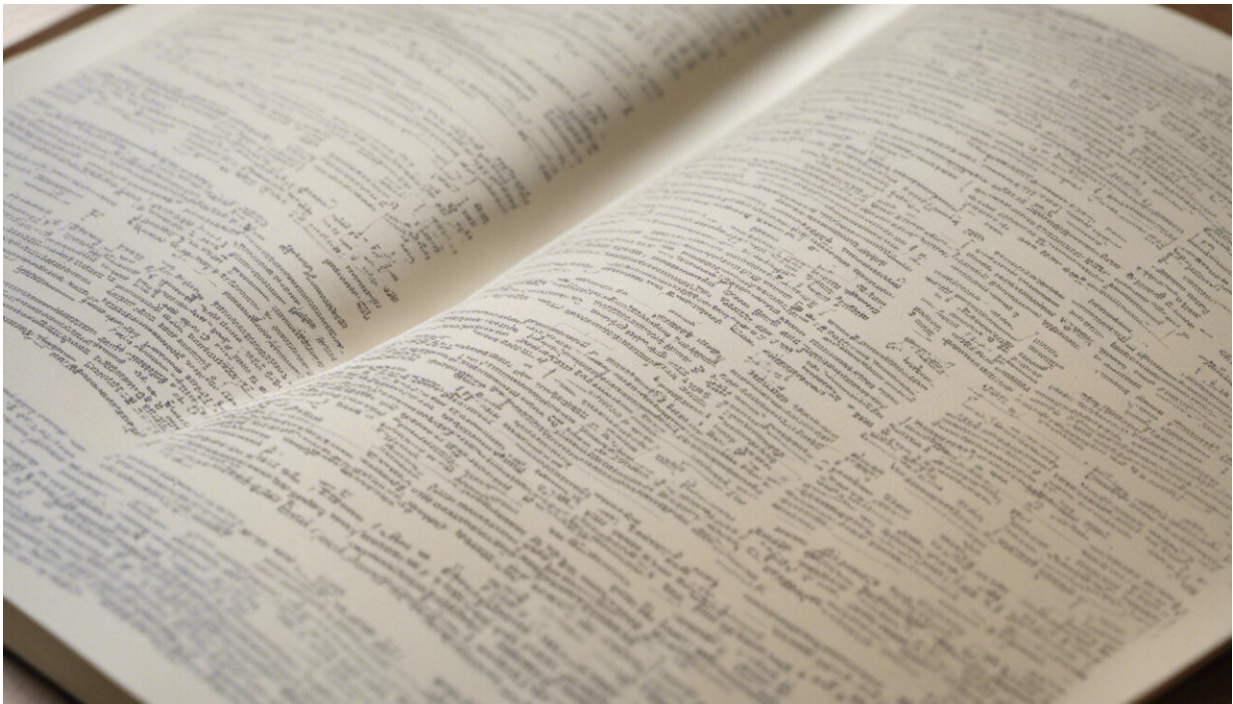


# How have textbooks portrayed climate change?

October 22 2018, by Brett Levy And Lauren Collet-Gildard

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Credit: AI-generated image ([disclaimer](#))

Back in 2007, the [world's foremost body charged with assessing climate change](#) stated with "[very high confidence](#)" that humans were a primary driver of climate change.

But you may not get the message that humans are responsible for climate

change if you peered into some of the most popular high school curriculum [materials](#) that were produced in the following years.

Many school materials back then did not communicate the [scientific consensus](#) that human activity was a major driver of climate change. That was one of the major findings of our line-by-line [analysis](#) of five science textbooks, four social studies textbooks and eight sets of supplemental curricular materials produced in the five years after the 2007 report. These 17 resources – all designed for high school classrooms – were selected based on their widespread use so that we could best understand the climate change-related content seen by the greatest number of U.S. students.

The three of us are researchers of education interested in how to prepare youth for well-informed civic participation. Casey Meehan came up with the idea to analyze how curricular materials deal with climate change, considering this a major civic issue. After doing this as part of his dissertation at the University of Wisconsin, Brett Levy and Lauren Collet-Gildard helped him to expand his analyses.

We published our [findings](#) in *Science Education* earlier this year. The main takeaway is that many American curricular materials communicate a skewed or incomplete view of the seriousness, scope and cause of global climate change. In addition, these resources present a small range of options for addressing the problem.

We examined how each resource portrayed three major dimensions of climate change: causes, impacts and potential responses.

## Causes

Nine resources in our study did reflect the scientific consensus that human activity is a major driver of climate change, but we found that

another six – including several science [textbooks](#) – were hesitant, communicating uncertainty about the conclusions expressed in the [2007 landmark report](#) by the Intergovernmental Panel on Climate Change.

For instance, one earth science textbook published in 2010 says that "researchers are trying to determine if the [temperature] increase is a natural variation or the result of human activities." Similarly, one geography textbook published in 2012 states that scientists "do not all agree on the nature of global warming and its effects."

"Some claim that a natural cycle, not human activity, is causing rising temperatures," this particular textbook states. "Others claim that the evidence for global warming is inconclusive."

Such messages suggest that humans may not be responsible for climate change – and that global warming itself could be a myth. These ideas were common in some of the curricula we examined. Two sets of supplemental materials directly challenge the idea that human activities cause climate change, with one calling this notion "far from settled."

These curricula helped shape the views of young Americans who are now in their 20s. Perhaps more importantly, there's a good chance many of these materials are still in use now, given that some schoolteachers have access only to [aging textbooks](#).

## **Impacts**

Beyond the fact that some publishers hedged when it came to the cause of [global climate change](#), we also found that they provided limited content about the impacts of climate change. Twelve of 17 curricular resources made little mention of extreme weather events, such as droughts and hurricanes.

Only two of the resources we examined had more than five sentences about the growing challenge of access to fresh drinking water. About half ignored the issue altogether. And when materials did explore the impacts of climate change, they often portrayed these problems as quite distant – for example, affecting Alaska and northern Canada but not the mainland U.S.

Although many of the most severe impacts of climate change have been outside the mainland U.S., in our view it's important for young people to recognize the current shifts closer to home—such as more frequent floods. Some materials in our study elaborated on how such impacts could affect us, but many provided only vague information about these topics.

## **Potential responses**

The last thing we found is that the materials in our study focused almost entirely on mitigation strategies, such as energy conservation. This is significant because the Intergovernmental Panel on Climate Change and other leading scientific organizations agree that addressing global warming and its impacts will also require adaptation – and perhaps geoengineering.

Since [adaptation strategies](#), such as modifying land use and developing drought-resistant crops, will be helpful for coping with the impacts described above, we believe school materials should explore these ideas.

However, many materials focused only on individual responses – such as turning off lights and driving less – instead of collective or policy responses. Social studies materials more frequently highlighted the need for government action, but we are concerned about how much exposure students get to policy solutions when they are in science class.

As the Intergovernmental Panel on Climate Change and other leading scientists have made clear, society needs to take [substantial action](#) to prevent the worst consequences of climate change.

It's true that some states are working to improve climate change education and to convey the seriousness of the issue to young people. For instance, as part of a major [climate](#) science initiative in Washington state, approximately US\$1 million is being awarded through competitive grants to nonprofit community-based organizations to work with school districts "to [build student understanding and problem solving](#) around local environmental challenges." And researchers at Indiana University are training teachers in the "[science of climate change](#) and its predicted [impact](#) on the state."

It will take these kinds of efforts and more to prepare young people for future challenges. There's still time, but educators must make sure that curricular materials communicate what scientists have been saying for well over a decade now – that is, humans are responsible for [climate change](#), the impacts will be serious, and we need to respond wisely.

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