen boys in the class reported that they understood climate change well or very well. In other words, self-identification as changemaker was concurrent with an increase in the boys’ understanding of climate change. In the words of one boy, “there is a very big difference when someone says you can make a difference and when someone shows you.”

In their closing reflections, all fifteen boys wrote that the service learning components of the unit were their favorite, with the majority of boys preferring the local service action. One boy

explained, “making the public service cards was the most meaningful part of the unit to me because it really showed me that daily things we do affect climate change. We all look at the cards every day at lunch and talk about what we can do. It really makes a difference.” When asked to identify the most important thing they learned throughout the entire climate change unit, all but two of the boys had an answer related to being an agent of change. One boy wrote, “I think that the most important thing I learned is that everyone can make a difference in our world,” while another shared, “the most important thing that I learned during the climate change unit is that we can help.” In the end, the knowledge they valued most was not how climate change works, but how they can work to make a difference.

Changemaker Attributes for Social Engagement

In addition to evaluating data on the evolution of my students’ content comprehension and self-identification as agents of change, I found it valuable to simultaneously examine the evolution of the class’ surveyed character attributes over the course of the climate change unit. I was most curious to learn which specific aspects of a changemaker mindset could be impacted by service learning. After the science inquiry component of the unit, most of the surveyed attributes showed minimal change, with the notable exception of a slight decrease in the attribute of problem solving. After completing the service learning project, however, there was a significant increase in the surveyed attributes of problem solving, innovation, and values-driven leadership. For example, when asked to rate their ability to evaluate methods for problem solving, only two of fifteen boys “strongly agreed” in the first three surveys, with another two boys “disagreeing.” After the local service project, however, there was an increase to five boys “strongly agreeing” with this attribute, with no boys in the class “disagreeing.” One boy reflected after the service project, “I’ve learned that I can do stuff, like teach people about climate change, that I never thought I could do,” and another remarked, “I have learned that if I see something wrong that I need to stand up.”

To gain a better understanding of the character attributes of a sixth grade boy’s changemaker mindset, I also coded individual student survey responses by the timing of their self-identification as changemakers, and correlated this to their individual character attributes

surveyed throughout the unit. Here I hoped to determine the requisite attributes of a changemaker mindset. As previously revealed, the majority of boys did not identify as changemakers until after the service component. These boys were initially lower in attributes of self-confidence and leadership, but were high in the attribute of self-awareness. At the same time, the three boys that immediately self-identified as agents of change in the pre-unit survey scored themselves highest, on average, in all of the attributes. Most notably, these boys were much higher in self-confidence than the boys who developed a changemaker mindset via service learning. In stark contrast, the one boy who only identified as “maybe” an agent of change on the surveys, rated himself by far the lowest on the changemaker attributes at the start of the unit, particularly in self-confidence, self-awareness, and leadership. Though he did not ever clearly identify as a changemaker, all of this boy’s attributes did show some growth over the course of the unit, except for the attribute of action orientation. One of the boys who showed a concurrent increase in self-confidence and self-identification as a changemaker after the service project shared in his unit reflection, “at first, I thought this was learning about the process of climate change. But now I know so much more. I learned that I can learn and do a lot if I set my mind to it.”

Service, Citizenship, and Connection to Place

A proponent of service learning, I was not surprised by its positive impact on content comprehension and a changemaker mindset. I was intrigued, however, to see how service learning correlated to the boys’ connection to place and view of global citizenship. Eight of fifteen students expressed an increase in their connectedness to the natural world before they identified as a changemaker. Another six of fifteen expressed an increase concurrent with identifying as a changemaker. Only one student expressed an increase in connectedness to place after, but he was the boy that identified as only “maybe” a changemaker. The biggest gain in both connectedness to place and a changemaker mindset occurred after the service learning component.

While most boys (eleven of fifteen) identified from the outset as global citizens, their perspective on what a global citizen is changed significantly as we moved through the unit.

Students' initial definitions of a global citizen were mostly literal –“a person of this world”, “a person that lives on the Earth, ”or other/leader focused – “engaged in big talks,” and “involved with lots of world problems.” After the science component, there was an increase in the number of boys self-identifying as a global citizen, and a concurrent shift in their definitions to include “caring” for the natural world, but with little mention of action. After the service learning component, however, the language in the boys' definitions of a global citizen became much more action-oriented – “takes action to help with the problems of the world,” “does something to help,” “recognize the world's problems and do something to help solve them,” “willing to do anything to help problems,” “it means that you can make a difference.” All in all, by learning about and engaging via service in the world around them, boys developed both a sense of place, as defined by a connectedness to the natural world, and the character attributes of a changemaker. Not only did the boys recognize this as the most important lesson of the unit, but they recognized it as a requisite for global citizenship.

Conclusion

By coupling a service learning project with a science-based unit on climate change, my class of sixth grade boys clearly showed a significant increase in their self-identification as changemakers. In addition to demonstrating acquisition of key changemaker character attributes as a result of the service learning component of the unit, the boys also showed a concurrent increase in their comprehension of the course content and self-identification as active and engaged global citizens. In other words, service learning proved to be a powerful teaching methodology that inspires growth in intellect, mindset, and citizenship.

Service learning also offers a valuable opportunity for boys who have lower self-confidence, or do not see themselves as leaders, to realize their impact in a constructive manner. Giving boys a feeling of power in a productive and positive way allows them to connect with emotions of empathy, confidence, and purpose—all fundamental to a changemaker mindset. In the words of one boy during our climate change service project, “learning how to make a difference and taking action feels really good.” This “widening of a boy's learning zone” does not come solely from academic knowledge, but from experiential learning, like authentic social

engagement, that offers a positive challenge and a positive way to show strength (Newsom, 2015).

Another conclusion brought to light by my action research is the significance of personal connection to place, and local service as a springboard for realizing system wide impact and a changemaker mindset. Jamie Cloud of the Cloud Institute (as cited in Senge, 2010), speaks of “the extent to which one sees both the whole system and its parts as well as the extent to which an individual can place one’s self within the system” as a primary “habit of mind” to be cultivated in education for sustainability (p. 143). I agree, as the emergence of changemaker mindsets in my class was contingent on the boys recognizing the interdependence of natural systems affected by climate change and developing their individual sense of connection to these systems, both inspired most significantly by authentic engagement in service. As explained by a boy in my class in his closing reflection, “I think that being a global citizen means that you are a person that knows about the world, cares for the world, and makes actions to make this world a better place.”

Implications for Future Practice

In *Education for an Interdependent World: Developing Systems Citizens*, Peter. M Senge (2010) writes:

The overarching aim is not educational reform, but re-contextualizing the whole process of education: starting with young children learning how to be more responsible for their own school environment and gradually moving to interconnecting diverse stakeholders in tackling complex real-life community issues. In this process, students stop being passive recipients of someone else’s curriculum and become active agents in developing a sense of responsibility and efficacy for an interdependent world (p.136).

Based on my research, I would be inclined to similarly “re-contextualize” my science curriculum with additional service learning opportunities. While I believe there is a fundamental need for boys to learn how to make a difference, it is clear from my research that

evolution of mindset requires a thoughtful coupling of knowledge, connection, and experience. Embedded service learning therefore necessitates curricula and experiential methodologies that give boys an opportunity to make decisions, frame problems, measure impact, and connect to place.

Authentic engagement via service enables a changemaker mindset, connection to place, and content comprehension; in other words, service learning is sound pedagogy that inspires engaged and educated global citizens and should be utilized in the education of boys. For this reason, I am also making efforts to extend the positive effects of service learning beyond my own classroom walls. In my role as service learning coordinator at The Fenn School, I am working with school leaders to institutionalize service learning in our academic program. My hope is the results of this action research project can inspire other teachers to “re-contextualize” their curricula to offer more developmentally appropriate points of connection for students via service learning.

Implications for Future Study

As a dedicated educator, I was inspired to see the see the positive evolution of mindset that can occur in sixth grade boys over the duration of a single unit. I would be interested in conducting similar research over the course of an entire school year to gain a deeper understanding of changemaker attributes and triggers. It would also be interesting to replicate this research in other grade levels to gain a better understanding of how a boy’s mindset, and its capacity for change, evolves with age, thus impacting breadth of curricula and service action. On a larger scale, extending this research over a much longer time period could help educators determine which changemaker attributes are the most accurate indicators of future social impact and engagement as global citizens; in turn, informing the learning experiences we offer our boys at different grade levels in an effort to inspire these results.

Reflection Statement

Socrates wrote, “The secret of change is to focus all of your energy, not on fighting the old, but on building the new.” This action research project allowed me to expand my own educational community and engage in research and learning that broadened my skills, knowledge, network of collaborators, and sphere of influence. Most importantly, it has given the work I do in my school community global context and validation; as an educator, it has personally given me hope.

I am grateful for the opportunity offered by the IBSC and the incredible support of Di Laycock and Laura Sabo. The relationships I formed with several of my “Team Laura” colleagues were motivating and inspiring, providing a unifying touchstone as each of us focused our energy on our individual projects (particularly as many of us struggled to keep this report under 5,000 words.) This journey would also not have been possible without the generous endorsement of the administration of The Fenn School. Jerry Ward, Derek Boonisar, and Steve Farley enthusiastically offered the resources and support required for me to joyfully give this project the attention and effort it warranted.

The IBSC action research research project on Boys as Global Citizens has certainly helped me be a more effective teacher within my classroom walls, but it has also provided an invigorating springboard for sharing my passion for meaningful teaching and learning with others. I have loved every moment of this project - so much so, that I am inspired to continue my research on ecological apartheid and changemaker attributes as part of a PhD program at Antioch University next fall. I am grateful for the new connections I have forged and excited for the educational opportunities, within and beyond my classroom, that they have helped create.

References

- Ashoka innovators for the public. (n.d.). Retrieved September 24, 2015, from <https://www.ashoka.org/about>.
- Alden Rivers, B., Armellini, A., & Nie, M. (2015). Embedding social innovation and social impact across the disciplines: Identifying “changemaker” attributes. *Higher Education, Skills and Work-Based Learning*, 5(3), 242-257. <http://dx.doi.org/10.1108/HESWBL-10-2014-0051>.
- Beges, S. (2015, September 4). Teaching Values and Purpose for Social Change (SSIR). *Stanford Social Innovation Review*. Retrieved from http://ssir.org/articles/entry/teaching_values_and_purpose_for_social_change.
- Biggs, S. (2011). Is the UN Promoting Environmental Apartheid? News from the Durban Climate Talks and Why You Should Care. Retrieved from <http://www.globalexchange.org/blogs/peopletopeople/2011/12/14/is-the-un-promoting-environmental-apartheid-news-from-the-durban-climate-talks-and-why-you-should-care/>.
- Bradley, M. (2012). The Benefits of Same-Sex Education for Boys. *Main Line Today*. Retrieved from <http://www.mainlinetoday.com/core/pagetools.php?pageid=9418&url=/Main-Line-Today/September-2012/The-Benefits-of-Same-Sex-Education-for-Boys/index.php?cparticle=1&siarticle=0&mode=print>.
- Costa, A. L., & Kallick, B. (2008). *Learning and leading with habits of mind: 16 essential characteristics for success*. Alexandria, VA: Association for Supervision and Curriculum Development.
- Cox, A. J. (2006). *Boys of few words: Raising our sons to communicate and connect*. New York: Guilford Press.

- Dweck, C. S. (2006). *Mindset: The new psychology of success*. New York: Random House.
- Ferrance, E. (2000). *Action research*. Providence, RI: LAB, Northeast and Island Regional Education Laboratory, Brown University.
- Gookin, J., & Swisher, A. (Eds.). (2015). *The wilderness educator notebook* (11th ed.). Lander, WY: National Outdoor Leadership School.
- Kaye, C. B. (2004). *The complete guide to service learning: Proven, practical ways to engage students in civic responsibility, academic curriculum, & social action*. Minneapolis, MN: Free Spirit Pub.
- Louv, R. (2005). *Last child in the woods: Saving our children from nature-deficit disorder*. Chapel Hill, NC: Algonquin Books of Chapel Hill.
- McGarry, D. (2013). *Empathy in the time of ecological apartheid* (Unpublished doctoral dissertation). Rhodes University. Retrieved from <http://philpapers.org/rec/MCGEIT>
- Newsom, J. S. (Director). (2015). *The mask you live in* [Motion picture]. USA: The Representation Project.
- Pollack, W. (1998). *Real Boys: Rescuing Our Sons from the Myths of Boyhood*. New York: Random House.
- Price-Mitchell, M. (2015, September 11). Empathy in Action: How Teachers Prepare Future Citizens. Retrieved from <http://www.edutopia.org/blog/8-pathways-empathy-in-action-marilyn-price-mitchell>.
- Senge, P. M. (2009). Education for an interdependent world: Developing systems citizens. In A. Hargraves, A. Lieberman, M. Fullan, & D. Hopkins (Eds.), *Second international handbook of educational change* (pp. 131-151). Springer Netherlands. doi:10.1007/978-90-481-2660-6_8.

Sharpe, W., (2000). Single-Gender Classes: Are They Better? *Education World*. Retrieved from http://www.educationworld.com/a_curr/curr215.shtml.

Shaw, S. (2014). It's time to teach climate change in school. Here's how. *The Guardian*. Retrieved from <http://www.theguardian.com/commentisfree/2014/sep/19/its-time-to-teach-climate-change-in-school-heres-how>.


Sobel, D. (2008). *Childhood and nature: Design principles for educators*. Portland, Me.: Stenhouse.

The Fenn School. (n.d.). Sua Sponte. Retrieved September, 2015, from <http://www.fenn.org/page.cfm?p=498>.

Thompson, M., (2010). The empathic civilization: Boys are the key to an empathic future. Retrieved from http://www.huffingtonpost.com/michael-thompson-phd/the-empathic-civilization_b_483068.html.

Verwoerd, W. (2015, July 9). *Reconciliation lessons from Mandela*. Keynote Address. International Boys' Schools Coalition Annual Conference, Bishops College, Cape Town.

Appendix: Climate Unit Questionnaire

 Edit this form

Copy of Climate Unit Questionnaire 1: Pretest

Do you think you are an agent of change?

- Yes
 No
 Maybe

On a scale of 1-5, how well do you think you understand climate change?

1 2 3 4 5

Not at all Very well

Do you think climate change is a:

(can select more than one)

- Global problem
 Problem that only affects certain climate regions
 Local problem
 Not a problem

I am optimistic we can find a solution to climate change.

- Yes
 No

What do you consider to be the primary cause of climate change?

Whose responsibility is it to address the issue of climate change?

On a scale of 1-5, how connected do you feel to the natural world?

1 2 3 4 5

Not connected at all Very Connected

Do you think your personal actions affect climate change?

- No
- Maybe
- Yes, but not enough to make a difference
- Yes, on a local level
- Yes, on a local and global level

Do you consider yourself to be a global citizen?

- Yes
- No

What do you think it means to be a global citizen?

On a scale of 1-5, rate how strongly you agree or disagree with the following statements:

You instigate change.

1 2 3 4 5

Strongly disagree Strongly agree

You are a future thinker.

1 2 3 4 5

Strongly disagree Strongly agree

You easily develop an understanding of another's perspective

1 2 3 4 5

Strongly disagree Strongly agree

You learn well cooperatively

1 2 3 4 5

Strongly disagree Strongly agree

You influence to positive ends

1 2 3 4 5

Strongly disagree Strongly agree

You use emotion in a positive way

1 2 3 4 5

Strongly disagree Strongly agree

You easily develop strategies for problem solving

1 2 3 4 5

Strongly disagree Strongly agree

You inspire others

1 2 3 4 5

Strongly disagree Strongly agree

You easily make decisions

1 2 3 4 5

Strongly disagree Strongly agree

You are a global citizen

1 2 3 4 5

Strongly disagree Strongly agree

You are an environmental steward

1 2 3 4 5

Strongly disagree Strongly agree

You are an advocate for social justice

1 2 3 4 5

Strongly disagree Strongly agree

You easily recognize problems

1 2 3 4 5

Strongly disagree Strongly agree

You are socially aware

1 2 3 4 5

Strongly disagree Strongly agree

You are quick to share findings with others

1 2 3 4 5

Strongly disagree Strongly agree

You are motivated to consider other's perspectives

1 2 3 4 5

Strongly disagree Strongly agree

You evaluate methods for problem solving

1 2 3 4 5

Strongly disagree Strongly agree

You take action unprompted

1 2 3 4 5

Strongly disagree Strongly agree

You set goals

1 2 3 4 5

Strongly disagree Strongly agree

You are motivated to engage in active reflection

1 2 3 4 5

Strongly disagree Strongly agree

You are original and inventive

1 2 3 4 5

Strongly disagree Strongly agree

You understand your own learning style

1 2 3 4 5

Strongly disagree Strongly agree

You are aware of your own strengths and weaknesses and values

1 2 3 4 5

Strongly disagree Strongly agree

You believe that a person's abilities and attributes are not fixed and can be developed

1 2 3 4 5

Strongly disagree Strongly agree

On a scale of 1-5, how interested are you in learning about climate change?

1 2 3 4 5

Not interested Very interested

Share three words you are thinking about at this point in our climate change unit.

Submit

Never submit passwords through Google Forms.

Powered by


This form was created inside of The Fenn School.
[Report Abuse](#) - [Terms of Service](#) - [Additional Terms](#)