



Climate Emotions in the Classroom: Research Findings from U.S. Public Middle School Teachers



Climate
Mental Health
Network



NEEF National
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Introduction

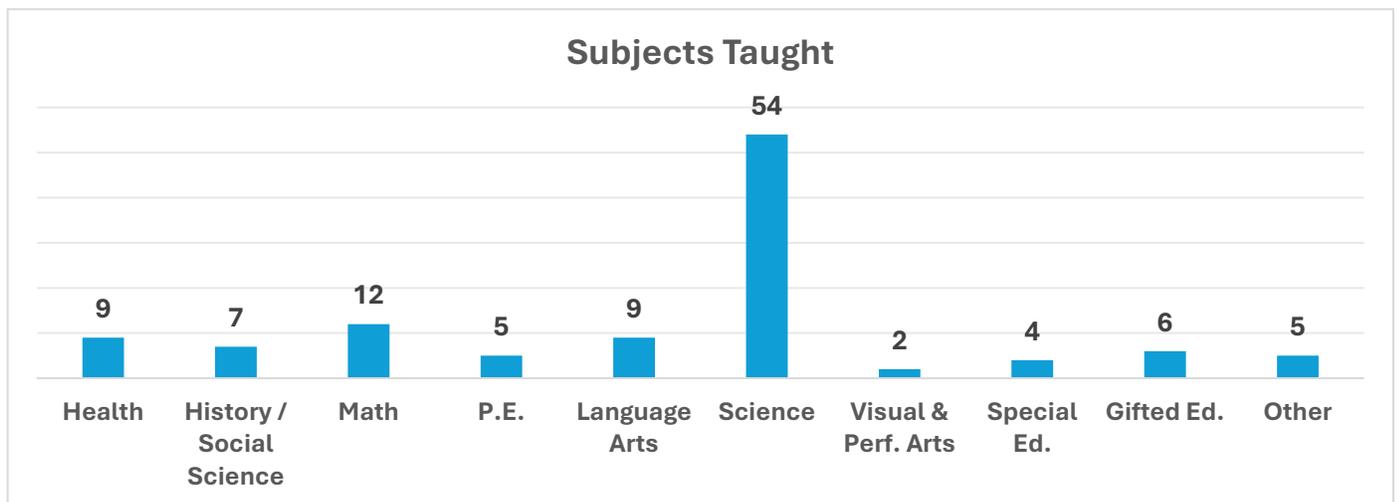
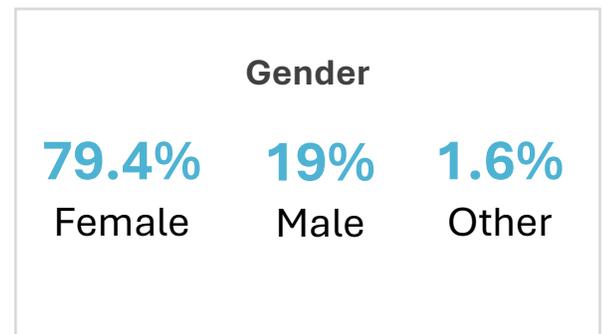
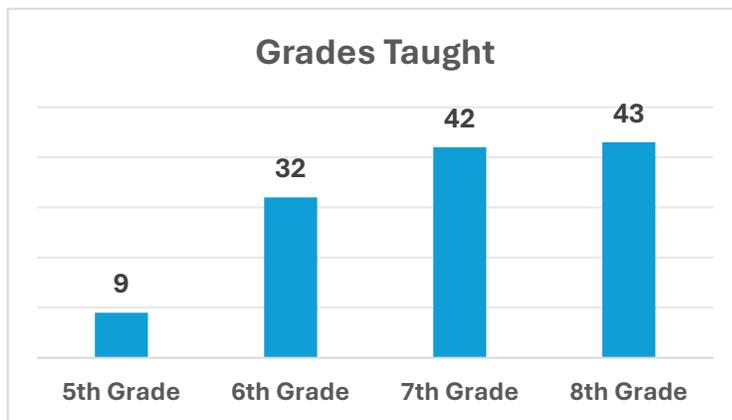
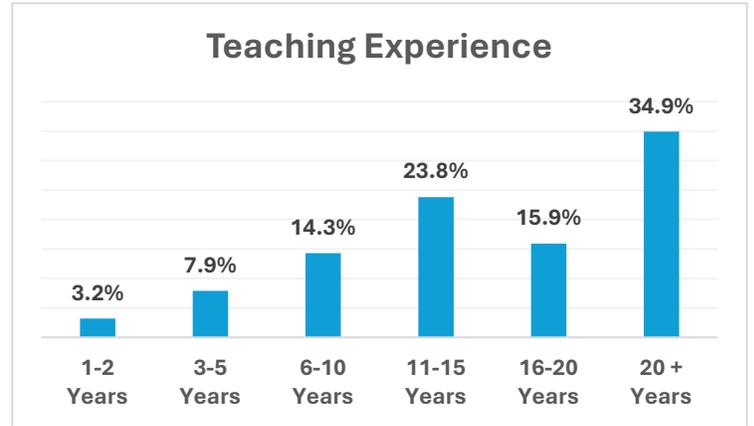
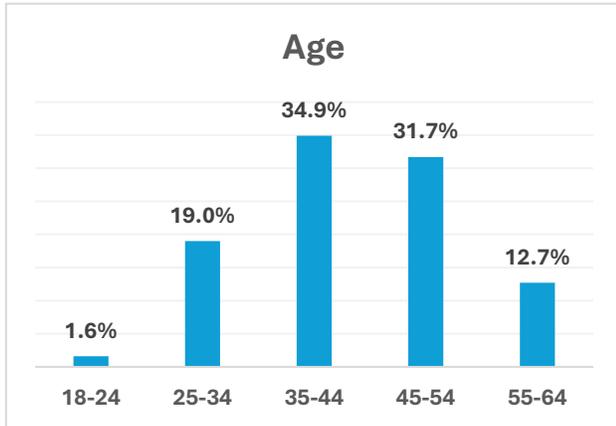
Climate Mental Health Network, in partnership with the National Environmental Education Foundation (NEEF) conducted an IRB-approved research study, involving a survey and focus groups with middle school teachers from across the United States from January - December 2023. The goals of this research were to investigate (1) the emotional impacts teachers encounter in students related to climate change, (2) the emotional impacts teachers themselves experience, and (3) ways to support teacher and student mental health in the context of climate change. To this end, we gathered survey data from 63 middle school teachers, and 32 of these teachers also participated in focus groups to gather additional qualitative data.

| | |
|---------------------------------|---|
| Mode | Survey and focus groups |
| Data Collection Dates | January - December 2023 |
| Eligibility Requirements | <ul style="list-style-type: none">▪ English speaking▪ Employed as a teacher serving middle school (5th-8th grade) students▪ Employed at a public school (or public charter school) in the United States▪ Access to a private, wifi-connected device▪ Not receiving or pursuing funding from NEEF▪ Had taught about climate change or related environmental issues and/or had encountered students with negative emotions related to climate change and/or had taught in a school that had been directly impacted by an extreme weather event |
| Sample Size | 63 middle school teachers across the United States (32 of these teachers also participated in the focus groups) |
| IRB-serving institution | University of California, Berkeley |
| IRB # | 2022-10-15699 |



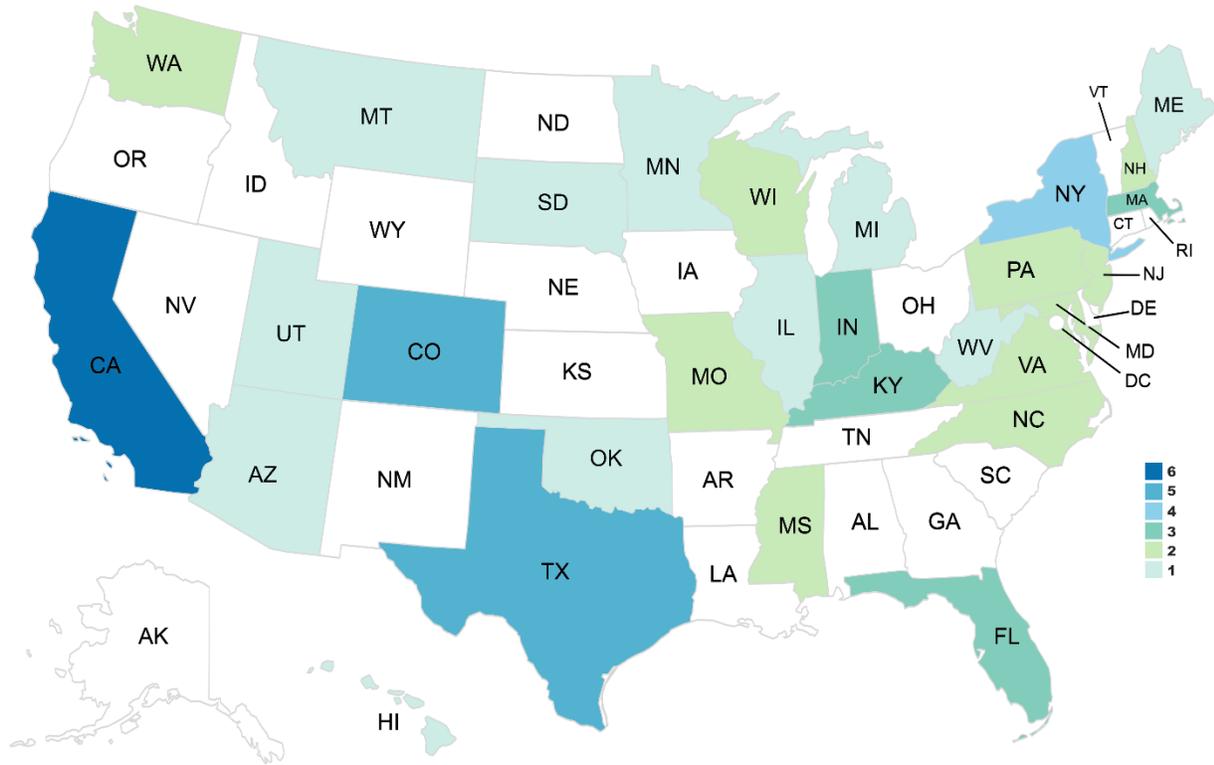
Participant Profile

Number of teachers unless otherwise noted.





School Location & Number of Participating Teachers



School Setting



Suburban
49.2%



Urban
23.8%



Rural
25.4%



Other
1.6%



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Key Findings

- **The majority of teachers and their students had been directly impacted by an extreme weather event.** 71% of teachers in our survey said they had been personally impacted by an extreme weather event; 76% of teachers said their students had been directly impacted.*
- **The majority of teachers said their students expressed negative emotions about climate change.** 71% of teachers in our survey said students express worry when learning about climate change; 72% said their students had expressed worry related to directly experiencing an extreme weather event.
- **The majority of teachers said they personally struggled with negative emotions about climate change.** 82% of teachers in our survey reported feeling worried when teaching about climate change. 80% said they had experienced worry related to being directly impacted by an extreme weather event. Many teachers said that an extreme weather event had caused them anxiety, fear, depression, and/or trauma.
- **The majority of teachers were concerned that climate change would negatively impact the mental health and wellbeing of their students.** 83% of teachers expressed concern that climate change would harm the mental health and wellbeing of their students.
- **The majority of teachers felt they were not fully equipped to help students cope with the mental health impacts of climate disasters.** 67% of teachers in our survey said that they did not have the resources and support they need to effectively support student climate emotions.
- Teachers suggested that any newly developed resources for climate emotions should be **easy to use and implement, targeted to middle schoolers, and aligned with standards.**
- Teachers recommended that resources **include case studies that showcase peers and incorporate action ideas and focus on solutions.** They also suggested that teacher trainings would be helpful.

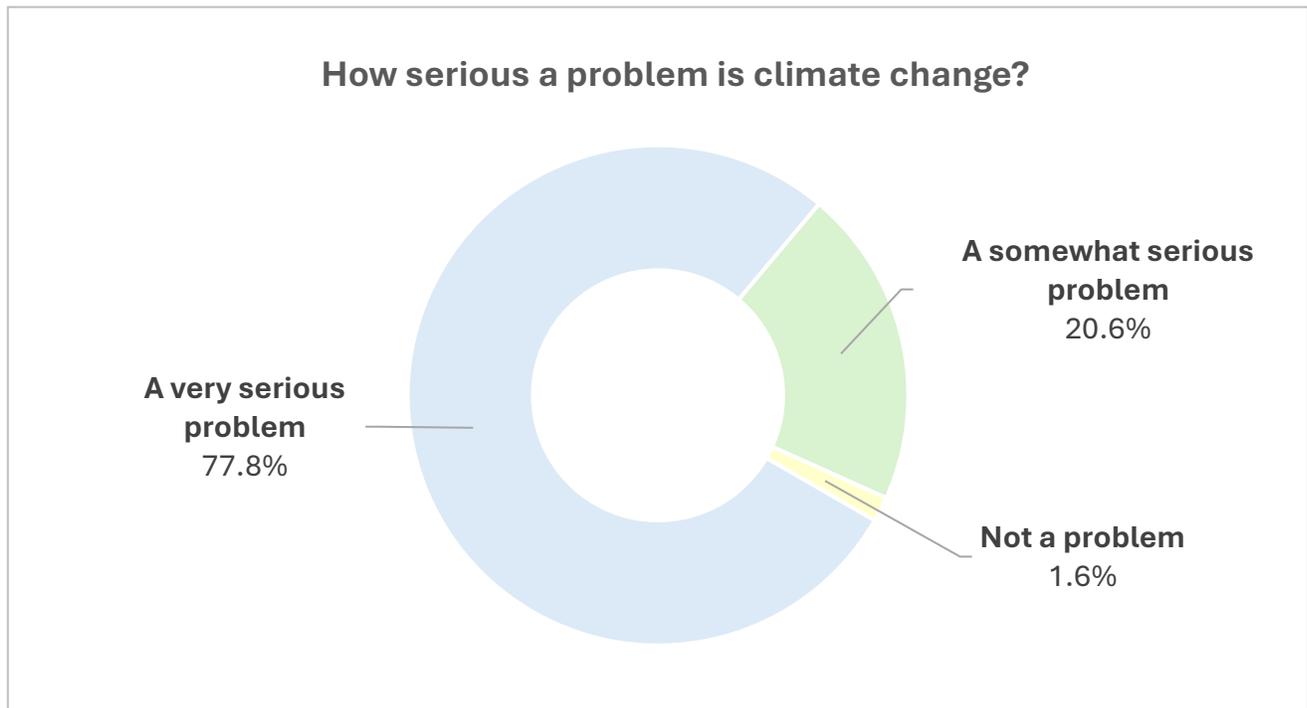
*Note that this percentage may have been influenced by our eligibility criteria. However, this statistic is aligned with recent polls showing that 70% of U.S. adults say they've been impacted by extreme weather in the past year. (Source: Pew Research Center, May 2024 poll of a representative sample of 8,638 US adults).



Results

Teacher Concerns about Climate Change

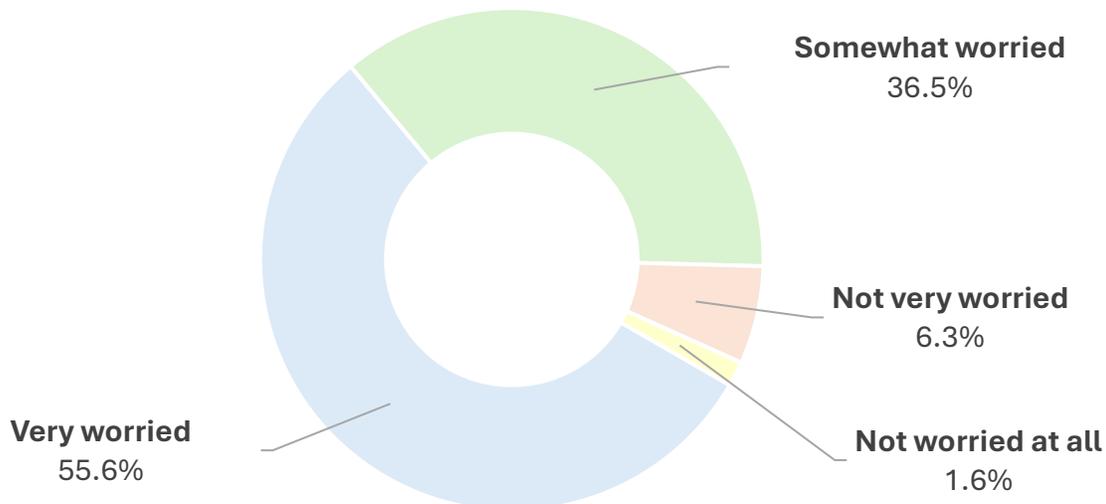
We informed teachers in both the survey and focus groups that all questions about climate change referred specifically to changes occurring in the last 150 years.



More than three-quarters of teachers considered climate change a very serious problem.



How worried are you about recent climate change?



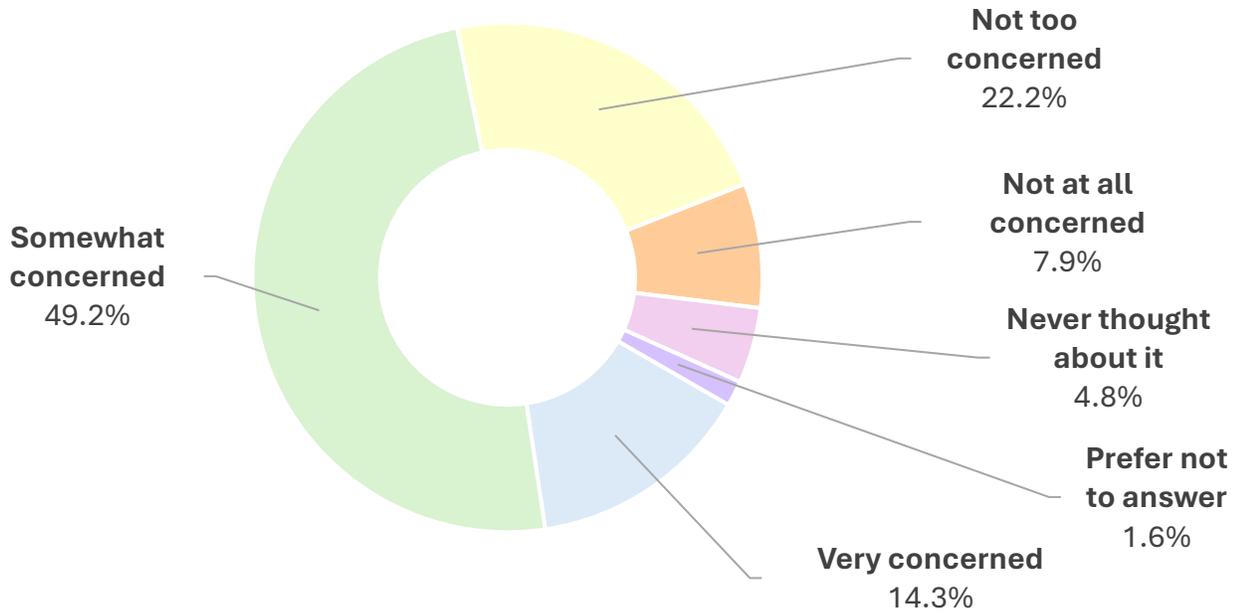
More than half of teachers were “very worried” about climate change.

Approximately 93% of teachers were either “very” or “somewhat” worried about climate change. Only 6% (4 teachers) were “not very worried”, and only one teacher was “not at all worried”. Overall, the findings suggest that the majority of teachers in our study were significantly concerned about climate change.





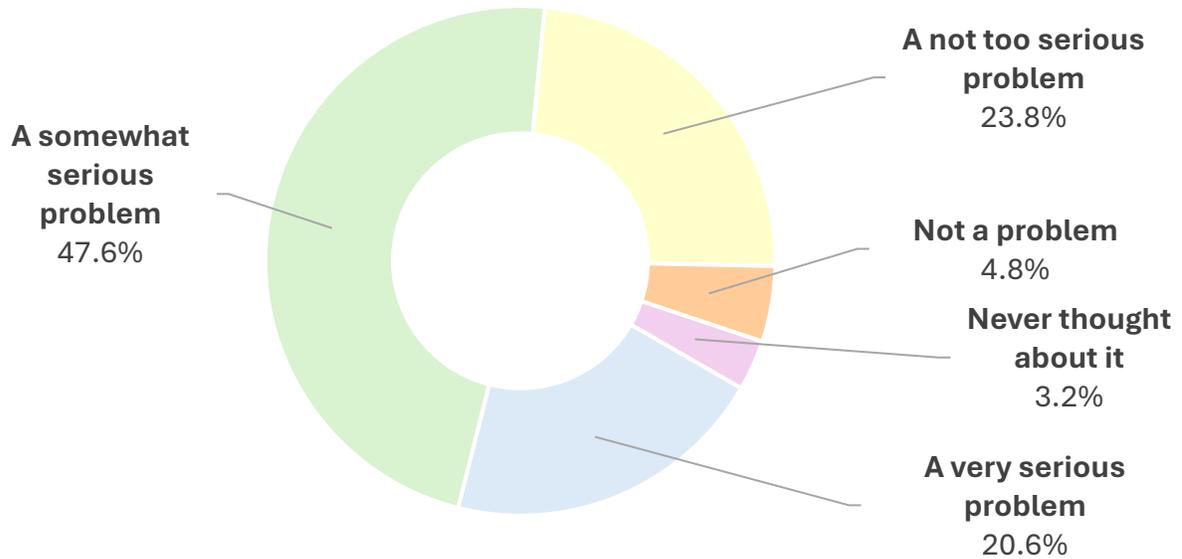
To what extent are you concerned that climate change will negatively impact your mental health and well-being?



Roughly half of teachers (49.2%) said they were “somewhat” concerned that climate change would negatively impact their mental health and well-being, while 14.3% were “very” concerned. Only 7.9% of teachers said they were not at all concerned.



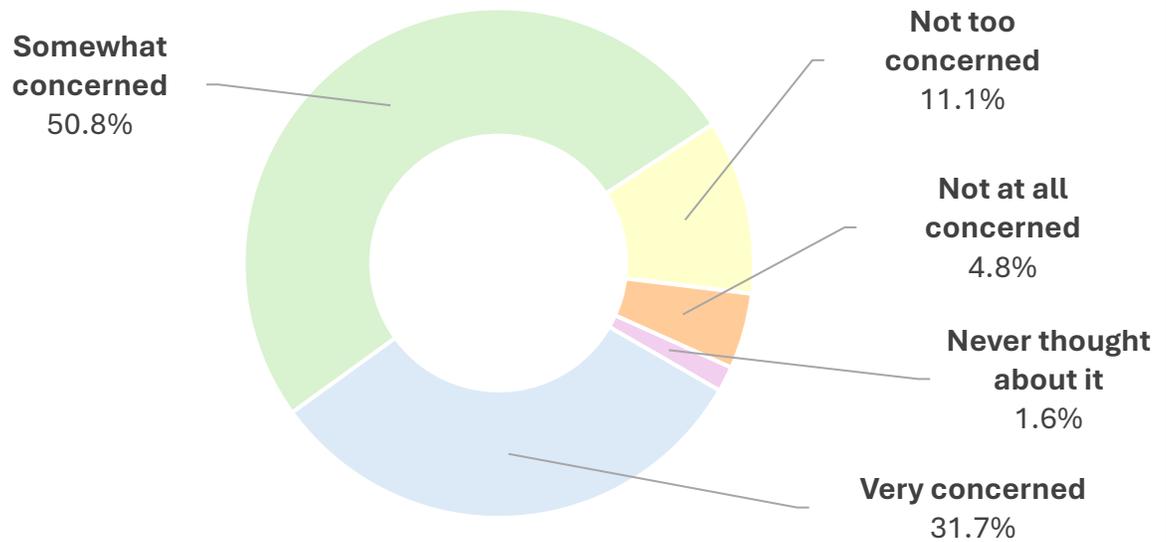
In your opinion, how serious are the emotional or mental health impacts of climate change on students?



Teachers most frequently characterized the impact of climate change on student mental health as a “somewhat serious problem” (47.6%). 68.2% thought it was a “very” or “somewhat” serious problem. Less than 5% of teachers thought it was not a problem at all.



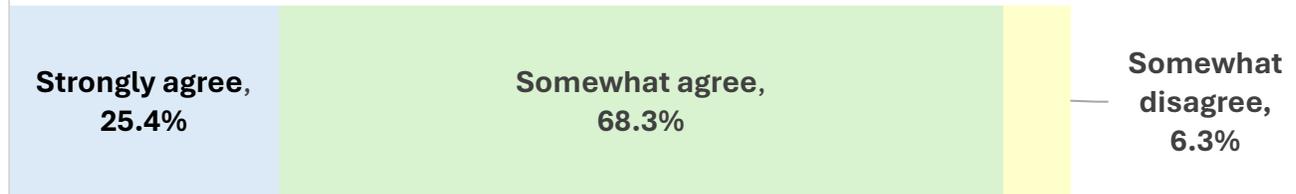
How concerned are you that climate change will negatively impact the mental health and well-being of your students?



The vast majority of teachers expressed some concern that climate change would harm the mental health and well-being of their students.

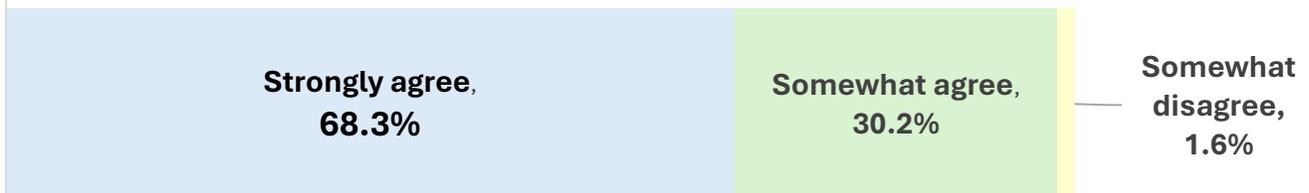


I can do something to help students cope with the emotional impacts of climate change



The vast majority of teachers felt they could help students cope, at least to some degree, with the emotional impacts of climate change. No teachers strongly disagreed that they could help students cope with this issue, suggesting that all teachers in the study felt they could help students in some capacity.

If I help students cope with the emotional impacts of climate change, it can make a positive difference in students' lives

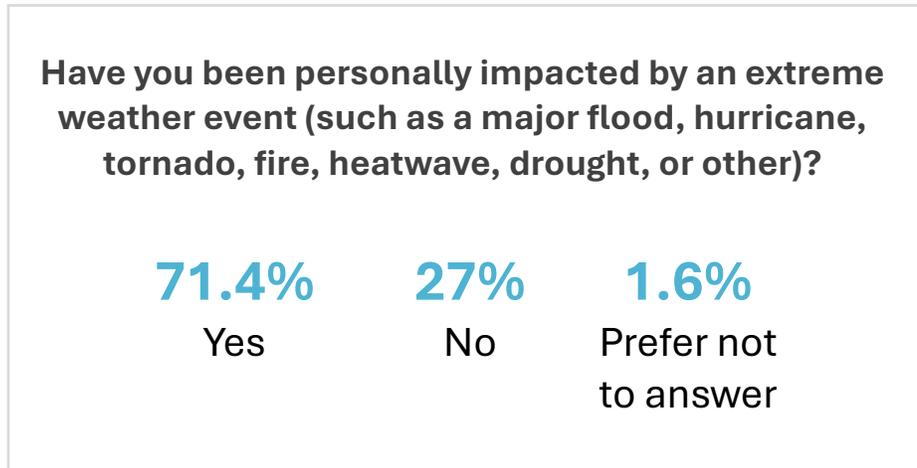


Most teachers (68.3%) strongly agreed that helping students cope with the emotional impacts of climate change could make a positive difference for students.

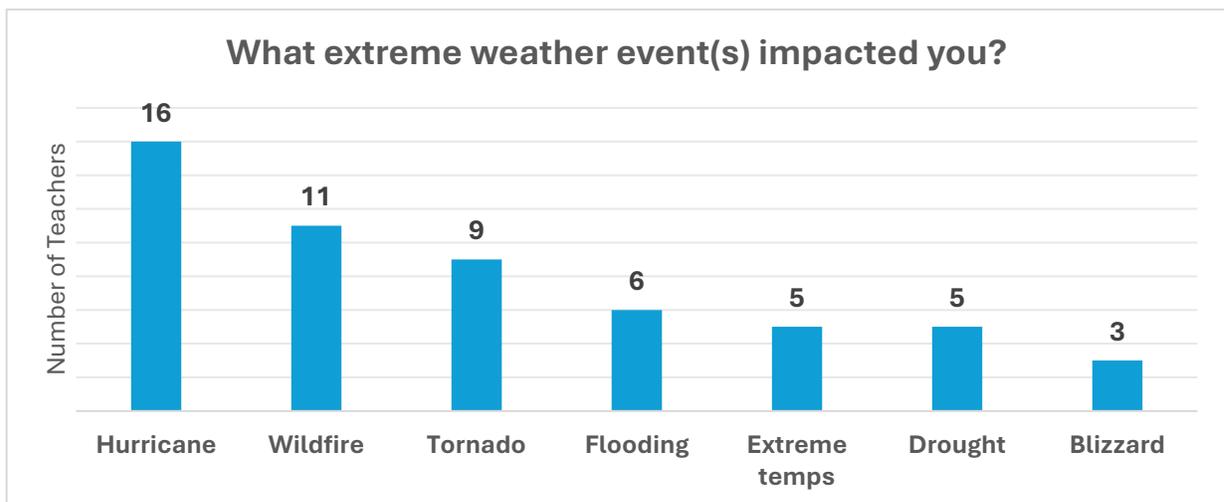


Direct Impacts of Climate Change on Teachers

The large majority of teachers (71.4%) said they had been directly impacted by an extreme weather event, such as a major flood, hurricane, tornado, fire, heatwave, or drought.



Teachers had commonly experienced hurricanes (such as Hurricanes Florence and Sandy), wildfires, and/or tornadoes. Teachers also reported experiencing flooding, extreme and unusual temperatures (including heatweaves, and freezing temperatures in areas where this is uncommon), droughts, and blizzards.





What impact did this extreme weather event have on you and your life?



Emotional impacts. Many teachers ($n = 14$) said that an extreme weather event had emotional impacts on them, causing anxiety, fear, depression, or trauma.

“My husband, three pets, and I had to evacuate. As a homeowner, that process was scary! It was terrifying watching what was happening to [my city] on the news. We were absolutely helpless. Trying to return there was flooding everywhere and roads were closed. Trees were down, there was no electricity and we had no idea what the state of our home would be. It was one of the scariest experiences of my life.” (Hurricane Florence 2018)

“I now have severe PTSD when it comes to weather related events.” (Hurricane Michael 2018, category 5 hurricane)



Disruption of school and activities. Many teachers ($n = 12$) said that an extreme weather event had caused their school to close, or caused the closure or cancellation of normal activities.

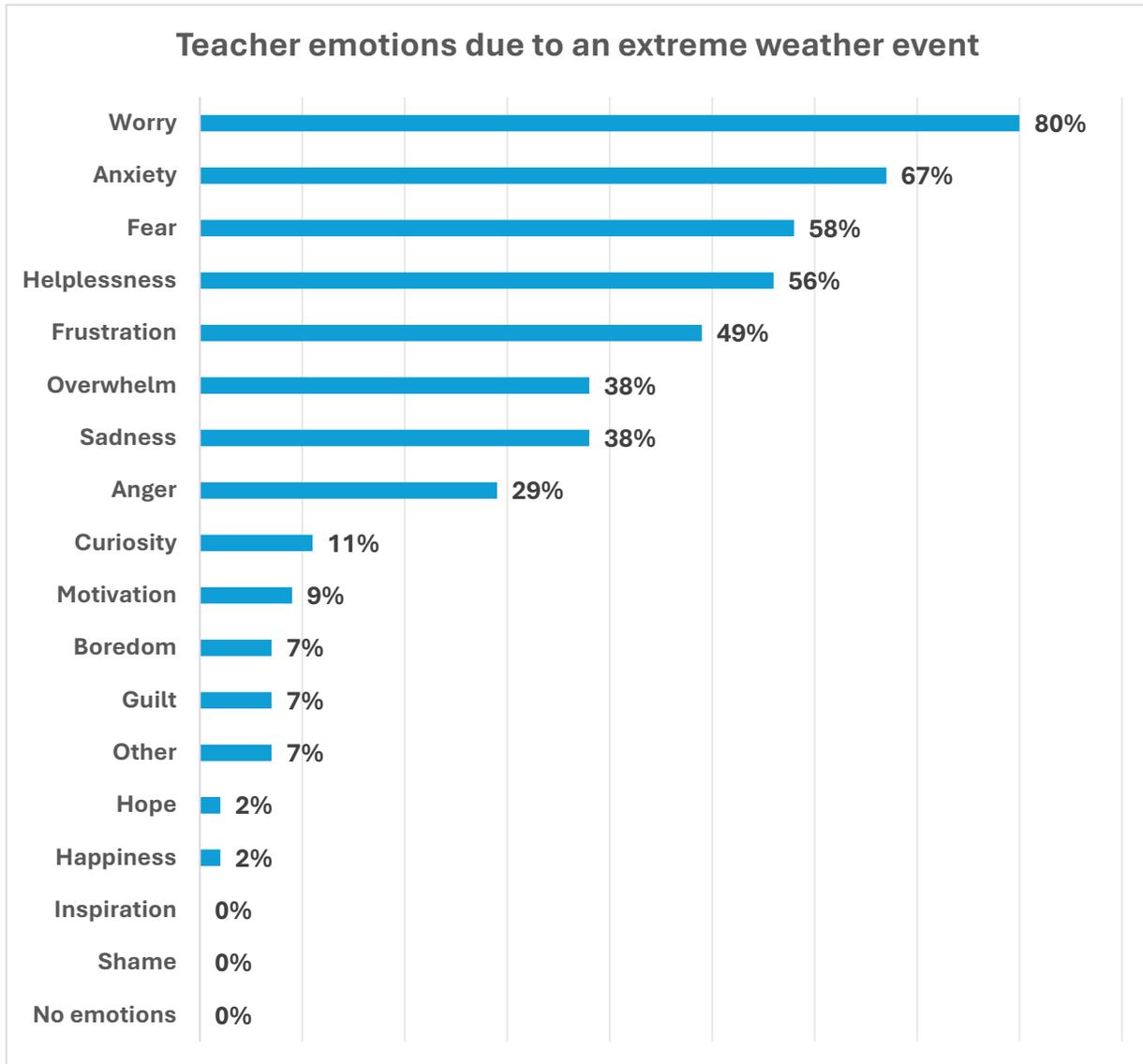
“We get summer fires every year, but some years are particularly bad. When this happens, summers are not nearly as enjoyable as the smoke in the air limits the amount of time we should be outside. As school resumes at the end of August, it has been common to have all classes indoors (no recess because of the smoke in the air) and for after-school sports to be canceled. It affects all students, but especially those sensitive to smoke, such as those with asthma. It can be a bit depressing when parks or hiking trails are closed, or schools cancel activities because of smoke in the air.” (Wildfires)

“I couldn't open windows or go outside for long periods of time. I got some terrible headaches. I couldn't see the mountains, or explore them like I love to do.” (Wildfires)



Property loss. Teachers commonly noted ($n = 11$) that an extreme weather event had caused major property damage or loss.

“I had nowhere to live for 5 months and my school was also destroyed so it was a dramatic change to every aspect of my life for some time.” (Hurricane and Flooding)

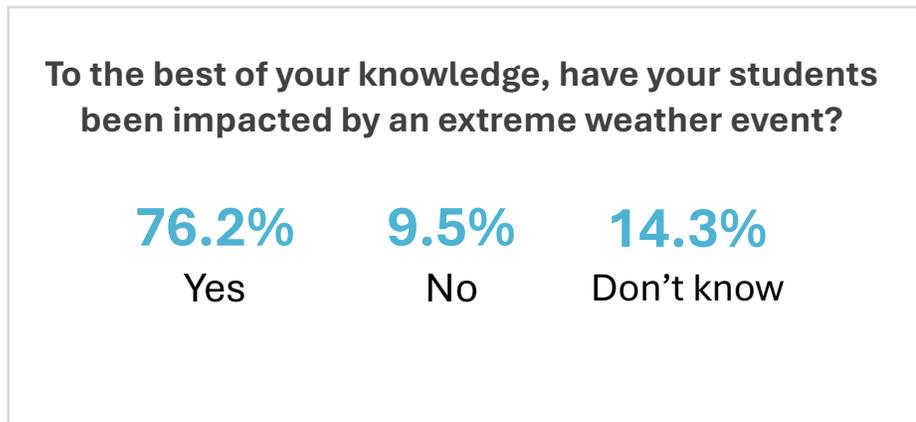


Teachers most frequently endorsed feeling worry, anxiety, and fear related to the extreme weather event(s) they had experienced. They also commonly experienced helplessness, frustration, overwhelm, sadness, and anger.

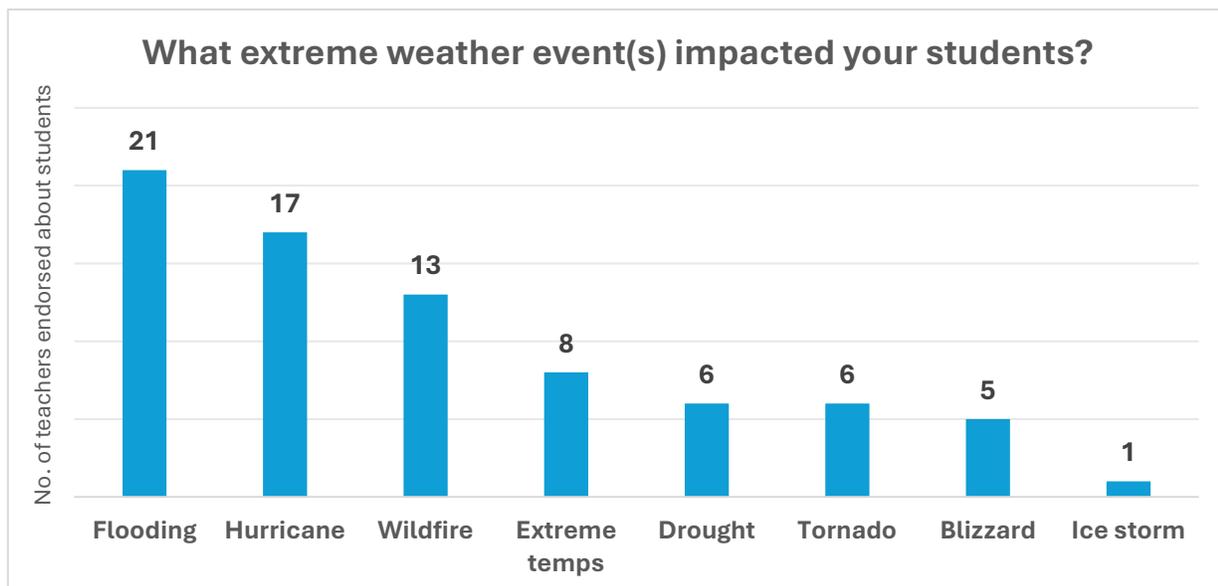


Direct Impacts of Climate Change on Students

More than three-quarters of teachers (76.2%) indicated that their students have been directly impacted by an extreme weather event. Another 14% said they didn't know if their students had been impacted or not, and roughly 10% of teachers said they thought their students had not been directly impacted. Thus, the large majority of teachers thought that at least some of their students had been impacted by at least one extreme weather event.



Teachers said their students had been impacted by flooding, hurricanes, wildfires, extreme temperatures, and other extreme weather events.





What impact did this extreme weather event have on your students and their lives (as far as you know)?



Emotional impacts. Teachers most frequently cited emotional impacts on students ($n = 23$), including anxiety, fear, heightened vigilance to weather alerts, and loss of motivation and focus at school.

“My students were worried, sad and stressed.” (Hurricane)

“They were lethargic, could not focus, and melting emotionally!” (Heatwave)

“They said it was traumatic.” (Flooding)



Loss. Many teachers ($n = 18$) stated that students had experienced significant losses (of loved ones, homes, or property), and/or had experienced significant damage to property.

“Their homes were damaged by water and high winds, which caused their families to be displaced for several weeks. These students shared their memories of living in hotel rooms and losing many of their belongings.” (Hurricanes)

“Some lost homes, several were displaced from their homes and lost belongings. They were lost and didn't know how to deal with the event. Sad and overwhelmed at first. Fearful of future storms, and then handling the situation by being light-hearted and almost joking about the tornado.” (Tornado)



Displacement. Related to loss and damage of property (above), many teachers ($n = 12$) said that students had been displaced due to an extreme weather event.

“My students were displaced. Some of them lost their homes. Some of my students didn't have food. Some of my students suffered greatly during Florence. It was heartbreaking to watch.” (Hurricane Florence, 2018)

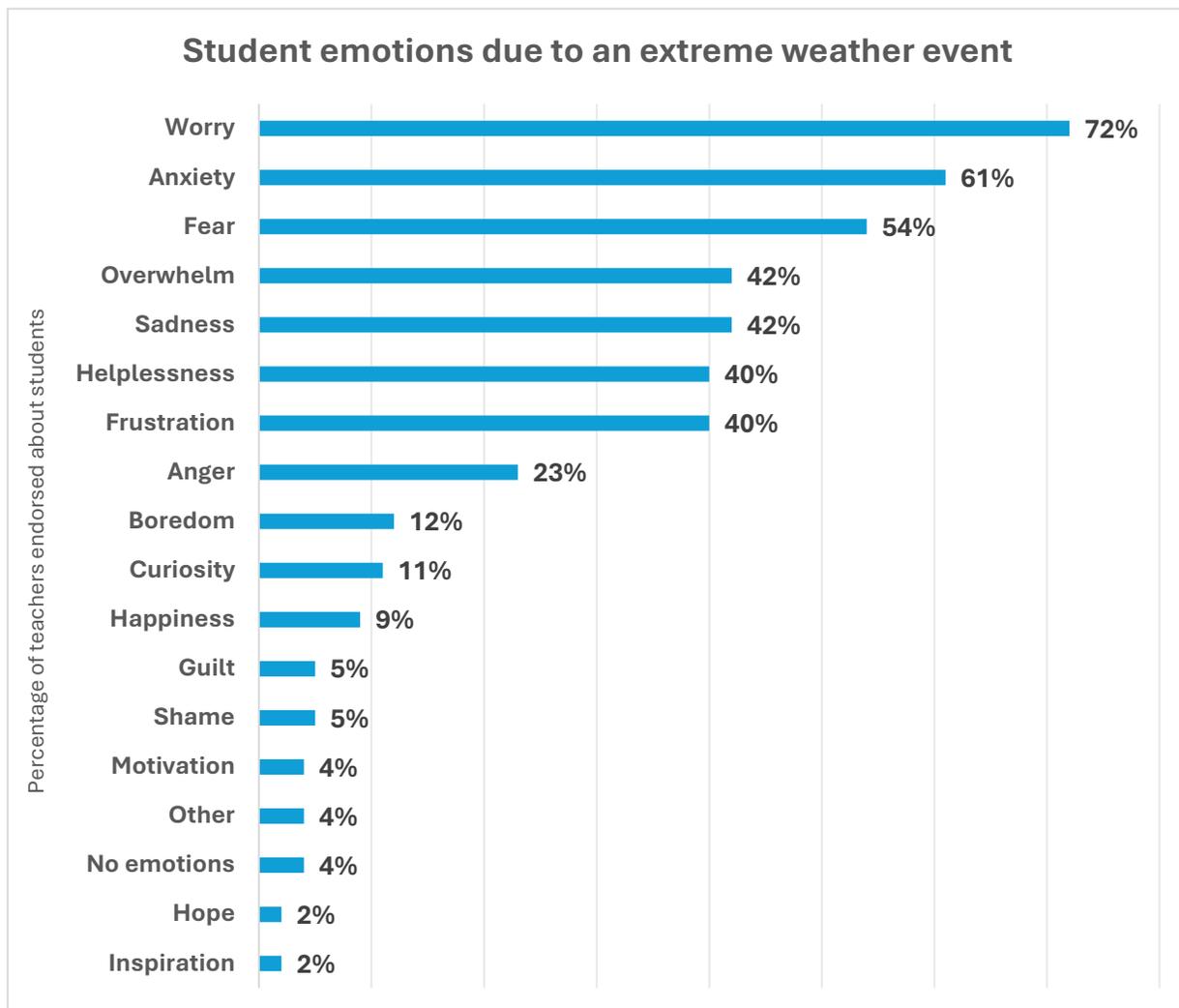


Learning disruption. A number of teachers ($n = 10$) mentioned that students were impacted because they lost instructional time due to school being closed or inability to access school.

“Many students lost educational time, at least a month.” (Hurricane Ian)

“Not coming to school and being with anxiety and nervous attacks.” (Hurricane and flooding)

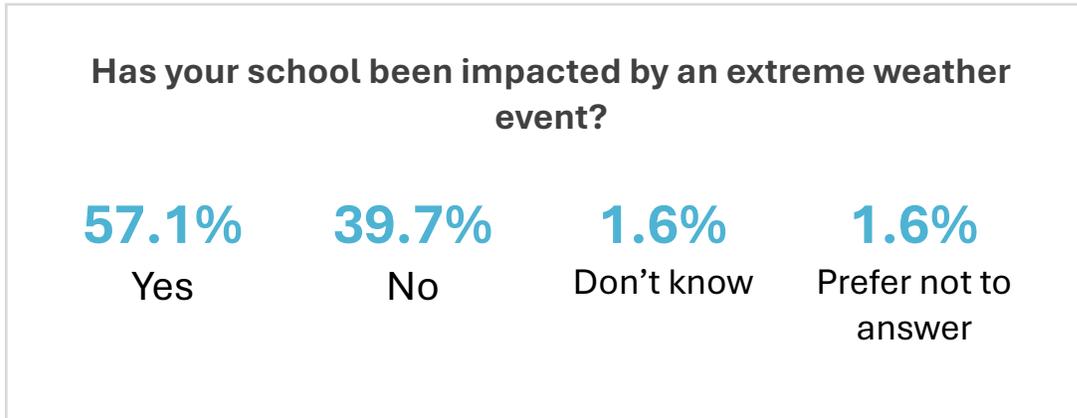
Teachers most often said that students who had been directly impacted by an extreme weather event expressed worry, anxiety, and fear related to the disaster. Other commonly observed emotions in students were overwhelm, sadness, helplessness, and frustration.



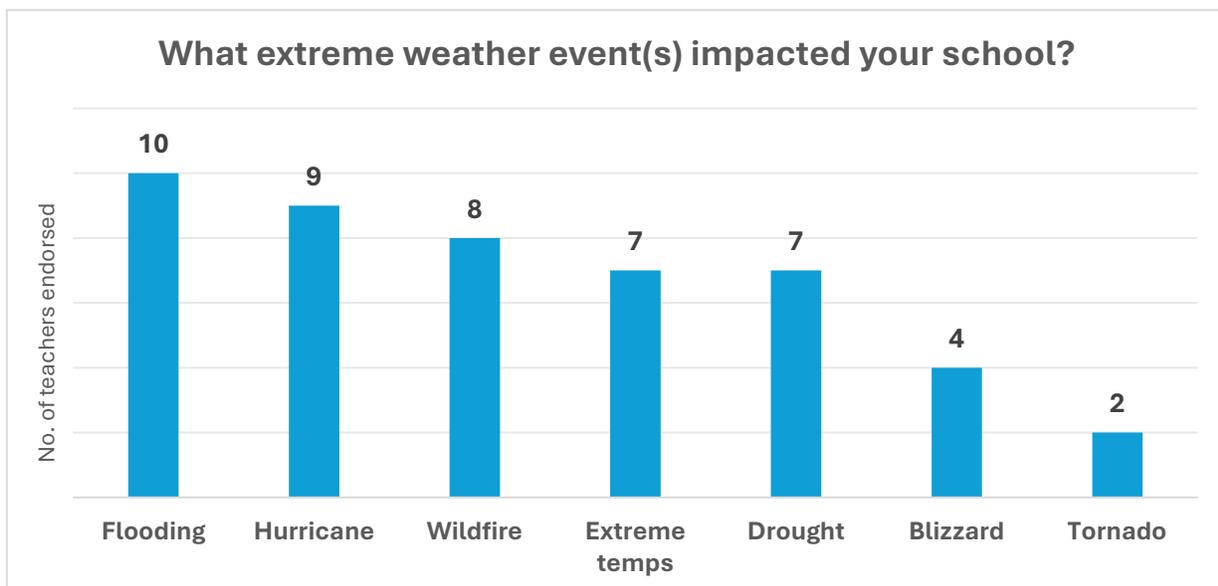


Direct Impacts of Climate Change on Schools

Over half of teachers (57.1%) said that the school where they worked had been impacted by an extreme weather event, such as a major flood, hurricane, tornado, fire, heatwave, drought, or other event; 39.7% of teachers said that their school had not been directly impacted.



The most common extreme weather events that had impacted teachers' schools were flooding, hurricanes, and wildfires. Schools had also been impacted by extreme temperatures, droughts, blizzards, and tornadoes.





What impact did this extreme weather event have on your school?



School closures and accessibility issues. Many teachers ($n = 20$) said that their school had been closed or was inaccessible to students and staff due to an extreme weather event.

“We had 13-14 snow days that January/February. We typically have 1-2 snow days per winter. It was very hard to teach that winter because there was no consistency.” (Polar vortex, 2019)

“Our school was closed for nearly one month after the hurricane made landfall. Structurally we’ve been dealing with repairs since the time.” (Hurricane Ian, 2023)

“The hurricane shut the school down for almost half of the school year while it was being rebuilt.” (Hurricane)

“Couldn’t go to school due to flooded roads.” (Flood)

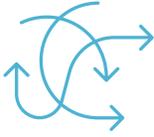


Students experienced loss and stress. Teachers frequently said students and families at their school had experienced significant loss, including loss of loved ones, homes, belongings; others mentioned threats to the livelihood of families at their school ($n = 9$).

“We’ve had students lose homes/belongings and even people to these storms. The students bring that trauma with them to school.” (Hurricanes and tropical storms)

“Several students lost their homes. Many were temporarily or semi-permanently displaced. Many lost belongings.” (Tornado)

“We are a rural school so the heat and drought caused added stress on students because of the effect it was having on their families at home with crops and livestock.” (Heatwave and drought)



Disruption of normal activities. A number of teachers described a disruption in normal activities ($n = 9$), primarily the inability to have students go outside due to poor air quality. They also mentioned events being canceled, disruption of bus routes, and difficulty getting kids to and from school.

“Students were not allowed to go outside during lunch time and were bused to classes at the high school only a few blocks away.” (Wildfires)

“Kids could not play outside at recess, ashes falling like snow.” (Wildfires)

“We have had less time to take kids outside, have been unable to use some of our spaces due to fast snow causing small floods/muddy areas. We have also experienced a greater number of red air days due to heat, wildfires in surrounding areas, and other things.” (Drought and heatwave)



Impacts of learning and teaching. Several teachers ($n = 7$) said that the extreme weather event had disrupted students’ ability to learn, and teachers’ ability to teach effectively.

“Have been without power for several hours so no learning can take place.” (Flooding)

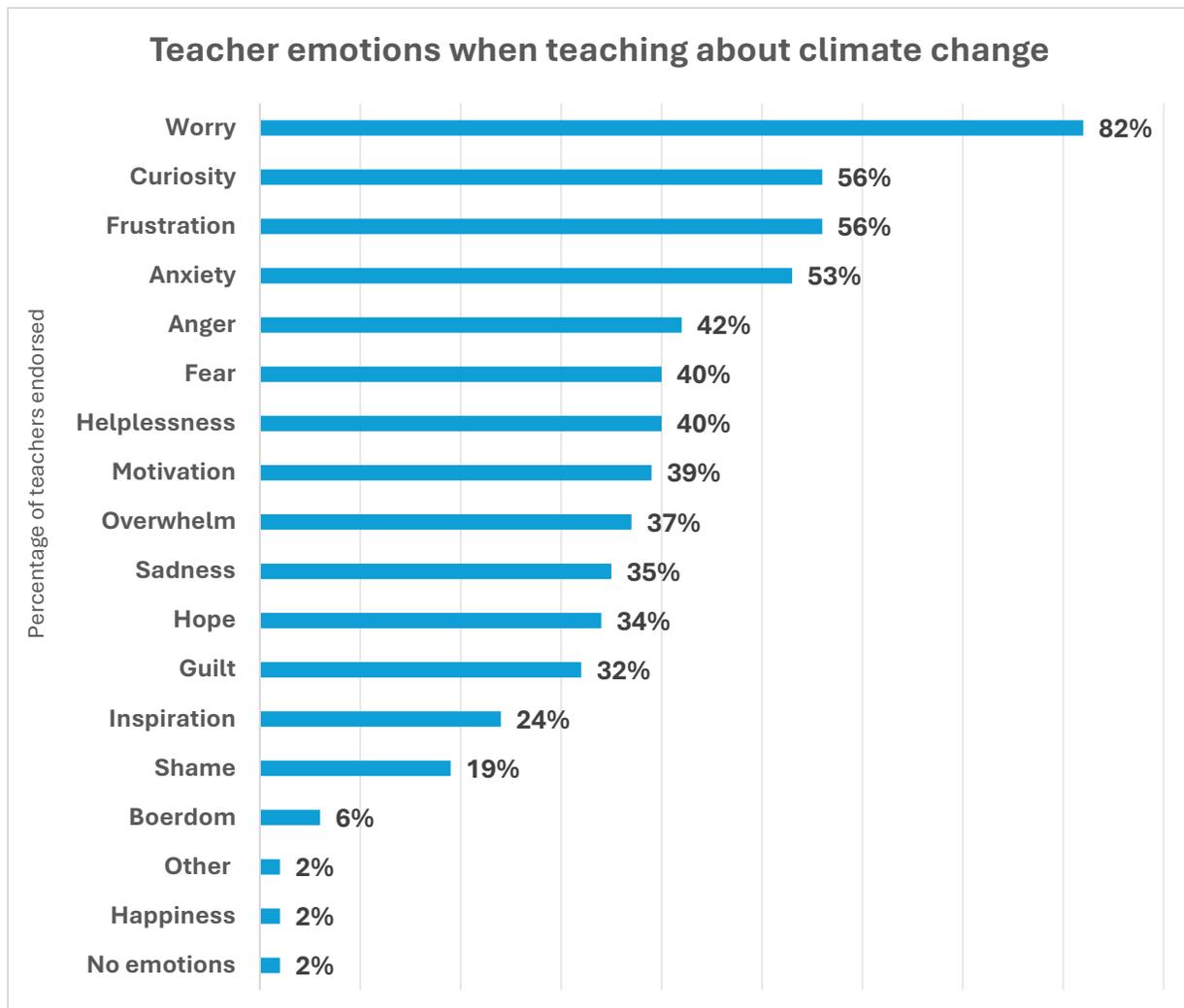
“Too hot to think; bad air quality, upset people.” (Fire, heatwave)

“It is challenging to learn when your home is in shambles.” (Hurricanes and tropical storms)



Indirect Impacts of Climate Change on Teachers

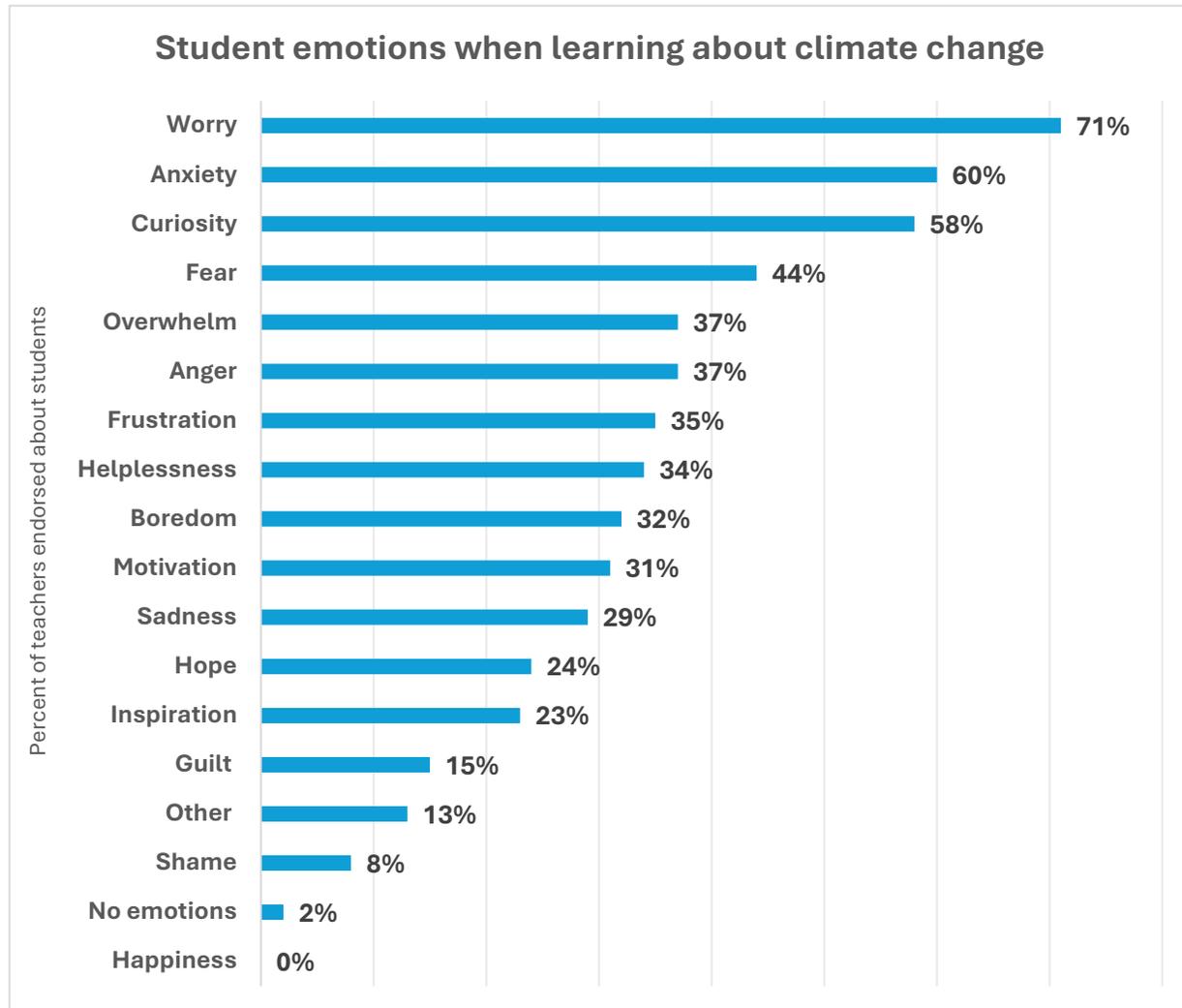
Teachers most commonly reported experiencing worry when teaching about climate change. Other commonly reported emotions were curiosity, frustration, and anxiety, which were endorsed by more than half of teachers. A third of teachers also reported experiencing hope when teaching about climate change.





Indirect Impacts of Climate Change on Students

Teachers most frequently indicated that students expressed worry, anxiety, and curiosity when learning about climate change. Teachers also commonly reported witnessing fear, overwhelm, anger, and several other negative emotions in their students. Nearly one-quarter of teachers (24%) said their students have expressed hope.





Resource Needs for Addressing Climate Emotions

Teacher quotes demonstrating the need for resources to help them address climate emotions in their classrooms.

“I know climate change will impact the generation I teach the most but I do not have the resources or knowledge to address how to inform them of the severity of the impact climate change will have on them without overwhelming them with that burden.”

-A middle school earth science teacher

“I believe that we have a wide array of emotions that are caused by climate change and would like to know how to adequately handle these emotions.”

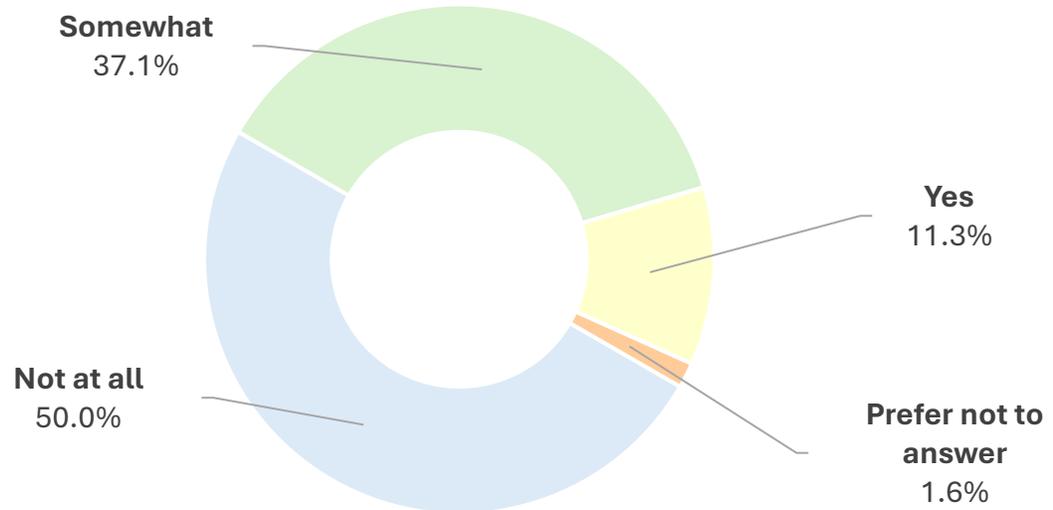
-A 6th grade biology teacher

“I would love some resources to help teach climate change and to help address student emotions elicited as a response from the topic.”

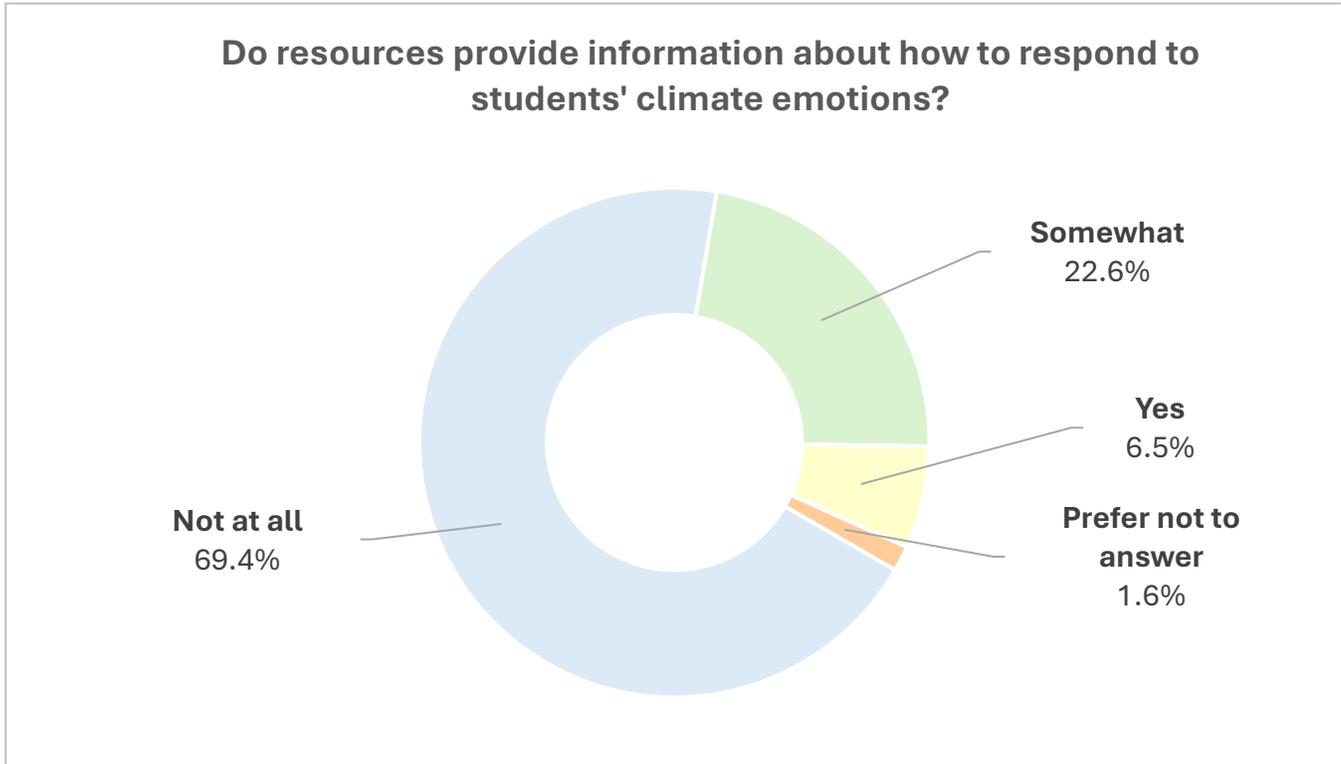
-A middle school life science teacher



Do the resources you use to teach climate change acknowledge climate emotions?



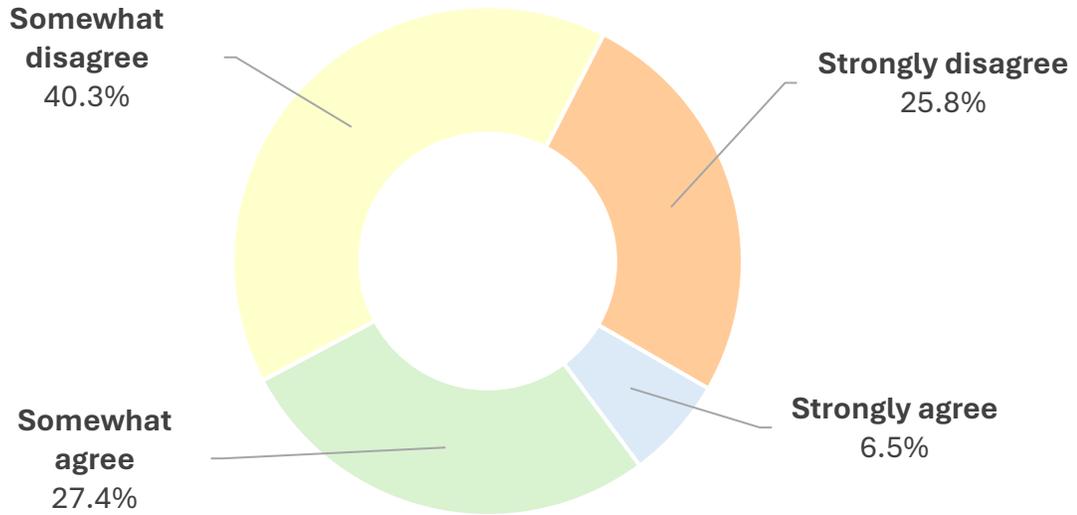
Only 11% of teachers in our study said that the materials they use to teach about climate change acknowledge climate emotions; 37% of teachers said their climate change teaching materials “somewhat” acknowledge climate emotions. Half of participants (50%) said the resources they use to teach climate change do not acknowledge the potential emotional impact of learning about climate change.



The majority of teachers (69%) said that the resources they use to teach climate change do not include information on how teachers should respond to students' climate emotions. About a quarter of teachers (23%) said their resources “somewhat” provide this information, and only about 7% said their resources definitely do provide this information.



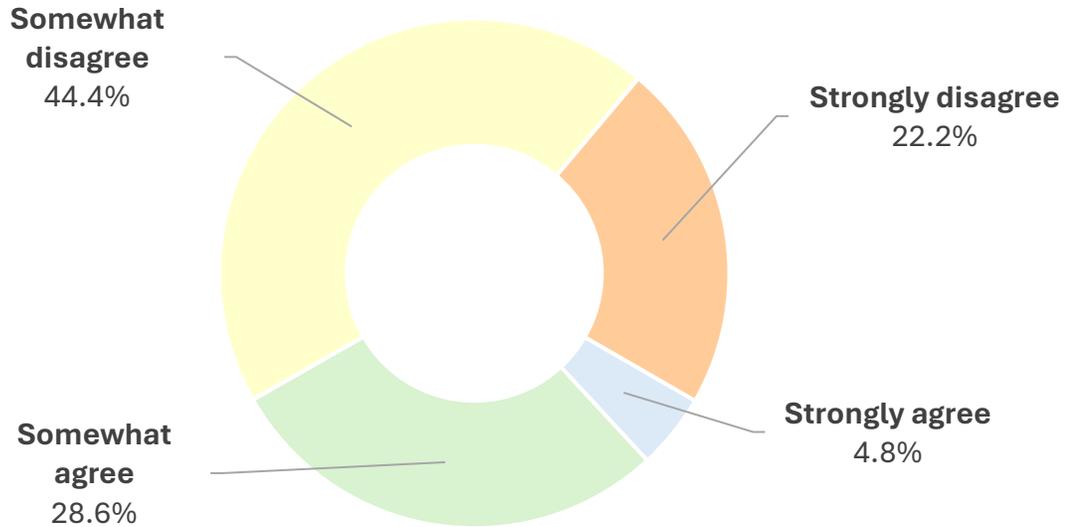
I have the resources and support I need to address student climate emotions



The majority of teachers (a combined 66.1%) “somewhat” or “strongly” disagreed that they currently have the resources and support they need to effectively support student climate emotions. This suggests that educators feel unprepared to deal with student climate emotions, and need more resources and support to support student climate emotions effectively.



I have the resources I need to emotionally support students impacted by extreme weather events



Most teachers (a combined 66.6%) “somewhat” or “strongly” disagreed that they have the resources and support they need to effectively provide emotional support to students impacted by extreme weather events. Thus, the majority of teachers felt they were not fully equipped to help students cope with the mental health impacts of climate disasters. In contrast a combined 33.4% of teachers “strongly” or “somewhat” agreed with the statement, suggesting that approximately one in three teachers in our study felt that they were at least partially prepared to help students cope with the emotional impacts of disasters.



I have the resources and support I need to cope with my climate emotions



Slightly more than half of teachers (51.6%) said they “strongly” or “somewhat” agreed that they have the resources and support they need to cope with any personal emotions that may arise when teaching about climate change; while 48.4% of teachers somewhat or strongly disagreed with this statement. This suggests that only about half of teachers feel fully equipped to effectively handle their emotions about climate change.



Perceived Barriers

Teachers in our study indicated that barriers existed to incorporating tools for addressing climate emotions in their classrooms. These barriers included individual level, interpersonal level, community level, and institution or policy level barriers.

The table below illustrates the barriers anticipated by teachers in our study.

Perceived Barriers to Incorporating New Climate-related Tools in the Classroom

| Level of Analysis | Exemplary Barrier |
|--|--|
| Individual level (student) | <ul style="list-style-type: none"> ▪ Lack of salience to the issue ▪ Lack of knowledge and understanding about climate change ▪ Prioritization of other issues/concerns |
| Interpersonal level (parents, family, etc.) | <ul style="list-style-type: none"> ▪ Parent/family beliefs about climate change/Pushback ▪ Prioritization of other issues/concerns |
| Community (school) | <ul style="list-style-type: none"> ▪ Perceived lack of relevance – minimal climate-related events ▪ Co-teacher/substitute/Aid not believing in climate change |
| Institutional/Policy | <ul style="list-style-type: none"> ▪ Lack of flexibility in State Standards ▪ State testing prioritization |



Resource Preferences

General Recommendations

1. **Make it Easy For Teachers (Easy to Use, Reproducible, and Modifiable).** Teachers recommended that any resources created should be easy for teachers to use and implement without much preparation or leg work, as well as easy to modify for different types of learners and abilities, and reproducible so it can be scaled for schoolwide use and beyond.
2. **Keep it Brief.** Teachers suggested that resources should be brief and simple. For example, articles or other written resources should be kept to one page, and videos should be kept to a few minutes in duration.
3. **Align with Existing Curricula and Standards.** Teachers suggested that resources should be tied in with existing curricula and standards, such as science and social emotional learning standards.
4. **Make it Age Appropriate.** Teachers emphasized a need for resources tailored specifically to middle school students, which are accessible and appropriate for that grade range.

Format and Content Recommendations

1. **Case Studies (Videos or Articles) of Peers Talking About Climate Emotions.** Teachers suggested that case studies (in video or article format) about other youth experiencing climate emotions and taking action would be effective. They said that videos in particular tend to be an effective way of tackling tough subjects, including mental health topics, and that students respond best when they can hear directly from their other youth rather than from teachers or other adults.
2. **Include Action Ideas / Solutions.** Teachers suggested that resources should include information on solutions and how students can take action on climate change. They indicated that students often feel powerless in the face of the problem, and that providing ideas and means for action can be empowering and instill hope.
3. **Teacher Training.** Teachers conveyed an interest in trainings or workshops, either virtually or in person, to help them gain skills to address climate emotions more effectively..



Conclusion

A significant number of teachers and students have been directly affected by extreme weather events, with many teachers and students expressing negative emotions related to climate change. Teachers reported feeling worried, anxious, and even experiencing trauma due to their own climate experiences, and they also expressed concern about the mental health impact of climate change on students. Despite these challenges, many teachers felt unprepared to support students in managing these emotions, citing a lack of necessary resources and support. Teachers suggested that new resources for addressing climate emotions should be easy to implement, tailored for middle school students, and aligned with educational standards. They also recommended including case studies, action ideas, and focusing on solutions, with teacher training being particularly helpful.

Based on these findings about the experiences, needs and preferences of middle school teachers and their students, the National Environmental Education Foundation and Climate Mental Health Network created a toolkit of resources, the Climate Emotions Toolkit for Educators, which was widely endorsed by teachers in our nationwide pilot.

Acknowledgements

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- Sarah Blount, National Environmental Education Foundation
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- Sarah Newman, MPH, Climate Mental Health Network
- Jada Lewis, MA, National Environmental Education Foundation

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