

Setbacks aside, climate change finds its way into the world's classrooms

LONDON

Many nations are making global warming part of the school curriculum

BY BETH GARDINER

From Mauritius to Manitoba, climate change is slowly moving from the headlines to the classroom. Schools around the world are beginning to tackle the difficult issue of global warming, teaching students how the planet is changing and encouraging them to think about what they can do to help slow that process.

Strapped school budgets, concerns about overburdening teachers and political opposition to what in some places is a contentious subject have complicated the spread of lessons on climate change. Nonetheless, many nations are adding or expanding such offerings, convinced that young people must learn about a phenomenon likely to have a big impact on their lives.

Schools, advocates say, can play an important role in fighting climate change by teaching young people greener habits and creating a generation of voters who will back measures to cut carbon dioxide pollution.

To slow dangerous warming, "we need an overall change of mind and a change of action that relates to everything that we think and do," said Alexander Leicht, of Unesco, the agency overseeing the United Nations Decade

of Education for Sustainable Development, which ends this year.

"We need every individual's understanding to do something about that, every individual's motivation," he said. "How else do you reach them than through education?"

Not everyone agrees, however, and in some places the question of how and whether to teach the subject is politically charged. Britain's education secretary has zigzagged, with changes that environmental advocates say will reduce climate's prominence in the national curriculum there.

In the United States, new science standards drawn up by 26 states and scientists' and teachers' groups call for introducing climate change to students in middle school and exploring it in greater detail in high school. That has stirred opposition in states like Wyoming, a coal and oil producer. Lawmakers there last month blocked funding for the standards, saying teaching climate change could hurt the local economy.

"A lot of science teachers essentially say, 'This doesn't feel like a very safe topic to teach. The science is conceptually difficult, and it's controversial. I might get complaints from parents and it's not part of my current curriculum, and so I'm not going to take it on,'" said Charles Anderson, a professor of teacher education at Michigan State University, who advised on the new standards.

Still, in other countries the subject is less contentious. Irish schools, for example, cover climate change as part of a broad theme known as education for sus-

tainable development, addressing social and environmental problems ranging from poverty to dwindling biodiversity.

While officials are only now formulating a national strategy, many schools have been offering such lessons for years, said Tony Gaynor, a curriculum and assessment officer at Ireland's Department of Education and Skills.

"There's a lot going on out there, and there's an awful lot of enthusiasm and passion in the sector," he said.

The subject fits well with Ireland's effort to move away from rote learning and toward developing students' analytic and critical thinking skills, he noted. "Sustainable development is an area where there are complex issues that need to be teased out and challenged."

That comes with "a much more participatory, democratic approach where students are identifying problems that need to be solved, and students are doing their own research on how to solve the problems," he said.

That is true, too, in island nations such as Cuba, Indonesia, Mauritius, and Trinidad and Tobago. As part of a Unesco effort called Sandwatch, students visit beaches to measure their width, analyze wave direction, collect water samples, assess wildlife and gather other data.

Getting children outdoors helps even the very young to appreciate nature, Mr. Leicht, of Unesco, said.

"The challenge is not to make it too threatening, but to make kids understand the value of what is being lost if climate change continues," he said.

Encouraging young people to think

about solutions is key to successfully discussing what can be an upsetting topic, said Annie Gregory, a program officer in Ahmedabad for India's Center for Environment Education.

"You can't go to very young kids and show them the Arctic melting and all this doom and gloom," she said. "With all the negativity and all the technical information, they can really get bogged down."

Instead, working with 200,000 schools, the government-backed center is using an approach suggested by a student, talking about the "handprint" of

The challenge is "to make kids understand the value of what is being lost if climate change continues."

individuals' beneficial actions, rather than the harm suggested by an environmental footprint.

Focusing on tangible actions, like repairing faucets to save water, is also important, said Ms. Gregory.

"You say to the kids, 'Look there's a problem here, how do we fix it?' Then you can use math, you can use language, you can use science, geography, you can use history," said Brid Connely, international director for eco-schools at the Foundation for Environmental Education, an independent nonprofit in Copenhagen.

All Indian schools are required to offer environmental education, but many struggle to provide even basic skills and

conveying the complexities of climate science can be difficult, said Sukhprit Kaur, a coordinator in Bangalore for the environment education center.

Such constraints exist in wealthier nations, too. In the United States, the new science recommendations follow a tough Common Core of English and math skills that many states are still straining to teach.

"The number of students who will not get education on climate change because of the financial and lack of adequate curriculum and teacher training issues is much larger than the number who will not get education on climate change because somebody in the legislature opposes it," Mr. Anderson of Michigan State said.

Globally, teachers "understand that the topic is very important, and they are eager" to teach it, said Ingrid Jung, coordinator of an international sustainability education project at the German development agency GIZ.

Unesco has been involved in such efforts, assisting, for example, with a program intended to reach 67,000 teachers in Vietnam, and working on smaller training programs in nations including Brazil, Mongolia, Namibia, the Philippines and South Africa, Mr. Leicht said.

Some nations teach climate in science classes and others in geography, while others again integrate the idea of sustainability across a range of subjects. China has included sustainability education in its outline for school reform, and Japan has written it into curriculum guidelines, according to Unesco.

Sometimes, educators focus on making schools themselves more environmentally friendly, so pupils can experience life in an institution with a slimmed-down carbon footprint, said Thomas Hoffman, a secondary school teacher who also helps develop sustainability curricula in southwestern Germany.

Such initiatives may rile critics. In Britain, the Global Warming Policy Foundation, an organization of climate change skeptics, has accused schools of brainwashing students with political indoctrination similar to that in Mao Zedong's China.

"The education system, subverted by a green political movement, now seeks conformity with environmentalist orthodoxy," the foundation warned in a report this month. Politicians, it said, are "effectively handing much of the curriculum to green activists."

Britain's education secretary, Michael Gove, partly reversed course last year after scaling back coverage of climate change in a draft version of a national curriculum taking effect in September. Still, the amended version would give less emphasis to the subject than the current curriculum, frustrating advocates like Esha Marwaha, a 17-year-old Londoner whose online petition urging a strong climate emphasis drew 31,000 signatures.

"For me education has been something that's opened my eyes completely to everything around me," she said. Of her climate activism, she added: "I wouldn't have done it had it not been for my classroom experiences."