



Survey Results: K-12 Climate Education in New Mexico

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Purpose and Methods

The 350NM Education Committee administered an informal survey in order to assess the prevalence of K-12 climate change education in New Mexico. The intent was to use the survey results to determine whether there is a need to improve climate education efforts in the state and if so, how to best support stakeholders. In January and February 2021, the survey was sent by email to the membership of 350NM and several other groups and individuals, including all public-school administrators; Environmental Education of New Mexico; NM Mathematics, Engineering, and Science Achievement (NM MESA); NM Science-Math Listserve; Explora; and the NM Museum of Natural History and Science. The target audience for the survey was people in the state who have knowledge of the frequency and methods for teaching about climate change, including K-12 classroom teachers, K-12 students, parents/guardians, grandparents, and informal educators.

Overall Results and Conclusions

Two hundred forty-seven people responded to the survey (Fig. 1). The majority of respondents were classroom teachers (40.5%), followed by K-12 students (20.6%).

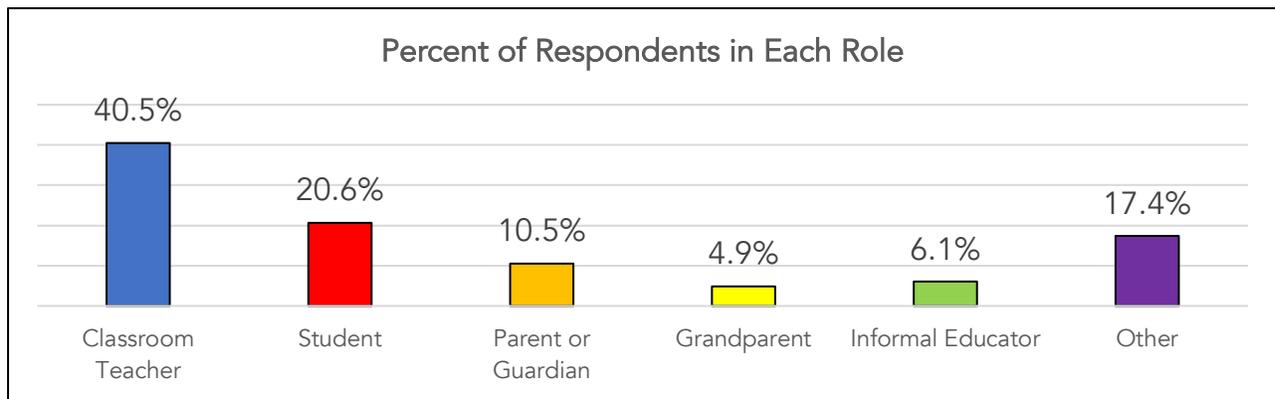


Figure 1. Percent of survey respondents in each role (N = 247 total respondents).

From the results of this informal survey, it appears that climate change is likely being taught in K-12 schools in New Mexico. However, due to the voluntary nature of this survey and the small sample size, it is possible that the results were skewed. Middle and high school science teachers most frequently reported teaching about climate change, but a large percentage of elementary teachers who responded also reported that they teach about climate change. The majority of student respondents indicated that they have learned about climate change in school. Optional comments provided from stakeholders in every category demonstrated that climate change education seems to be valued in the state. The majority of teachers who responded indicated that they would like more high-quality climate change education resources.

Teachers: Results and Conclusions

Ninety-nine teachers replied to the survey. Fifteen respondents were elementary teachers; 54 were middle school teachers; and 30 were high school teachers. Teachers were given an optional survey question to provide the name of their district. Of the districts provided, 11 of the 89 public school districts in New Mexico were represented (Fig. 2). Teachers from two tribal school districts responded, and several teachers from charter schools responded to the survey. Private schools were also represented.

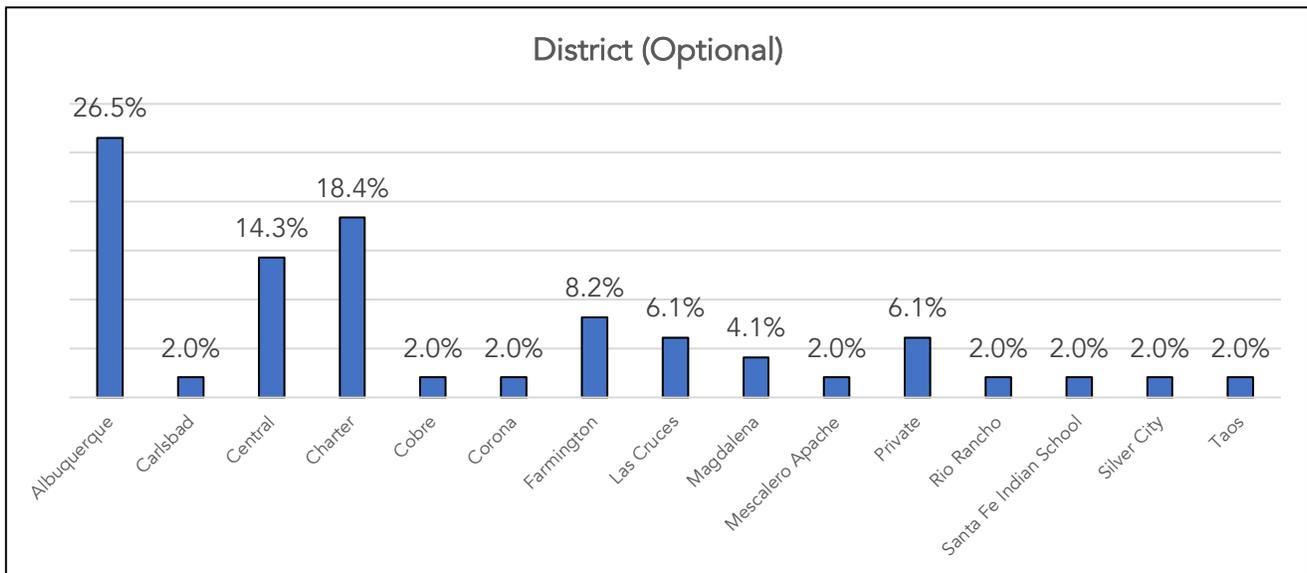


Figure 2. Percent of teachers from each district represented in the survey (N = 49 teachers who opted to provide their district).

47.5% of teachers reported that their district (or charter/private school) includes climate change in its curriculum (Fig. 3). A large percentage of teachers did not know (30.3%) whether climate change was included in their district's curriculum, and 20.2% reported that it is not included.

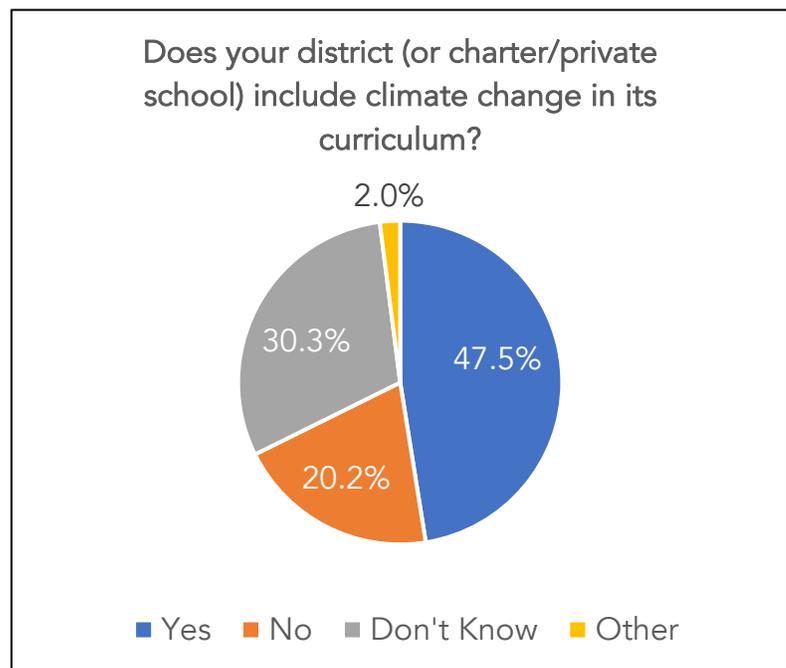


Figure 3. Percentage of districts, charters, and private schools that include climate change in their curriculum, as reported by teacher respondents (N = 99).

The majority of teachers who responded to the survey said that they teach about climate change every year or sometimes teach about it (70.7%, Fig. 4). 29.3% of teachers reported that they do not teach about climate change. Teachers from kindergarten through high school were represented in the survey.

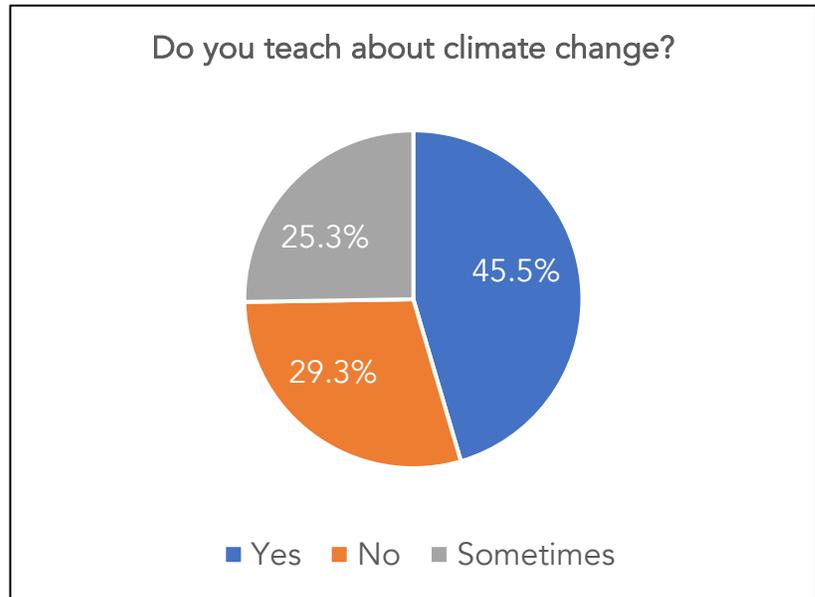


Figure 4. Percentage of K-12 teachers who reported that they teach about climate change (N = 99).

Teachers who indicated that they do not teach climate change (N = 29) were asked why. Teachers were able to choose as many options as they desired from a list of reasons, and they were given the opportunity to write in other reasons. The most frequently selected reason by teachers who do not teach about climate change is that it is not in the scope and sequence for their grade level (51%, Fig. 5). Other reasons cited were that teachers do not have high quality materials for teaching about it (9%) and that they do not accept that the climate is changing and/or that humans are responsible (9%).

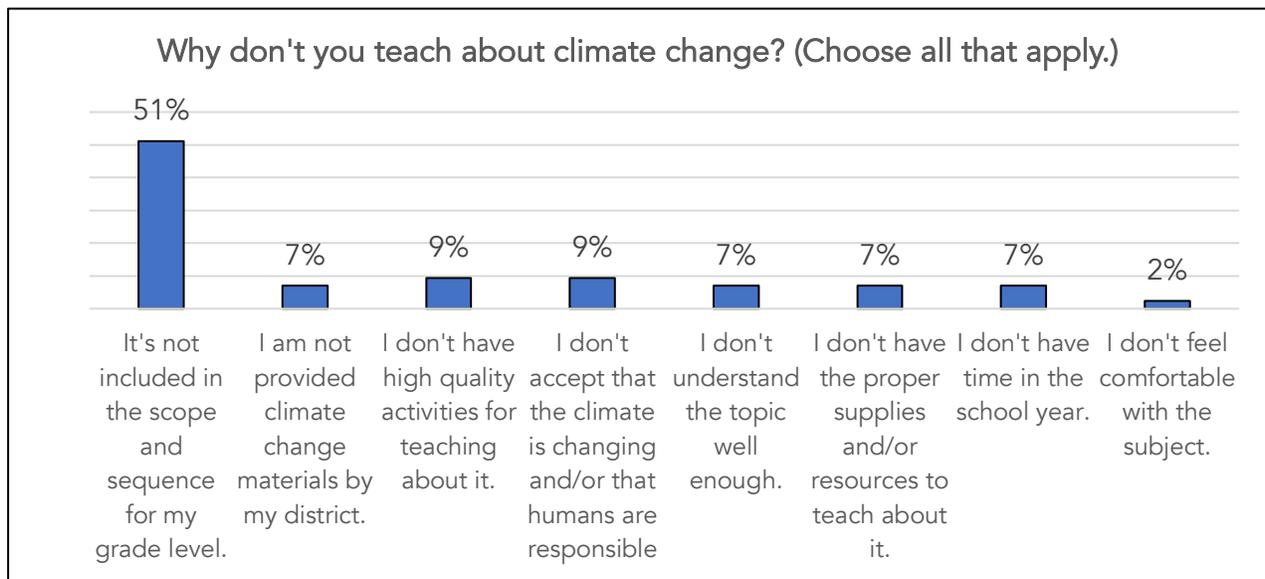


Figure 5. The percentage of each reason selected by teachers who reported that they do not teach about climate change (N = 29 teachers, 45 responses).

The results from middle and high school science teachers were analyzed. 95.2% of middle and high school science teachers reported that they teach climate change every year or sometimes (Fig. 6). Two science teachers reported that they do not teach climate change (4.8%, Fig. 6). The two science teachers who said that they do not teach climate change are middle school teachers who cited the following reasons:

- I don't have high-quality activities for teaching about it (1).
- It's not included in the scope and sequence for my grade level (2).

Many districts and charter and private schools divide the NM STEM-Ready Science Standards among grade levels, and therefore, it is not expected that science teachers in all middle and high school grades cover climate change.

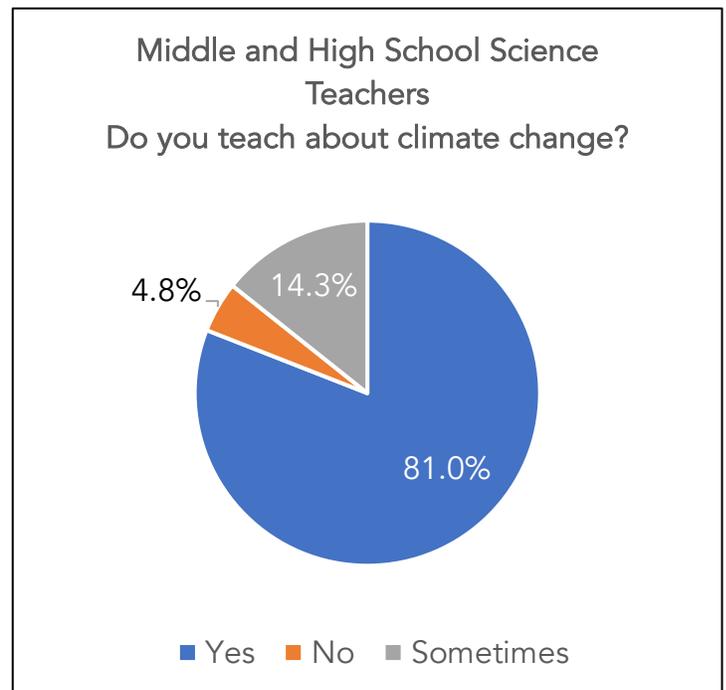


Figure 6. Percentage of middle and high school science teachers who reported that they teach about climate change (N = 42).

In addition, we analyzed the results from elementary teachers. Although climate change is not included in the elementary NM STEM-Ready Science Standards, 60% of elementary teacher respondents reported that they teach about climate change every year or sometimes (Fig. 7).

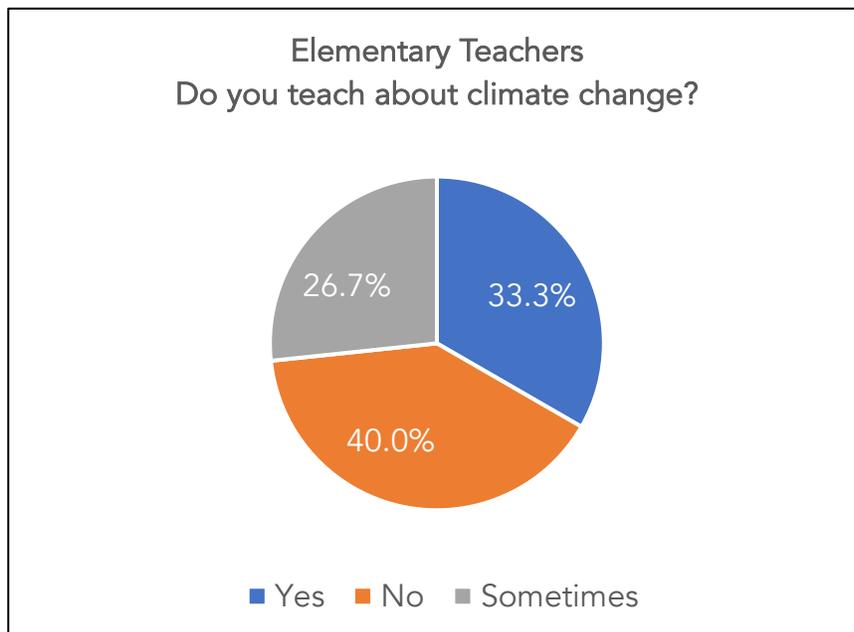


Figure 7. Percentage of elementary teachers who reported that they teach about climate change (N = 15).

Seventy-two of the 99 teachers (73%) who completed the survey responded “yes” or “maybe” when asked if they needed more high-quality materials for teaching about climate change.

Select comments from teachers

- Climate change education needs to be prioritized! The information is in the curriculum, but it is buried and could easily be ignored or skipped over.
- More support for non-science teachers would be great. Students really want to know more.
- An online interactive specific to the western US would be very useful, as would a lesson plan for high school that includes a letter writing campaign.
- All science teachers in NM should be teaching it since it is part of the NGSS!
- I attended a great workshop in Las Cruces with the Asombro Institute with their Climate Champions curriculum. They have some good, ready to use, and tested lesson plans. They even gave attendees a supply box to institute the lesson plans right away. I've attended various webinars and workshops, and any curriculum needs to be practiced as a student in the workshop and ready to use right away so that they aren't forgotten.
- I'm always looking for new resources, activities, or other ways to teach climate change and empower students! Thank you!
- It is the root of all problems facing us now. So important!
- It's an oil patch up here. We have at least one outright climate change denier on the board. Tread lightly or come prepared.
- Many of my materials are old. It might be useful to have a list of curricula that have been updated in the past 3-5 years and links to the most recent information.

Students: Results and Conclusions

Fifty-three students responded to the survey. 86.8% of student respondents were in middle school, and 13.2% were in high school.

79.2% of students reported that they have learned about climate change in school (Fig. 8).

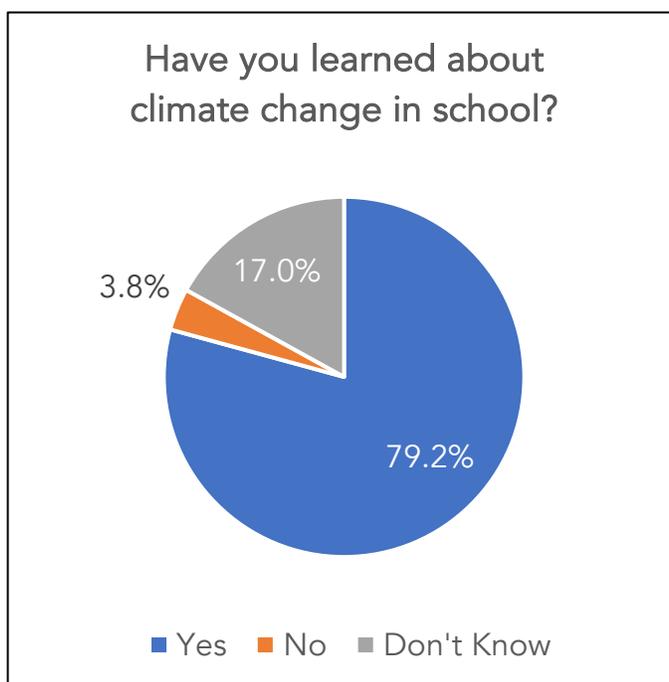


Figure 8. Percentage of students who reported that they have learned about climate change in school (N = 53).

Student respondents reported learning about climate change most frequently in fifth grade and middle school (Fig. 9). Only 13.2% of respondents were in high school, which may help explain the low percentage of students who reported that they learned about climate change in high school.

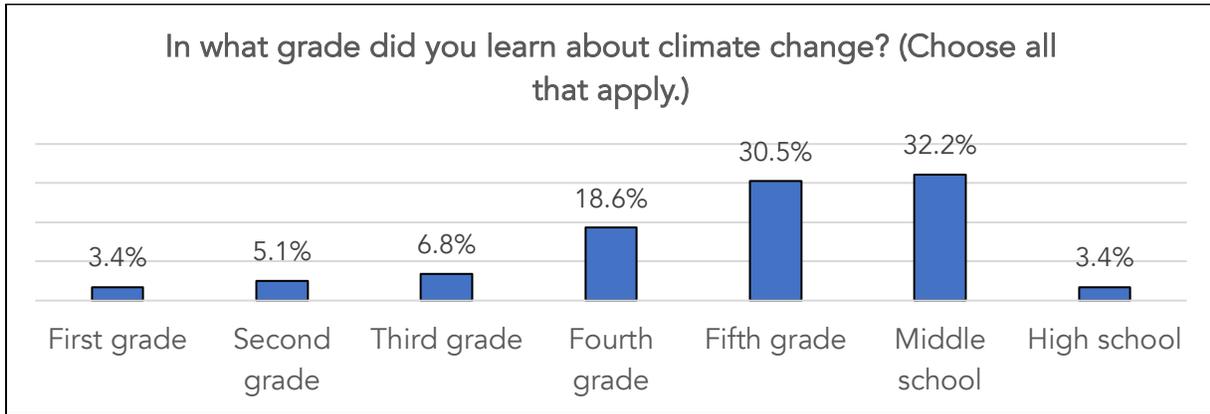


Figure 9. The percentage of each grade in which students reported learning about climate change. The majority of student respondents were currently in middle school ($N = 53$).

Students were asked the following optional question. Their responses are below.

What kinds of things would you like to learn about climate change? (Optional)

- How it changes stuff and affecting the world
- The different ways someone can help make a change whether that be small or big
- Everything
- How it will affect us in the future and what is being done to stop it
- How to combat it
- What people are doing to fix it
- Why it is that people can't follow simple directions and why they'd rather leave the earth in a worse condition than they received it.
- I want to learn more about what different countries are doing about it.
- Hurricanes
- How it can affect different areas throughout the world
- What the world is doing to prevent it
- Why are some people so unproductive in trying to stop it?

Comments from students

- If we had pictures of what's happening
- I think that New Mexico has to focus more on helping with the issue, maybe get solar panels, walk when you can, and things like that.
- The Rio Grande is really low.
- Controversial subjects should be taught about in schools.

Parents, Guardians, and Grandparents: Results and Conclusions

Thirty-seven parents, guardians, and grandparents responded to the survey. 48.6% of parents, guardians, and grandparents who responded did not know if their student(s) has been taught about climate change in school, and 27% indicated their student(s) has been taught about climate change (Fig. 10).

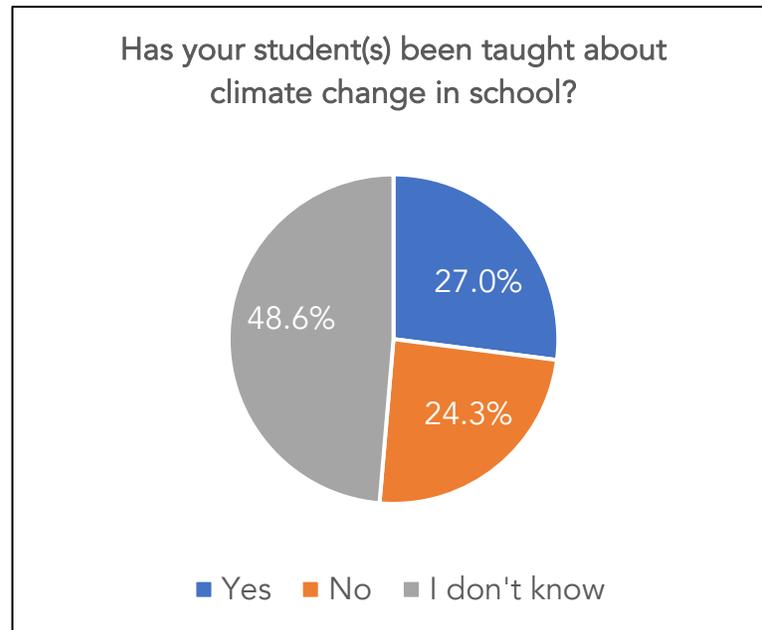


Figure 10. The percentage of students who have been taught about climate change in school, as reported by their parents, guardians, and grandparents (N = 37).

Parents, guardians, and grandparents were asked the following optional question if they indicated that their student had not been taught about climate change. Their responses are below.

If you know, why has climate change been omitted from your student's education in school?
(Optional)

- G-son only in Kindergarten and school only virtual
- Almost all science education had been omitted in school in favor of almost all concentration on ELA and math; the NM science standards are not being taught
- Not that I know of, but it may be a point of avoidance, due to lack of curriculum or possible contention
- Not age appropriate
- No, they say the school pretty much ignores the topic.

Comments from parents, guardians, and grandparents

- We need it; our grandchildren must be left a clean, livable environment.
- We need more.
- It should be part of applicable standard science curriculum.
- Climate education is essential for NM PED programs... Molly Bang series books (e.g. "Living Sunlight", etc.- used by Sierra Club GWE (Global Warming Express) program could support a curriculum for grades 2-3+.

- It's critical to get kids involved, each with age-appropriate activities. Older ones should be encouraged to become involved (during or after school) with legislative bodies, going to hearings, listening to debates, following news reports, etc. They need to be supported to become active, make choices, represent youth opinions. Perhaps even join some of the young people's climate organizations. They need guidance toward taking responsibilities in the own communities. There are many good ideas out there, and high school students are creative.
- I believe this is a very important topic on which to educate our future leaders! I worry that some teachers, who may not believe this is a problem, does not/would not teach about it to the extent they should, or even worse, give students the impression that it is no big deal.
- We have the land and space here in NM to build renewable energy storage facilities and lead the nation in renewable energy storage infrastructure. We need to look into graphene super capacitors for this application as well as the new liquid metal batteries recently discussed by Elon Musk as a possibility for Tesla.
- My youngest (2nd grader) said he is not sure. My oldest (6th grade) said maybe in Science class. It important to let our kids beware of climate change.
- Needs to be taught in all grades!

Comments from other survey participants

- There is a National Campaign called #MakeClimateAClass that advocates for climate education in schools and universities. Any Teacher, Educator, Professor, Teacher Aid, student, or individual can be a part of the national campaign. I work as an intern on the social media campaign for Solve Climate by 2030, the main advocates for 'Make Climate a Class'. Thank You.
- APS has a Water and Energy Conservation Committee - the committee largely works off a Conservation Policy passed by the BOE in 2013. The committee is tasked with increasing energy conservation at school sites and also with energy education. It would be helpful to have climate curriculum that can 1. be adapted to a school garden or outdoor learning classroom 2. incorporate topics that are relevant to sustainability (water conservation and protection, agriculture, waste management -e.g. composting) and 3 lesson plans that are aligned with state standards, STEM or NGSS so that they are easy for teachers to integrate into what they are already doing/ required to do.
- The media may need to get involved to document how little, or how much, teachers tackle this subject. I sense many teachers avoid the subject.
- Grant funding focused on climate change education would greatly support the multiple non-profit organizations who provide excellent program delivery.
- We're working to tie in Soil Health/Regen Ag/Soil Carbon with biology and club Climate curriculum. Our students are very interested in student-appropriate actions they can take - - any guidance we can give them is much appreciated!
- The most important thing that 350 NM could do would be to align and build on the work that other organizations in the state are already doing in this arena!
- I very much support putting a much larger and more direct focus on getting significant climate change education to every student in the state. I am trying to do some more direct teaching about it myself.

- Please indicate if 350NewMexico.org is already working with Northern NM Climate Reality. If not, we can circle up.
- I've attended webinars and browsed publications about teaching climate change, but it still seems like this broad thing. It would be awesome if New Mexico teachers were given a well-polished newsletter (not a full intensive curriculum) with unbiased information about "New Mexico's Changing Climate" citing relevant examples in our state and why it's important to pay attention. I would be thrilled to help with such an endeavor in any way.
- PED must be improved to improve school outcomes and same applies to higher education.
- Our Elementary students just completed a unit on what they envision their houses will look like in 2040. It is part of the P.B.L. (Project Based Learning) curriculum. Clearly the children understand that we ALL must contribute to environmental stewardship.
- Having worked for on climate education for some 30 years, I believe humans need to adapt their own personal and community ways of using our resources. (habits). In this capitalist/consumer society we haven't adopted community ways...thinking about the all instead of the me. There is a whole study on this through consumerism.
- I'd like to be involved in any efforts to educate and/or spread awareness about climate change issues among NM youth.
- Where can we find funding opportunities??