The webinar will begin at 1 p.m. EST

While you wait, please answer the poll question in the upper right corner of your screen.

Introductions

Miranda Lee
Lori Wingate
Goldie MacDonald

This material is based upon work supported by the National Science Foundation under grant number 1204683. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the presenters and do not necessarily reflect the views of NSF or the Centers for Disease Control and Prevention.
Behind the Scenes

Mike Lesiecki  Janet Pinhorn  Tim Suchomski  Emma Perk

Materials

2 FOR 1  Retrospective Pretests

Slides  Handout  Recording

www.evalu-ate.org/webinars/2015-dec/
Objectives

By the end of the webinar, you will be able to

1. design retrospective pretest questions.
2. analyze and report data gathered using this method.
3. use the evaluation data for training accountability, improvement, or planning.

Overview

what • how • why
what • how • why

is the retrospective pretest method?

Retrospective pretest

Respondents rate their knowledge, skill, attitude, or behavior before and after an intervention in a single data collection event

Any planned effort that is designed to produce specific changes in people’s thoughts, feelings, or behaviors*

Anatomy of a retrospective pretest question

<table>
<thead>
<tr>
<th>RATE YOUR KNOWLEDGE OF:</th>
<th>NOW</th>
<th>BEFORE the webinar</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to format a retrospective pretest question</td>
<td>1 Poor</td>
<td>1 Poor</td>
</tr>
<tr>
<td></td>
<td>2 Fair</td>
<td>2 Fair</td>
</tr>
<tr>
<td></td>
<td>3 Good</td>
<td>3 Good</td>
</tr>
<tr>
<td></td>
<td>4 Excellent</td>
<td>4 Excellent</td>
</tr>
</tbody>
</table>

Aspect of participant’s knowledge, skill, attitude, or behavior that you need to measure in order to assess the quality or outcomes of an intervention.
## Anatomy of a retrospective pretest question

<table>
<thead>
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<th>BEFORE the webinar</th>
</tr>
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</tr>
<tr>
<td></td>
<td>2 Fair</td>
<td>2 Fair</td>
</tr>
<tr>
<td></td>
<td>3 Good</td>
<td>3 Good</td>
</tr>
<tr>
<td></td>
<td>4 Excellent</td>
<td>4 Excellent</td>
</tr>
</tbody>
</table>

**Distinct headers/response areas for post- and pre- ratings**

---

## Anatomy of a retrospective pretest question

<table>
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<tr>
<th>Rate Your Knowledge Of:</th>
<th>NOW</th>
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</tr>
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<tbody>
<tr>
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<td>1 Poor</td>
</tr>
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<td></td>
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<td>2 Fair</td>
</tr>
<tr>
<td></td>
<td>3 Good</td>
<td>3 Good</td>
</tr>
<tr>
<td></td>
<td>4 Excellent</td>
<td>4 Excellent</td>
</tr>
</tbody>
</table>

**Rating scale: Response options arranged in hierarchical order**
1) How would you rate your...  
   a. ability to access climate-change projections relevant to your health department BEFORE beginning BRACE Step One?
   
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   b. ability to access climate-change projections relevant to your health department AFTER implementing BRACE Step One?
   
<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>Medium</td>
<td>High</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2) If your ability increased, please check the boxes for each source that contributed to this increase in ability:
   - Webinars delivered by the CDC’s Climate & Health Program
   - Data on Environmental Public Health tracking portal
   - April 2014 grantee meeting at the CDC
   - National Climate Assessment regional outlooks
   - Collaboration with other grantees
   - Other non-CDC facilitated collaborations

Real-world example from Sharon Gusky, Northwestern Connecticut Community College

<table>
<thead>
<tr>
<th>After the workshop</th>
<th>Prior to the workshop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Weak</td>
<td>Weak</td>
</tr>
<tr>
<td>Rate your ability to define the term metacognition</td>
<td>Rate your knowledge of metacognition practices that can be used with students</td>
</tr>
</tbody>
</table>
Real-world example from Cheryl Eschbach  
Michigan State University Extension  
(formerly at Oregon State University Extension & Family Health)

The Parenting Skills Ladder

Look at the Parenting Skills Ladder. Some people feel their skills in certain areas are low. Others see their skills as higher.

First, think about where you are on the ladder NOW for each of the skills below.

Then, think back to BEFORE you participated in the parenting class. Where were you then?

<table>
<thead>
<tr>
<th>Parenting Skills</th>
<th>Score</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>cropped</td>
<td>NOW</td>
<td>BEFORE</td>
</tr>
<tr>
<td>1. Know normal behavior for my child(ren)’s age level</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>2. Show my child(ren) love and affection frequently</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>3. Listen to my child(ren) to understand their feelings</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>4. Help my child(ren) feel good about themselves</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>5. Set and stick to reasonable limits and rules</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>6. Know fun activities to help my child(ren) learn</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>7. Find positive ways to guide and discipline my child</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>8. Play with my child(ren) frequently</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>9. Protect my child(ren) from unsafe situations</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>10. Talk with other parents to share experiences</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>11. Deal with the day-to-day stresses of parenting</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>12. Understand my goals and values as a parent</td>
<td>Low</td>
<td>Low</td>
</tr>
</tbody>
</table>

Real-world example from Marilyn Barger & Marie Boyette  
Florida FLATE  
Hillsborough Community College

YES  NO  2) I was considering a career in advanced manufacturing before the tour.

YES  NO  8) After taking this tour, I am considering a career in advanced manufacturing.
Part of a comprehensive evaluation of training, professional development, or other efforts to change what people know, think, or do

<table>
<thead>
<tr>
<th>0. Reach</th>
<th>The extent to which the intended audience was reached</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Reaction</td>
<td></td>
</tr>
<tr>
<td>2. Learning</td>
<td></td>
</tr>
<tr>
<td>3. Behavior</td>
<td></td>
</tr>
<tr>
<td>4. Results</td>
<td></td>
</tr>
</tbody>
</table>
Part of a comprehensive evaluation of training, professional development, or other efforts to change what people know, think, or do

0. Reach
1. Reaction  How participants react to the intervention
   SATISFACTION • ENGAGEMENT • RELEVANCE
2. Learning
3. Behavior
4. Results

Part of a comprehensive evaluation of training, professional development, or other efforts to change what people know, think, or do

0. Reach
1. Reaction
2. Learning The extent to which participants acquire the intended knowledge, skills, or attitudes
3. Behavior
4. Results
Part of a comprehensive evaluation of training, professional development, or other efforts to change what people know, think, or do

0. Reach
1. Reaction
2. Learning
3. Behavior
   - The extent to which participants apply what they learned
4. Results
   - The extent to which intended outcomes occur
Webinar
2 for 1: The Retrospective Pretest Method for Evaluating Training

what • how • why

Part of a comprehensive evaluation of training, professional development, or other efforts to change what people know, think, or do

0. Reach
1. Reaction
2. Learning
3. Behavior
4. Results

Kirkpatrick Model*
for evaluating training

*Kirkpatrick Partners: bit.ly/kirk-model

what • how • why

LOGIC MODEL + KIRKPATRICK

INPUTS ACTIVITIES OUTPUTS SHORT-TERM OUTCOMES MID-TERM OUTCOMES LONG-TERM OUTCOMES

0. Reach

1. Reaction
2. Learning
3. Behavior
4. Results

evalu-ate.org
what • how • why

LOGIC MODEL + KIRKPATRICK

SHORT-TERM OUTCOMES  MID-TERM OUTCOMES

Learning  Behavior

Knowledge  Application of content
Skills  Change in practice
Attitudes
Motivation

Self-efficacy

an individual's belief in his or her capacity to execute behaviors necessary to produce specific performance attainments*


what • how • why

Retrospective pretest data are collected in conjunction with other data from participants

Feedback survey from a recent EvaluATE workshop

evalu-ate.org
**what** • **how** • **why**

Basic demographic questions to help us interpret results

Questions about participants' satisfaction, engagement, relevance, and intent to use content

Retrospective pretest questions aligned to workshop objectives

+ follow-up quantitative and qualitative data collection to learn more about actual use of content on the job

Open-ended questions about what needs improvement and what was especially good

**what** • **how** • **why**

use it?
what • how • why

✓ Reduces response-shift bias

“ I didn’t know what I didn’t know. ”
**what • how • why**

**Traditional pre-post**

Rate your skill level in using spreadsheets:
- Not at all skilled
- Somewhat skilled
- Moderately skilled
- Highly skilled

Before workshop

Rate your skill level in using spreadsheets:
- Not at all skilled
- Somewhat skilled
- Moderately skilled
- Highly skilled

After workshop

**what • how • why**

**Retrospective pretest**

Rate your skill level in using spreadsheets:

**NOW**
- Not at all skilled
- Somewhat skilled
- Moderately skilled
- Highly skilled

BEFORE the workshop
- Not at all skilled
- Somewhat skilled
- Moderately skilled
- Highly skilled

After workshop
what • how • why

✔ Reduces response-shift bias
✔ Convenient
✔ More accurate than traditional pre-post self-assessments
✔ Versatile
✔ More acceptable to adult learners


“an imperfect, but useful tool”

— Theodore Lamb
Center for Research and Evaluation,
Biological Science Curriculum Study
Design
focus: scale: format

question focus
**focus • scale • format**

Critical knowledge, skills, behaviors, or attitudes

Align with the intervention’s logic model

<table>
<thead>
<tr>
<th>INPUTS</th>
<th>ACTIVITIES</th>
<th>OUTPUTS</th>
<th>SHORT-TERM OUTCOMES</th>
<th>MID-TERM OUTCOMES</th>
<th>LONG-TERM OUTCOMES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>Behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Knowledge</td>
<td>Skill</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attitude</td>
<td>Motivation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>Application of content</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in practice</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Focus items on individual-level changes

---

**focus • scale • format**

**KNOWLEDGE**

Rate your knowledge of ...  
What is your level of expertise ...

**BEHAVIOR**

How often do you ...

**SKILL**

Rate your ability to ...  
Rate your proficiency in ...

**ATTITUDE**

How important is ...  
To what extent do you agree ...

**MOTIVATION**

How likely is that you will ...  
To what degree are you committed to ...

**SELF-EFFICACY**

Rate your confidence in ...
<table>
<thead>
<tr>
<th>AGREEMENT</th>
<th>strongly disagree – disagree – agree – strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>FREQUENCY</td>
<td>never – rarely – sometimes – often – always</td>
</tr>
<tr>
<td>IMPORTANCE</td>
<td>Not all important – slightly important – moderately important – very important – extremely important</td>
</tr>
</tbody>
</table>
**Likert scales—Fully anchored**

**FREQUENCY**
never – rarely – sometimes – often – always

```
1 2 3 4 5
Never Rarely Sometimes Often Always
```

**Partially anchored scales**

```
1 2 3 4 5
Not at all skilled Moderately skilled Highly skilled
```

```
1 2 3 4 5 6
Extremely unlikely Extremely likely
```
**Your turn**

### Poll

Read and respond to the question in the upper right corner of your screen.

<table>
<thead>
<tr>
<th>Rate your extent of agreement or disagreement with the following statements:</th>
<th>NOW</th>
<th>BEFORE the webinar</th>
</tr>
</thead>
<tbody>
<tr>
<td>A: Usually plan for analysis when I am drafting survey questions</td>
<td>Strongly disagree</td>
<td>Disagree</td>
</tr>
<tr>
<td>B: I know how to design a retrospective pretest question</td>
<td>Strongly disagree</td>
<td>Disagree</td>
</tr>
</tbody>
</table>

---

### Poll

Read and respond to the question in the upper right corner of your screen.

<table>
<thead>
<tr>
<th>Rate your ability in each of the following areas:</th>
<th>NOW</th>
<th>BEFORE the webinar</th>
</tr>
</thead>
<tbody>
<tr>
<td>C: Designing retrospective pretest questions</td>
<td>Poor</td>
<td>Fair</td>
</tr>
<tr>
<td>D: Confidence in using the retrospective pretest method</td>
<td>Poor</td>
<td>Fair</td>
</tr>
</tbody>
</table>
focus & scale

Make sure they make sense together!

question format
### Format 1*

<table>
<thead>
<tr>
<th>AFTER the webinar</th>
<th>BEFORE the webinar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Poor</td>
<td>2 Fair</td>
</tr>
<tr>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

**RATE YOUR KNOWLEDGE OF:** How to format a retrospective pretest question

*Adapted from University of Wisconsin-Extension (2005). *Quick Tips 28.*

### Format 2*

<table>
<thead>
<tr>
<th>NOW</th>
<th>BEFORE the webinar</th>
</tr>
</thead>
<tbody>
<tr>
<td>RATE YOUR KNOWLEDGE OF:</td>
<td>1 Poor</td>
</tr>
<tr>
<td>How to format a retrospective pretest question</td>
<td>○</td>
</tr>
</tbody>
</table>

*Adapted from University of Wisconsin-Extension (2005).*
## Format 3*

1. Rate your knowledge of how to format a retrospective pretest question:

<table>
<thead>
<tr>
<th></th>
<th>Poor</th>
<th>Fair</th>
<th>Good</th>
<th>Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. After the program</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>b. Before the program</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

*Adapted from University of Wisconsin-Extension (2005).

---

### INSTRUCTIONS

For each item below, rate your knowledge NOW and what it was BEFORE this webinar.

<table>
<thead>
<tr>
<th>NOW</th>
<th>BEFORE this webinar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Poor</td>
<td>1 Poor</td>
</tr>
<tr>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>

How to format a retrospective pretest question

The life history of Anakin Skywalker
## INSTRUCTIONS: For each item below, rate your knowledge NOW and what it was BEFORE this webinar.

<table>
<thead>
<tr>
<th>NOW</th>
<th>BEFORE this webinar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Poor</td>
<td>1 Poor</td>
</tr>
<tr>
<td>2 Fair</td>
<td>2 Fair</td>
</tr>
<tr>
<td>3 Good</td>
<td>3 Good</td>
</tr>
<tr>
<td>4 Excellent</td>
<td>4 Excellent</td>
</tr>
</tbody>
</table>

### RATE YOUR KNOWLEDGE OF:
- How to format a retrospective pretest question
- The life history of Anakin Skywalker

Use between 4 and 7 response categories

Use formatting to distinguish post and pre items

Format guidance adapted from University of Wisconsin-Extension (2005). Tip Sheet 28
**INSTRUCTIONS:** For each item below, rate your knowledge NOW and what it was BEFORE this webinar.

<table>
<thead>
<tr>
<th>NOW</th>
<th>PLACE POST-INTERVENTION ITEM FIRST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>Fair</td>
</tr>
<tr>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>○</td>
<td>○</td>
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</tbody>
</table>

Format guidance adapted from University of Wisconsin-Extension (2005). Tip Sheet 28
CAUTION
FOR WEB SURVEYS,
CHECK OPTIONS
BEFORE YOU COMMIT
TO A FORMAT

For each item listed below, rate your what knowledge is NOW and what is was BEFORE the webinar.

<table>
<thead>
<tr>
<th></th>
<th>1 Poor</th>
<th>2 Fair</th>
<th>3 Good</th>
<th>4 Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to format a retrospective pretest question</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The life history of Anakin Skywalker</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Qualtrics

**Rate your knowledge of how to format a retrospective pretest question.**

<table>
<thead>
<tr>
<th></th>
<th>1 - Poor</th>
<th>2 - Fair</th>
<th>3 - Good</th>
<th>4 - Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>After the webinar</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Before the webinar</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

**Rate your knowledge of the life history of Anakin Skywalker.**

<table>
<thead>
<tr>
<th></th>
<th>1 - Poor</th>
<th>2 - Fair</th>
<th>3 - Good</th>
<th>4 - Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>After the webinar</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Before the webinar</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

### Qualtrics

**For each item listed below, rate your current knowledge.**

- How to format a retrospective pretest question
- The life history of Anakin Skywalker

<table>
<thead>
<tr>
<th></th>
<th>1 - Poor</th>
<th>2 - Fair</th>
<th>3 - Good</th>
<th>4 - Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to format a retrospective pretest question</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The life history of Anakin Skywalker</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

**For each item listed below, rate your knowledge before the webinar.**

- How to format a retrospective pretest question
- The life history of Anakin Skywalker

<table>
<thead>
<tr>
<th></th>
<th>1 - Poor</th>
<th>2 - Fair</th>
<th>3 - Good</th>
<th>4 - Excellent</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to format a retrospective pretest question</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>The life history of Anakin Skywalker</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>
Analysis & Visualization

data analysis
### Analysis Visualization

**Frequency Distribution of Ratings**

Participants’ ratings of their knowledge of how to format a retrospective pretest question*

<table>
<thead>
<tr>
<th>Rating</th>
<th>Number</th>
<th>Percentage</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 – Poor</td>
<td>12</td>
<td>16%</td>
<td>2</td>
<td>3%</td>
</tr>
<tr>
<td>2 – Fair</td>
<td>34</td>
<td>45%</td>
<td>12</td>
<td>16%</td>
</tr>
<tr>
<td>3 – Good</td>
<td>21</td>
<td>28%</td>
<td>37</td>
<td>49%</td>
</tr>
<tr>
<td>4 – Excellent</td>
<td>8</td>
<td>11%</td>
<td>24</td>
<td>32%</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
<td>100%</td>
<td>75</td>
<td>100%</td>
</tr>
</tbody>
</table>

*Fictional data

---

**Frequency Distribution of Ratings**

Most participants rated their POST-WEBINAR knowledge as good or excellent

<table>
<thead>
<tr>
<th>Rating</th>
<th>BEFORE the webinar</th>
<th>AFTER the webinar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>1 – Poor</td>
<td>12</td>
<td>16%</td>
</tr>
<tr>
<td>2 – Fair</td>
<td>34</td>
<td>45%</td>
</tr>
<tr>
<td>3 – Good</td>
<td>21</td>
<td>28%</td>
</tr>
<tr>
<td>4 – Excellent</td>
<td>8</td>
<td>11%</td>
</tr>
<tr>
<td>Total</td>
<td>75</td>
<td>100%</td>
</tr>
</tbody>
</table>

Most participants rated their PRE-WEBINAR knowledge as fair or good
**analysis • visualization**

**Frequency Distribution of Change Scores**

Participants’ ratings of their knowledge of how to format a retrospective pretest question*

<table>
<thead>
<tr>
<th>Change score</th>
<th>0</th>
<th>+1</th>
<th>+2</th>
<th>+3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage of respondents</td>
<td>2%</td>
<td>17%</td>
<td>55%</td>
<td>26%</td>
</tr>
</tbody>
</table>

More than half of participants rated their POST-WEBINAR knowledge as two levels higher than their PRE-WEBINAR knowledge.

---

**Means**

Use mainly to identify relative strengths and weaknesses and overall patterns

<table>
<thead>
<tr>
<th>NOW</th>
<th>BEFORE this webinar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Poor</td>
<td>2 Fair</td>
</tr>
<tr>
<td>3.6</td>
<td>How to format a retrospective pretest question</td>
</tr>
<tr>
<td>2.0</td>
<td>Life history of Anakin Skywalker</td>
</tr>
</tbody>
</table>

*participant's knowledge of how to format a retrospective pretest question*
WORKSHOP OBJECTIVES

- Understand the fundamentals of Intellectual Merit and Broader Impacts
- Identify gaps in evaluation data
- Fill evidence gaps with low-cost, high-impact evidence
- Create a persuasive Results from Prior NSF Support section for proposals

{Next examples are from a recent EvaluATE workshop}
The Retrospective Pretest Method for Evaluating Training

**RATING SCALE***

- **Entry or Novice**
  - Developing awareness of topic
  - Limited capability
  - Little or no awareness of potential problems
  - Little or no awareness of questions to ask

- **Proficient or Skilled**
  - Basic capability
  - Solving problems as they arise
  - Knowing what questions to ask
  - Knowing where and how to access resources to answer questions

- **Mastery or Expert**
  - Applying knowledge effectively, confidently
  - Advanced capability
  - Anticipating problems before they arise
  - Being sought out for guidance
  - Innovating or improving practices


---

**OBJECTIVE 1:**
Understand the fundamentals of Intellectual Merit and Broader Impacts (N=42)

<table>
<thead>
<tr>
<th>Level</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>17%</td>
<td>31%</td>
</tr>
<tr>
<td>2</td>
<td>2%</td>
<td>21%</td>
</tr>
<tr>
<td>3</td>
<td>7%</td>
<td>28%</td>
</tr>
<tr>
<td>4</td>
<td>12%</td>
<td>26%</td>
</tr>
<tr>
<td>5</td>
<td>2%</td>
<td>30%</td>
</tr>
<tr>
<td>6</td>
<td>24%</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>5%</td>
<td></td>
</tr>
</tbody>
</table>

Entry or Novice ➔ Proficient or Skilled ➔ Mastery or Expert ➔
OBJECTIVE 1: Understand the fundamentals of Intellectual Merit and Broader Impacts (N=42)

Most participants rated their competence before the workshop as a 2 or 3.

Always indicate the number of respondents when presenting percentage data.
OBJECTIVE 1:
Understand the fundamentals of Intellectual Merit and Broader Impacts (N=42)

Most participants rated their competence AFTER the workshop as a 4, 5, or 6

Before and After Chart

OBJECTIVE 1:
Understand the fundamentals of Intellectual Merit and Broader Impacts (N=42)

Mode 2 and 5

Before and After Chart
OBJECTIVE 1: Understand the fundamentals of Intellectual Merit and Broader Impacts (N=42)

OBJECTIVE 3: Fill evidence gaps with low-cost, high-impact evidence (N=42)

Bar Charts with Distribution of Change Scores (N=42)

Two-thirds of participants gained 2 or more levels on these objectives
Bar Charts with Distribution of Change Scores (N=42)

- Understand the fundamentals of Intellectual Merit and Broader Impacts:
  - 0%: 0%
  - +1: 13%
  - +2: 17%
  - +3: 40%
  - +4: 10%
  - +5: 0%
  - +6: 0%

- Identify gaps in evaluation data:
  - 0%: 17%
  - +1: 31%
  - +2: 29%
  - +3: 19%
  - +4: 2%
  - +5: 2%
  - +6: 0%

- Fill evidence gaps with low-cost, high-impact evidence:
  - 0%: 12%
  - +1: 31%
  - +2: 17%
  - +3: 0%
  - +4: 2%
  - +5: 2%
  - +6: 0%

- Create a persuasive Results from Prior NSF Support section for proposals:
  - 0%: 10%
  - +1: 21%
  - +2: 21%
  - +3: 40%
  - +4: 12%
  - +5: 7%
  - +6: 5%

Most participants saw a small or no gain on this objective.

Dot Plot with Means (all objectives)

- Understand the fundamentals of Intellectual Merit and Broader Impacts:
  - Before: 2.8
  - After: 4.9
  - Gain: +2.1

- Identify gaps in evaluation data:
  - Before: 3.4
  - After: 5.0
  - Gain: +1.6

- Fill evidence gaps with low-cost, high-impact evidence:
  - Before: 3.3
  - After: 4.6
  - Gain: +1.3

- Create a persuasive Results from Prior NSF Support section for proposals:
  - Before: 3.2
  - After: 5.3
  - Gain: +2.1
Using Results

NSF-ATE EVALUATION WORKSHOP OBJECTIVE 1: Understand the fundamentals of Intellectual Merit and Broader Impacts (N=42)

Average change

We need to tap the expertise of this group (14%)
- Before: 2
- After: 6
- Average change: +1

This group would benefit from more advanced content (38%)
- Before: 17
- After: 5.6
- Average change: +1.2

This group is well served (48%)
- Before: 31
- After: 4.5
- Average change: +2.5

Entry or Novice
Proficient or Skilled
Mastery or Expert

This group is well served (48%)
- Before: 31
- After: 4.5
- Average change: +2.5
92% of participants agreed that they learned something—But what? How much?

Using Results

"This webinar increased my knowledge of evaluation." (N=52)

92% of participants agreed that they learned something—But what? How much?

Using Results

Objectives-based retrospective pretest

Objective 1:
Understand how a strong evaluation plan can improve an ATE proposal

Objective 2:
Know what evaluation elements should be included in an ATE proposal and where

evalu-ate.org
**Using Results**

### Objectives-based retrospective pretest

**Objective 1:**
Understand how a strong evaluation plan can improve an ATE proposal

**Objective 2:**
Know what evaluation elements should be included in an ATE proposal and where

---

**Using Results**

1. **Why are retrospective pre-test items so informative to evaluate training activities (especially for the instructor)?**

2. **Have these data provided practical insights regarding the intervention (i.e., training)?**

3. **How have I used this information as a platform for action (e.g., adjustments to content, delivery of content)?**
Using Results

An Example of Common Items Used to Evaluate Training

<table>
<thead>
<tr>
<th>Summer Evaluation Institute</th>
<th>Survey Item</th>
<th>Overall Institute Average</th>
<th>Indicators Workshop Average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>The session improved my understanding of the topic.</td>
<td>4.20</td>
<td>4.87</td>
</tr>
<tr>
<td></td>
<td>The presenter seemed knowledgeable about the topic.</td>
<td>4.65</td>
<td>5.00</td>
</tr>
<tr>
<td></td>
<td>Clear learning objectives were stated for this session.</td>
<td>4.26</td>
<td>4.83</td>
</tr>
<tr>
<td></td>
<td>The session was taught at the advertised level (i.e. beginner, intermediate).</td>
<td>4.25</td>
<td>4.74</td>
</tr>
<tr>
<td></td>
<td>There was sufficient time devoted to interactive/case work/discussion in this session.</td>
<td>4.02</td>
<td>4.83</td>
</tr>
<tr>
<td></td>
<td>The knowledge and skills I learned will be useful to me in my job.</td>
<td>4.09</td>
<td>4.87</td>
</tr>
<tr>
<td></td>
<td>The session slides and handouts were useful.</td>
<td>4.13</td>
<td>4.87</td>
</tr>
<tr>
<td></td>
<td>The session size worked well for this presentation.</td>
<td>4.26</td>
<td>4.83</td>
</tr>
<tr>
<td></td>
<td>I would recommend this session to others.</td>
<td>4.10</td>
<td>4.96</td>
</tr>
<tr>
<td></td>
<td>Overall, this was a good session.</td>
<td>4.16</td>
<td>4.96</td>
</tr>
<tr>
<td></td>
<td>Overall Mean</td>
<td>4.21</td>
<td>4.87</td>
</tr>
</tbody>
</table>

1=Strongly Disagree  2=Disagree  3=Neither Agree nor Disagree   4=Agree   5=Strongly Agree

Using Results

Retrospective Pre-test Items to Evaluate Changes in Knowledge or Skills

<table>
<thead>
<tr>
<th>Knowledge/skill level before the course</th>
<th>WORKSHOP OBJECTIVES</th>
<th>Knowledge/skill level after the course</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>Describe and apply explicit indicators for program evaluation</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>Describe the importance and content of operational definitions for indicators</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>Explain the relationship of indicators to other elements of evaluation design</td>
<td>1 2 3 4 5 6 7</td>
</tr>
<tr>
<td>1 2 3 4 5 6 7</td>
<td>Recognize and address common practice traps in development and use of indicators</td>
<td>1 2 3 4 5 6 7</td>
</tr>
</tbody>
</table>
Using Results

Rating Scale

Entry or Novice
- Developing awareness of topic
- Limited capability
- Little or no awareness of potential problems
- Little or no awareness of questions to ask

Proficient or Skilled
- Basic capability
- Solving problems as they arise
- Knowing what questions to ask
- Knowing where and how to access resources to answer questions

Mastery or Expert
- Applying knowledge effectively, confidently
- Advanced capability
- Anticipating problems before they arise
- Being sought out for guidance
- Innovating or improving practices

INDICATORS WORKSHOP • JUNE 2, 2015 • ATLANTA, GEORGIA
CHANGES IN PARTICIPANT KNOWLEDGE OR SKILLS

<table>
<thead>
<tr>
<th>Learning Objectives</th>
<th>Use of Indicators for Program Evaluation</th>
<th>Criteria for Selection of Indicators</th>
<th>Content of Operational Definitions</th>
<th>Relationship Indicators to Evaluation Design</th>
<th>Recognize Practice Traps</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE WORKSHOP</td>
<td>2.82</td>
<td>2.21</td>
<td>2.10</td>
<td>2.83</td>
<td>2.23</td>
</tr>
<tr>
<td>POST WORKSHOP</td>
<td>4.49</td>
<td>4.19</td>
<td>4.51</td>
<td>4.34</td>
<td>4.13</td>
</tr>
</tbody>
</table>
Entry or Novice
- Developing awareness of topic

Proficient or Skilled
- Basic capability

Mastery or Expert
- Applying knowledge effectively, confidently
• Involve every learner in exercises and knowledge checks for sure
• Enhance collaboration among participants and with the instructor (beyond the small group exercises already used)
• Sustain engagement through complex technical content
• Create real-time feedback on delivery and receipt of key concepts

Data-driven Decisions:
• Added use of clickers
• Scaled back content to look more deeply at core topics
• Used in-depth knowledge of my own organization to anticipate and meet participant needs
Webinar
2 for 1: The Retrospective Pretest Method for Evaluating Training

Entry or Novice
- Developing awareness of topic

Proficient or Skilled
- Basic capability

Mastery or Expert
- Applying knowledge effectively, confidently
Regardless of where participants begin on the scale, what is the aim for collective growth?

Entry or Novice
- Developing awareness of topic
- Limited capability
- Little or no awareness of potential problems
- Little or no awareness of questions to ask

Proficient or Skilled
- Basic capability
- Solving problems as they arise
- Knowing what questions to ask
- Knowing where and how to access resources to answer questions

Mastery or Expert
- Applying knowledge effectively, confidently
- Advanced capability
- Anticipating problems before they arise
- Being sought out for guidance
- Innovating or improving practices

CDC UNIVERSITY INDICATORS WORKSHOP • OCTOBER 15, 2015 • ATLANTA, GEORGIA
CHANGES IN PARTICIPANT KNOWLEDGE OR SKILLS

LEARNING OBJECTIVES

USE OF INDICATORS
FOR PROGRAM EVALUATION
CRITERIA FOR SELECTION OF INDICATORS
RECOGNIZE PRACTICE TRAPS
RELATIONSHIP INDICATORS TO EVALUATION DESIGN

5.14 5.07 5.18 5.29
3.88 2.66 2.93 3.96

PRE WORKSHOP
POST WORKSHOP
Thank You!

www.evalu-ate.org