2. Climate Change Attitudes and Knowledge

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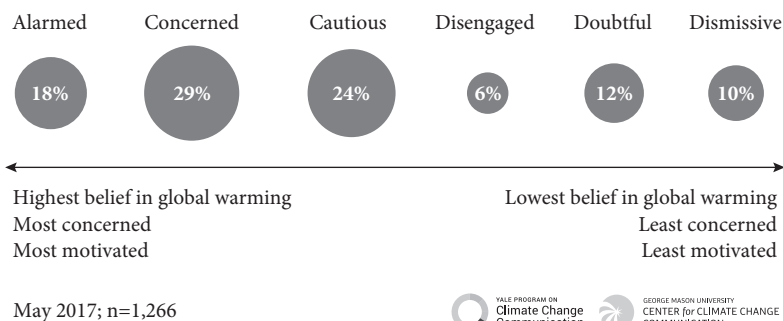
CLIMATE CHANGE ATTITUDES AND KNOWLEDGE

Understanding climate change attitudes is one of the challenges educators face when teaching about climate change. Attitudes are cognitive representations that summarize people's evaluation of an action, event, idea, or thing, or what social scientists call an "attitude object." In this case, the attitude object is climate change.[1]

The relationship between attitudes and behavior is not always straight-forward. One might think positive environmental attitudes would engender pro-environmental behavior that minimizes environmental impacts and has positive environmental outcomes.[2] But in reality, attitudes are often a weaker predictor of behavior than we might expect.[3] In the case of climate change, although people who hold more positive attitudes toward renewable energy may be more likely to install solar panels on their home, there are many reasons why people who feel positive about renewable energy may *not* do so—for example, lack of knowledge, structural barriers such as cost, or how they feel others may view them. Generally speaking, attitudes are a better predictor of behaviors when the attitudes are more specific—for instance, if we want to predict who will install solar panels, attitudes toward renewable energy, specifically, are likely to be a better predictor than general environmental attitudes.[4] The predictive strength of attitudes also depends on whether behavioral intentions or actual behaviors are the intended outcome. In general, there is a strong relationship between believing in anthropogenic climate change and intentions to partici-pate in pro-environmental behavior; however, the relationship between climate change belief and actual behavior is weaker.

In a study published in 2014, researchers estimated that 60 percent of adults worldwide were aware of climate change, whereas 40 percent had never heard of it.[5] Survey data demonstrate that high-emitting countries like the United States and China are among the least concerned about climate change, whereas lower-emitting countries in South America and Africa are most concerned.[6] Within countries, awareness and risk perceptions also vary markedly. A study in Cebu, Philippines, published in 2012 found that only 18 percent of fishermen in the region were aware of climate change, compared to 71 percent of laborers. This difference underlines the challenges confronting this archipelagic nation as it faces significant risks from sea level rise and ocean warming.[7]

Social scientists examining U.S. climate change attitudes over the past decade have found that those attitudes have remained remarkably stable, although acknowledgment that climate change is happening has increased steadily since 2015.[8] As of 2017, the majority—71 percent—of the country thought the climate is changing.[9] According to survey data published in 2011, 54 percent of Americans also believe that climate change is anthropogenic; but the population differs markedly in its policy preferences and behaviors.[10] At the ends of the spectrum, some Americans are very alarmed, while others dismiss climate change almost completely. Most Americans lie somewhere in between (figure 2.1). Political ideology and party identification are strong predictors of climate change attitudes and beliefs in national surveys; Democrats and liberals reliably express more alarm compared to Republicans and conservatives, who are more likely to be dismissive.[11]

Belief that climate change is happening does not equate to understanding the facts. Most Americans have heard of the greenhouse effect (87 percent,

Alarmed	Concerned	Cautious	Disengaged	Doubtful	Dismissive
18%	29%	24%	6%	12%	10%

Highest belief in global warming   Lowest belief in global warming
Most concerned   Least concerned
Most motivated   Least motivated

May 2017; n=1,266

YALE PROGRAM ON Climate Change Communication   GEORGE MASON UNIVERSITY CENTER for CLIMATE CHANGE COMMUNICATION

FIGURE 2.1   Global warming's six Americas
Yale Program on Climate Change Communication and George Mason University Center for Climate Change Communication, 2017

according to a 2010 Yale study), but fewer Americans understand how the greenhouse effect works, and many continue to conflate ozone layer depletion with climate change.[12] While people generally understand that carbon dioxide is a greenhouse gas that contributes to warming, they are relatively unaware of other important greenhouse gases, like methane.[13] Fewer than half the science teachers in a 2016 study could correctly identify the percentage of scientists (97 percent) who agree that humans are causing climate change, and a third reported purposefully giving students mixed messages about climate change.[14] In a study examining climate change knowledge across the United States, Canada, Germany, Switzerland, China, and the United Kingdom, higher levels of knowledge about the causes of climate change (but not the physical characteristics of climate change) were associated with higher levels of climate change concern.[15] Understanding and communicating the scientific consensus around climate change could function as a key factor in moving audiences toward supporting climate policy.[16]

Other research has focused on youth knowledge and attitudes toward climate change. A 2010 survey found that U.S. teens knew about the same or a little less about climate change compared to U.S. adults.[17] Although fewer teens said that climate change was happening compared to adults (54 percent of teens versus 63 percent of adults), more teens than adults understood that the greenhouse effect refers to gases in the atmosphere that trap heat (77 percent of teens compared to 66 percent of adults). Strong predictors for climate change concern among teens include acceptance of anthropogenic climate change, frequency of discussion with family and friends, and the perceived acceptance of anthropogenic climate change by family and friends.[18] The importance of family and friends suggests intergenerational programs that engage parents alongside children could be particularly effective at building concern. Efforts like the Climate Urban Systems Partnership in Pittsburgh employ this approach; when families come to the program's booths at festivals, the children and parents explore climate change activity kits together.[19]

Because much of the research on climate change attitudes and knowledge comes from Western countries, "debates remain anchored primarily in the experiences, values, and desires of developed nations . . . even when we think we are arguing against what we construe to be the selfish interests of 'the West.'"[20] Educators working in other countries may find themselves confronted by challenges different from those facing U.S. educators. For example, whereas political polarization dominates climate change discussions in the United States, this is not true in other countries that are major players in global climate negotiations, like India.[21]

Bottom Line for Educators

Understanding audiences' climate change attitudes and knowledge can guide educators in developing program outcomes and content. For example, if educators work with audiences who are already very concerned and knowledgeable about climate change, they may want to focus on developing audiences' sense of collective efficacy—the feeling that they can respond collectively to the problem—to help them avoid despair. Educators working with audiences who are more skeptical or less aware of the problem may target climate change knowledge and awareness as preliminary outcomes. These educators may also seek to identify areas of common ground, such as shared experiences in their communities, that enable them to have a positive dialogue with audiences even as they disagree about certain aspects of climate change. It may hearten environmental educators to look at the opinion data and remind themselves that the majority of Americans *do* believe that the climate is changing, even if they disagree on ways to address the problem.