ClimeTime: Science Teacher Professional Development

Washington State

Coalition for Climate Education Policy

Advancing climate literacy for a just and sustainable future

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Executive Summary

Washington state has led the country in supporting climate change education. This case study highlights climate education policy in Washington state by taking an in depth look at ClimeTime legislation and programming. It provides an overview and background on ClimeTime, and explores the impact this legislation has had in the state. Finally, it covers some specific challenges faced, lessons learned, and next steps for Washington's climate education journey.

Overview

Washington state is a climate change education policy leader in the United States. In the spring of 2018, Washington formalized climate change education through a legislative proviso (SB 6032, Section 501), receiving an initial investment of $4 million and continued funding in successive years. The funds subsidize ClimeTime, a state-led network and grant program that supports professional development for teaching climate science aligned with the Next Generation Science Standards (NGSS). ClimeTime is facilitated by the Washington State Office of the Superintendent of Public Instruction (OSPI) and the University of Washington Institute for Science + Math Education.

Policy Type: Teaching and Learning, Community Partnerships

ClimeTime grants serve all nine Educational Service Districts in Washington as well as Tribal schools, community-based tribal education organizations, and community-based nonprofits. Priority is given to districts and communities historically underserved by science education. Once a district or organization receives grant funding, teachers in at least one grade level in elementary, middle, and high school are required to participate in the professional development. ClimeTime offers various methods for supporting teacher professional development for climate education; examples include developing instructional materials, designing related assessment tasks and evaluation strategies, and facilitating student events.

Background

Like so many states across the country, Washington is experiencing the impacts of climate change, including climbing temperatures, snowpack melt, and infrastructure damage. ClimeTime is focused on building the capacity of educators to help students develop a deeper understanding of these issues. The leadership team consists of education leaders from the Washington Office of Superintendent of Public Instruction, learning scientists from the University of Washington, and members of the Association of Educational Service Districts. They assist network partners in accessing grants and professional learning resources. Community engagement and partnerships with community-based organizations are essential to the success of this program.

Approach

Grant-funded projects address several core programming areas including:

1. Anti-racism, equity, and inclusion

2. Professional learning and student engagement in historically underserved areas

3. Innovative project designs for climate science & the Next Generation Science Standards (NGSS)

4. K-12 science learning

5. Environment or sustainability literacy standards related to climate science

6. Innovative learning in afterschool programs

7. Innovative learning in computer science as applied in NGSS

8. Career and technical education programs

To increase the quality and quantity of climate education, ClimeTime projects lean into network building and increasing access to resources. The **Washington Commons OER website** is home to all professional learning materials developed by grantees; these are open-access educational resources. In addition, **ClimeTime Project Portraits** share stories about what is happening in classrooms when districts receive grants to fund their projects. Project portraits explore the challenges and best practices for grant-funded projects, and amplify the diversity of work enabled by ClimeTime funds. Projects vary widely because districts and Community Based Organizations (CBOs) tailor the grant funding to their local context and needs. The following three exemplary ClimeTime projects demonstrate the varied nature of the work supported by this initiative.

Teaching the Critical Link Between Food Waste and Climate Change

This ClimeTime-funded project, facilitated by the **Pacific Education Institute (PEI)**, helped educators learn more about how food waste contributes to climate change and understand effective methods for teaching students about solutions for how to reduce food waste. Educators reviewed a variety of lessons and educational materials to use in their classrooms. The workshops incorporated community collaborations with organizations like 2nd Harvest Food Bank, and invited indigenous leaders to provide their perspectives.

The result of this professional development and access to new materials and strategies was the incorporation of lessons about food waste as an effective climate solution. In one classroom, educators asked students to measure the energy, water, and land needed to produce one pound of milk for school lunches. Students converted this data into greenhouse gas emissions, and used this exercise to inform their discussion about how food waste is linked to climate solutions. Another classroom asked students to participate in a snack audit in which they could draw, journal, and reflect on their food habits and roles in reducing food waste. These exercises encouraged students to become advocates for food waste reduction while simultaneously improving their critical thinking and problem-solving skills. Since 2018, the workshops have served 126 K-12 teachers from 31 school districts. Ninety seven percent of the educators who took part in the workshops said their climate change knowledge significantly deepened and one-third of the educators conducted lessons with students and earned implementation stipends.

Elementary ClimeTime Institute

Washington's Educational School District 121 received a ClimeTime grant to coordinate the Elementary ClimeTime Institute, a hybrid professional learning community for K-5 educators. The Institute recruited educators from school districts with large numbers of students living in communities with a disproportionate array of environmental hazards. Educators participated in a three-day summer institute followed by six monthly online meetings. During the sessions, teachers learned about air quality and climate change by exploring students' stories. For example, educators examined an anecdote about a young girl who couldn't go outside for soccer due to poor air quality. Educators used what they learned during workshops to implement classroom activities, and reflect on and share their experiences with others in the Elementary ClimeTime Institute. Teachers valued engaging with peers and applying what they learned in their classrooms. The Elementary ClimeTime Institute has served 75 teachers and approximately 1,500 students since its inception.

Climate Justice League

The Climate Justice League is a cohort of 13 educators who support secondary teachers in designing and implementing activities that connect environmental and social justice issues. The project took place over three months, with one day of training each month. Each session was co-facilitated to include varying perspectives. Experts deeply involved in climate justice work shared their experiences and sparked important discussions during these sessions.

By digging into complex environmental justice issues, educators came away with a greater understanding of social and environmental justice, explored interconnections between these topics, analyzed case studies and examples of climate justice issues, and learned how to approach teaching these subjects. The workshops focused on locally relevant challenges and the link to regional or global climate impacts. After implementing lessons in their classrooms, teachers would share their experiences and further reflect on them with other educators. The program has reached about 1,300 students since its inception. The Climate Justice League plans to provide ongoing support and professional development to support climate justice education.

Evaluation

Several surveys collected data and feedback about ClimeTime programming to evaluate its impact. Read more about the results of these surveys in this **report**.

1. The Climate Science Survey collected data on the quality and efficacy of professional development training and found that most participants rated the training very highly. Additionally, most respondents felt they broadened or deepened their knowledge of climate science topics and practices for inclusive learning experiences. Fifty-eight percent of survey participants reported they felt confident or very confident teaching climate science topics aligned with Next Generation Science Standards.

2. The Fellows' Survey gathered feedback about ClimeTime from the Washington State Fellows Network, a group of instructional leaders who support implementing learning standards. Overall, educators highly rated professional development and agreed that their participation prepared them for their professional practice.

Other data and metrics that have been used to evaluate the impacts of ClimeTime include:

- The number of projects, learning experiences, professional development offerings, and resources developed.
- The number of community-based organization collaborations within projects.
- The number of teachers and/or students impacted.
- The proportion of projects that receive continued funding.

Outcomes

ClimeTime grant funding supports grantees in designing and taking part in professional development activities so that teachers can effectively integrate climate change into their teaching. The funding has significantly impacted the quantity and quality of climate change education across Washington; professional development opportunities and sharing of free, open-access resources enhance this positive impact. In FY20, ClimeTime reached over 200 school districts, 1,742 schools, 244,894 students, and 6,058 educators.

ClimeTime continues to evolve and grow; in FY22 and FY23, Washington appropriated three million dollars to continue building capacity and developing teacher professional development programming. Of this amount, one million dollars was appropriated exclusively for partnerships with community-based nonprofits. The continued funding for the program has enabled it to expand and evolve. ClimeTime recently launched a network of educators and continues to build partnerships and collaborations with community-based organizations to expand ClimeTime's reach and impact. Additionally, ClimeTime is developing professional development opportunities for Career and Technical Education teachers and initiating professional learning in districts with multilingual and migrant student populations. ClimeTime's impact extends beyond the state of Washington, too; the success of ClimeTime has inspired other states to explore policy levers as opportunities for providing funding and capacity for climate change education.
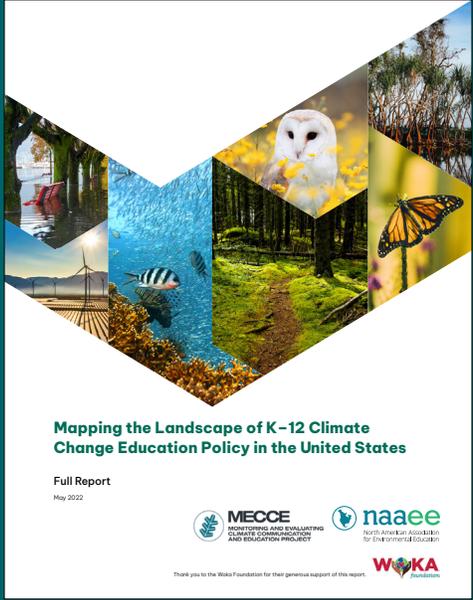
Mapping the Landscape of K–12 Climate Change Education Policy in the United States

Full Report
May 2022

MECCE
MONITORING AND EVALUATING CLIMATE COMMUNICATION AND EDUCATION PROJECT

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Thank you to the Woka Foundation for their generous support of this report.

Does ClimeTime support any of the recommendations from the *Mapping K-12 Climate Education Policy* Report?

Yes!

- Increasing the quality and quantity of climate change content in education.

- Including climate change content in Career and Technical Education (CTE) programs, computer science, and other subject areas.

- Providing policy support, such as funding, professional development, and staffing to help advance climate change education policy.

Lessons Learned & Next Steps

ClimeTime's overarching success did not come without several challenges. A few of these challenges and their solutions are highlighted below, and many are still a work in progress.

1. COVID-19 and school closures posed a severe challenge for ClimeTime programming. In-person professional development opportunities were canceled, and virtual professional development options were offered instead. Many educators felt these virtual options were less effective than in-person opportunities. Over time, the virtual sessions improved, and ClimeTime expanded its technological footprint, creating virtual learning communities that could successfully access resources and workshops. The program now offers both in-person and virtual opportunities for educators.

2. ClimeTime is working on including more diverse voices via community engagement and input related to environmental injustices and health.

3. Creating sustainable educational change is a challenge that ClimeTime is continually working to address. Several best practices are used by ClimeTime projects including:

    a. Offering contextualized and localized professional development for climate science.
    b. Infusing climate science into career opportunities and Career Technical Education.
    c. Offering STEM seminars that help change teacher perspectives toward climate science and avoid political debates.

Resources

- **ClimeTime Website**
- ***Mapping the Landscape of K–12 Climate Change Education Policy in the United States* Report**

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