Small Lessons, Big Impact

Inspiring Students to Climate Action through Education

KEY FINDING

Even brief climate lessons increased knowledge, hope, and action: twice as many students were more willing to engage in civic climate action after a single unit.

Researchers from Suffolk University and University of Washington, in partnership with SubjectToClimate and with support from the Spencer Foundation, examined how participation in SubjectToClimate units affected students' climate knowledge, emotions, and behaviors.

The study included 6 teachers and 144 students and examined what happens when climate learning moves beyond the transmission of information to help students understand their own capacity to respond.

About the Study

Understanding How Climate Education Can Support Student Action

Young people are growing up with climate change as part of their everyday reality. High-quality climate education has the potential to increase what students know while also shaping how they understand their own role, and whether they feel prepared to take meaningful action.

This study examined those connections by investigating changes in students before and after participating in SubjectToClimate units. In addition to the study's primary questions focused on climate change anxiety, community empowerment, and individual and collective action, researchers also measured outcomes including climate knowledge, hope, sense of purpose, and climate-positive behaviors.

The Research Questions

The study was designed around three primary aims:

1

Measure change following climate education.

Researchers examined changes in youth climate change anxiety and individual and collective climate action following participation in a SubjectToClimate unit.

2

Understand the relationship between emotions and action.

The study investigated the extent to which changes in climate change anxiety predicted changes in students' individual and collective climate action from before to after unit participation.

3

Explore the role of community empowerment.

Researchers examined whether students' baseline levels of community empowerment influenced the relationship between changes in climate change anxiety and changes in individual and collective climate action.

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How the Study Worked

Recruiting Participating Teachers

Teachers were recruited through multiple educator networks and outreach channels, including: social media, education conferences and networking events, physical flyers, SubjectToClimate's teacher network, and LinkedIn. Recruitment was open to educators across subject areas. Researchers prioritized outreach to schools serving racially and ethnically diverse student populations and schools where a significant proportion of students received free or reduced-price lunch.

Study Oversight and Partnerships

The study was approved by the Suffolk University Institutional Review Board (IRB) and conducted through a collaboration among Suffolk University, University of Washington, and SubjectToClimate, with grant funding from the Spencer Foundation.

After recruitment, participating educators were connected with the SubjectToClimate team to identify an appropriate unit plan. Teachers selected the SubjectToClimate unit that best aligned with the subject matter and grade level they taught. This allowed the intervention to fit within educators' existing instructional contexts rather than requiring every classroom to implement an identical curriculum.

Data Collection

Data collection took place at two primary stages: before the climate education unit and after its completion.

Stage 1: Preparation + Pre-Survey

Before data collection began, participating teachers obtained required school approvals and facilitated the collection of parental consent to determine which students' data could be included in the research. Importantly, all students participated in the classroom curriculum regardless of whether their data were eligible for inclusion in the study.

At the beginning of the pre-survey, students provided consent or assent, as appropriate based on age. They then completed measures examining climate-related knowledge, attitudes, emotions, and behaviors. Students with the required parental consent who completed the pre-survey received a $15 Amazon gift card. Teachers then implemented their selected SubjectToClimate unit as part of classroom instruction.

Stage 2: Post-Survey

Following completion of the unit, students completed a post-survey containing the same measures administered before participation. This enabled researchers to examine changes from pre- to post-instruction. Eligible students who had the required parental consent and student assent or consent received a $20 Amazon gift card after completing the post-survey.

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Data Analysis

Researchers analyzed the data using IBM SPSS Statistics for Mac, version 29.0.2.0 (IBM Corp., 2023). Before testing the study's primary research questions, researchers evaluated the data to determine whether they met relevant statistical assumptions. Researchers then calculated descriptive statistics, including means, standard deviations, frequencies, and ranges for the variables of interest.

EDUCATOR OBSERVATIONS:

> Just the engagement and collaboration among students having productive dialogue is a struggle, but with the curriculum that you provided... I saw so many light bulbs go off, and I feel like those behaviors will transfer to other content areas. Other grade areas that the students will be moving on to.

KNOWLEDGE GAINS:

+77%

Students demonstrated full content mastery, with 81% answering each question correctly.

EMOTIONS & AGENCY:

+12%

Students reported more hope regarding climate change.

+10%

Students identified a greater sense of purpose in their role in the climate crisis.

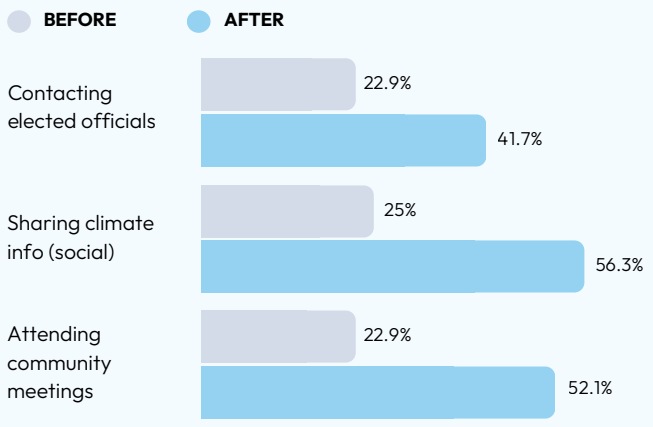
INDIVIDUAL CLIMATE ACTION:

Students reported greater participation in everyday climate-positive behaviors after learning with SubjectToClimate materials. Results from one unit plan:

BEHAVIOR	BEFORE	AFTER
turning off the lights when leaving a room	27.1%	46%
unplugging chargers when not in use	25%	44%
Asking family to wash laundry in lower temperatures	18.7%	25%

CIVIC & COLLECTIVE ACTION:

After one unit plan, students reported an increased willingness to engage in civic and community action.



STUDENT VOICE:

"I've become more aware of how our everyday actions contribute to climate change. I now see the importance of choosing sustainable options and discussing them with others. For example, I've started conversations with my friends and family about switching to energy-efficient appliances and why it matters."

- 6th grade student