



Climate Change Sparks Battles in Classroom

The U.S. political debate over climate change is seeping into K–12 science classrooms, and teachers are feeling the heat

THIS SPRING, WHEN THE SCIENCE DEPARTMENT of Los Alamitos High School in southern California proposed an advanced class in environmental science, members of the elected school board for the small district in Orange County thought the course was a great idea. Then they read the syllabus and saw a mention of climate change.

The topic, the board decided, is a “controversial issue.” Its next step was a new policy requiring teachers to explain to the school board how they are handling such topics in class in a “balanced” fashion. And the new environmental science course, which starts this fall, will be the first affected.

Local teachers immediately deplored the board’s actions. “It’s very difficult when we, as science teachers, are just trying to present scientific *facts*,” says Kathryn Currie, head of the high school’s science department. And science educators around the country say such attacks are becoming all too familiar. They see climate science now joining evolution as an inviting target for those who accuse “liberal” teachers of forcing their “beliefs” upon a captive audience of impressionable children.

“Evolution is still the big one, but climate change is catching up,” says Roberta Johnson, executive director of the National Earth Sci-

ence Teachers Association (NESTA) in Boulder, Colorado. An informal survey this spring of 800 NESTA members (see word cloud) found that climate change was second only to evolution in triggering protests from parents and school administrators. One teacher reported being told by school administra-



Hot topic. Teachers can bone up on climate science in workshops and classes.

Growth potential. Students gather acorns for a middle school science project.

tors not to teach climate change after a parent threatened to come to class and make a scene. Online message boards for science teachers tell similar tales.

Unlike those biology teachers who have borne the brunt of the century-long assault on evolution, however, today’s earth science teachers won’t have the protection of the First Amendment’s language about religion if climate change deniers decide to take their cause to court. But the teachers feel their arguments are equally compelling: Science courses should reflect the best scientific knowledge of the day, and offering opposing views amounts to teaching poor science.

Most science teachers don’t relish having to engage this latest threat to their profession. “They want to teach the science,” says Susan Buhr, education director at the Cooperative Institute for Research in Environmental Sciences (CIRES) in Boulder. “They’re struggling to be on top of the science in the first place.”

CIRES and NESTA offer workshops and online resources for educators seeking more information on climate change. But teachers also say that they resent devoting any of their precious classroom time to a discussion of an alleged “controversy.” And they believe that politics has no place in a science classroom.

Even so, some are being dragged against their will into a conflict they fear could turn ugly. “There seems to be a lynch-mob hate against any teacher trying to teach climate change,” says Andrew Milbauer, an environmental sciences teacher at Conserve School, a private boarding school in Land O’ Lakes, Wisconsin.

Milbauer felt that wrath after receiving an invitation to participate in a public debate about climate change. The event, put on last year by Tea Party activists, proposed to pit high school teachers against professors and climate change deniers David Legates and Willie Soon in front of students from 200 high schools. Organizers said the format was designed “to expand knowledge of the global warming debate to the youth of our state.” When Milbauer and his colleagues declined to participate, organizer Kim Simac complained to the local papers about their “suspicious” behavior. Milbauer corresponded for a time on the organization’s blog until Simac wrote that Milbauer, “in his role as science teacher, is passing on to our youth this monstrous hoax as being the gospel truth.”

Milbauer regards the episode as an unfor-

tunate but telling example of misguided science and uses it in class discussions. “I explain this is the trap the [other side] is building,” he says.

Some teachers would disagree, however. In comments in the NESTA survey, a handful of teachers called climate change “just a theory like evolution” or said they firmly believed that opposing views should be presented with equal weight.

Sowing confusion

Given the ongoing and noisy national debate over climate change, it’s not surprising that those disagreements are seeping into K–12 schools, too. Science educators are scrambling to figure out how to deliver top-quality instruction without being sucked into the maelstrom. The issue is acute in Louisiana, which enacted a law in 2008 that lists climate change along with evolution as “controversial” subjects that teachers and students alike can challenge in the classroom without fear of reprisal.

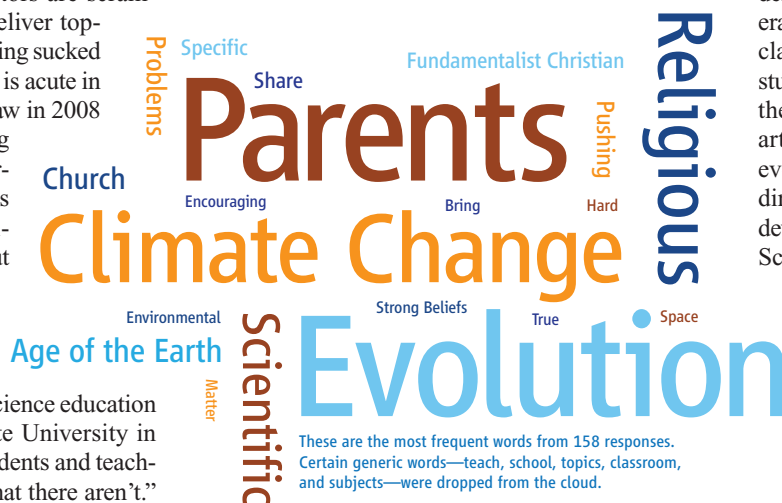
When a state law suggests that established scientific theories are controversial, says Ian Binns, a science education researcher at Louisiana State University in Baton Rouge, “it tells our students and teachers that there are problems that there aren’t.” That ambiguity, he and others fear, can distort a student’s understanding of the nature of scientific inquiry. “Science is not about providing balance to every viewpoint that’s out there,” says Joshua Rosenau of the National Center for Science Education, a nonprofit organization in Oakland, California, that has begun to monitor controversies regarding climate change in addition to battles over evolution. To Rosenau, staging debates over science in schools or on the floors of Congress “is madness.”

In Los Alamitos, the course will follow the curriculum laid out by the nonprofit College Board for its Advanced Placement (AP) course in environmental science, which presents the scientific evidence for climate change. This curriculum, which prepares students to take an end-of-year test for college credit, is what irritated Jeffrey Barke, a Los Alamitos school board member and physician who led the push to revise the district’s policies after learning about the course. Barke has spoken publicly about his concern that “liberal faculty” members would use the course to present global warming as “dogma.”

Science department head Currie criticizes the board’s new policy and feels that it may

confuse students when they answer multiple-choice questions relating to climate change on the final AP exam. “When a kid comes across that on the AP test, what are they supposed to bubble?” she asks. “The fact, or [Barke’s] belief that it’s not a fact?” The school board, however, has said that the new policy is simply a way to prevent political bias from entering the classroom.

Currie and her colleagues are spending the summer working up a lesson plan for the new course, but she isn’t sure what will satisfy the board. “I’m going to fight for scientific facts being presented in the classroom,” she says. “I want to keep politics out.”



A hotter climate? The phrase “climate change” came up often when NESTA asked its teacher members what classroom concepts trigger outside concerns.

Arming for battle

The extent to which politics is affecting geoscience courses around the country is hard to measure, Rosenau says: “Just like with evolution, it’s difficult to know what a given teacher in a given classroom is teaching.”

To improve the quality of that instruction, both CIRES and NESTA are trying to put up-to-date, data-rich climate science materials into the hands of teachers and students to supplement textbooks. They’re not the only ones; even government agencies such as the National Oceanic and Atmospheric Administration, spurred by language in the 2007 America COMPETES Act about their role in improving science education, have beefed up their teacher training programs.

But it’s not enough to say that “you just need to teach people more,” Rosenau says. Teachers also have to learn how to defend themselves against parents or administrators wearing “ideological blinders,” he says. CIRES has analyzed the strategies that teachers used in the creationism debates and repurposed them for discussions about climate change. That includes citing state science standards—30 states include climate science in their description of what should be taught—and enlisting the support of administrators before tackling the subject in class.

Those who have taught geoscience or environmental science may feel more confident than colleagues who teach general physical science in managing a classroom discussion. Parents and students trying to poke holes in what they are being taught often “can’t articulate what the opposing view even is,” says Karen Lionberger, director of curriculum and content development for AP Environmental Science in Duluth, Georgia.

Of course, some attacks on climate change come from well-heeled sources. In 2009, the Heartland Institute, which has received significant funding from Exxon-Mobil, expanded its audience beyond teachers and students with a pamphlet, called *The Skeptic’s Handbook*, mailed to the presidents of the country’s 14,000 public school boards.

Heartland Institute senior fellow James Taylor, who sent out the pamphlet, says the underlying message is that educators need “to understand that there is quite a bit that remains to be learned” about climate change. Taylor also applauds the actions of the Los Alamitos school board, saying that “if the science is unsettled on any topic, of course you should present all points of view.”

The AP course itself doesn’t take a position on the issue, Lionberger says. The handful of multiple-choice questions on the final exam relating to climate change are not “slanted in any way,” she says, and none explicitly asks whether climate change is occurring. But because AP courses can be taken for college credit, she says, “we’re going to follow what colleges and universities are doing” by teaching students about the factors that contribute to climate change and its effects on the planet. Although researchers are always adding to that pool of knowledge, she says “for now, we will fall on the side of consensus science.”

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