

The Next Generation of Climate Scientists as Science Communicators

Supplemental Materials

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1. Topic guide

1. Introduction (5 minutes)

- Explanation of ground rules
- Could you please introduce yourself?

2. Barriers and motivations to engage in science communication (25 minutes)

- Today's topic is science communication. What are your general feelings about science communication?
 - What kind of experiences do you have with science communication?
- What are the reasons for you to engage in science communication?
 - Goals?
 - Educate the public
 - Warn the public
- What are the barriers for you to engage in science communication?
 - Uncomfortable
 - Time constraints
 - Fear or failure
 - Lack of skills
- To what extent do you feel that science communication is one of your responsibilities as a scientist?
- What skills should one have to be a good science communicator?
 - Do you have these skills?
- You are part of the younger generation of climate scientists. Would you follow a different approach to science communication if you compare it to your more senior colleagues? Could you please explain.

3. Climate Advocacy (25 minutes)

- To what extent can you warn people about the dangers of climate change as a scientist?
 - Risk of being labeled as an 'alarmist' and 'exaggerating'
- To what extent can you advocate for climate change as a scientist?
 - Risk of being labeled as a 'climate advocate' and 'subjective'
- To what extent can you be an (active) member of an organization that lobbies/advocates/campaigns for action on climate change?
 - Risk of being labeled as 'climate activist' and 'partial'
- To what extent can you be open about your political ideology when you are a climate scientist?
 - Risk of being labeled as a 'climate politician' and 'partial'
- To what extent can you openly support particular climate policies as a climate scientist?

- Risk of being labeled as 'policy-prescriptive'
- To what extent can you engage in unsustainable behavior as a climate scientist?
 - Risk of being labeled as someone 'who does not walk the talk'
 - Lead by example
- To what extent can you show your emotions when you engage in science communication?
 - Risk of being perceived as 'subjective'
 - How does climate anxiety affect your work?

4. Message Content (15 minutes)

- Do you practice science communication?
 - How?
- Do you review social science evidence on how to effectively communicate?
 - How?
- How do you engage lay audiences with your research?
 - Examples?
- How do you deal with climate science's complexity when communicating to a lay audience?
- How do you communicate about uncertainties in climate science?

5. Climate skepticism, incivility, and misinformation (15 minutes)

- How do you deal with climate change misinformation?
 - Strategy
- How do you deal with incivility?
 - Experiences with incivility
 - To what extent does incivility play a role in how you embrace your role as a science communicator?
 - Strategies for dealing with incivility
- How do you deal with climate sceptics?
 - In public debates
 - Face-to-face
 - Not-at-all

6. Closure (5 minutes)

- What challenges of science communication haven't we discussed yet, however, that you feel are important when we are talking about science communication?
- What would you like to learn with regards to science communication?
- What would you like to practice in the workshop?

2. Codebook

This codebook presents the final code groups (i.e. themes) with the corresponding codes.

Code group: Participants' backgrounds

Code	Meaning	Notes
Participant backgrounds	Information about participants' background	Participants' stage of their career; research focus; university

Code group: Experiences with science communication

Code	Meaning	Notes
Experience with business collaborations	The participant has experience with science communication through collaborating with businesses	
Experience with education	The participant has experience with science communication through teaching experiences	Primary level; secondary level; university level
Experience with interviews	The participant has experience with science communication through interviews with journalists	For television, radio, and newspapers
Experience with social media	The participant has experience with science communication through social media	
Experience with talking to friends and family	The participant has experience with science communication by explaining one's research to friends and family	
Experience with writing	The participant has experience with science communication through writing about one's research for non-academic audiences	Including blogs
No or little experience	The participant has no or little experience with science communication	

Code group: Motivations for science communication

Code	Meaning	Notes
General feelings	Participant's general feelings toward science communication	
Acknowledgment	The participant is motivated to do science communication to get acknowledgment for their work	
Educate students	The participant is motivated to educate students	Primary level; secondary level; university level
Influence consumers	The participant is motivated to do science communication to influence consumers to make sustainable choices	
Inform politicians	The participant is motivated to do science communication to inform politicians	
Fun	The participant is motivated to do science communication as it is a fun activity	
Network	The participant is motivated to do science communication for networking purposes	
Raise awareness	The participant is motivated to do science communication to raise awareness about climate change	
Restore trust	The participant is motivated to do science communication to restore trust in (climate) science	
Share passion	The participant is motivated to do science communication to share one's passion with others	
Warn public	The participant is motivated to do science communication to warn the public about climate change	

Responsibility	Statements about whether the participant feels it is one's responsibility to do science communication	
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Code group: Skills

Code	Meaning	Notes
Ability to address criticism	Participant believes that a good science communicator is able to address criticism	
Charisma	Participant believes that a good science communicator is charismatic	
Deep understanding of research	Participant believes that a good science communicator has a deep understanding of one's research	
Funny	Participant believes that a good science communicator is funny	
Keeping it interesting and focused	Participant believes that a good science communicator is able to keep the communication interesting and focused	
Verbal presentation	Participant believes that a good science communicator has strong verbal presentation skills	Including storytelling
Recognize relevance	Participant believes that a good science communicator is able to recognize the societal relevance of one's own research	
Translating to lay audience	Participant believes that a good science communicator is able to translate one's own research in laymen terms	
Writing	Participant believes that a good science communicator has strong writing skills	

One can learn the skills	Participant believes that one can learn the skills of being a good science communicator	
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Code group: Common barriers

Code	Meaning	Notes
Center of the attention	Participant perceives being the center of attention as a barrier to doing science communication	
Dislike social media	Participant perceives their dislike of social media as a barrier to doing science communication	
English language	Participant perceives the English language as a barrier to doing science communication	
Fear of failure	Participant perceives their fear of failure as a barrier to doing science communication	
Incivility	Participant perceives the harsh tone of the debate as a barrier to doing science communication	
Non-educational	Participant perceives the non-educational character of certain science communication as a barrier to doing science communication	
Not fun	Participant perceives the lack of fun as a barrier to doing science communication	
Not intrinsically motivated	Participant perceives their lack of intrinsic motivation as a barrier to doing science communication	
Others' opinions about you	Participant perceives the idea that others form opinions about you as a barrier to doing science communication	

Persistence	Participant perceives the idea that their communication is out there forever as a barrier to doing science communication	Communication is out there forever
Too much effort or time	Participant perceives a lack of time and effort as a barrier to doing science communication	
Not about own research	Participant perceives the idea that science communication is often not about one's own research as a barrier to doing science communication	
Difficult translating to lay audience	Participant experiences translating one's science into laymen language as difficult and perceives this as a barrier to doing science communication	
Ignorance, skepticism, polarization	Participant perceives the idea that others are not open to one's message as a barrier to doing science communication	
Not comfortable	Participant is not comfortable with science communication, which is a barrier to doing science communication	
Too simplistic	Participant perceives science communication as too simplistic, which is a barrier to doing science communication	
Too unknowledgeable	Participant perceives themselves as too unknowledgeable, which is a barrier to doing science communication	

Code group: Climate advocacy

Code	Meaning	Notes
Climate advocacy general	Participant's views about scientists doing climate advocacy in general	

Climate activism on streets	Participant's views about scientists participating in climate activism on the streets	
Climate policies	Participant's views about openly supporting climate policies as a scientists	
Emotions	Participant's views about scientists showing their emotions in science communication	
Political ideology	Participant's views about scientists openly communicating their political ideologies	
Unsustainable behavior	Participant's views about the impacts of scientists' sustainable or unsustainable behaviors on their credibility	

Code group: Message content

Code	Meaning	Notes
Complexity	Participants' views on communicating the complexity of their science to the public	
Engage lay audience	Participants' communication strategies for tailoring their message to engage the audience	
Uncertainties	Participants' views on communicating the uncertainties in science to the public	

Code group: Climate skepticism, misinformation, incivility

Code	Meaning	Notes
Climate skeptics	Participant's experiences with and communication strategies for dealing with climate skepticism	
Incivility	Participant's experiences with and communication strategies for dealing with incivility	

Misinformation	Participant's experiences with and communication strategies for dealing with climate change misinformation	
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