

Are Surveys Serving Your Project? Find Out! Pre-Post or Retrospective?

Sondra LoRe, PhD

STEM Program, Evaluation, Assessment, & Research (SPEAR)



STEM · Program Evaluation · Assessment · Research

Sondra's journey to Program Evaluation

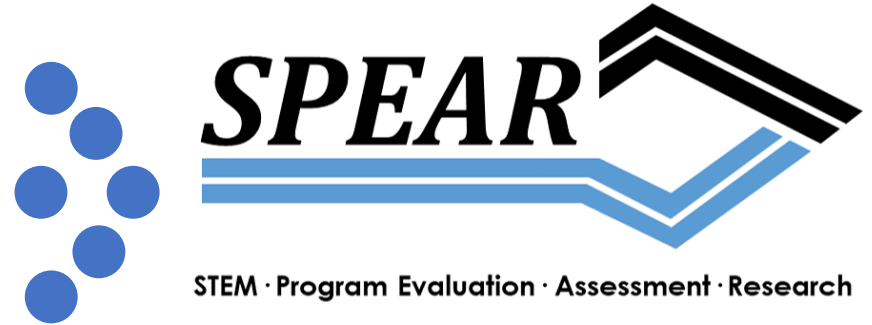
Teacher & School Principal



Educator & Administrator Evaluator



Educational Researcher



Quantitative Literacy



Science Methods

Partners

NSF CENTER (1)



NIH SEPA (1)



NRT (5)



University of Nevada, Reno

REU (1)



NOYCE (1)



ATE (2) + S-STEM (1)



IntBIO(1)



IUSE (3)



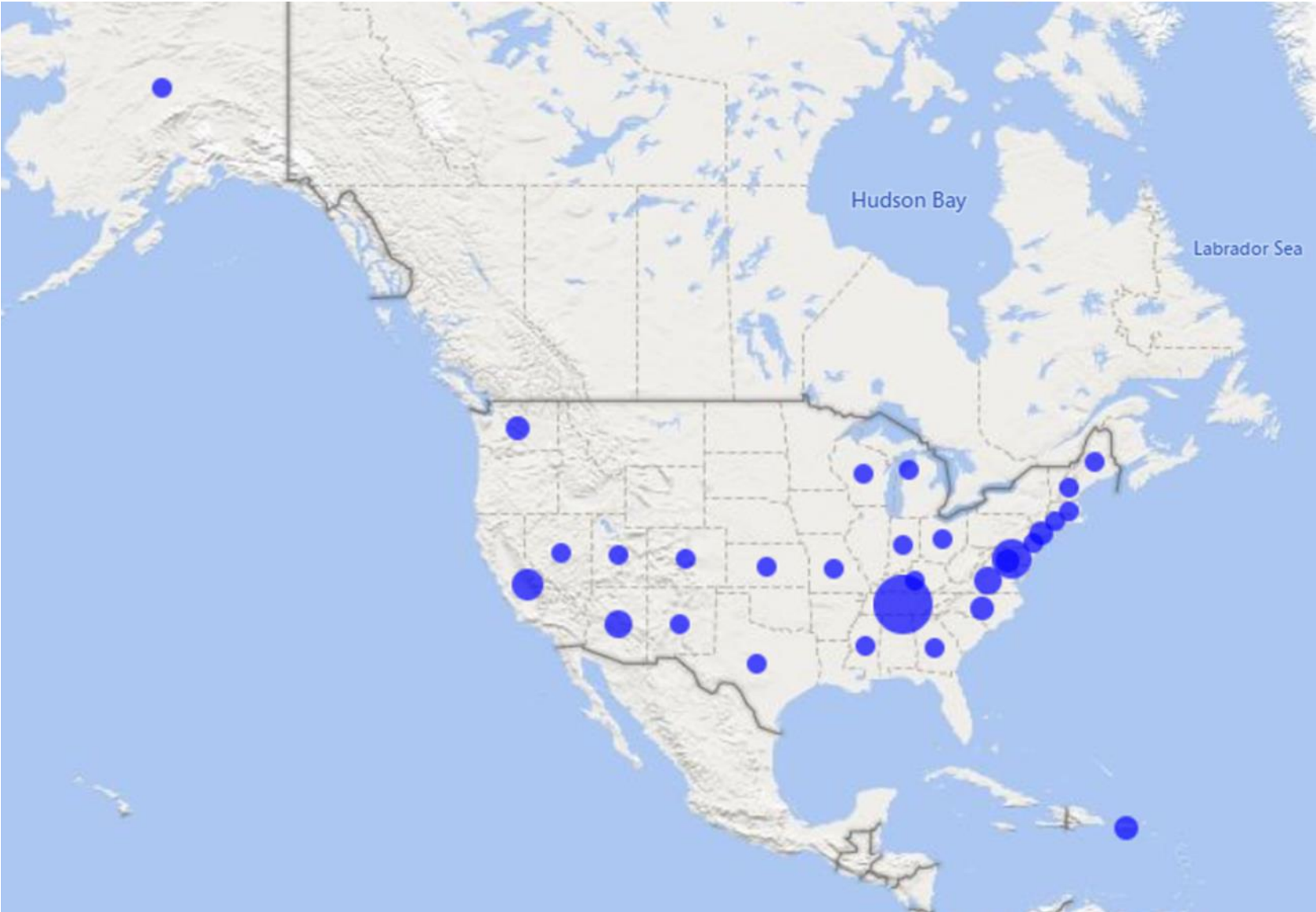
RCN (2)



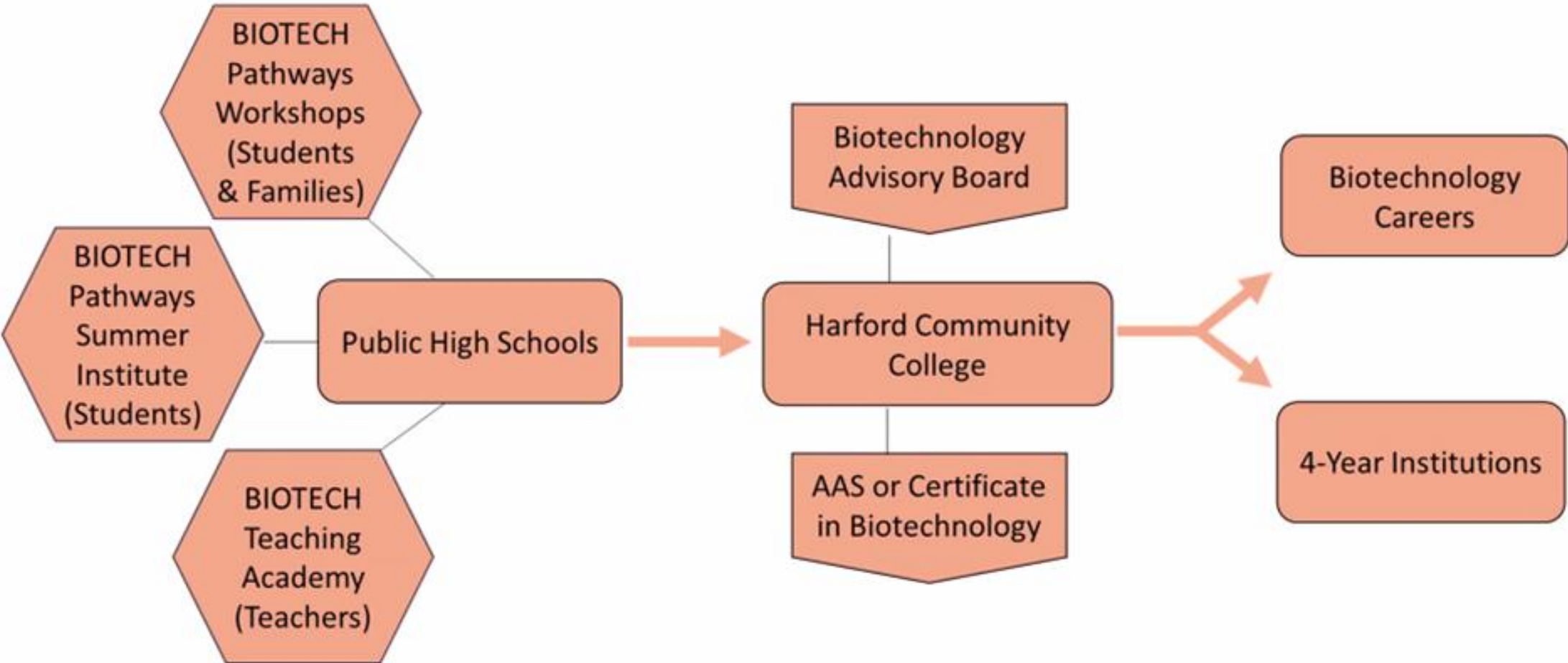
Partners



Where our evaluation projects are located

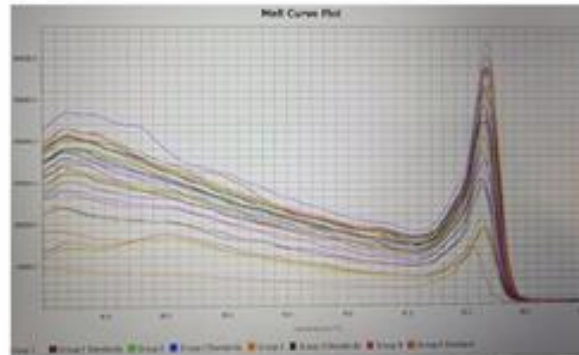
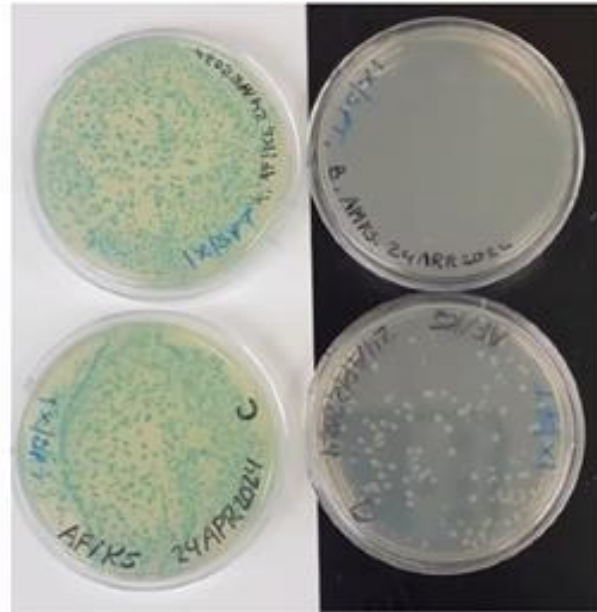


NSF ATE BIOTECH Pathways

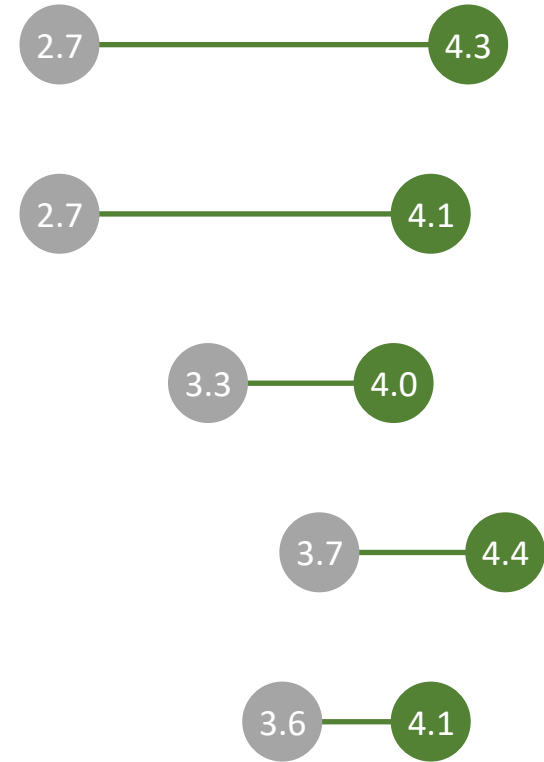


NSF ATE BIOTECH Pathways

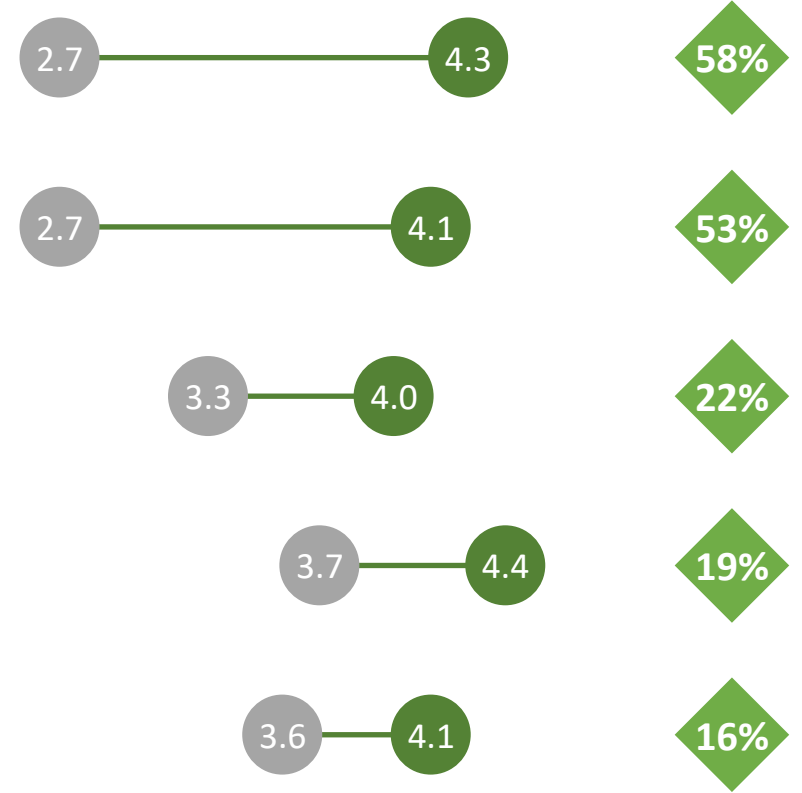
Course Survey- Biology 214 Molecular Techniques



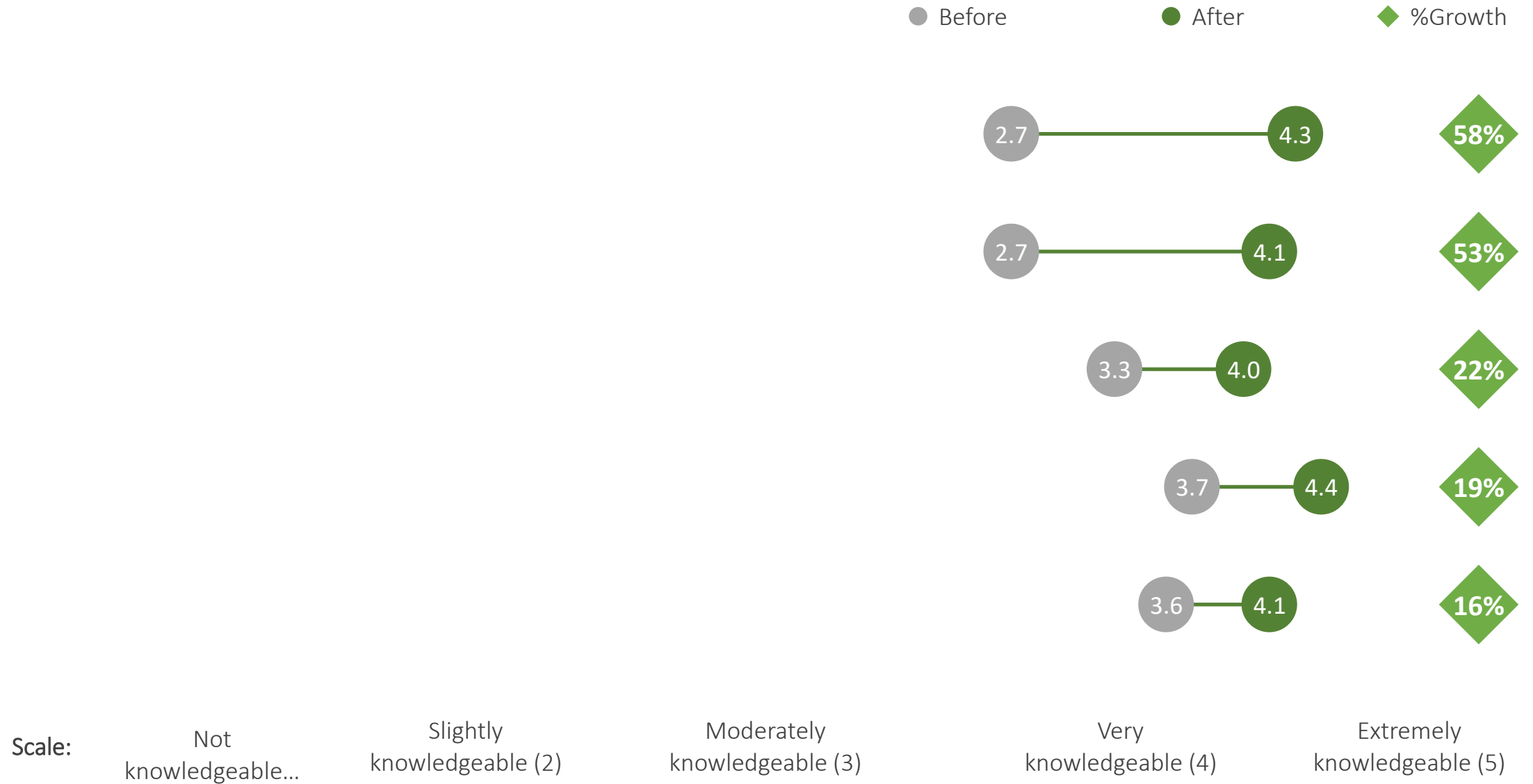
Survey Reporting



Survey Reporting



Survey Reporting



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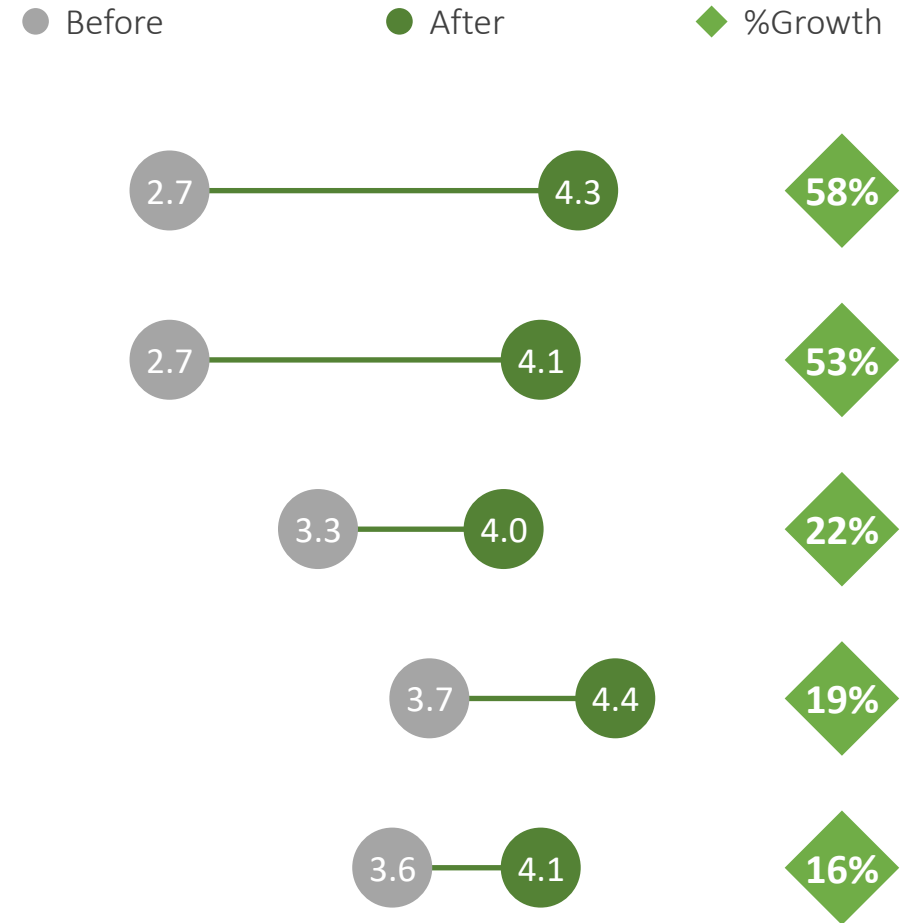
Understanding of the responsible and ethical conduct of research.

Developing and conducting a research experiment and analyzing the data.

Communicating the results of scientific research in written form.

Knowledge of synthetic biology concepts and practices.

Understanding of the theory and methods of molecular techniques used in the study of nucleic acids.



Scale:

Not
knowledgeable...

Slightly
knowledgeable (2)

Moderately
knowledgeable (3)

Very
knowledgeable (4)

Extremely
knowledgeable (5)

Pre & Post Surveys (2)

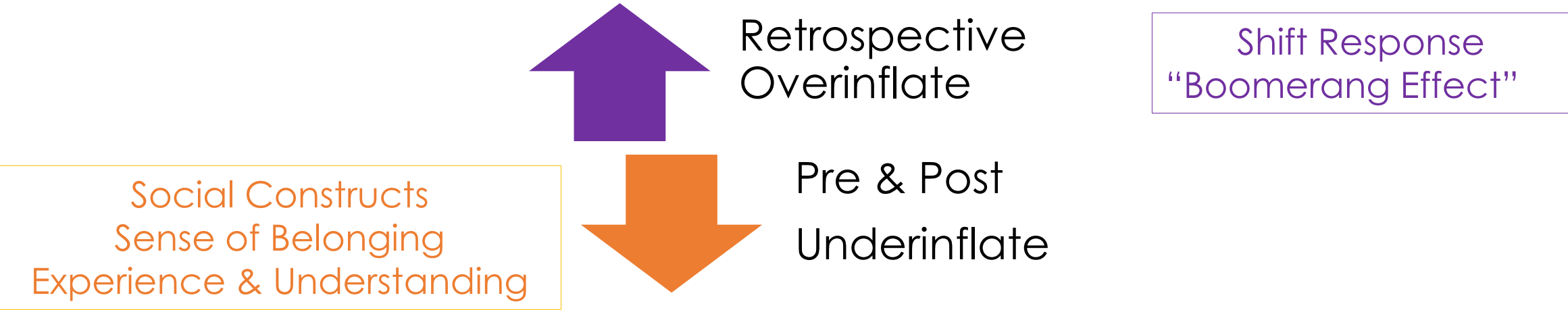
Before Intervention & After Intervention

Experimental or Clinical Methodology

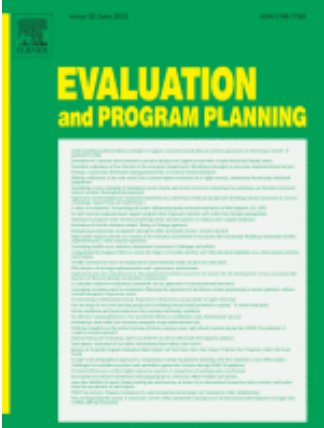
Retrospective Survey (1)

Reflective- After Intervention

Retrospective Pretest (RPT) Methodology



What retrospective survey design is best?



Melanie Hwalek

Article:

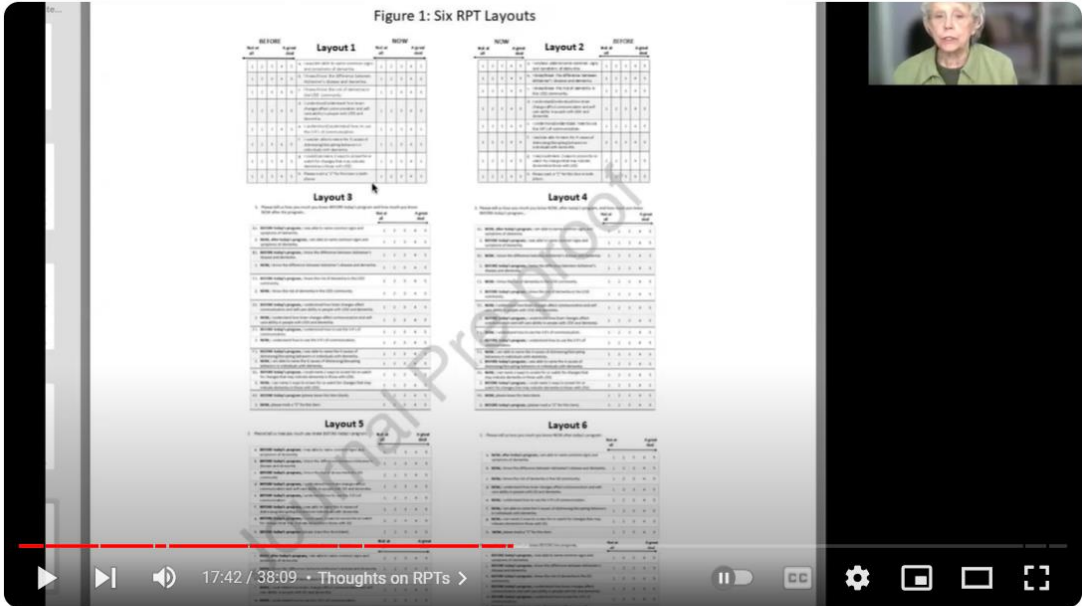
Designing a questionnaire with retrospective pre-post items:
Format matters
Melanie Hwalek, Kate Piece, Victoria Straub



James Pann

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Research and program evaluation videos pert:
evalnetwork.com

Subscribed



The Power of Retrospective Pretests to Address Common Survey Research Challenges

James Pann
234 subscribers
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What retrospective survey design is best?

BEFORE						NOW				
Not at All		A great deal				Not at All		A great deal		
1	2	3	4	5	I can reduce complex scientific jargon into simpler topics appropriate for high school students.	1	2	3	4	5
1	2	3	4	5	I can talk to high school students in an engaging way about science.	1	2	3	4	5

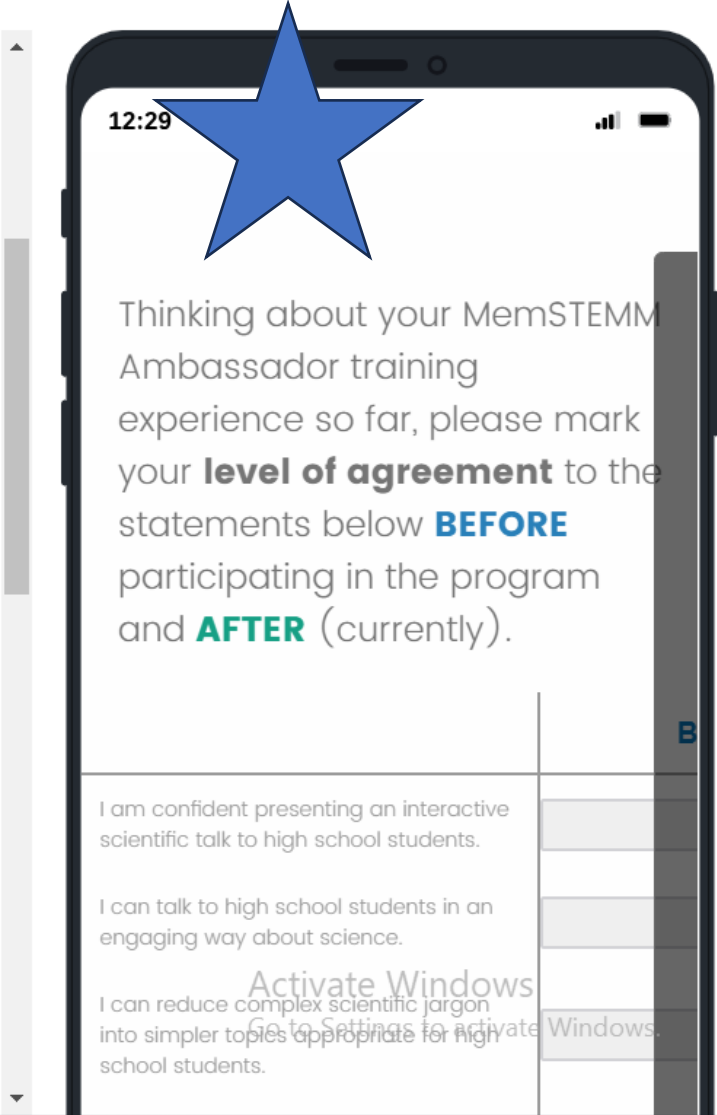
Please tell us how much you knew BEFORE attending these workshops and how much you know NOW after finishing the workshops.	Not at All		A great deal		
1a.) BEFORE these workshops I could reduce complex scientific jargon into simpler topics appropriate for high school students.	1	2	3	4	5
1b.) NOW after completing these workshops, I can reduce complex scientific jargon into simpler topics appropriate for high school students.	1	2	3	4	5
2a.) BEFORE these workshops, I could talk to high school students in an engaging way about science.	1	2	3	4	5
2b.) NOW after completing these workshops, I can talk to high school students in an engaging way about science.	1	2	3	4	5

Please tell us how much you knew BEFORE attending these workshops.	Not at All		A great deal		
1.) BEFORE these workshops I could reduce complex scientific jargon into simpler topics appropriate for high school students.	1	2	3	4	5
2.) BEFORE these workshops, I could talk to high school students in an engaging way about science.	1	2	3	4	5
Please tell us what you know NOW after attending these workshops.					
1.) NOW after completing these workshops, I can reduce complex scientific jargon into simpler topics appropriate for high school students.	1	2	3	4	5
2.) NOW after completing these workshops, I can talk to high school students in an engaging way about science.	1	2	3	4	5

Retrospective Survey (Sondra's favorite format)

Thinking about your MemSTEMM Ambassador training experience so far, please mark your **level of agreement** to the statements below **BEFORE** participating in the program and **AFTER** (currently).

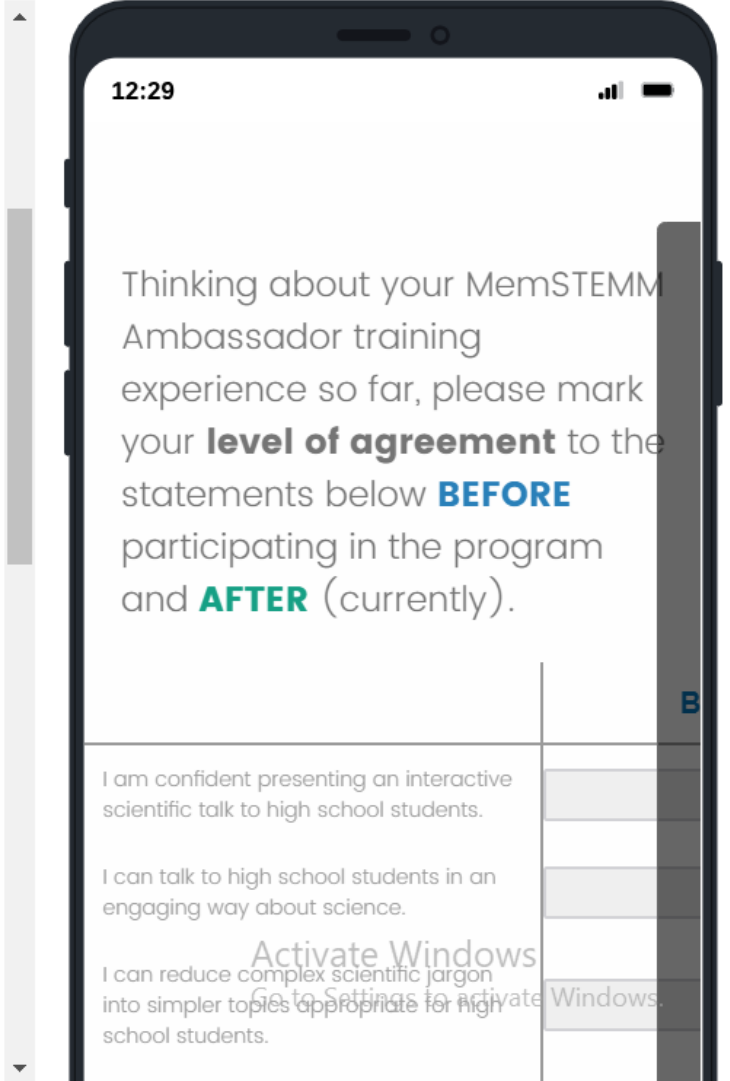
	BEFORE	AFTER (currently)
I am confident presenting an interactive scientific talk to high school students.	Strongly agree	
I can talk to high school students in an engaging way about science.	Strongly agree	
I can reduce complex scientific jargon into simpler topics appropriate for high school students.	Somewhat agree	
	Neither agree nor disagree	
	Somewhat disagree	
	Strongly disagree	
I can tell my story through images using appropriate colors, tones, and layouts.		



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Retrospective Survey Reporting

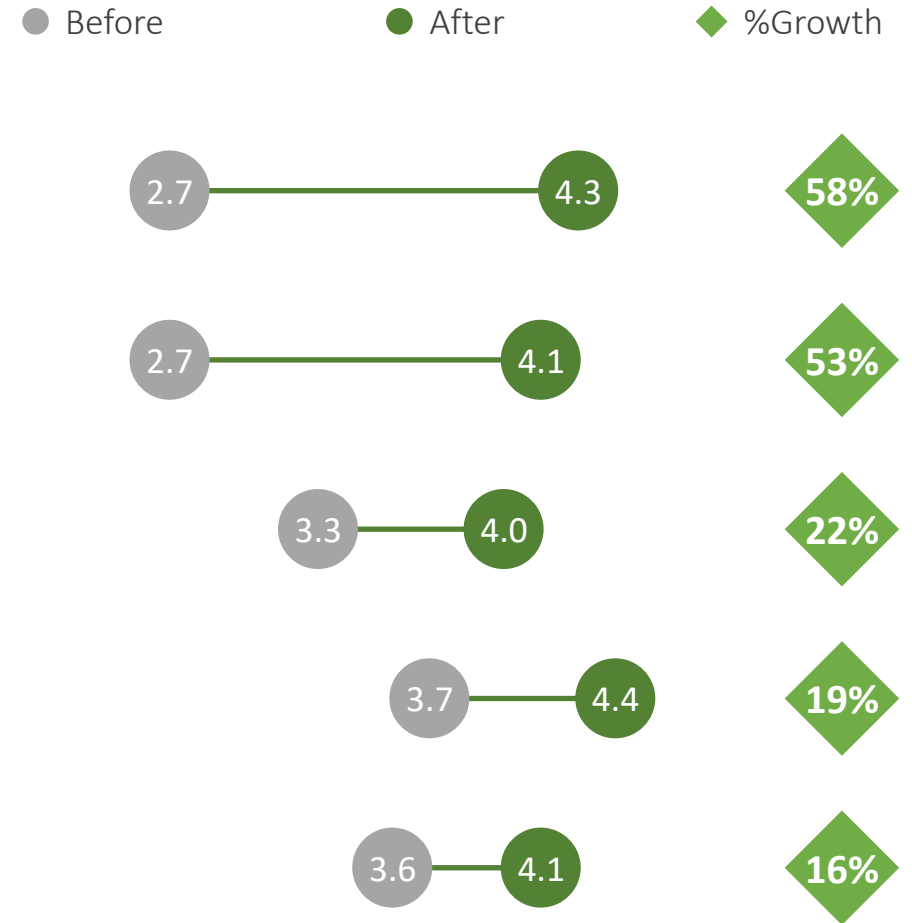
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<https://bit.ly/SPEAR-HI-TEC2024>