



Climate Science Proviso

2019-20 Interim Survey Report

February 2020



AESD ASSOCIATION OF
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Climate Science Proviso Interim Report— Executive Summary

[ClimeTime](#) is facilitated by the Office of Superintendent of Public Instruction (OSPI) through a Washington State legislative proviso originally requested by Governor Jay Inslee of an annual \$4 million investment that began in 2018-19 and continues as a \$3 million investment in 2019-20. OSPI manages the Washington State Fellows’ Network¹, and the grant funding flows through all nine Educational Service Districts (ESDs) in Washington and six community-based organizations (CBOs). 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 Interim Survey Report discusses data from two surveys about ClimeTime professional development of science teachers across Washington between August 13, 2019 and January 12, 2020. The first survey, the **Climate Science Survey**, addressed trainings open to educators across the state related to the Washington State budget proviso. The second survey, the **Fellows’ Survey**, gathered feedback from science educators participating in the Washington State Fellows’ Network that OSPI and the ESDs convened. The Network is a group of instructional leaders who support district and community implementation of state learning standards in mathematics, English Language Arts (ELA), science, and the Early Learning Guidelines. The report includes data collected from the first two Science Fellows’ convenings held in fall 2019. While Regional Science Coordinators focus on teacher leadership in the Fellows’ Program, they provide support for climate science instruction through these convenings.

Survey Findings

Overall, participants in **Climate Science Professional Development** rated the trainings very highly with more than 90 percent stating that aspects of the session were good or very good. More than nine in ten participants reported that they were introduced to useful resources and were motivated to recommend these types of sessions to colleagues. Most participants (97 percent) shared that they have broadened or deepened their knowledge of topics related to research-based instructional practices. Practically every participant (98 percent) agreed or strongly agreed that 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. While close to two out of three respondents provide opportunities for students to use data in their thinking, a smaller proportion (50 percent) engage students in science-based

¹ Please visit <http://k12.wa.us/CurriculumInstruct/Fellows.aspx> to learn more about the Washington State Fellows Network.

computational thinking. Three-fourths of the participants claimed that they prompted students to explain and revisit their understandings. Close to two-thirds reported engaging students in conversations around science and engineering findings.

Participants in the **Science Fellows’ Trainings** also gave strong ratings to these professional learning experiences (PLEs). More than 88 percent stated that aspects of the sessions were good or very good. More than 88 percent also reported that the sessions used engaging activities, introduced them to useful resources, and provided timely and relevant information. The vast majority of the participants (96 percent) agreed or strongly agreed that participation prepared them with the necessary skills to try something new or different in their professional practice.

Climate Science Survey: Open-ended Responses

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

Participants discussed resources, tools, and methods that they would use in their classrooms. These include games, hands on activities, modeling, online resources, and kits. Participants also valued the opportunity to collaborate with fellow teachers, sharing tips and feedback. Many survey respondents referenced learning about how to incorporate discussions of naturally occurring phenomena² in science classrooms. They walked away excited to bring a cross-curricular lens to the classroom and engage students in more peer driven dialogue. Overall people were appreciative of the opportunity to gain more confidence and practice with science curricula and State standards.

- “I am going to use the planning tools for a more direct, thoughtful and purposeful outline for lessons.”
- “There are so many hands-on activities that I am so excited about using with my students. Love the notebooks, notes and involvement.”
- “I liked the tutorial and online component to walk me through using the material. It was simple enough for students to use as well and still help them feel successful.”
- “After attending the training today, I now feel comfortable and confident with regards to facilitating instruction pertaining to this particular unit of study. I was hesitant to begin instruction for my students prior to attending this training. Thank you for taking the time to help educators have a clear understanding of the curriculum.”
- “As an ELA/Social Studies teacher I will embed more scientific topics in my classroom and continue to do Close Reading, revisiting some of the strategies presented today; I hope

² The Next Generation Science Standards provide a rich description of the importance of phenomena at <https://www.nextgenscience.org/sites/default/files/Using%20Phenomena%20in%20NGSS.pdf>

that I can convince our middle school science teachers to also embed these activities in their instruction, to support their inquiry and phenomenon scientific studies.”

- “I look forward to implementing the teaching models we practiced in this training. They are research-based and practical to use. They are student-centered and effective. I appreciate receiving information from guest speakers who are scientists in the area of climate change. Very interesting and applicable!”

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

Participants suggested that adding time to professional learning experiences (PLEs) would improve their experience. Many asked for more hands-on activities, movement and longer breaks. People requested more collaboration and planning time. Additionally, comments referenced content and strategies geared towards working with English Language Learners, students with disabilities, and elementary school students. Rather than offering feedback, close to one out of five participants who replied to this question expressed praise for their PLEs.

- “I learned a lot today. I believe I would benefit more if this training was broken into two-day trainings. It would allow us more time to study each lesson and dig deeper into the unit - coming away a little better prepared.”
- “The instructors have a lot of information and content to share in such a short amount of time. It would be nice to have it span over two days so we can go deeper into productive teaching strategies within the units instead of just material. They did a great job for the time that they have!”
- “This training can use more interactive learning opportunities.”
- “It would be great to spend more time looking at other's models and critically analyzing them. It made understanding my own a lot clearer.”
- “I would suggest having more instructional strategies aimed at the elementary level. Giving more suggestions on how to incorporate the learning for our appropriate grade levels.”
- “Give us more differentiated ways to incorporate all learners.”

Fellows Open Ended Responses

What worked well?

Participants valued collaboration time, particularly with other teachers within grade level and across different districts. Many fellows appreciated time spent practicing strategies, particularly modeling and lessons about phenomena. Overall people liked the structure of the days, noting the variety of activities, guest speakers and opportunities to practice learning from the student perspective.

- “All areas of the meeting today gleaned useful information and skills for me to use in my classroom.”
- “I always enjoy the time to read and discuss science learning with other fellow teachers with the same passion!”
- “I love being able to talk with and work with other teachers from other school districts, share ideas and mistakes, and find new ways to make my teaching practice better.”
- “I enjoyed engaging in the modeling process as a learner. It is fun to experience and see just how empowering and engaging it can be to puzzle through ideas.”
- “I liked that we got to be the students in a lesson designed to show modeling with explanation. I picked up some great tools, like using different colors to show change of understanding over time.”
- “I am coming away with a [clearer] image of what the Fellows consists of. I learned about how to implement change and inspire fellow teachers, school, and district.”

What would you change for the next session?

Participants requested more time for collaboration, planning and individual reflection. A few survey respondents suggested adding more content applicable to elementary school classrooms. Additionally, many would like access to the demonstrated resources and more support in implementing strategies into their own classroom. More than one-third of the participants replied with praise, saying that they would not change anything about their sessions.

- “I'd like to look at more student work and collaborate with other teachers in my grade band. It would be great to see and hear about what they are doing in their classrooms.”
- “I would love more time to collaborate with colleagues. Not sure how to fit everything in but it would be nice to have more time to talk and share ideas with other teachers.”
- “I would have liked more time for planning, developing an Action Plan and communicating with people I might be wanting to work with about it.”
- “I need more quiet reflection/work time.”
- “I wish I had a vetted list of high-quality games to use in my science classes.”
- “Links to resources used would be helpful for future implementation in classroom (i.e. sturgeon data and articles).”
- “How do I create this in my classroom? I am challenged and my eyes are opened to what we are missing, but I need more step by step/how-to to create these all-inclusive models in the classroom.”
- “The first day was a lot of sit and get. The second day was more interactive and engaging.”

What new or different thing(s) will you try in your professional practice in the coming months because of this Professional Learning Experience?

Participants noted several tools and strategies they are excited to bring back to their classrooms including science circles, student discussion, games and how to discuss naturally occurring phenomena in the science classroom. Some specifically shared that they would use the Notice, Wonder and Know tool. Most participants mentioned modeling, both as a strategy to use in their classroom and one to bring back to other teachers.

- “I want to find relevant phenomena to anchor our FOSS kits to so that there is an overarching purpose to our learning for the kids.”
- “I will facilitate more student feedback on their models and have students reflect on how their models changed/evolved over the course of the unit.”
- “I plan to focus on having more sense-making discussions in my classroom.”
- “I really liked going through the modeling process. Often strategies are talked about and maybe demonstrated but going through the process is really helpful. I am looking forward to implementing some of the strategies soon.”
- “I’m going to look for more ways to incorporate modeling into the curriculum and getting students to add onto their models and develop their models throughout a unit.”

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.	#	603	210	23	1	0	1
	%	72%	25%	3%	0%	0%	0%
Use of engaging and useful activities to facilitate your learning.	#	584	210	37	6	1	0
	%	70%	25%	4%	1%	0%	0%
Introducing you to useful resources such as curriculum materials, research articles, and practice information?	#	575	218	40	3	0	2
	%	69%	26%	5%	0%	0%	0%

		Very Good	Good	Fair	Poor	Very Poor	Does Not Apply
Providing timely, relevant information that you will be able to apply in your work setting.	#	569	229	37	2	1	0
	%	68%	27%	4%	0%	0%	0%
Engaging you in discussion with other participants in ways to facilitate your learning.	#	581	201	46	8	2	0
	%	69%	24%	5%	1%	0%	0%
Providing sufficient time for you to process the information collaboratively with colleagues.	#	518	240	58	16	6	0
	%	62%	29%	7%	2%	1%	0%
Motivating you to recommend these types of sessions to your work colleagues.	#	521	247	45	19	3	3
	%	62%	29%	5%	2%	0%	0%

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	#	411	388	18.0	1	20
	%	49%	46%	2%	0%	2%
Research-based instructional practices	#	467	344	13	0	14
	%	56%	41%	2%	0%	2%
Instructional practices to make learning experiences more inclusive for diverse student populations (e.g., special education, highly capable, migrant, students of color).	#	421	316	39	3	59.0
	%	50%	38%	5%	0%	7%

		Strongly Agree	Agree	Disagree	Strongly Disagree	Not Addressed
Instructional practices to make learning experiences more inclusive for English language learners.	#	377	330	53	5	73
	%	45%	39%	6%	1%	9%
Instructional practices to make learning experiences more inclusive for students with disabilities.	#	330	318	119	5	119
	%	37%	36%	13%	1%	13%
A range of assessment and/or resources across the educational system such as state, local, and/or classroom assessments.	#	346	363	39	3	87.0
	%	41%	43%	5%	0%	10%
How to share the sessions' information with others (teachers, administrators, parents).	#	350	357	47	1	83
	%	42%	43%	6%	0%	10%

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 use data to inform their thinking	#	127	373	259	14	21
	%	16%	47%	33%	2%	3%
Test the ability of students to apply key science ideas to new situations	#	105	332	307	27	23
	%	13%	42%	39%	3%	3%
Engage in conversations around science findings or engineering solutions	#	163	345	237	27	18
	%	21%	44%	30%	3%	2%
	#	98	292	326	43	25

		All of the time	Most of the time	Sometimes	Never or Hardly Ever	Not Applicable
Engage student in science-related computational thinking	%	13%	37%	42%	5%	3%
Ask students to explain their partial understandings and potentially incorrect ideas	#	227	365	165	18	16
	%	29%	46%	21%	2%	2%
Have students make explanations and revise them in response to new evidence	#	184	348	219	19	18
	%	23%	44%	28%	2%	2%

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

		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	#	504	319	14	1
	%	60%	38%	2%	0%

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	#	218	368	174	13	18
	%	28%	47%	22%	2%	2%
I encourage students to consider possible barriers to implementing a solution	#	166	360	219	21	21
	%	21%	46%	28%	3%	3%

		All of the time	Most of the time	Sometimes	Never or hardly ever	Not applicable
I survey students about their interests and experiences relevant to science ideas	#	131	265	295.0	73	23
	%	17%	34%	37%	9%	3%

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?	#	120	395	245	39
	%	15%	49%	31%	5%

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

Elementary (P-5)	#	668
	%	80%
Middle (6-8)	#	103
	%	12%
High (9-12)	#	44
	%	5%
Multiple grade	#	23
	%	3%

Table 8: Are you a Washington State Fellow?

Yes	#	125
	%	15%
No	#	694
	%	83%
Fellow Emeritus	#	19
	%	2%

Fellows Surveys

Table 9: 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.	#	179	70	8	1	0	1
	%	69%	27%	3%	0%	0%	0%
Use of engaging and useful activities to facilitate your learning.	#	190	49	16	3	1	0
	%	73%	19%	6%	1%	0%	0%
Introducing you to useful resources such as curriculum materials, research articles, and practice information?	#	161	68	25	2	2	1
	%	62%	26%	10%	1%	1%	0%
Providing timely, relevant information that you will be able to apply in your work setting.	#	175	71	10	2	1	0
	%	68%	27%	4%	1%	0%	0%
Engaging you in discussion with other participants in ways to facilitate your learning.	#	192	55	11	0	1	0
	%	74%	21%	4%	0%	0%	0%
Providing sufficient time for you to process the information collaboratively with colleagues.	#	170	73	11	3	1	1
	%	66%	28%	4%	1%	0%	0%

Table 10: As a result of participating in this Fellows Session, please rate your agreement with the statement, I have broadened/deepened my existing knowledge of...

		Strongly Agree	Agree	Disagree	Strongly Disagree	Not Addressed
The content area	#	118	113	11	1	16
	%	46%	44%	4%	0%	6%
Research-based instructional practices	#	147	103	4	1	4
	%	57%	40%	2%	0%	2%
Instructional practices to make learning experiences more inclusive for students of color.	#	116	109	9	1	24
	%	45%	42%	3%	0%	9%
Instructional practices to make learning experiences more inclusive for English language learners.	#	125	105	9	1	19
	%	48%	41%	3%	0%	7%
Instructional practices to make learning experiences more inclusive for students with disabilities.	#	108	113	10	1	27
	%	42%	44%	4%	0%	10%
A range of assessment and/or resources across the educational system such as state, local, and/or classroom assessments.	#	73	93	26	4	63
	%	28%	36%	10%	2%	24%
How to share the sessions' information with others (teachers, administrators, parents).	#	92	124	19	4	20
	%	36%	48%	7%	2%	8%
Leadership practices to provide equitable access to high quality instruction.	#	123	115	11	3	7
	%	47%	44%	4%	1%	3%
How to look at data to identify ways to adjust instruction.	#	64	71	35	5	84
	%	25%	27%	14%	2%	32%
How to try something new or different in my professional practice.	#	163	86	6	2	2
	%	63%	33%	2%	1%	1%