

Outcome Expectations for Public Engagement with Science

Outcome Expectations

Outcome expectations are defined as a person's judgements about the likely consequences of a given task, positive outcome expectations serve as incentives that promote future behavior (Bandura, 2001). They guide behavioral choices as people adopt courses of action that are likely to result in positive outcomes. A scientist's outcome expectations related to outreach would be expected to inform the extent to which they continue to engage with the public.



Please reflect on your most recent public engagement with science (PES) activity as you answer the following questions.

I plan to do another activity in the future because:

1. My most recent PES activity gave me insight into the concerns that people have about science.
2. I felt enlightened by ideas shared by participants at my most recent PES event.
3. My most recent PES activity gave me a better understanding of how people think about the kinds of work that scientists do.
4. My most recent PES activity helped participants connect science to their everyday lives.
5. My most recent PES activity provided me with an opportunity to learn from the broader community.
6. As a result of my most recent PES activity, I believe that participants will make more informed decisions using science.

Items were rated on a 6-point scale: Strongly disagree, Moderately disagree, Mildly disagree, Mildly agree, Moderately agree, Strongly agree.

Potential Uses

- Monitor key factors that keep scientists engaged in PES
- Measure pre-post change in outcome expectations across time

Scoring

- Check the reliability of the scale with your group of scientists using Cronbach's alpha
- If the scale is reliable, create an average score for each scientist

Step 1: Think-aloud Interviews



43 scientists participated in one of two rounds of think-aloud interviews to react to the short-term outcomes on the AAAS logic model, and to describe their understanding and responses to survey items.

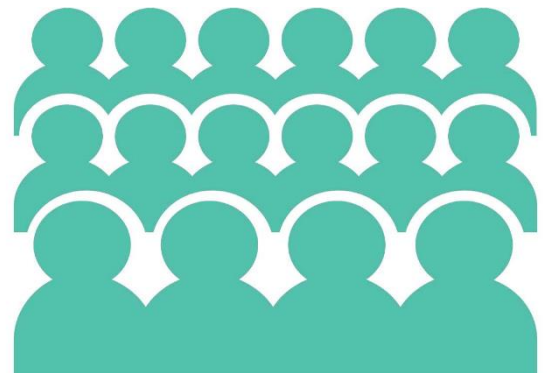
20 items were identified as intuitive for scientists and provided a wide variety of responses.

Step 2: Survey Data Collection

$N=364$ scientists who had conducted PES in the past year.

PES activities were mostly public dialogue (56%) and university extension (29%).

Some had done PES for less than a year and many had 20+ years of experience.



Step 3: Analysis



Item response theory (IRT) and graded response models were used to validate items.

The scale was reduced to six items that have classically adequate reliability for those with outcome expectation scores that range from -3 to 2.2 standard deviations from the mean.

The average score on the scale was 4.64; scientists' scores ranged from 1.17 to 6.