

Climate Science Proviso

2020-21 Final Survey Report

June 2021

Washington Office of Superintendent of PUBLIC INSTRUCTION

AESD ASSOCIATION OF EDUCATIONAL SERVICE DISTRICTS
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CLIME TIME

Kauffman & Associates INCORPORATED

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Climate Science Proviso Interim Survey Report

Executive Summary

ClimeTime is facilitated by the Office of Superintendent of Public Instruction (OSPI) through a Washington state legislative proviso. Governor Jay Inslee originally requested an annual $4 million investment for the proviso in 2018-19, which has continued as a $3 million investment in 2019-20 and 2020-21. Proviso grant funding flows through all nine Educational Service Districts (ESDs) and six community-based organizations (CBOs) in Washington. With this funding, the ESDs and CBOs have launched programs for science teacher training, linking the Next Generation Science Standards (NGSS) and climate science. In addition to teacher professional development, the project supports the 15 grantees to develop instructional materials, design related assessment tasks and evaluation strategies, and facilitate student events. This Final Survey Report discusses data from a survey about ClimeTime professional development of science teachers between June 16, 2020, and June 15, 2021. The questionnaire addressed trainings open to educators across the state related to the Washington state proviso.

The school closures that began in March 2020 due to the COVID-19 pandemic led to rapid adjustments in the ClimeTime initiative. Each project adopted innovative ways to support teacher learning because experiential and field-based learning about climate science were not possible. Students and teachers were unable to take field trips, and lab investigations shifted to virtual platforms. Partnerships between ESD Regional Science Coordinators (RSCs) and community-based organizations were challenged by the shift to online collaboration spaces. The survey data in this report indicates that RSCs maintained a high quality of professional learning experiences (PLEs) throughout the year.

During the 2020-21 school year, RSCs reported delivering 43 PLEs totaling 315 hours of trainings with 913 participants from 121 school districts. The Second Annual Spring ClimeTime Summit had 164 participants from 71 school districts across Washington. The Summit also attracted educators from community-based organizations and private and charter schools.

Survey Findings

Overall, participants in **Climate Science Professional Development rated the trainings very highly**, with more than 95% of respondents stating that aspects of the session were good or very good. Most participants (98%) shared that they have **broadened or deepened their knowledge** of topics related to research-based instructional practices. Practically every participant (99%) agreed or strongly agreed that their participation prepared them with the necessary skills to try something new or different in their professional practice.

Participants reported on the frequency of their instructional practices in science and STEM teaching. Close to three-fourths (73%) of respondents claimed that they ask students to explain their partial understandings and potentially incorrect ideas, and 68% of respondents reported

that they have students make explanations and revise them in response to new evidence. A smaller proportion (49%) of participants engage students in computational thinking.

Climate Science Survey: Open-Ended Responses

The 2020-21 Climate Science Survey included two options for participants to share open-ended responses. These responses provided insights into how teachers envisioned they would implement professional learning and how they valued tools shared by the RSCs and professional learning partners.

What aspect of your learning today are you most likely to use in your classroom in the near future?

Most participants were excited to use the tools, strategies, and resources shared during the training in their own classrooms. Specific tools included Flipgrid, Loopy, Jamboard, Pear Deck, and Padlet. Teaching strategies included close reading, modeling and taking their students outside for science lessons. Resources included lesson plans, books, and online resources to deepen participant learning. Many survey respondents appreciated resources that could be used for instructional planning and were excited to try them out with students.

Additionally, some respondents were grateful for resources and support on how to discuss COVID-19 with their students and incorporate it into their curricula. Others discussed plans to integrate science into other subjects, particularly English language arts and math. Respondents who participated in the course "Enacting Science Classrooms Tasks to Support Girls' STEM Identities" mentioned strategies to empower girls in the classroom and increase self and general awareness about gender representation in STEM.

- "I look forward to having my students work with the cards. Having them build charts and graphs using Jamboard will be so engaging for my students. I can't wait to hear what ideas and explanations they will come up with when we analyze the data."
- "I am so excited to try Pear Deck with my students. I really believe if young students understand the difference between climate and weather when they are very little, then they can grow their understanding at a deeper level in middle and high school classrooms. I like the carbon calculator. I also want to check out See, Think, Wonder."
- "I am excited to begin working with our classroom teachers on content reading for my reading intervention students through close reading, vocabulary building ideas, and a focus on creating access."
- "Integrate how climate change and COVID impact similar groups into my ethnic studies unit."
- "As an English teacher, I will most likely utilize the articles and videos to support finding textual evidence in writing expository or argumentative essays around environmental issues. I also teach social studies, so I think it would be valuable for introducing social

justice in terms of being inclusive of the Native American perspective in history and their valuable contributions to society as a whole."

- "Increased level of awareness and sensitivity to promoting girls in STEM learning. The need to directly name and address issues of inequality. The need for more female role models and the significance of their influence on youth."

What suggestions do you have to make this professional learning experience better?

Participants suggested that adding time to professional learning experiences or decreasing the amount of content could improve their experience. A few participants noted that they would appreciate space and time to collaborate with teachers in similar grade bands. A few participants would like to see more female guest speakers in the future. Rather than offering feedback for improvement, about one in three of the respondents used this opportunity to praise the training.

- "It felt like a few things were cut short in order to make it through—if it was possible to put one more day into this, it could provide time to get through more of them."
- "I think it would be great to break this down into smaller cohorts with specific grade-level lessons/content."
- "It would be great to have a guest speaker who is a woman currently working in a scientific field instead of the field of education. Both guest speakers provided extremely helpful perspectives, but it would have been great to hear from someone who is currently using their science training in the field."
- "I honestly can't think of anything. The amount of time felt just right. The variety of activities kept things different and moving. It was an awesome balance of content and practice. I just loved it."
- "This was a very well-run course. It's a great blend of whole group and small group to encourage engagement, and all of the content is very relatable to our everyday teaching."

Climate Science Surveys

Table 1: Thinking about your professional learning session, how would you rate it for the following?

		Very Good	Good	Fair	Poor	Very Poor	Does Not Apply
Meeting the stated learning objectives of the session.	#	403	101	9	1	0	1
	%	78%	20%	2%	<1%	0%	<1%
Use of engaging and useful activities to facilitate your learning.	#	394	103	15	2	1	0
	%	77%	20%	3%	<1%	<1%	0%
Introducing you to useful resources such as curriculum materials, research articles, and practice information?	#	420	86	7	2	0	0
	%	82%	17%	1%	<1%	0%	0%
Providing timely, relevant information that you will be able to apply in your work setting.	#	394	103	11	1	1	5
	%	77%	20%	2%	<1%	<1%	1%
Engaging you in discussion with other participants in ways to facilitate your learning.	#	374	119	17	4	0	1
	%	73%	23%	3%	1%	0%	<1%
Providing sufficient time for you to process the information collaboratively with colleagues.	#	340	147	23	1	0	4
	%	66%	29%	4%	<1%	0%	1%
Motivating you to recommend these types of sessions to your work colleagues.	#	369	126	12	3	2	3
	%	72%	24%	2%	1%	<1%	1%

Table 2: As a result of participating in this Professional Learning Experience, I have broadened/deepened my existing knowledge of:

		Strongly Agree	Agree	Disagree	Strongly Disagree	Not Addressed
Three-dimensional learning and teaching.	#	281	208	6	0	20
	%	55%	40%	1%	0%	4%
Research-based instructional practices.	#	310	198	1	0	6
	%	60%	38%	<1%	0%	1%
Instructional practices to make learning experiences more inclusive for diverse student populations (e.g., special education, highly capable, migrant, students of color).	#	292	190	7	1	25
	%	57%	37%	1%	<1%	5%
Instructional practices to make learning experiences more inclusive for English language learners.	#	239	215	17	1	43
	%	46%	42%	3%	<1%	8%
Instructional practices to make learning experiences more inclusive for students with disabilities.	#	212	216	19	1	67
	%	41%	42%	4%	<1%	13%
A range of assessments and/or resources across the educational system such as state, local, and/or classroom assessments.	#	249	204	14	0	48
	%	48%	40%	3%	0%	9%
How to share the sessions' information with others (teachers, administrators, parents).	#	260	215	9	0	31
	%	50%	42%	2%	0%	6%

Table 3: How frequently do you implement the below instructional practices in your science or STEM teaching?

		All of the Time	Most of the Time	Sometimes	Never or Hardly Ever	Not Applicable
Provide opportunities for students to use data to inform their thinking	#	79	217	143	21	38
	%	16%	44%	29%	4%	8%
Test the ability of students to apply key science ideas to new situations	#	72	189	148	34	53
	%	15%	38%	30%	7%	11%
Engage in conversations around science findings or engineering solutions	#	104	186	143	16	45
	%	21%	38%	29%	3%	9%
Engage students in science-related computational thinking	#	63	180	154	44	53
	%	13%	36%	31%	9%	11%
Ask students to explain their partial understandings and potentially incorrect ideas	#	154	208	82	15	37
	%	31%	42%	17%	3%	7%
Have students make explanations and revise them in response to new evidence	#	123	212	103	21	37
	%	25%	43%	21%	4%	7%

Table 4: Participating in this Professional Learning Experience prepared me with the necessary skills to try something new or different.

		Strongly Agree	Agree	Disagree	Strongly Disagree
Participating in this Professional Learning Experience prepared me with the necessary skills to try something new or different in my professional practice.	#	349	161	4	1
	%	68%	31%	1%	<1%

Table 5: How frequently do you engage in the instructional practices in science and STEM teaching below?

		All of the Time	Most of the Time	Sometimes	Never or Hardly Ever	Not Applicable
I plan for multiple ways for my students to access learning	#	168	211	71	10	33
	%	34%	43%	14%	2%	7%
I encourage students to consider possible barriers to implementing a solution	#	105	217	116	19	36
	%	21%	44%	24%	4%	7%
I survey students about their interests and experiences relevant to science ideas	#	87	189	136	29	49
	%	18%	39%	28%	6%	10%

Table 6: How confident are you about teaching the Next Generation Science Standards (NGSS) climate science-related topics at your current level?

		Very Confident	Confident	Somewhat Confident	Not Confident
How confident are you about teaching the Next Generation Science Standards (NGSS) climate science-related topics at your current level?	#	101	211	142	40
	%	20%	43%	29%	8%

Table 7: Grade level(s) currently teaching/current role.

Elementary (P-5)	#	295
	%	57%
Middle (6-8)	#	117
	%	23%
High (9-12)	#	76
	%	15%
Multiple Grades/Other	#	27
	%	5%

Table 8: Are you a Washington State Fellow?

Yes	#	84
	%	16%
No	#	422
	%	82%
Fellow Emeritus	#	9
	%	2%