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AMERICANS ENDORSE CLIMATE CHANGE EDUCATION

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1. Why study public views towards teaching about Global Warming and Climate Change?

Scientists and the international community agree: Climate change is a defining issue of our time and we are at a defining moment. The Intergovernmental Panel on Climate Change (IPCC), which includes more than 1,300 scientists from the United States and other countries, estimates that human activities have caused approximately 1.0°C of global warming above pre-industrial levels. If conditions remain the same, global warming is likely to reach 1.5°C between 2030 and 2052. Whether referred to as "global warming" or "climate change," these patterns have already had observable effects on our planet, including loss of sea ice, accelerated sea level rise and longer, more intense heat waves.

Education, from classrooms to boardrooms, is seen as a critical tool for boosting both resilience and the capacity to carry out the enormous social and technological changes necessary to cut risks as the human surge meets accelerating climate disruption. By engaging students with climate science, energy history and related subjects, schools can help young people grasp reality amid today's noise and polarization, and shape academic, civic and career paths that can help build a climate-safe future. The recent wave of youth activism – known as Fridays for Future and School Strikes for the Climate – is a clear signal that young people are motivated and committed to the issue.¹

Scholars have documented the shifting public views towards global warming and climate change (e.g., perceived seriousness, causes, and impact). A recent Pew Research Center report, for example, shows that a majority of Americans say climate change is a major threat to the well-being of the United States (rise from 40% in 2013 to 57% in 2019).² The survey also shows that views towards climate change vary widely by political party and ideology. Among Democrats and Democratic-leaning independents overall, 84% say climate change is a major threat to the country's well-being, whereas among Republicans and Republican leaners the figure is 27%.

Past research also shows that question wording matters. Self-identified Republicans are more likely to endorse that the phenomenon is real when it was referred to as "climate change" rather than "global warming," whereas self-identified Democrats were unaffected by question wording.³ One possible explanation is that these terms shape beliefs by drawing attention to certain aspects of the issue and by invoking different associations. The term "global warming" focuses attention on the rising Earth's average surface temperature. Therefore, seemingly contradictory evidence, such as unseasonably cold days or record rainfall/snowfall, often

¹ <https://www.fridaysforfuture.org>

² <https://www.pewresearch.org/fact-tank/2019/08/28/u-s-concern-about-climate-change-is-rising-but-mainly-among-democrats/>

³ Schuldt, J. P., Konrath, S. H., & Schwarz, N. (2011). "Global warming" or "climate change"? Whether the planet is warming depends on question wording. *Public Opinion Quarterly*, 75(1), 115-124.

challenge the premise of “global warming.” In contrast, the term “climate change” refers to a long-term change in the Earth’s climate patterns, or of a region on Earth. Thus, it easily accommodate unseasonably weather patterns.

Public opinion polling on teaching about global warming and climate change is a relatively limited. Using several search engines and catalogues (e.g., iPOLL / Roper Center) we found only eight surveys that asked respondents about the topic. Figure 1.1 presents the name of the organizations responsible for the survey, the year of data collection, the wording of the survey question, and the distribution of responses. Majority of these surveys use the term “global warming,” which frames the topic in a certain way. Moreover, we know little about the extent to which different groups vary in their views on the topic. This research brief examines Americans' views of teaching about global warming *and* climate change in primary and secondary schools. The brief provides detailed analysis by socio-demographic groups and open-ended reflection from respondents.

2. Wording does not matter

To evaluate whether and how terminology affects public opinion, we conducted a question wording experiment. Half of the survey respondents were asked about teaching “global warming,” and the other half were asked about teaching “climate change.” Respondents were assigned randomly to each experimental condition.

Although past research has demonstrated that minor variations in question wording (i.e. climate change vs. global warming) can elicit major shifts in responses to survey questions, we find no significant impact on public perception of teaching about “climate change” and teaching about “global warming”. In other words, views towards the topic are the same regardless of the term we use in the question (Figure 2.1). Because we find no significant differences and for the sake of convenience, in what follows we use the term “climate change.”

3. Most Americans support teaching about Climate Change

A large majority of American adults (77%) say it is important that elementary and secondary school students learn about climate change (Figure 3.1). Slightly more than two-fifths of respondents (44%) perceived it as “very important,” and one-third of respondents (33%) perceived it as “somewhat important.” The remaining one-quarter of respondents perceived climate change as “somewhat unimportant” or “not important at all” (14% and 9%, respectively).

In a follow-up question, respondents further explained their views. Several respondents indicated that teaching about climate change would lead to action and care for the planet. A 24-year-old man from Vermont wrote, “Topics like global warming tie into everyday life, it's important for kids to know why they need to take care of the environment,” and a 38-year-old Latina mother from Arizona wrote, “Sometimes they don't have enough information about this

important issue and they don't know how to react or behave.” Other respondents emphasized the urgency of the topic. For example, a 31-year-old Asian father from Georgia wrote, “Students should learn about global warming and humans rights [...] many less developed nations are now experiencing global warming,” and a 30-year-old Latino father from California added “[...] the problem is getting worse and worse.”

Respondents' perceived importance of teaching about climate change varies across key demographics: gender, race/ethnicity, age groups, community type, political ideology, and religiosity (Figure 3.2).

1. **Women are more likely than men to rate teaching about climate change as important.** Half of women (51%) and slightly more than one-third of men (36%) say teaching about climate change is “very important.”
2. **People of color are more likely than Whites to rate teaching about climate change as important.** More than half of Asian Americans (56%), Blacks (55%), and Latinx (57%) say teaching about climate change is “very important.” Among Whites, this figure drops to 37%.
3. **Younger adults are more likely than others to rate teaching about climate change as important.** Six-in-ten respondents age 18-24 (57%) and slightly more than half of respondents age 25-44 (53%) say teaching about climate change is “very important.” This figure drops significantly for respondents age 45-64 (38%) and respondents age 65 and above (28%).
4. **Respondents living in urban communities are more likely than respondents living in suburban and rural communities to see teaching about climate change as important.** More than half (55%) of residents of urban communities say teaching about climate change is “very important,” compared to 42% of suburban and 37% of rural, respondents.
5. **Liberals are more likely than conservatives to view teaching about climate change as important.** Two-thirds of those identifying themselves as liberals (67%) say teaching about climate change is “very important,” compared to 22% of conservatives and 45% of moderates.
6. **Religious respondents are less likely than less-religious respondents to rate teaching about climate change as important.** Among respondents who say that they are very religious, slightly more than one-third (35%) say teaching about climate change is “very important,” compared to 53% of respondents who describe themselves as not religious at all.

5. Conclusion

Americans support teaching about climate change in primary and secondary schools. Our findings echo previous studies (see Figure 1.1). The level of support, however, varies by key demographics (gender, race, age, and community type) and political ideology. Younger respondents, the generation that will experience the devastating impacts of climate change in their lifetime, send a clear message – it is time to take action.

There are many ways for schools to engage climate change. This topic is not only a scientific matter; it is an ethical and social issue. If one wanted to promote the study of climate change into K-12 schools, which many of our respondents support, one could infuse climate change throughout the curriculum to provide as many perspectives on the topic. Similar to the broader topic of sustainability, meaningful engagement with climate change requires a whole-school approach. A strong collaboration and alignment among the official curriculum (e.g., textbooks, lesson plans), the co-curriculum (e.g., school gardens, social events, and field trips) and facilities is a promising approach. In New York City, for example, public schools are required to appoint a Sustainability Coordinator to advance engagement with issues such as energy, resource management, wellness etc. This policy already shows positive signs.⁴

6. Methodology

Results are based on online survey conducted August 28 – September 6, 2017 among a national sample of 3,117 adults 18 year of age or older using the Qualtrics Panel. Qualtrics, a marketing research firm, partners with a variety of online panel providers to supply a nationally representative sample. The sample is compiled using overall demographic quotas based on census percentages for representation (i.e., age, gender, race/ethnicity, household income, and census region). To allow greater power for analysis, we over-sampled people who identify as Black, Asian and Pacific Islander, and/or Latinx. The sample is weighted to represent the U.S. adult population living in households or group quarters. For socio-demographic composition of the sample see Technical Note (available on <http://www.tc.columbia.edu/thepublicmind>).

The survey included several quality assurance measures, including attention checks and a speed check. Attention checks asked respondents to mark a specific answer. Respondents who failed one or more of these checks were removed from the final sample.

Most of the survey items were developed by the research team and colleagues at Teachers College. Other survey items were adapted from the General Social Survey (GSS), Gallup and Pew. The survey also included a detailed battery of survey items on sociodemographic characteristics. In addition to close-ended items, the survey asked several open-ended questions, allowing respondents to contextualized and explain their responses in greater detail.

⁴ Pizmony-Levy, O., McDermott, M., & Copeland, T. T. (2019). Improving Sustainability Education Policy through Research Partnerships: Reflections and Analysis from New York City. <https://academiccommons.columbia.edu/doi/10.7916/d8-0gcg-7y14>

To test for framing/wording effects, the survey contained several experiments. For example, we vary the term used for describing different curricular topics. We used the terms “Global Warming” and “Climate Change” that are known to have different appeal on conservatives and liberals. That is, the experiment included a total of two conditions. Respondents were randomly assigned to each condition.

All surveys are subject to various forms of error. One form is sampling error: the variation in results that is attributable to chance in which members of a population are randomly selected to participate in the survey. For percentages based on the entire sample, the approximate margin of error is +/- 1.8%. For subgroups, the margin of error is larger. For example, the margin of error for Black respondents is approximately +/- 4.5%.

Variable used in this brief:

1. Perceived importance of different topics. The survey asked respondents: “How important is it that elementary and secondary school students learn about the following topics?” The survey included eight contemporary topics or issues: (1) Health issues, (2) racial and ethnic diversity, (3) same-sex families / gay and lesbian families, (4) the experience of immigrants, (5) Climate Change / Global Warming, (6) human rights, (7) the experience of people with disabilities, and (8) Non-Christian faiths (e.g., Judaism, Islam, and Buddhism). Topics were presented in a randomized order. Responses are on a 4-point scale: 1 = not important at all, 2 = somewhat unimportant, 3 = somewhat important and 4 = very important.

In order to gain further insight on public views towards teaching about Climate Change / Global Warming, we asked respondents to explain in their own words their views (“Thinking about your responses, what topics should students learn in elementary and secondary school and why? Please use the text box to share your opinion”). The question was presented to a random group – one-fifth – of the whole sample (n=565).

Figure 1.1: Summary of public opinion research on teaching about Global Warming and Climate Change in schools

Year	Survey	Question	Response
2009	Yale University Project on Climate Change Communication	Should schools teach our children about the causes, consequences, and potential solutions to global warming? Strongly agree Somewhat agree	27% 43%
2010	Yale University Project on Climate Change Communication	Should schools teach our children about the causes, consequences, and potential solutions to global warming? Strongly agree Somewhat agree	35% 40%
2015	Ed Next Survey	Using a seven point scale where 1 means “a little” and 7 means “a lot”, how much should your local schools emphasize global warming? High (5/7) Medium (4) Low (1/3)	44% 22% 35%
2016 (March)	Yale University Project on Climate Change Communication	Should schools teach our children about the causes, consequences, and potential solutions to global warming? Strongly agree Somewhat agree	36% 41%
2016 (November)	Yale University Project on Climate Change Communication	Should schools teach our children about the causes, consequences, and potential solutions to global warming? Strongly agree Somewhat agree	38% 38%
2017	Yale University Project on Climate Change Communication	Should schools teach our children about the causes, consequences, and potential solutions to global warming? Strongly agree Somewhat agree	39% 39%
2019	Yale University Project on Climate Change Communication	Should schools teach our children about the causes, consequences, and potential solutions to global warming? Strongly agree Somewhat agree	39% 39%
2019	NPR/Ipsos poll	Should Climate Change Be Taught In School? Schools should teach about climate change and its impacts on our environment, economy and society Schools should teach that climate change exists, but not the potential impacts Schools should not teach anything about climate change Don't know	65% 12% 10% 13%

Figure 2.1: Views toward teaching Climate Change / Global Warming, by wording

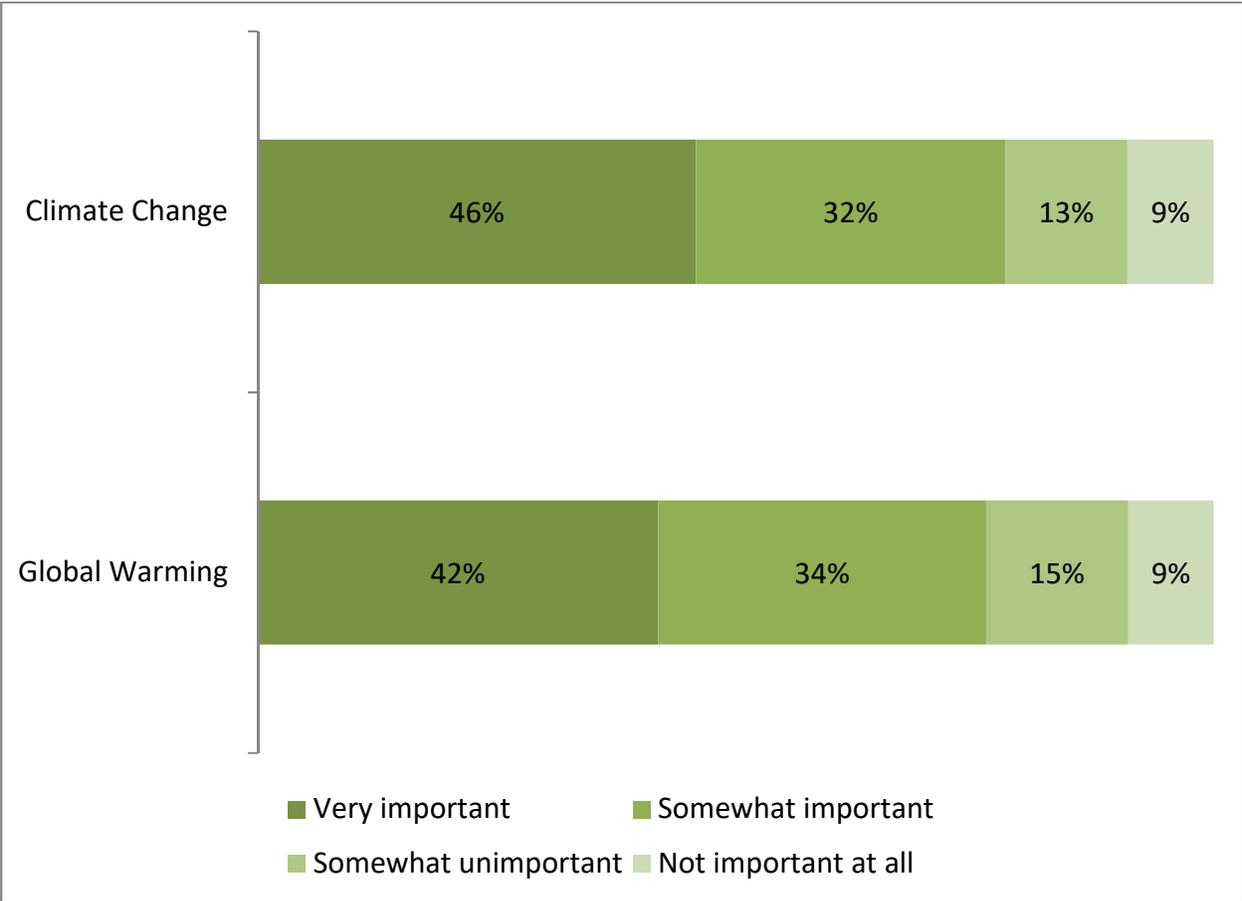


Figure 3.1: Views toward teaching Climate Change / Global Warming, overall

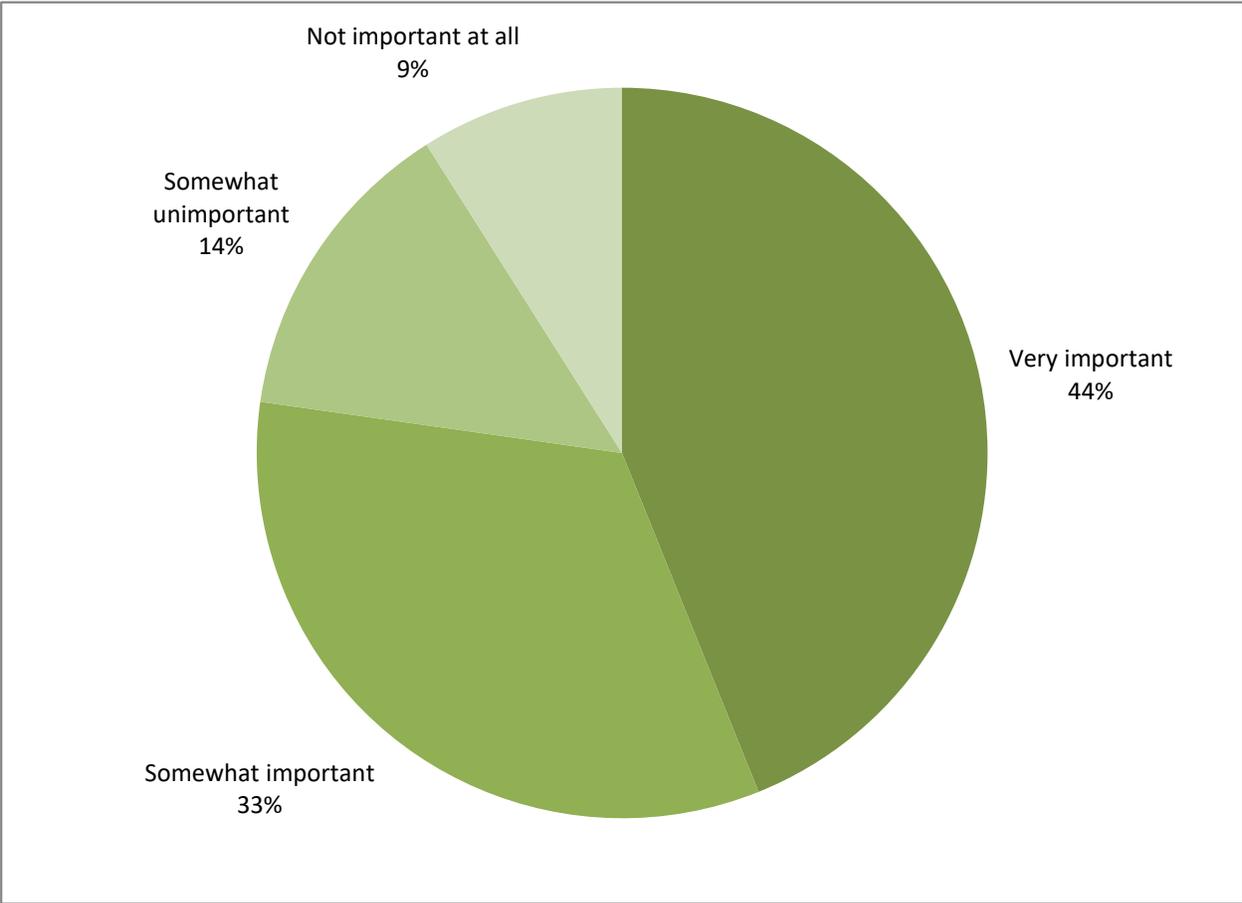


Figure 3.2: Views toward teaching Climate Change / Global Warming, by key demographics (% say “very important”)

