

Climate Education and Awareness

Introduction

Climate Education/Awareness and Climate Change

Due to the complexity of climate change science, the controversy surrounding the issue, particularly within the USA, and the overwhelming amount of misinformation available, it is essential that climate change education be part of a broad effort to educate our community members. Climate change is a complex process in which long-term analysis and projections are difficult to make. Also problematic for science educators is the communication of the process of climate change. Models often used to help describe, represent, or help to make predictions about the phenomena are oversimplified (Cartier et al., 2001). Educators also struggle to overcome informational outlets about the issue; and many people reach understandings about climate change from media outlets, which often misrepresent the issue and reinforce common misconceptions that persist within the science classroom (Dawson & Carson, 2013; Gayford, 2002).

Climate change, within the USA, is what Zimmerman and Robertson, (2017) refer to as a type of controversy called an “expert–public disagreement,” in which knowledgeable persons agree, and laypersons dispute the issue. We cannot ignore such controversies, and have a professional obligation to teach expert–public disagreements and support stakeholders in discerning when to defer to experts, learning to distinguish fact from propaganda, how to use expert evidence to make well-reasoned arguments, and to distinguish between ideological claims and fact-based positions (Zimmerman & Robertson, 2017). Gayford (2002) suggests the presence of controversy over an issue can influence instructional decisions; and the presence of political controversy about the science of climate change may lead to objections from stakeholders (Maibach, et al., 2008).

For the past two decades, climate change has been misrepresented by American politicians, policy institutes, and television or radio commentators as a highly controversial and debatable issue, thus challenging the authenticity of anthropogenically induced GCC (De Pryck & Gemenne, 2017; McCright & Dunlap, 2011; Oreskes & Conway, 2008). In addition, many sources of information perpetuate misconceptions about the causes of climate change, fail to emphasize the anthropogenic nature of climate change and widely simplify the process of climate change–induced global warming (Chen, 2011; Choi et al., 2010; Serman, 2011). One-third of the general public in the USA believe scientists disagree on the topic of anthropogenically induced climate change and only half think humans are the primary cause of climate change (Funk et al., 2019; Plutzer et al., 2016). The result of the continued denial of GCC and its causes has been to diminish scientific consensus (Anderegg et al., 2010).

The Southeastern US (SEUS) has one of the most conservative political ideologies in the country, which aligns closely with skepticism surrounding climate change. Yet areas within the SEUS have been among the hardest hit by climate change impacts in recent years, and continued threats pose costly adaptation and mitigation challenges for this region (Carter, et al., 2018; Melillo et al., 2014; Roach, 2005). Hurricanes, storm surge, sea level rise, and increased intensity of storm events will continue to cause coastal flooding, saltwater intrusion, and shoreline erosion in heavily populated low-lying coastal areas within the SEUS (Karl et al., 2009; Melillo et al., 2017). Policymakers and science educators recognize

that teaching climate change science is necessary to produce a citizenry that understands the causes of Global Climate Change and ways to both mitigate it and prepare for its effects (Gutierrez et al., 2008).

Discussion Questions

1. What can individuals, private and non-governmental organizations and governments do to educate the public on the impacts of climate change?
2. Where/what is the best venue for climate change education?
3. How should the impacts of climate change and climate strategies be communicated?

Resource and Information Links

1. <https://www.un.org/en/climatechange/climate-solutions/education-key-addressing-climate-change>
2. <https://www.unesco.org/en/education/sustainable-development/climate-change>
3. <https://naaee.org/eepr/groups/climate-change-education>
4. [Yale's Six Americas: Our Views on Climate Change](#)(video)
5. [Yale's Six Americas](#) (Website)

Initial List of Potential Strategies

- A. Design and implement curricula about climate change early, in K-12 to increase knowledge of climate change and acknowledge how cultural ideology plays a role in perception and learning.
- B. Develop materials and curricula suitable for use by community-based organizations, including:
 - Home Owners Associations (HOA)s
 - Faith community
 - Leadership programs
 - New resident education programs
- C. Develop coordinated public messaging that:
 - Provides information in “bite-sized”, easily digestible increments
 - Regularly provides information through multiple highly visible channels, including billboards, social media, broadcasting, etc.
 - Documents and uses local examples of climate change-related impacts such as nuisance flooding, heat records, etc.
- D. Develop climate education partnerships and coalitions with and within:
 - Community-based organizations
 - Business organizations
 - Faith communities
 - Local governments
 - Include public/private partnerships
 - Include organizations already active in climate change education, such as the

League of Women Voters and extension programs

- E. Include climate change curriculum in new elected official certification programs
- F. Build networks of individuals and organizations that can serve as ambassadors and trusted voices in underserved communities that do not yet have high awareness of climate change issues
- G. Enhance the effectiveness of climate education by:
 - Using pedagogical practices such as argumentation, discussion, and the connection of content to place to effectively teach climate change in ways that confront other information outlets.
 - Presenting climate change science in an unbiased or neutral manner.
 - Communicating climate impacts and solutions in a way that confronts one's own attitudes and beliefs about the subject to influence behaviors, prior to instruction of the content.