



naaee

North American Association
for Environmental Education

The State of Climate Change Education

Findings from a National Survey of Educators

October 2022

Methodology

- National Survey of K-12 Public School Educators (n=812)
 - 707 Teachers
 - 105 School/District/State Administrators
- Data collected August 8-27, 2022
- Recruited through an online non-probability sample. To ensure the survey is representative, quotas were set control for sample distributions by key demographics, geography, school type, grade levels and subjects taught, etc.)



Teacher Setting & Subject (multi-select accepted)	N Size
Elementary	266
Middle School	258
High School	304
Science	219
Math	297
Social Studies/History	269
English/Language Arts	354
Foreign language	35
Health/Physical Education	49
Electives (e.g., art, music, drama)	92
Other (please specify)	35

Administrator Type	N Size
Principal, Assistant Principal, or other school administrator	40
District Superintendent, Assistant Superintendent, Curriculum Director, or other district administrator	49
Chief State School Officer, Deputy/Associate Commission, or other administrator at State Education Association	16

The background is a gradient of blue colors, ranging from light to dark. It features several overlapping geometric shapes: a large, semi-transparent circle on the left, a large, semi-transparent circle on the right, and a large, semi-transparent triangle pointing downwards from the top center. A thick, dark blue arc is positioned across the middle of the image, partially overlapping the circles and the triangle. The text "Executive Summary" is centered in the middle of the image, overlaid on the dark blue arc.

Executive Summary

Top 5 Key Take-Aways

1. Teachers are concerned about and want to teach climate change. Their students bring it up, and some express real anxiety.
2. Yet schools and districts have not made it a priority. Educators point to lack of formal curriculum, lack of preparation and resources, an unclear mandate, and content relegated to middle grades science. All of these lead to a recipe for low ratings for climate education in US public schools.
3. This is exacerbated by a confidence gap on the teacher side and fear of addressing the topic on the administrator side.
4. Signals from the top matter. The data shows that when teachers believe their district and state supports teaching climate change as real and human caused, they are more likely to feel prepared and teach the topic.
5. Inclusion in the formal curriculum, access to resources, professional development are needed. Teachers want resources that are current, focus on students' futures, resilience, and solutions.

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Mindset on Climate Change

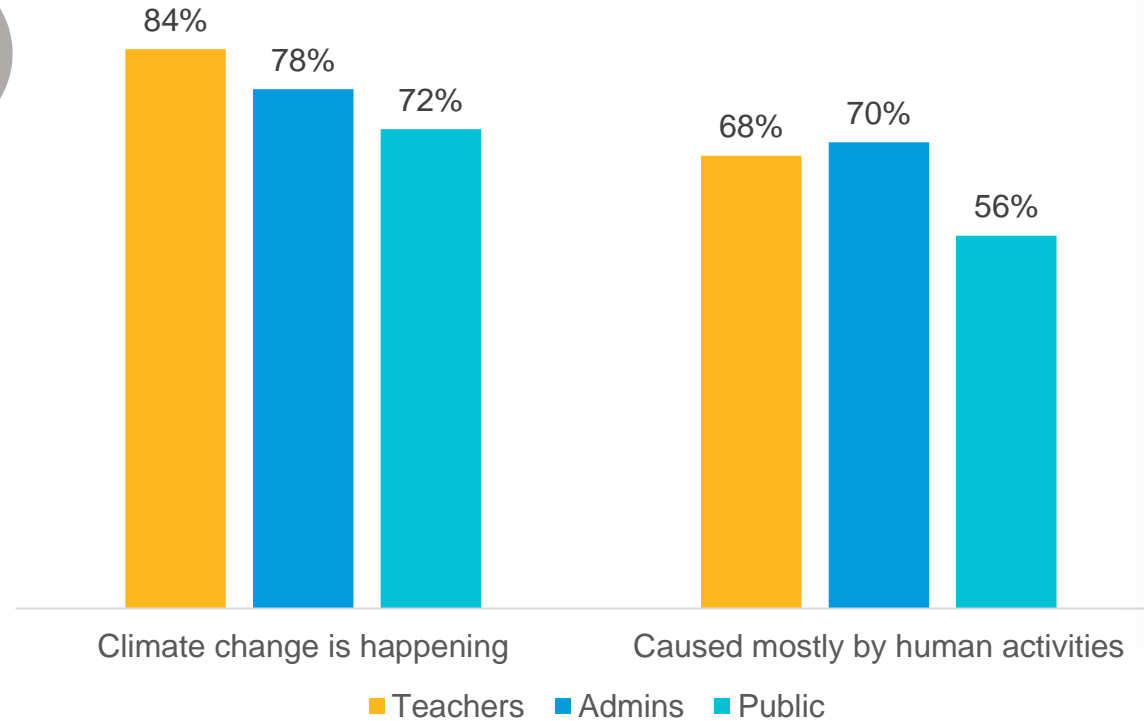
Educators Are Invested in the Issue

Most educators believe climate change is happening because of human activities, say the issue is of personal importance, and worry about the impact on themselves and future generations.

Issue Is Very Important to You Personally:
68% Teachers,
80% Admins



Climate Change Perceptions



Teachers Believe Climate Change Will Harm:

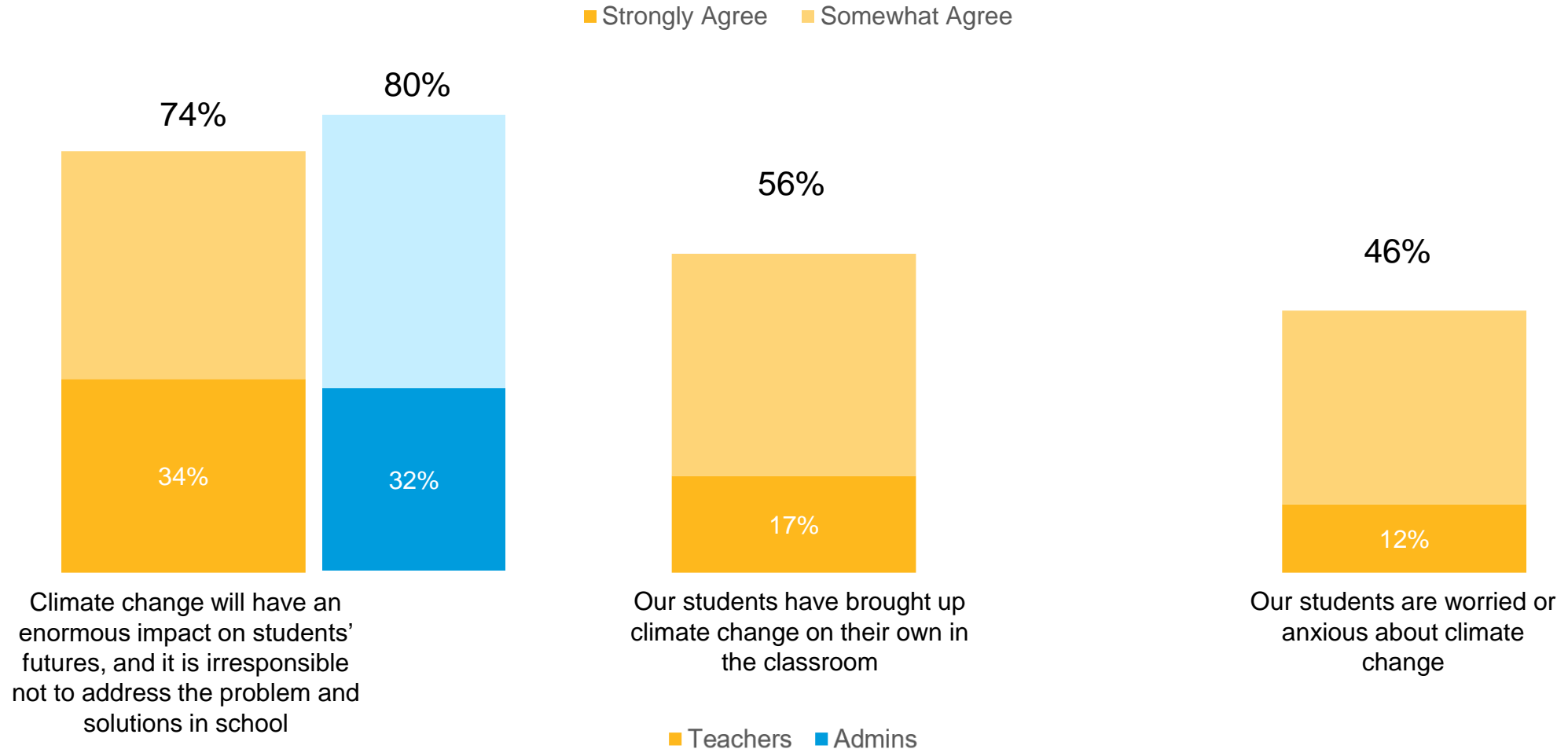
Them Personally:
66% say at least a moderate amount

Their Community:
61% say at least a moderate amount,
17% say already is

Future Generations:
82% say at least a moderate amount

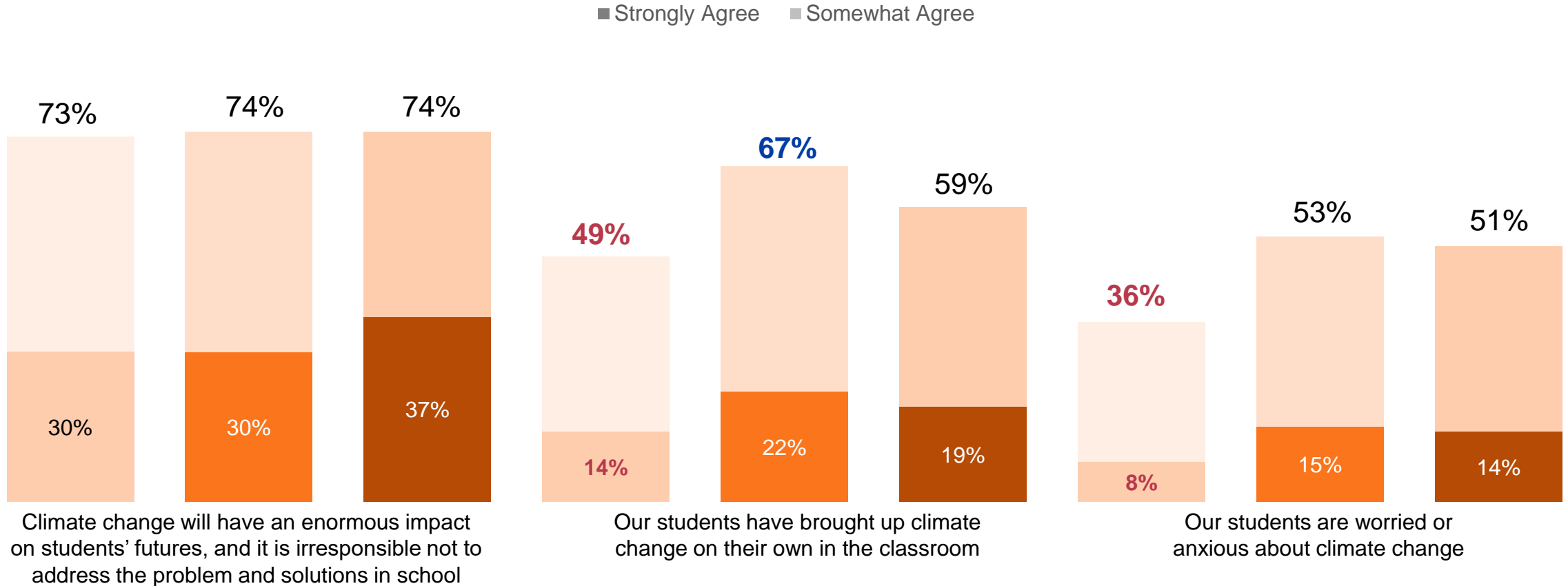
Teachers Say There Is a Responsibility to Teach About Climate Change; Administrators Agree

A majority report that students bring up climate change on their own and many are anxious about it.



Teacher Concerns

Teachers across the developmental spectrum agree climate change should be addressed in education. While Middle and High School teachers see more student concern, nearly half of elementary teachers say students raise the issue in class.



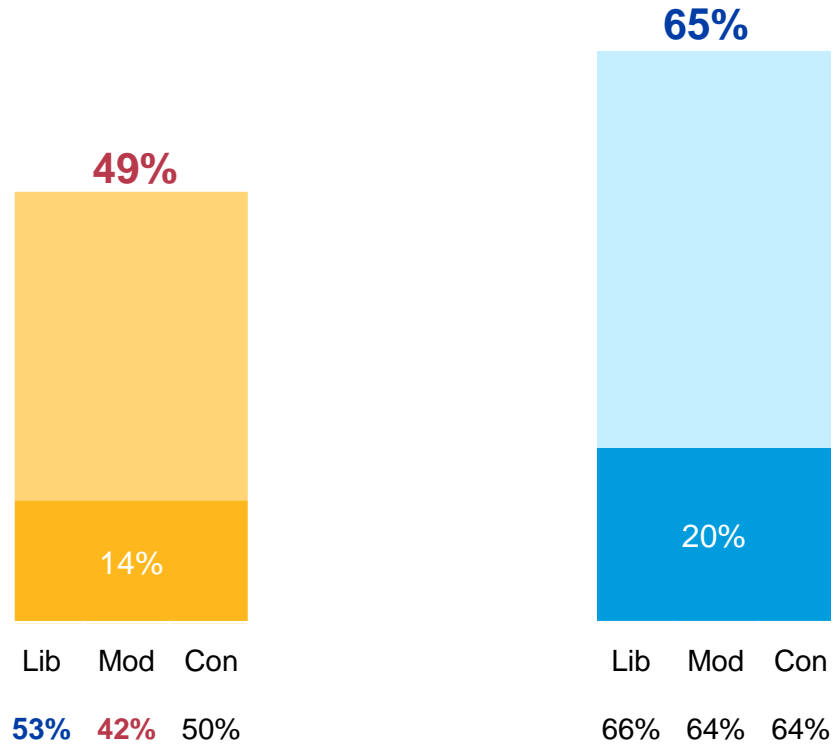
Administrators Worry About Politics and Parents

Teachers' sense of responsibility and assessment of student interest and concern about climate change outweigh concern about the politics. Administrators are far more concerned.

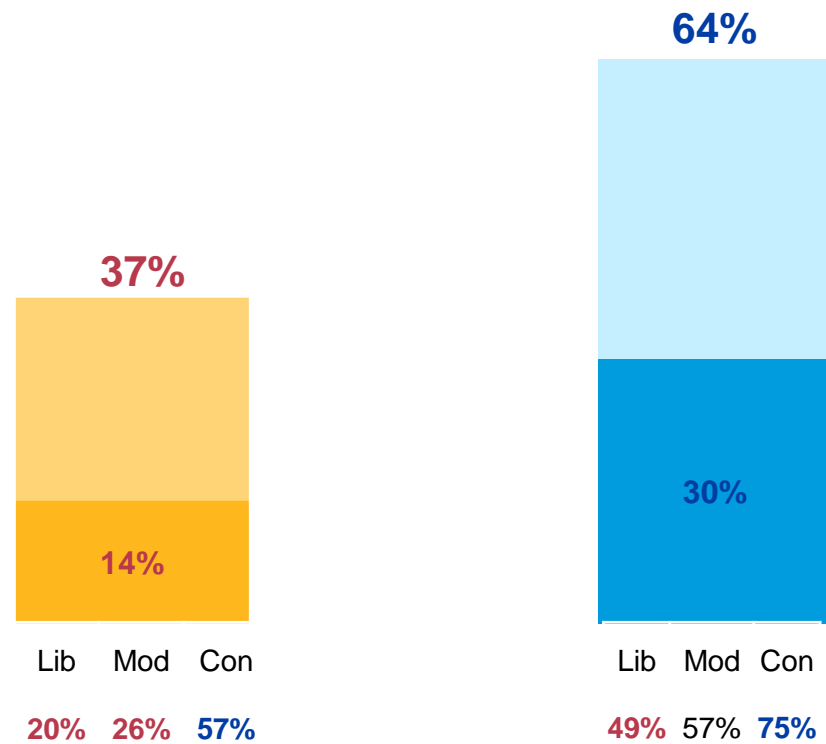
Educators' own political views correlate with their view on whether climate should be taught.

I worry about parent complaints when it comes to teaching climate change

Strongly Agree Somewhat Agree



Climate change is a political issue that does not belong in the classroom

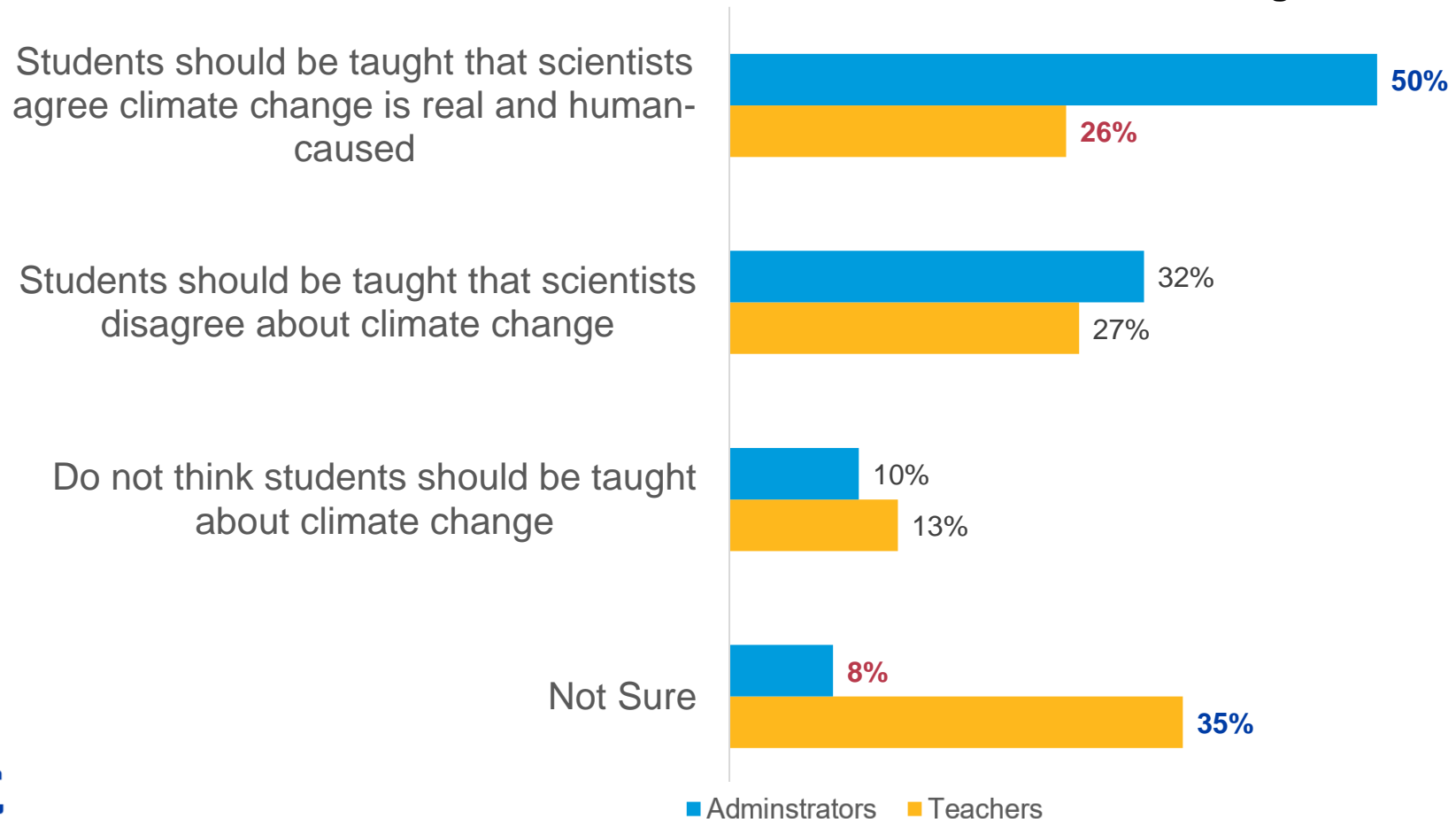


Teachers Admins

Educators Are Unclear on Parent Support for Climate Education

Only half of Administrators and just a quarter of Teachers think parents support teaching the scientific consensus that climate change is real and human-caused.

Beliefs About What Parents Think Should be Taught



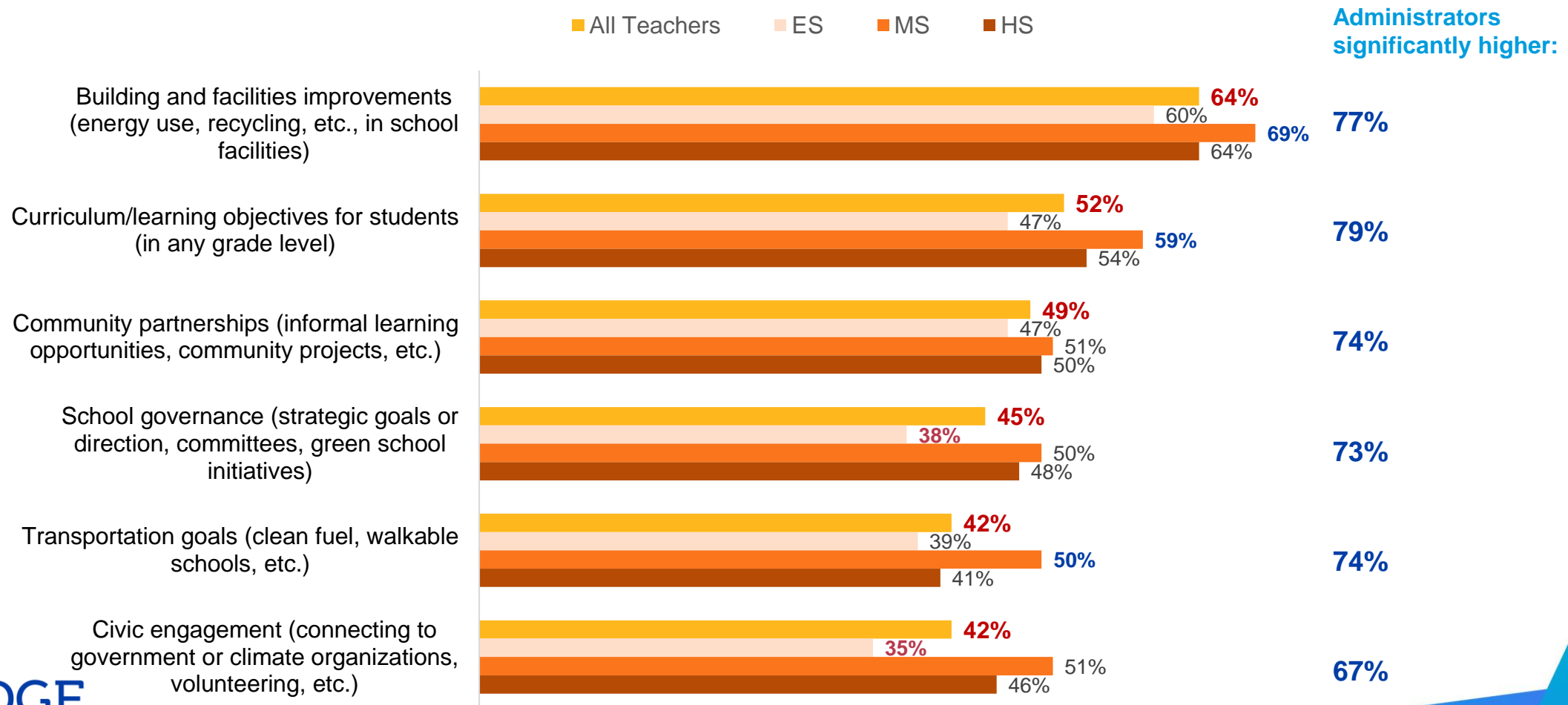
The background is a vibrant blue gradient with abstract geometric shapes. A large, dark blue circle is partially visible on the left side. A thick, dark blue curved line sweeps across the middle of the image. In the upper right, there are several overlapping triangular and polygonal shapes in various shades of blue and cyan. The overall composition is modern and dynamic.

Climate Change Education Policy

A majority of administrators report formal goals for addressing climate change in their school systems.

Majorities of Teachers believe there are facility and curriculum policies, but far fewer say there are policies in other areas – they either don't believe they exist or are not sure.

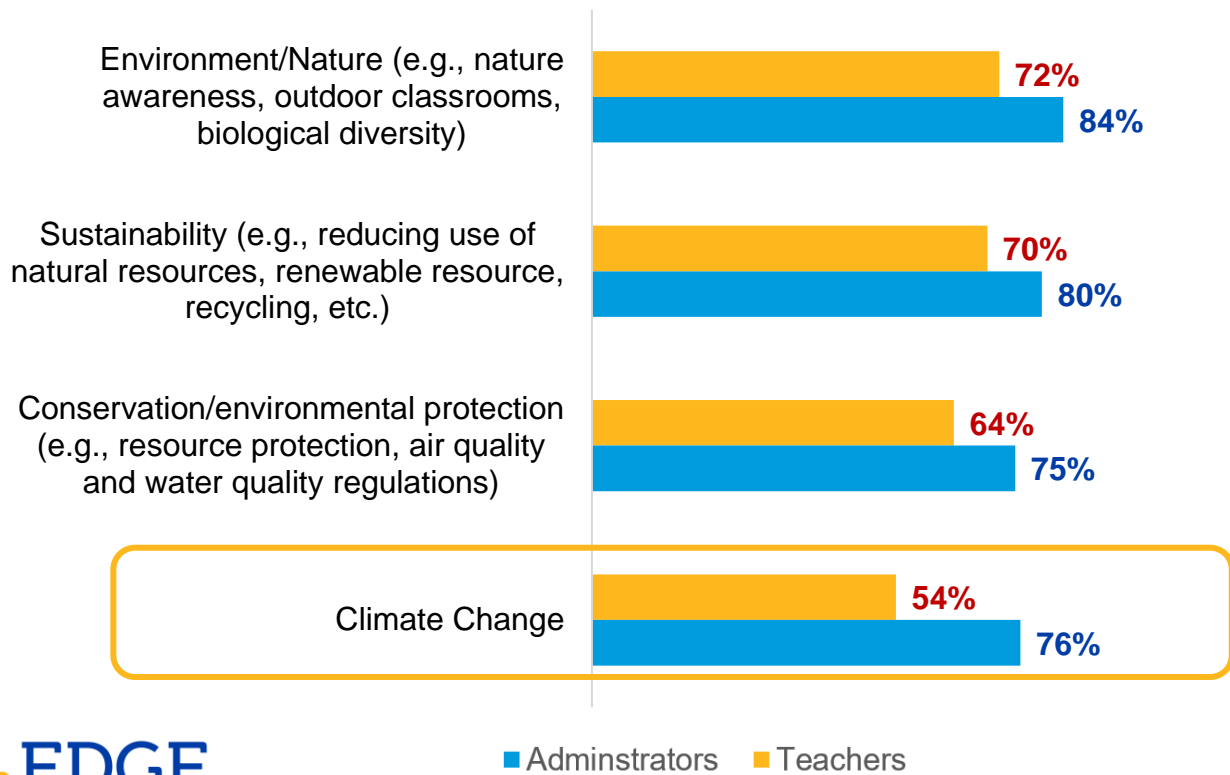
Have Formal Policies/Goals for Addressing Climate Change in the Following Areas...



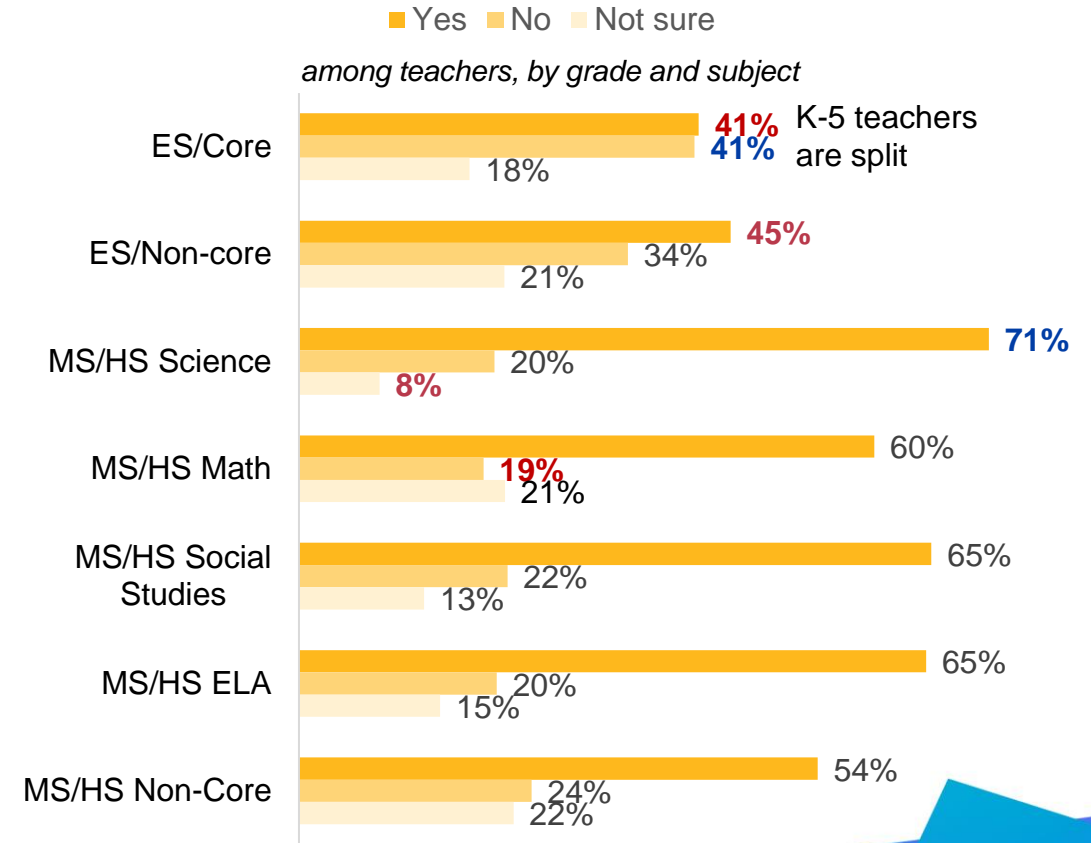
Climate Change is Least Likely to Be Thought of As Part of Formal Curriculum

While other aspects of sustainability and conservation are included only about half of teachers say climate change is part of their formal curriculum. There are differences in perceptions by grade band and subject and Administrators are higher.

Believe the Following Topics/Content are Included in Formal Curriculum

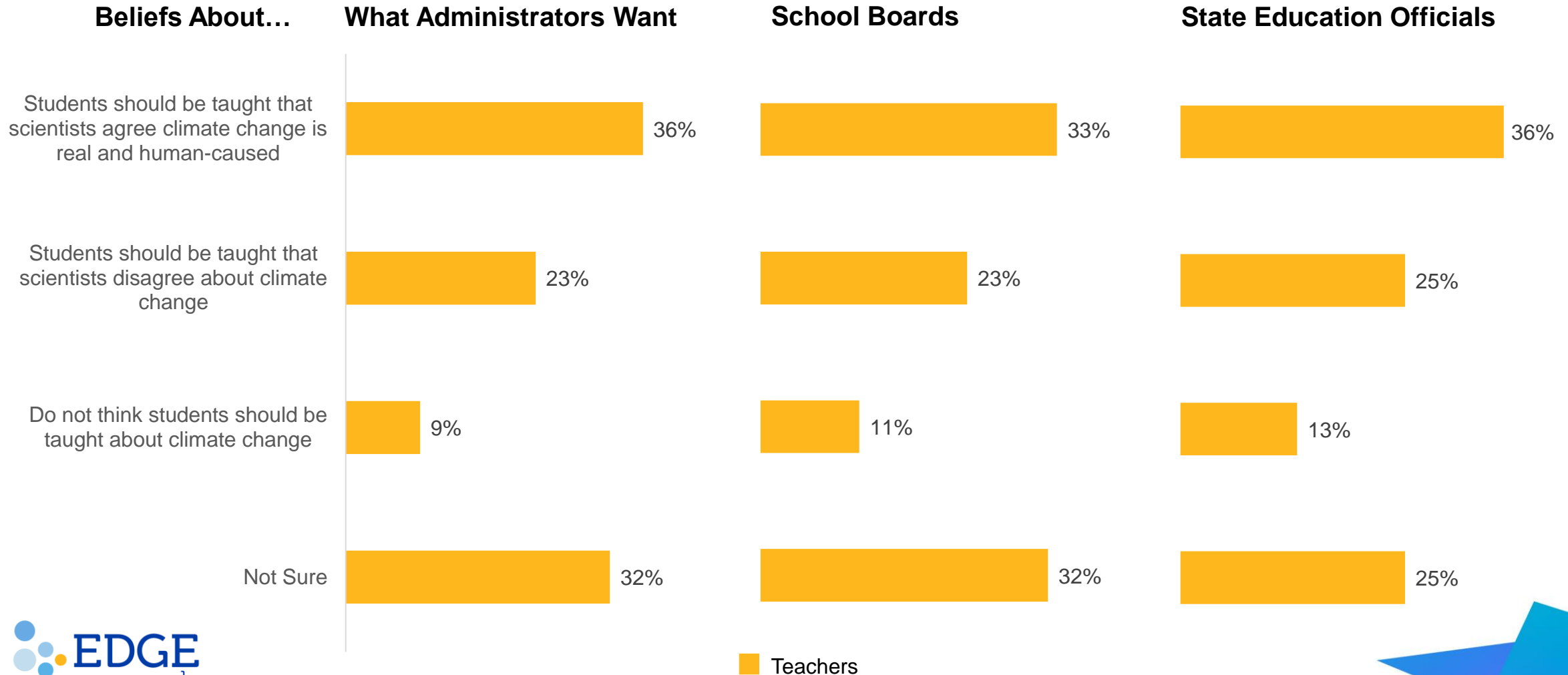


Is Climate Change Included in Formal Curriculum?



Teachers' Lack of Clarity on Climate in the Curriculum Is Coupled with Varying Perceptions on What Administrators Want Taught

Only a third think education officials want the scientific consensus taught.



What Should Be the Goal of Climate Change Education?

Most say to focus on it as a problem to be solved; things we can do

I think the goal should be trying to stop it now and prepare our youth to take care of these things so when they are in positions to do so they can prevent climate change from getting worse.

Goal should be to educate students that climate change is real by providing scientific research, studies. They should be aware of its consequences and what they can do to help fight climate change.

Some say to put it in the larger context of environmental stewardship

The climate change agenda in schools should be what we can do to not be wasteful because so many things can be repurposed not just for the environment, but to save money. We should teach resourcefulness.

Teaching kids to use sustainable products and strongly recycle, reduce, and reuse. Less plastic is better for the environment.

And a smaller number say to help them form their own views

I think the goal of climate change education should be to teach students about what climate change is and the factors that affect climate change. I think that it's important to give them all of the information and then let them decide what their opinion is on climate change and the possible impact that it could have on them, their community, and future generations.

Looking at the data, what has changed? Asking students to come up with their own explanations for why, the impact, and how to minimize the problem of climate change. The important thing is to use scientific data to support their learning.

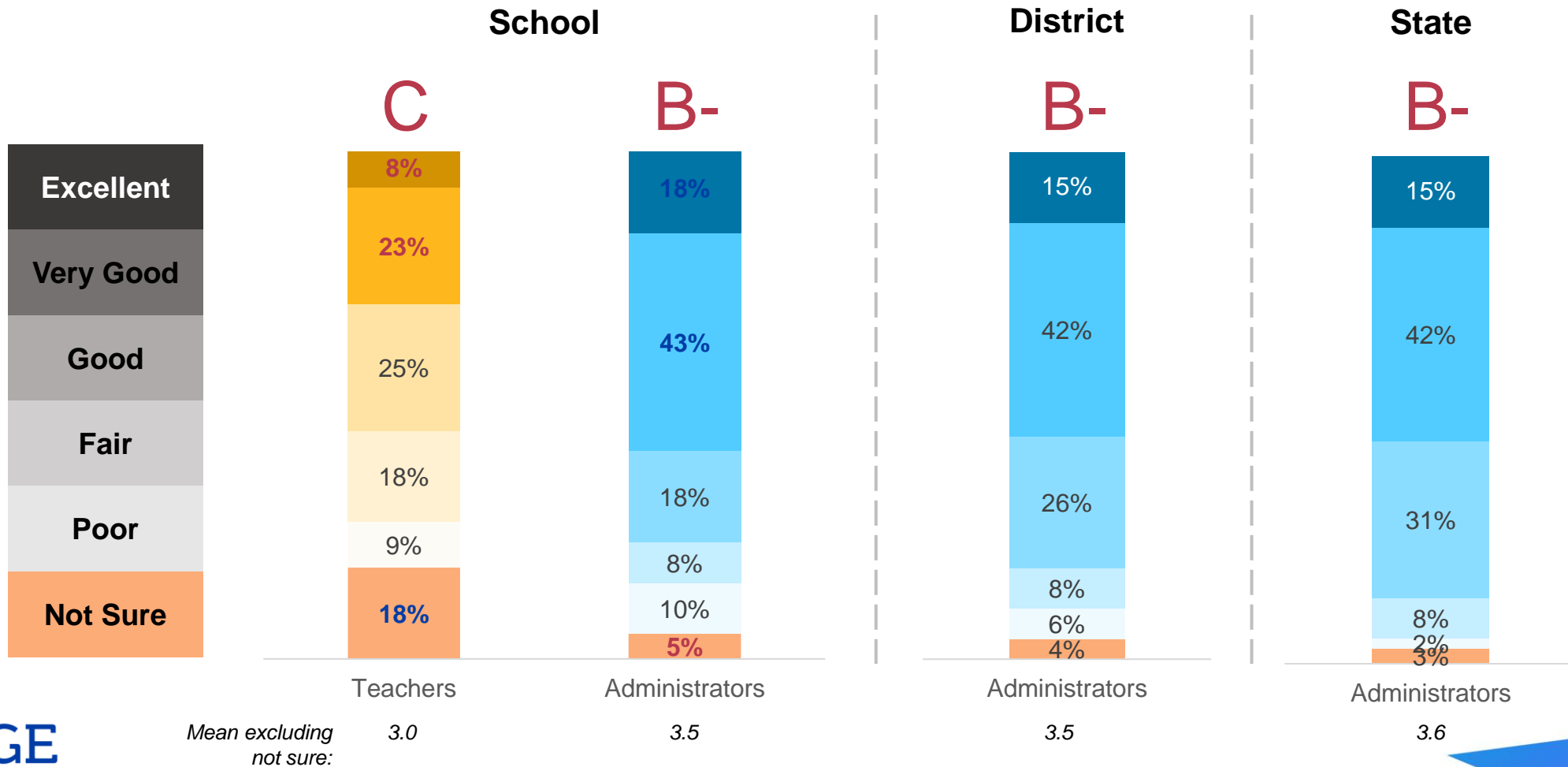
The background is a vibrant blue gradient with abstract geometric shapes, including a large circle on the left, a triangle at the top, and a thick blue line forming a partial circle at the bottom. The text is centered in a white, sans-serif font.

Climate Education Report Card

Climate Change Report Card

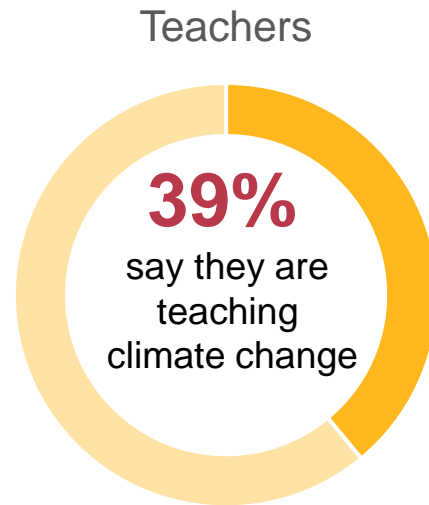
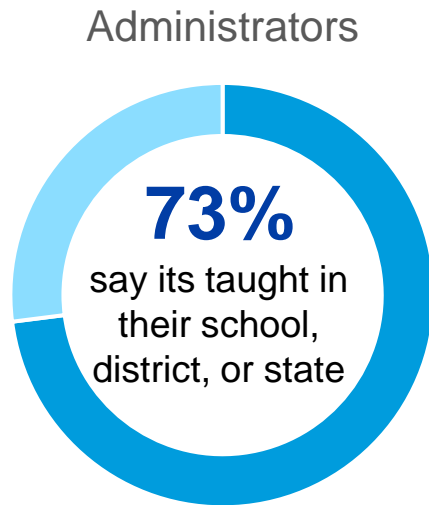
While few Administrators give an A for climate change content, they are more generous in their ratings than Teachers, who give their school on average about a C.

How Would You Rate the Climate Change Content in Your...



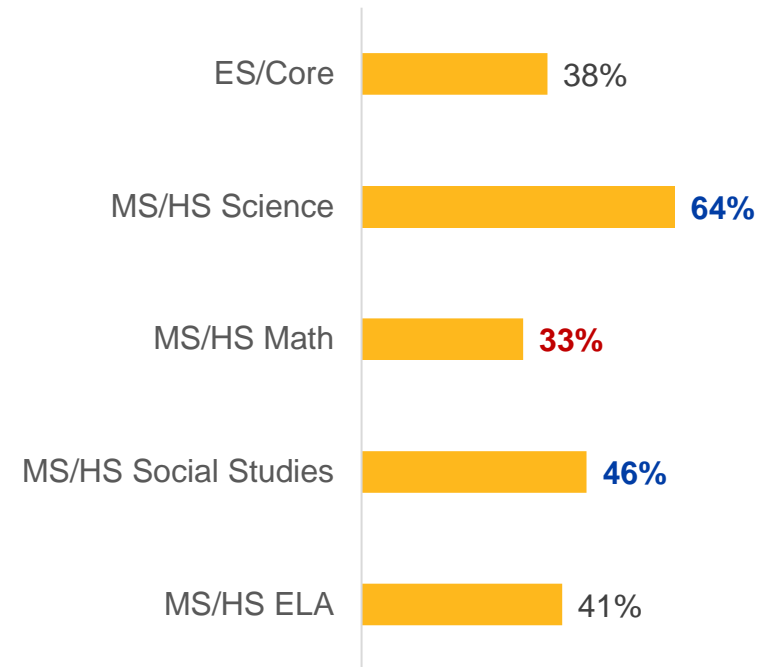
Teaching Climate Change Varies By Grade and Subject

Regardless of formal curriculum, 7-in-10 administrators say climate change is being taught in their school or district, but fewer than 4-in-10 Teachers say they are personally teaching it, and it's mostly Middle and High School science teachers.



Personally Teach About Climate Change

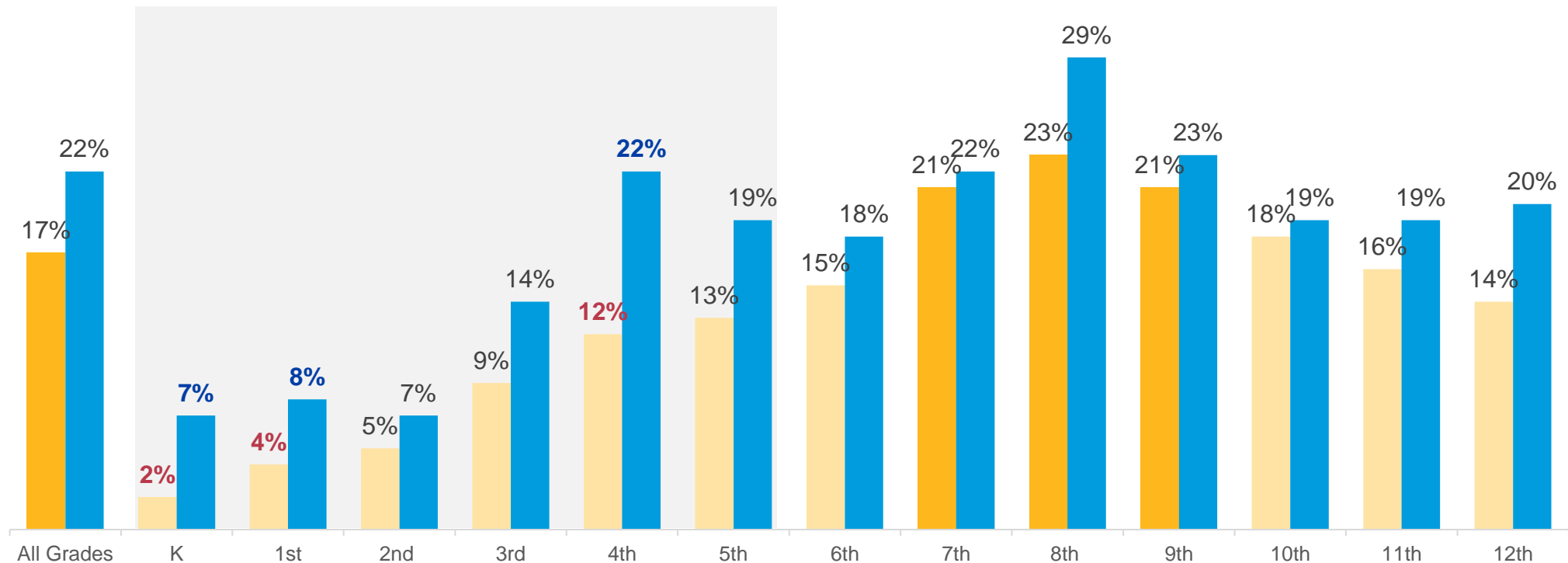
among teachers only



Climate Change Education, When Happening, Is Concentrated at the Middle and Early High School Grades, Leaving A Big Gap for Younger Students and Those About to Graduate

At the elementary school level, Teachers and Administrators have very different perceptions of what is happening on the ground.

Grades Climate Change Topics/Content Included in School/District



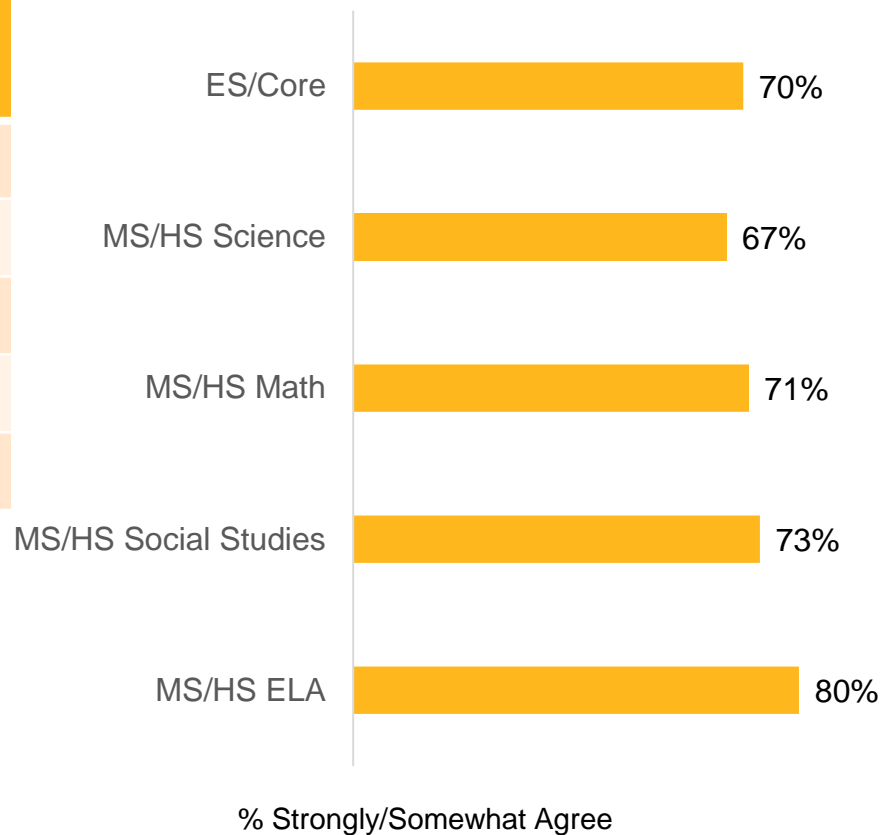
Teaching Climate Change Is Not Inter-Disciplinary

It is mostly happening in the Science classroom, but Teachers would like to see it integrated.

GRADE: School Integrates Climate Change Content Across Subjects <i>among teachers only</i>	
A	9%
B	18%
C	22%
D/F	36%
Not Sure	16%

Majorities in Each Subject/Grade Would Like Teaching About Climate Change Integrated Across Subjects

among teachers only

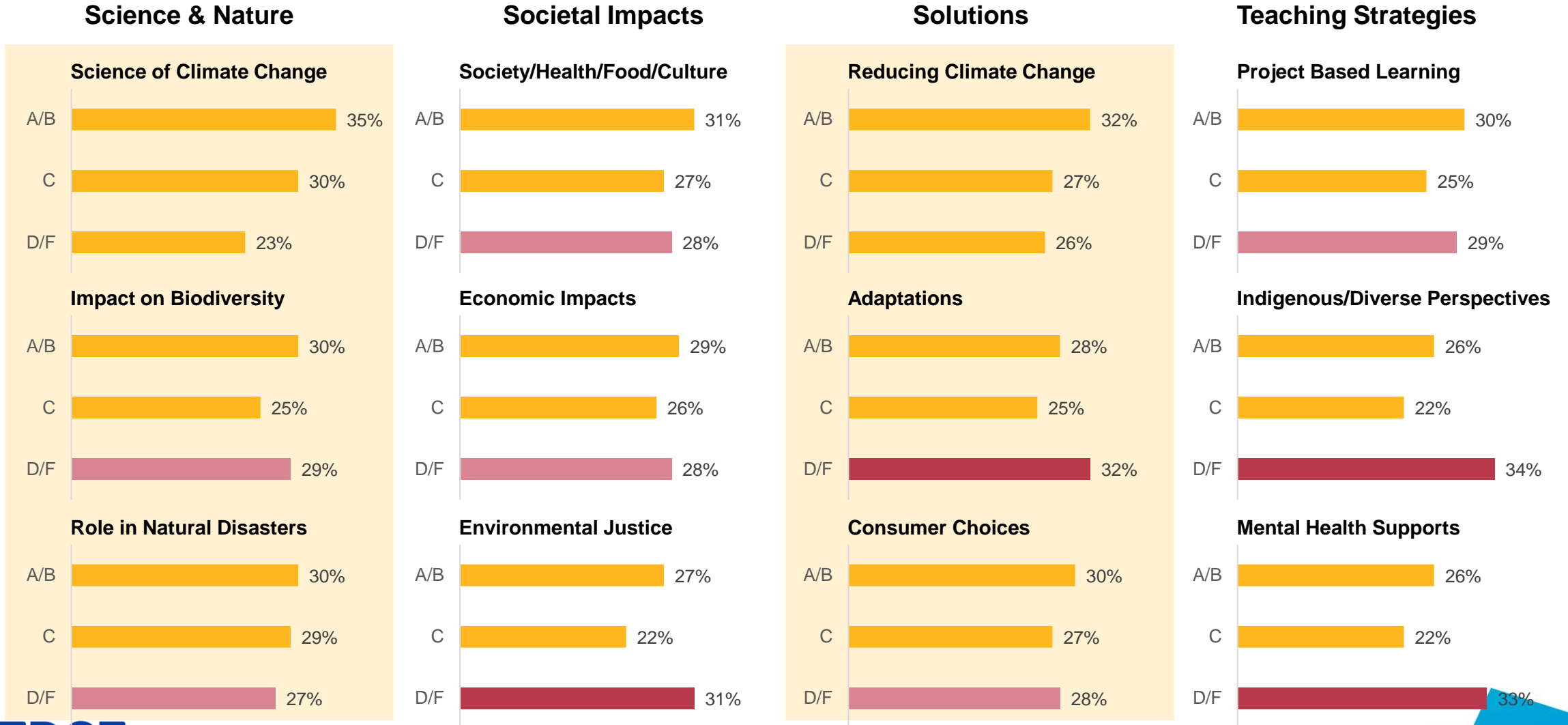


Subjects Where Climate Change is Taught

	Teachers	Administrators
General Science	54%	33%
Environmental Studies	49%	66%
Biology	26%	31%
Social Studies	25%	30%
ELA	13%	15%
US History	12%	15%
Chemistry	11%	9%
World History	10%	12%
US Government	9%	10%
Health/Phys. Ed.	8%	18%
Physics	6%	11%
Math	6%	10%
Art	5%	7%
Foreign language	2%	4%
Music	2%	3%
Theater	1%	5%
Other (specify)	2%	2%

Holistic Report Card: Teachers

Outside of the science and reducing causes, teachers are as or more likely to give a D/F as an A/B on all other aspects of teaching climate change in their schools.



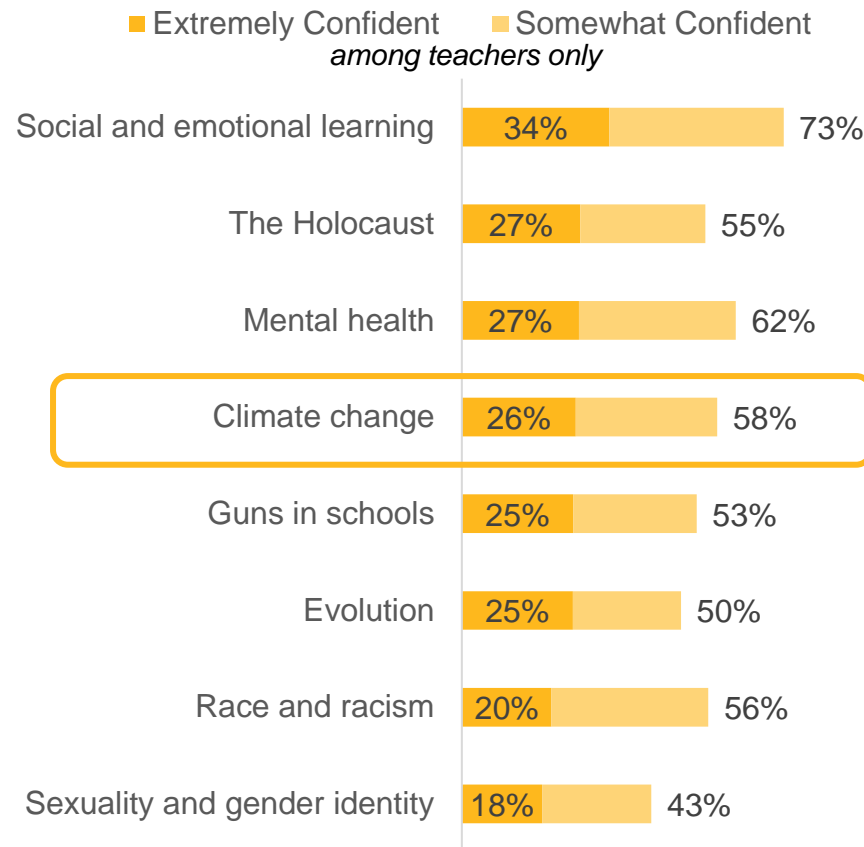
School ratings based only on Teacher responses. Teachers A/B Equal with D/E D/f Greater Than A/B

There is a Significant Confidence Gap

Few teachers feel extremely confident talking about climate change with students – it is on par with guns and mental health.

Only 21% of Teachers feel “very informed” about climate change

Confidence Addressing the Following Topics with Students



% Extremely/Somewhat Confident

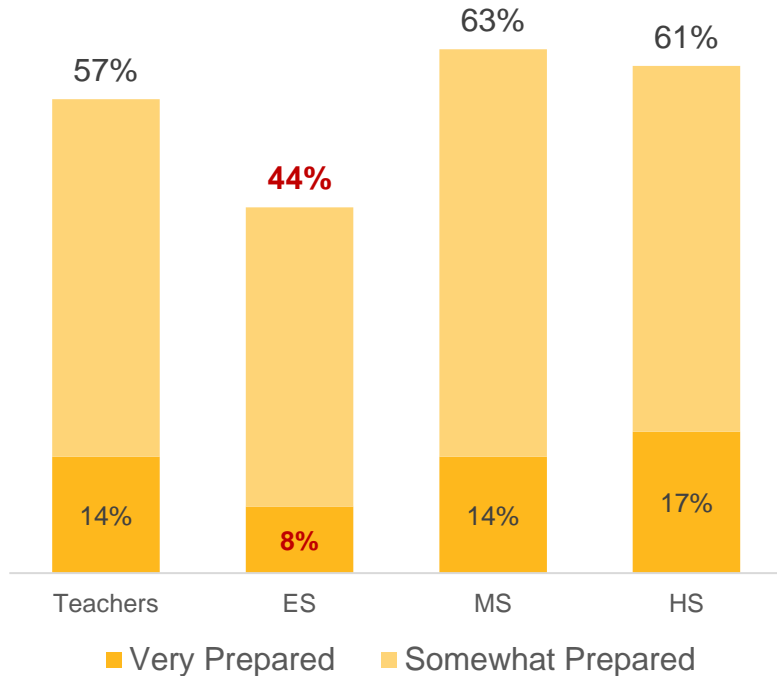
Most Confident	
Urban Teachers	73%
Teach AP	72%
MS/HS Science	71%
<10 Years in Education	67%

Least Confident	
Elementary Teachers	47%
Suburban	47%

As Well As A Preparedness Gap

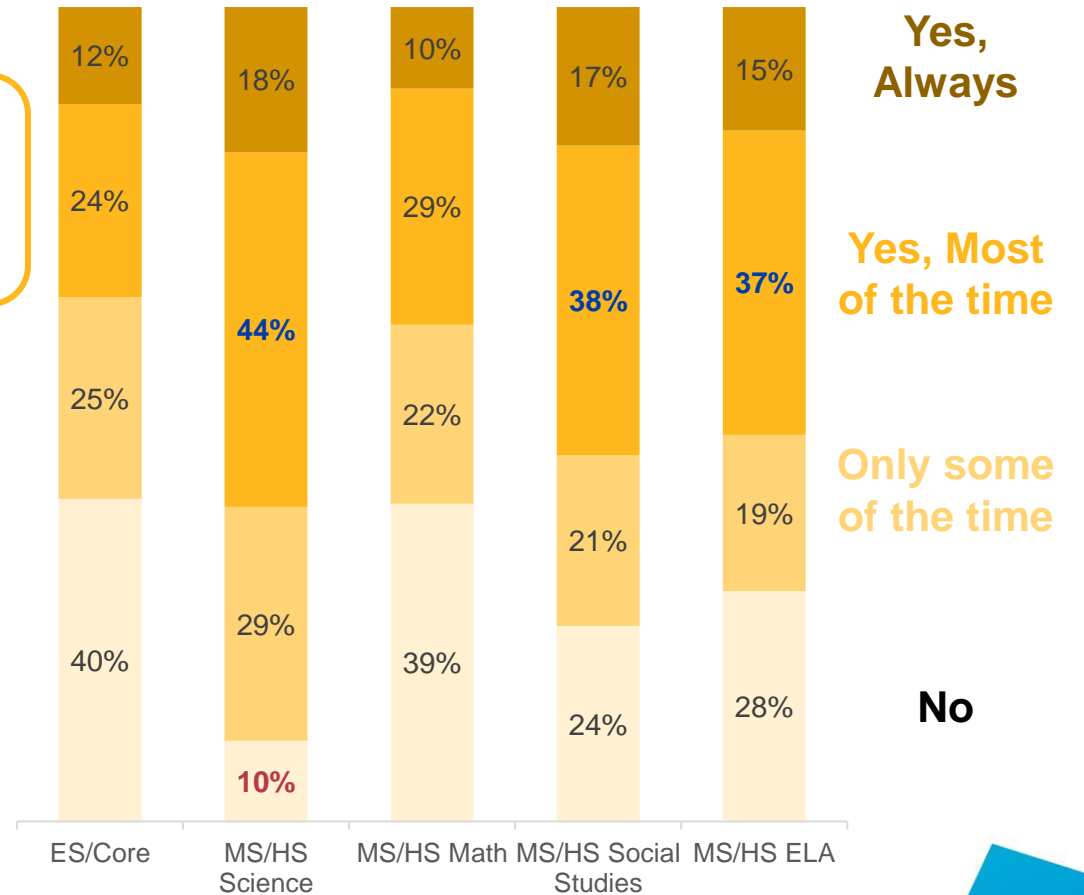
Less than half of teachers across grade levels feel “prepared” to teach the topic and they lack needed resources.

Preparedness to Teach About Climate Change
among teachers only



56% of teachers say they only have resources some of the time or never

Have Resources to Teach Effectively about Climate Change
among teachers only



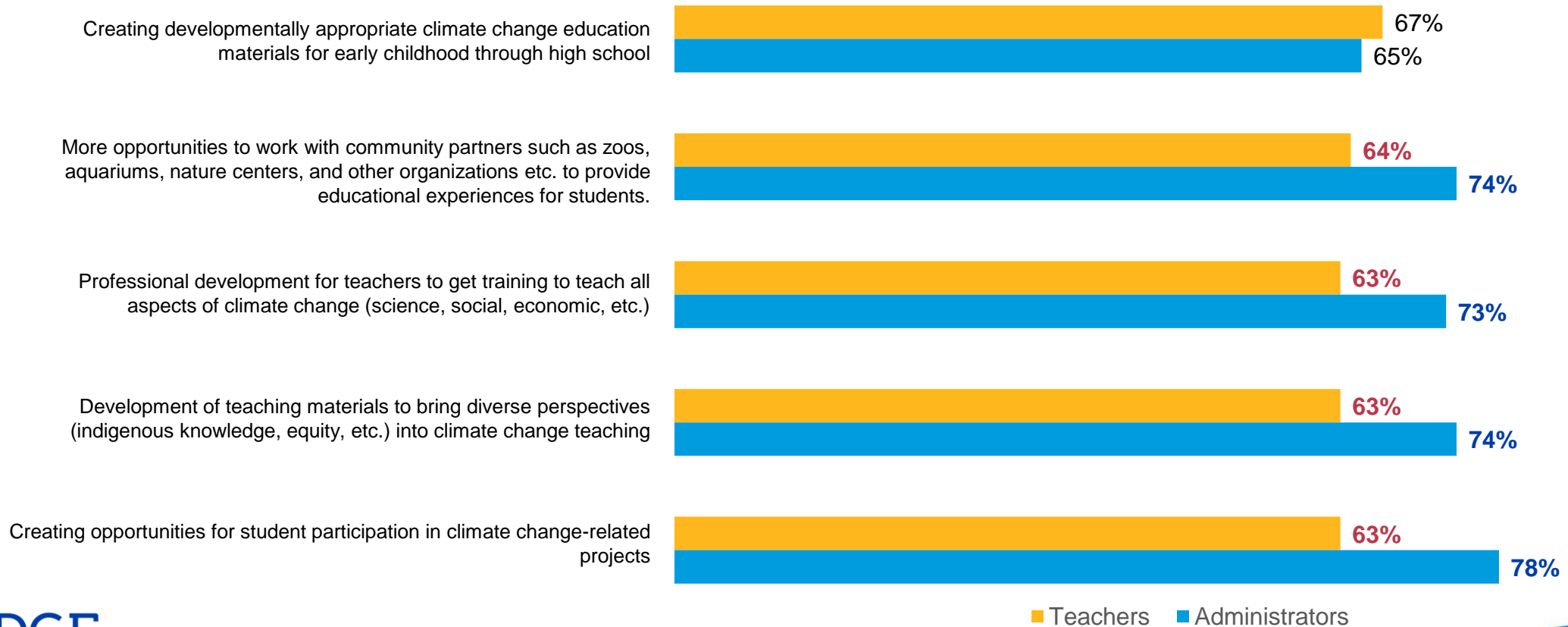
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Closing the Climate Education Gap

Materials, PD, and Opportunities for Student Experiences Are All About Equally Important to Supporting Effective Teaching

Importance of Each Action to Support Effective Teaching about Climate Change in your School/District/State

% Extremely/Very Important



Teachers' Survey Comments Underscore the Need Not Only For Developmentally Appropriate Materials, but Interdisciplinary Ones

Elementary

I think a lot of those concepts seem too advanced for primary age kids. Especially for primary students with disabilities.

We don't address this at our level. I assume they do in middle school and high school. I really don't have any preparation at all. I would like to have some materials to use on the effects of climate change.

As a kindergarten teacher, I think the goal should be to communicate to students that a change in climate has an effect on the plants and animals around us which affects us.

Middle & High

I would need articles and texts to share with students. I don't know enough about the science behind climate change to feel confident teaching it. –High School

I am not prepared to teach about any topics of climate change. I only have a degree in math education, so I would need additional training in all areas. –Middle School

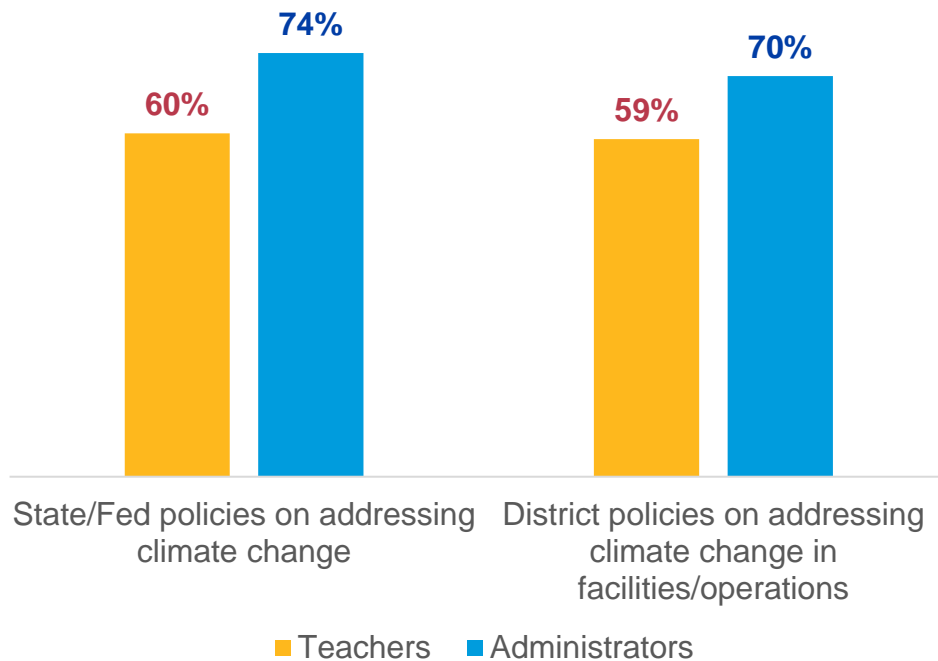
Although I am aware of the topics, I am not informed enough to teach about it. I teach English. Perhaps if there were novels or essays that addressed the topic, I might be better positioned to incorporate climate change into my classroom. –High School

Beliefs About What The State/District Will Support Matter

Regardless of formal curriculum, belief that administrators, school boards, and state education leaders believe that climate change is real correlates with teaching it.

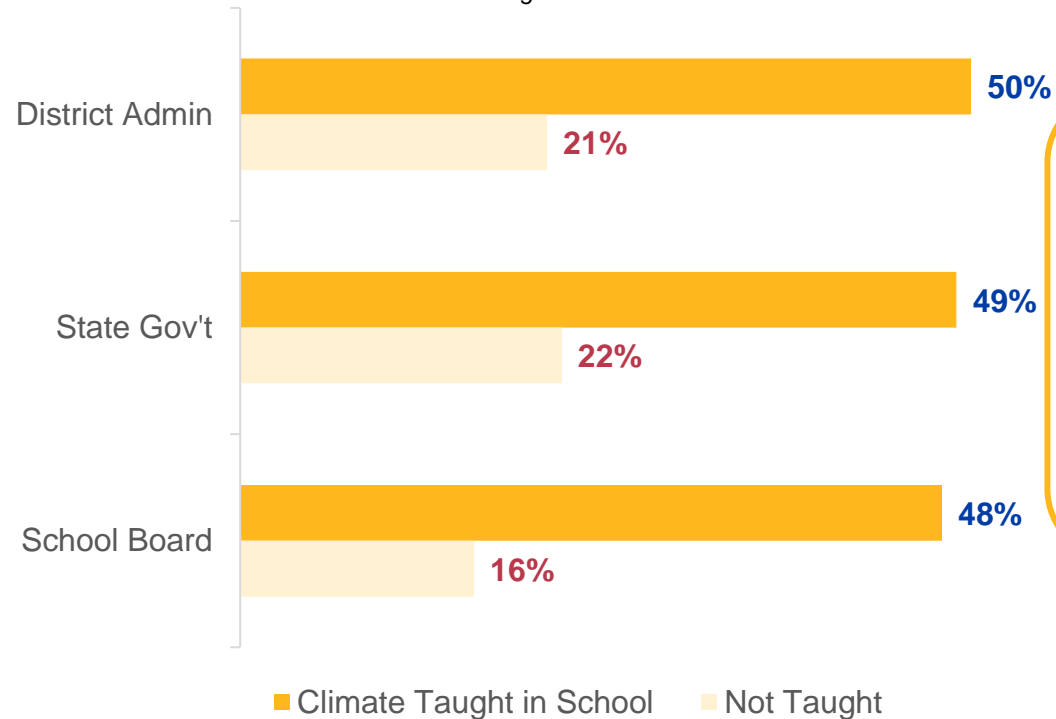
Importance of Each Action to Support Effective Climate Change Teaching

% Extremely/Very Important



Belief That Authority Supports Teaching Climate Change is Real and Human-Caused

Among Teachers

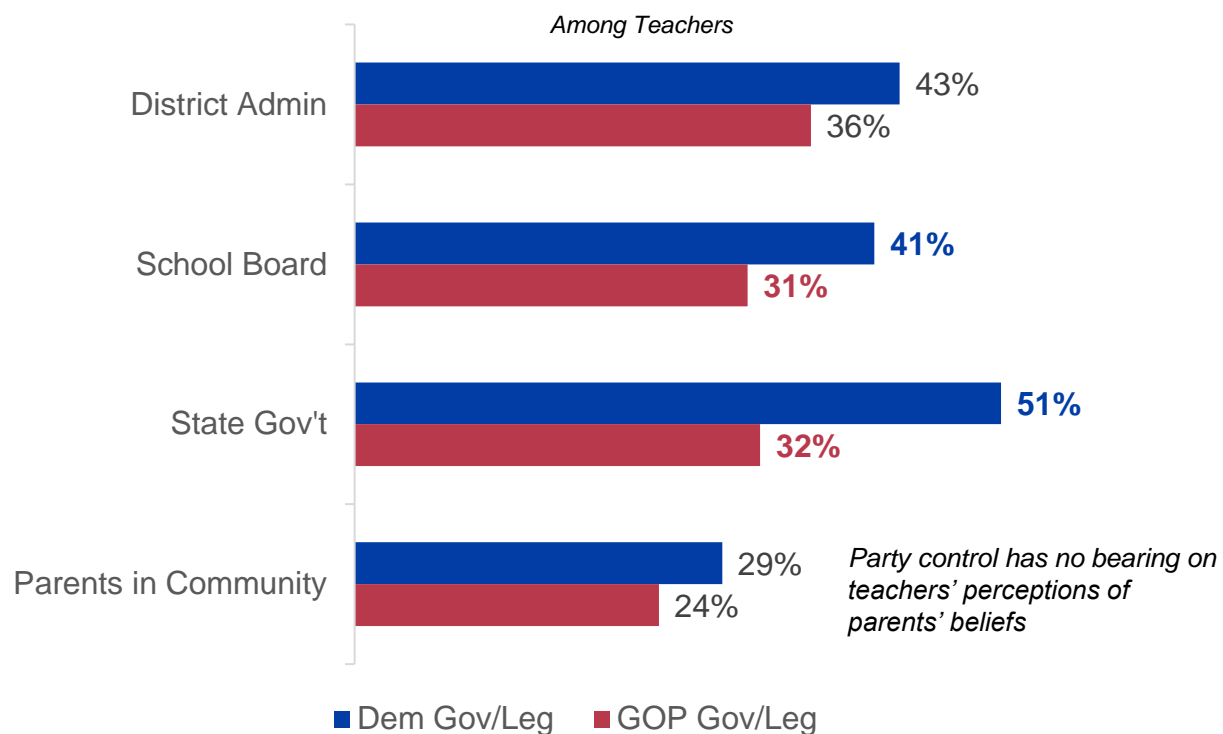


To teach climate change I would need reliable source material with cited research. I would also need express permission from my school district.
-6th grade

Signals from the Top Matter

While teachers and administrators feel they play a large role in effective climate change education, all say the state government is critical. Perceptions about support of teaching that climate change is real differs between red and blue states.

Belief That Authority Supports Teaching Climate Change is Real and Human-Caused



Teachers' Views	Most Responsible	Most/2 nd Most
Teachers	24%	45%
State gov't	23%	35%
Parents	12%	23%
District Admin	11%	25%
School Admin	8%	24%

Administrators' Views	Most Responsible	Most/2 nd Most
State gov't	30%	47%
School Admin	26%*	46%
District Admin	12%	28%
Teachers	10%	26%
Parents	9%	18%

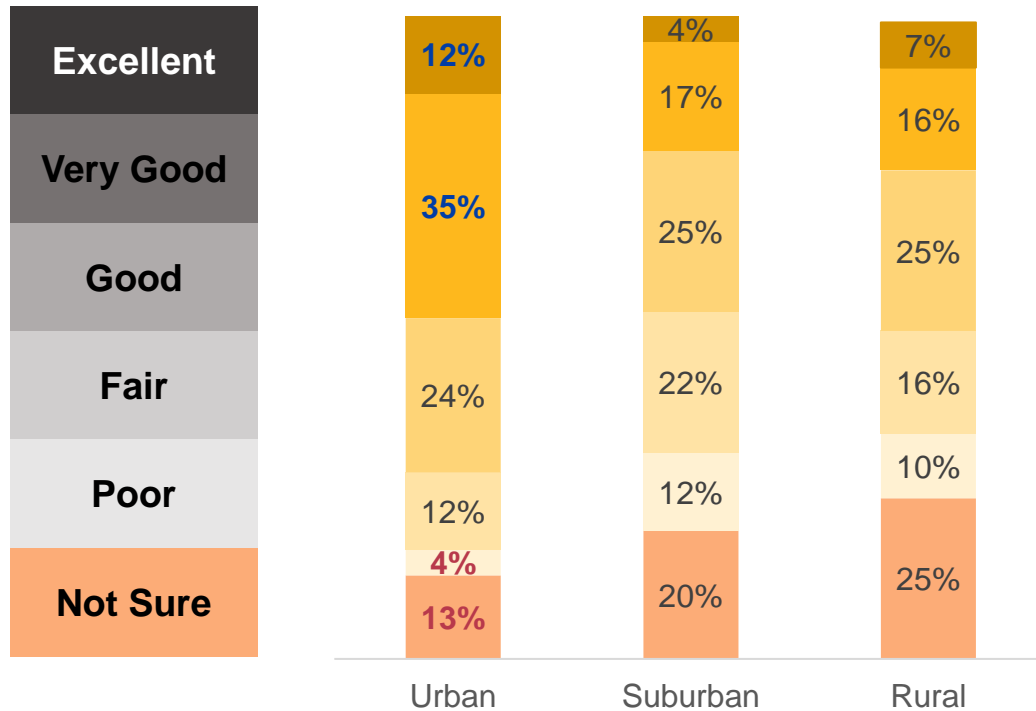
*Note: There were more school administrators than district or state in the sample

Urban-Suburban-Rural School Differences Point to The Intersection of Climate with Other Education Concerns

Urban teachers give their schools higher marks on teaching climate change, are more likely to think they are doing enough, and feel more pressure in other areas of education.

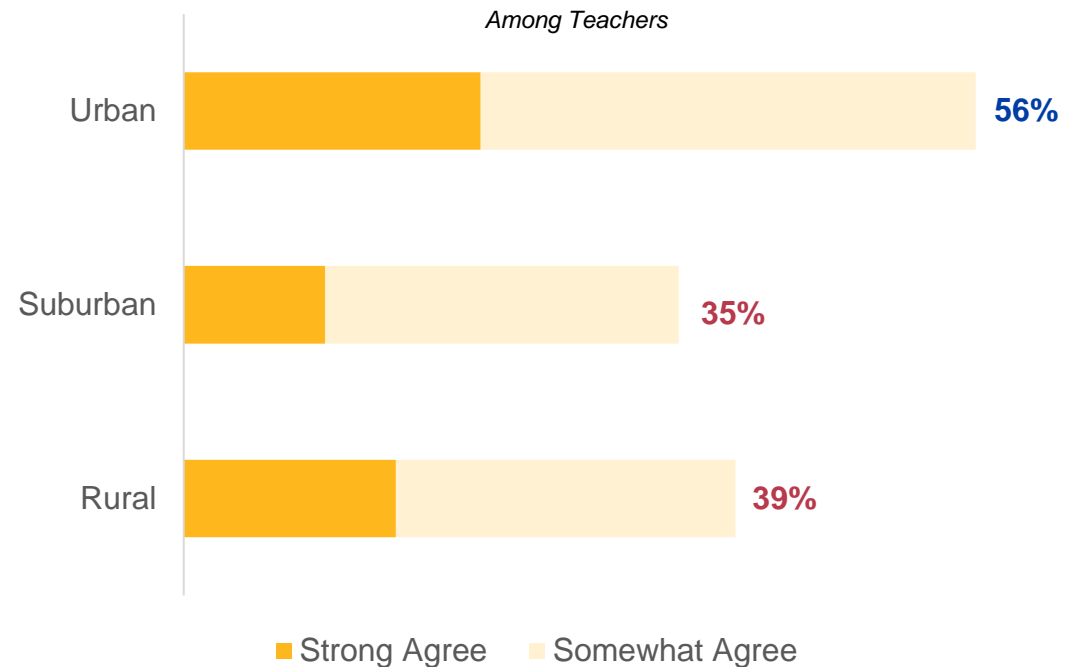
How Would You Rate the Climate Change Content in Your... School

Among Teachers



Agree with the statement: *There is too much emphasis placed on climate change when there are other issues to be addressed in education*

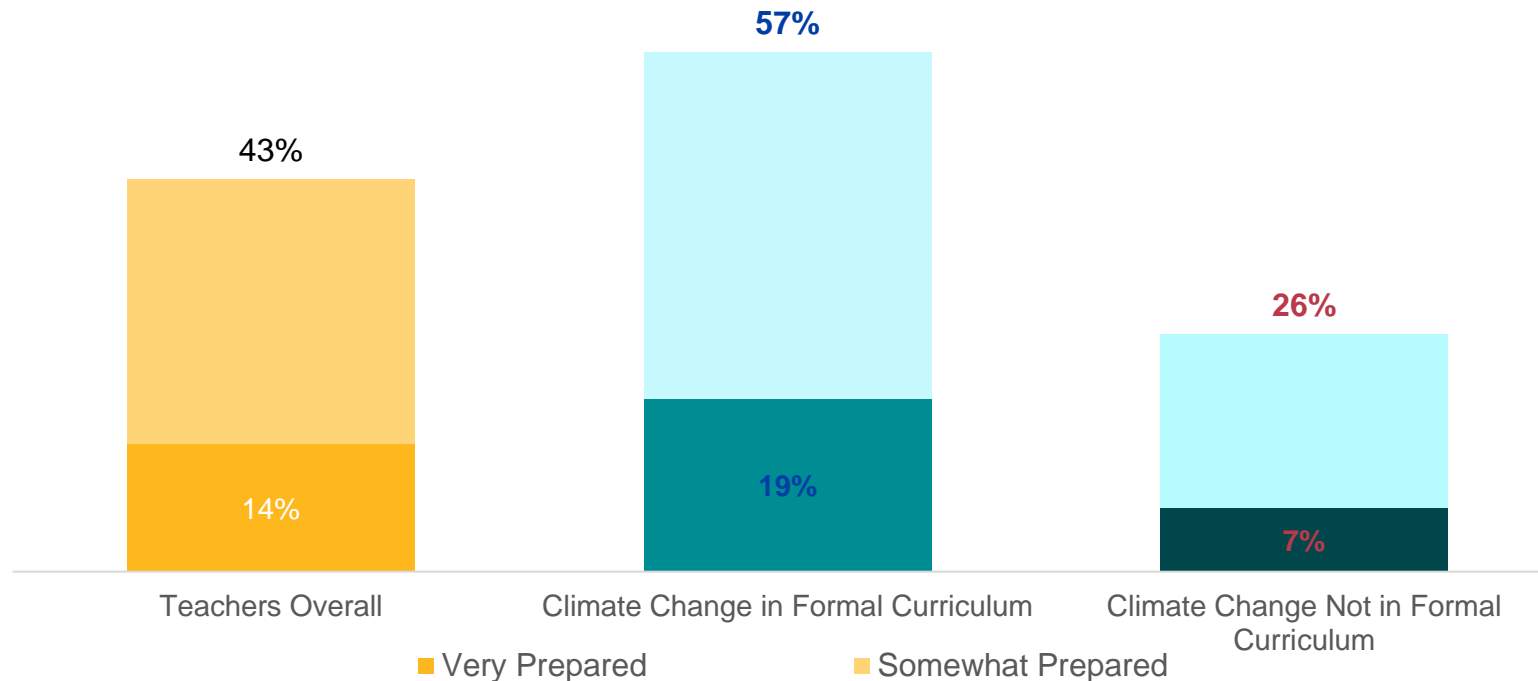
Among Teachers



Formal Inclusion in Curriculum Makes a Real Difference

There is a huge gap in preparedness between teachers who say climate is part of the formal curriculum and those who do not.

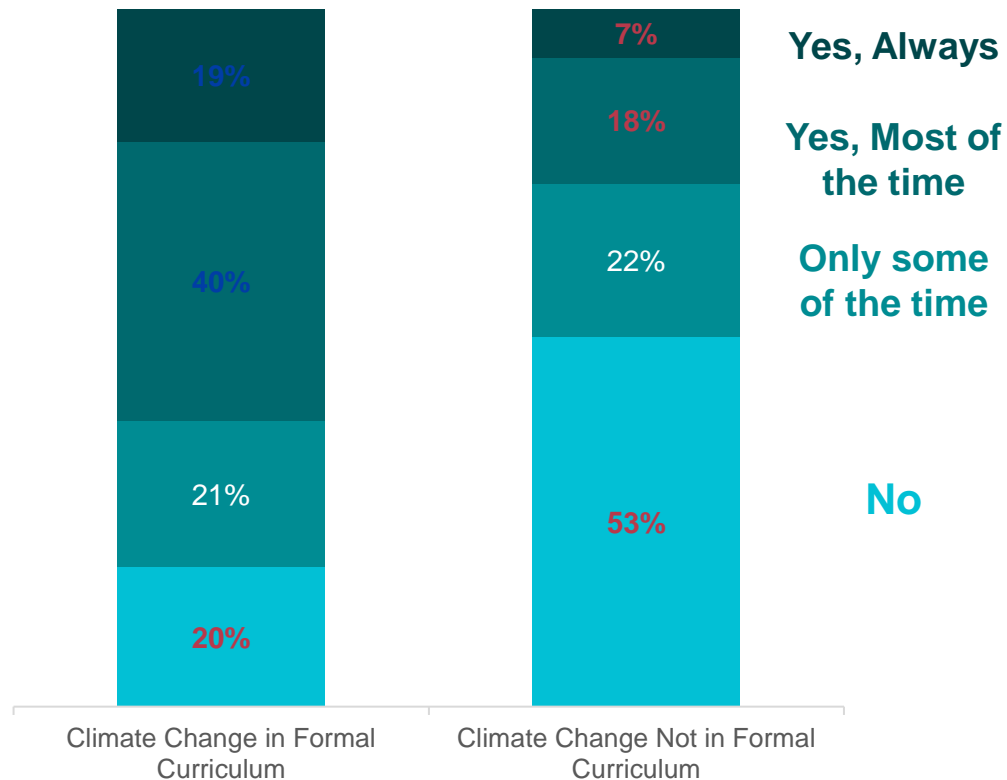
Preparedness to Teach About Climate Change
among teachers only



Formal Inclusion in Curriculum Leads to Resources and Classroom Time Spent on Climate Change

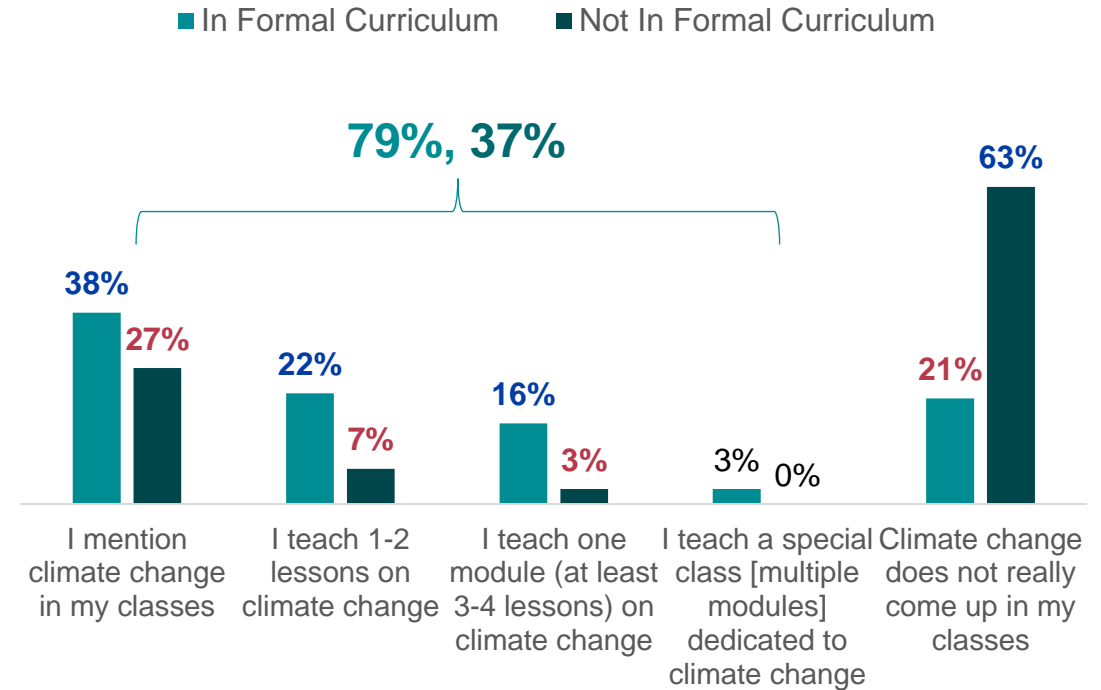
Have Resources to Teach Effectively about Climate Change

among teachers only



Amount of Time Teaching about Climate Change

among teachers only



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Developing Climate Change Education Resources

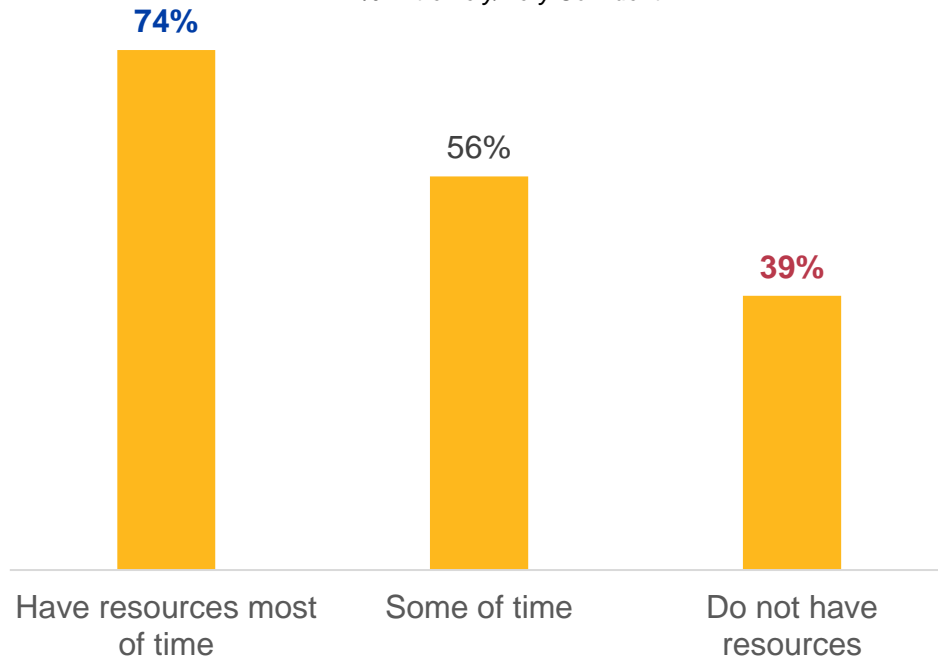
Access to Climate Change Resources Builds Confidence

Having even *some* resources correlates with significantly higher confidence

Confidence to Address Climate Change With Students

among teachers only

% Extremely/Very Confident



Under-Resourced Teachers Say...

I use whatever I can find on the Internet. It's all I have time to find.

I teach both sides of the political argument.

I've just relayed what I've heard in the past from the media to my students.

Some Teachers Are Reaching Out to Supplement...

Right now, I do my own research to prepare the lesson only during Earth Day Week. We discuss the issue in a basic matter, then create art to send a message to the other students and community.

The Ag Extension office people.

The most helpful for my grade has been Scholastic and National Wildlife Federation when talking about animals.

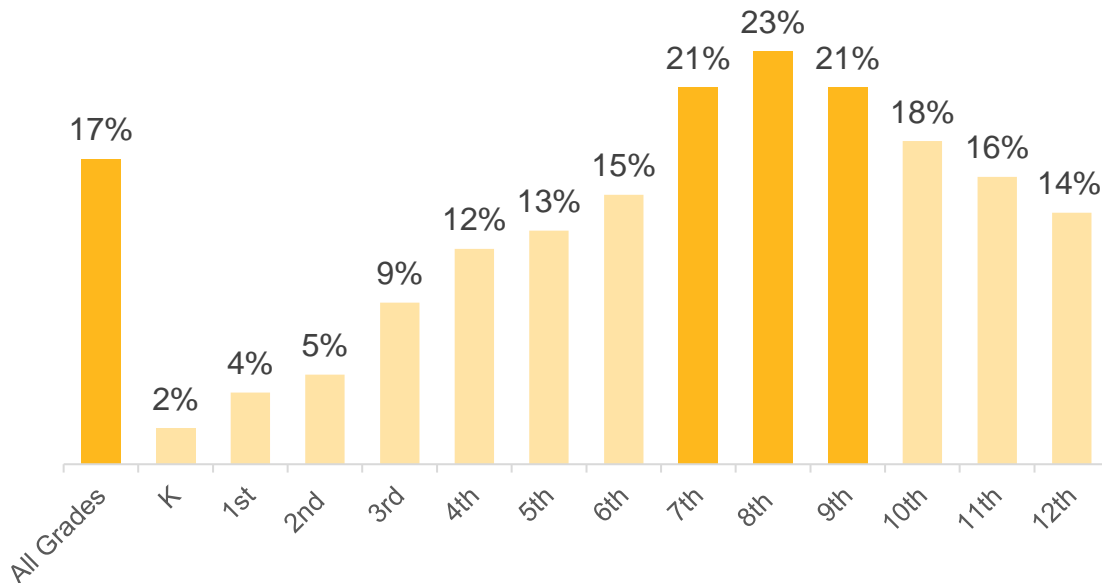
I find contacting non-profit organizations is most helpful. From the WWF to Izaak Walton League and Nature Conservancy, I've received the best information.

Grade and Subject Specific Gaps Need to Be Addressed

Lower and upper grades need content. Even when climate change is thought to be included in curriculum, it remains concentrated in science, underscoring the need for resources to integrate climate into ELA, history and beyond.

Grades Climate Change Topics/Content Included in School/District

among teachers only

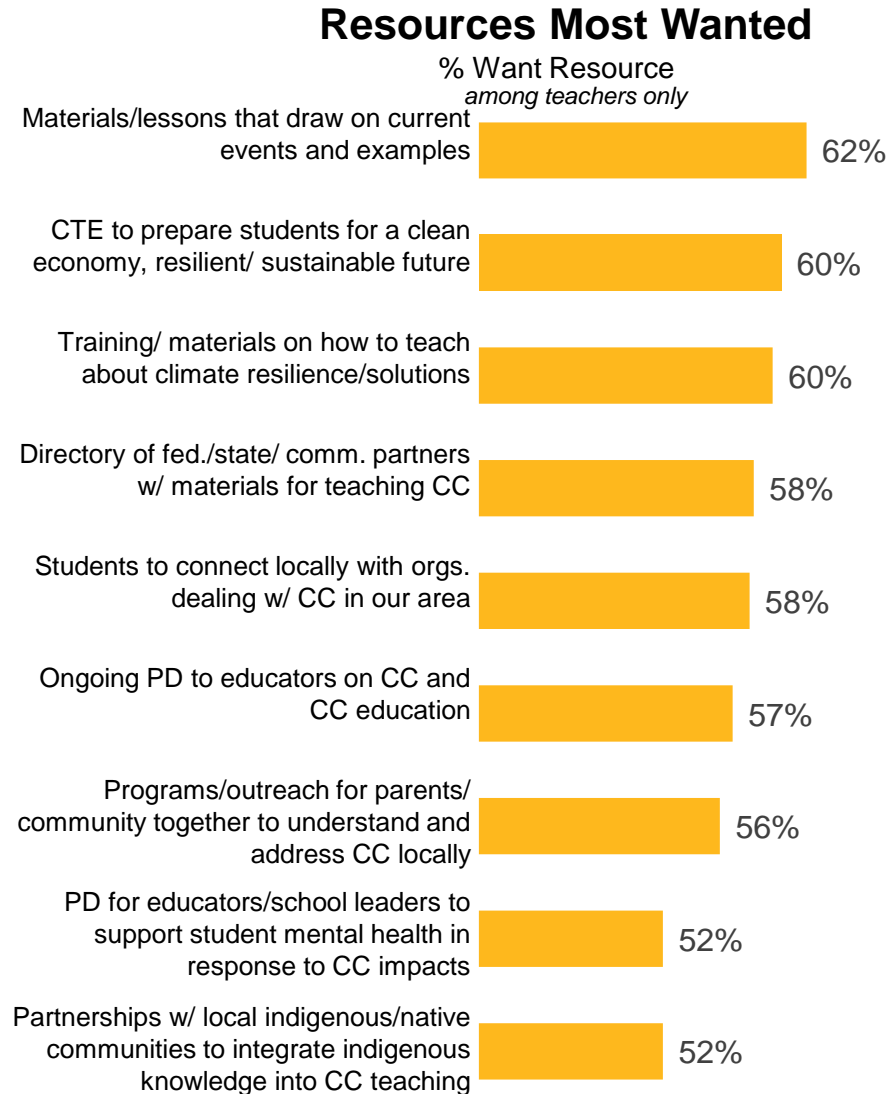


Subjects Where Climate Change is Taught

	Climate Change in Formal Curriculum	Climate Change Not in Formal Curriculum
Environmental Studies	60%	37%
General Science	58%	50%
Biology	34%	17%
Social Studies	32%	18%
English/Language Arts	16%	9%
Chemistry	15%	6%
US History	15%	10%
World History	14%	6%
US Government	11%	7%
Health/Physical Education	10%	5%
Physics	8%	4%
Math	6%	5%
Art	4%	5%
Foreign language	2%	2%
Theater	2%	-
Music	1%	3%
Other, describe:	2%	1%
Not sure	2%	20%

Desired Resources Are Current and Solutions-Oriented

Teachers are most interested in real-world examples, CTE, and PD.



I need science texts and current events materials that directly address climate change.
– Elementary

I need developed curricula that can be used and that I don't need to make. –High School

I would need something at a level that my students would understand. Also, materials or trainings that show how students can be a part of the solution. – Elementary

Teachers Want Ready-Made Lesson Plans and Video PD

For the students, teachers at the lower grades want video-shorts, small group activities, and interactives. For non-science MS/HS documentaries and discussions are desired.

Preferred formats for climate change education classroom resources for your students

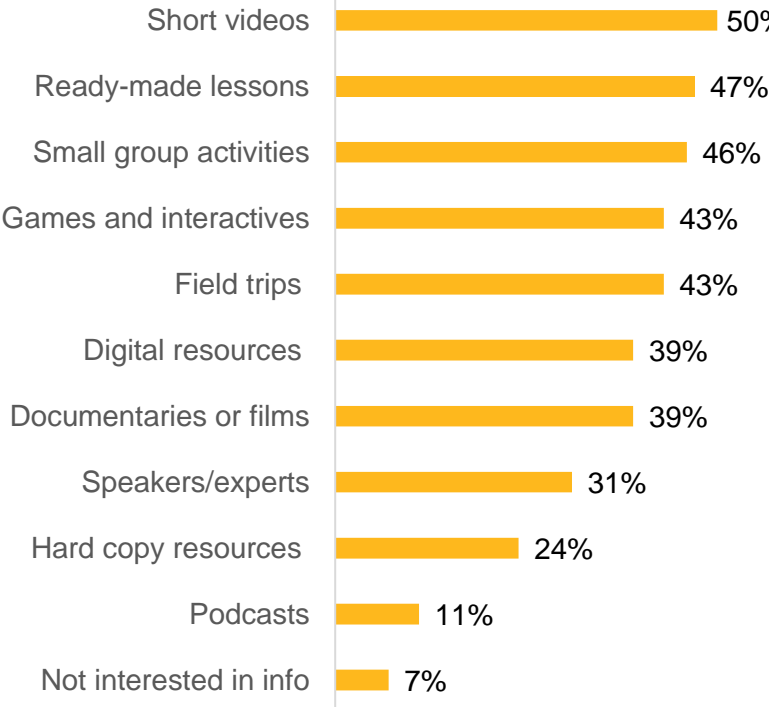
among teachers only

	ES/Core	MS/HS Science	MS/HS Math	MS/HS Social Studies	MS/HS ELA
Short videos	58%	60%	61%	37%	49%
Ready-made lessons	51%	57%	46%	40%	43%
Small group activities	53%	54%	45%	31%	44%
Games and interactives	55%	51%	48%	26%	36%
Field trips	50%	46%	40%	46%	43%
Digital resources	39%	51%	42%	37%	36%
Documentaries or films	25%	37%	37%	47%	49%
Speakers/experts	33%	34%	31%	30%	29%
Hard copy resources	27%	23%	28%	26%	23%
Podcasts	6%	9%	12%	11%	23%
Not interested in info	7%	3%	4%	10%	4%

Preferred formats for training and professional development to teach climate change

among teachers only

	ES/Core	MS/HS Science	MS/HS Math	MS/HS Social Studies	MS/HS ELA
Short videos	58%	51%	43%	51%	45%
Ready-made lessons	60%	65%	46%	41%	45%
Field trips	50%	49%	54%	49%	42%
Small group activities	46%	57%	45%	42%	49%
Digital resources	33%	43%	43%	41%	43%
Speakers/experts	36%	41%	38%	32%	38%
Games and interactives	42%	43%	39%	25%	36%
Documentaries or films	22%	49%	32%	45%	42%
Hard copy resources	24%	35%	28%	32%	29%
Podcasts	6%	8%	12%	12%	13%
Not interested in info	6%	4%	9%	4%	3%



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Wrap-up

Possible Headlines	Implication/Ask
<p>Whether they're officially being taught about climate change in the classroom or not, students are anxious and bringing it up in school.</p>	<p>Teachers are not prepared to respond to their students and are drawing off a hodge-podge of resources. Teachers need formal, developmentally appropriate curriculum (or they respond with their own opinion or deflect).</p>
<p>Teachers give their schools a 'C' in climate change education. A lack of formal curriculum, lack of preparation and resources, an unclear mandate, and content relegated to middle grades science, make for a barely passing grade.</p>	<p>Teachers need PD and resources to teach in a grade-appropriate, interdisciplinary way.</p>
<p>Educators are unclear on parental support for climate education. Teachers lack confidence and Administrators are scared.</p>	<p>Teachers want leadership and clarity on the climate education policy in their state. This policy needs to be communicated effectively to parents.</p>
<p>Signals from the top matter. Having a clear mandate closes the confidence gap.</p>	
<p>Teachers say the three Rs of climate education should be Resilience, Relevance, and Real-World solutions.</p>	<p>Teachers want ready-made lesson plans to support PD. For the students, teachers at the lower grades want video-shorts, small group activities, and interactives. For non-science MS/HS documentaries and discussions are desired.</p>

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Appendix: Additional Detail

Holistic Content Report Card: Administrators

Administrators are broadly confident that climate content for science and teaching strategies are strong in their district, less so about inter-sectional issues or adaptation approaches.

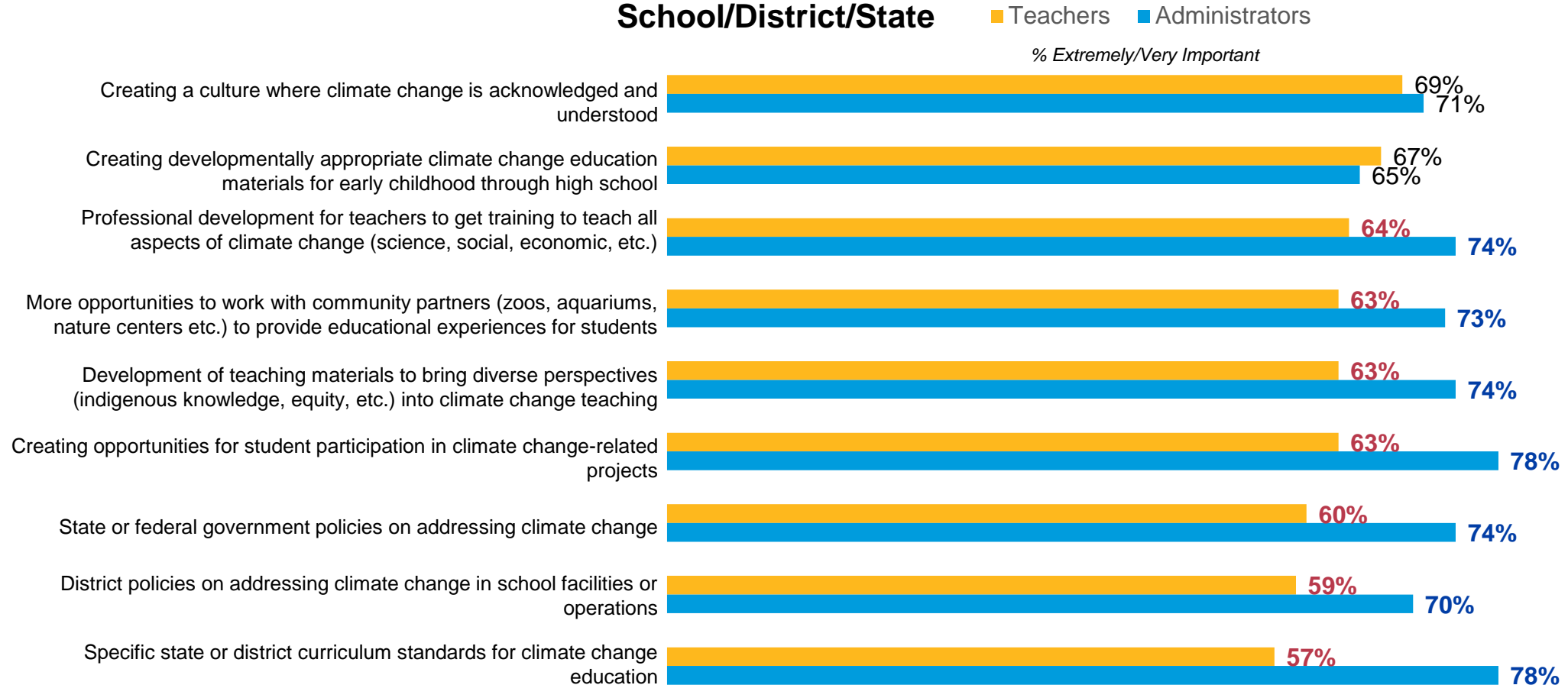
	<i>Ratings on Integrating Aspects of Climate Change into Curriculum/Content</i>	District Grade A/B	District Grade C/D/F	State Grade* A/B	State Grade* C/D/F
Science & Nature	Science of climate change (e.g., greenhouse gas effect, role of CO2 and fossil fuels, etc.)	54%	39%	55%	43%
	Impacts of climate change on biodiversity	62%	29%	55%	43%
	Role of climate change in natural disasters	58%	37%	52%	46%
Societal Impacts	Impacts of climate change on society, including human health, food production, culture, art, etc.	54%	42%	63%	36%
	Economic impacts of climate change and climate change solutions (e.g., business, technologies, job, etc.)	55%	39%	58%	41%
	Environmental justice/disproportionate impacts of climate change on underserved communities and poorer nations	52%	41%	52%	45%
Solutions	Reducing climate change (e.g., reduction of greenhouse gasses, carbon capture, clean fuels, etc.)	57%	38%	44%	55%
	Adaptation to climate change (e.g., alternative futures, technologies and skills needed)	49%	46%	60%	38%
	Consumer choices and individual actions to address climate change	57%	39%	51%	50%
Teaching Strategies	Project-based learning related to any aspect of climate change (e.g., climate solutions, civic engagement, etc.)	55%	42%	54%	45%
	Knowledge and perspectives of native and indigenous people on climate change	60%	34%	60%	40%
	Mental health supports to deal with students' feelings about climate change/foster resilience	56%	38%	55%	43%
	Integrating climate change learning into all subjects (e.g., social studies/history, government and civics, etc.)	56%	37%	56%	42%

*District and State ratings based on Administrator responses. District n=89; State n=65 (*small sample size)*

Every Item Tested Matters, But Materials, PD, and Opportunities for Student Experiences Matter Most

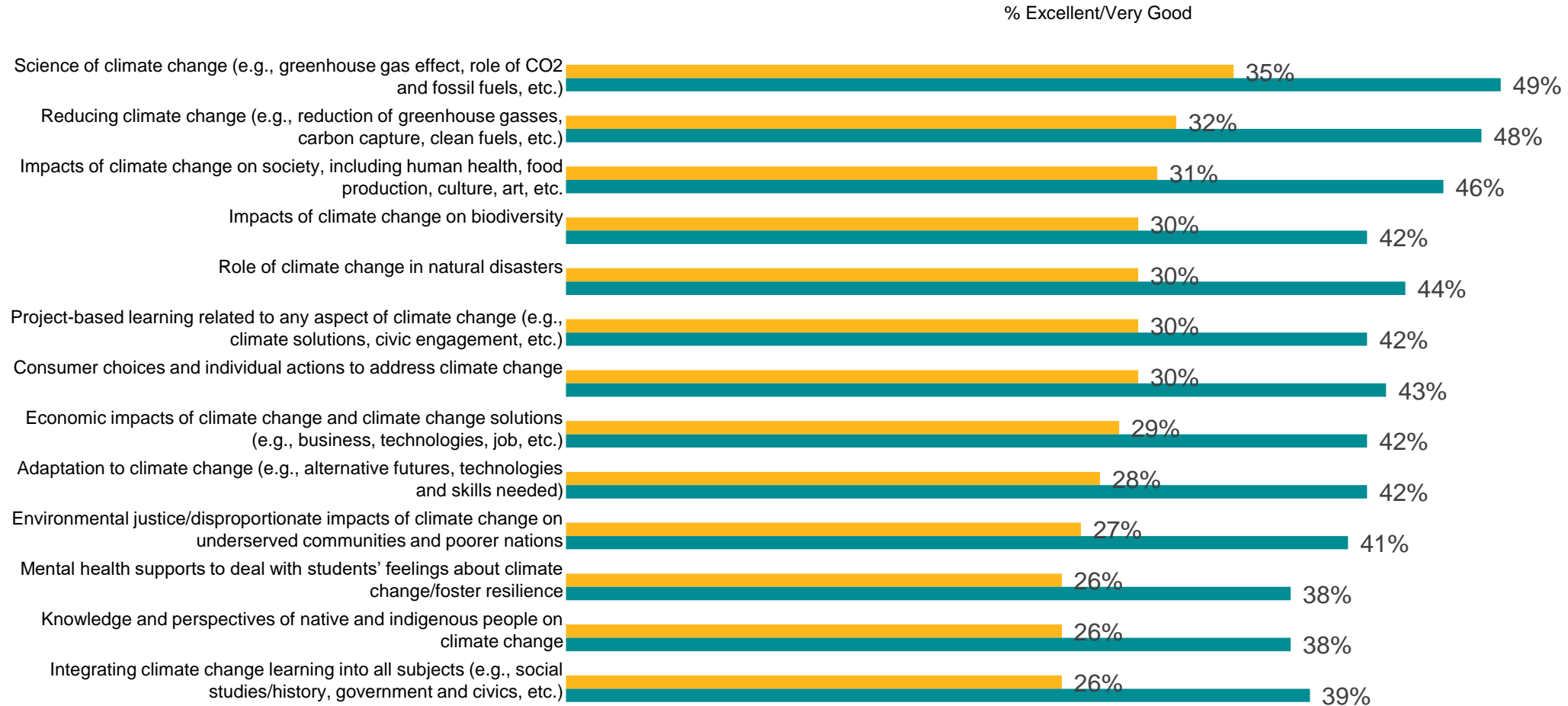
Teachers perceive the importance of actual curriculum standards as far less important than administrators do.

Importance of Each Action to Support Effective Teaching about Climate Change in your School/District/State



With Climate in the Curriculum, Integration Across Subjects is Higher, Although There Is Room To Improve

How would you rate your school on integrating the following aspects of climate change into its curriculum and content on climate change?



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