

Cognitive Pretesting for Survey Design

The NIH Evaluation Set-Aside (ESA) Program
Program Evaluation Special Interest Group (Eval SIG)

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April 14, 2010



Presentation Outline

- Overview of cognitive pretesting
- Cognitive pretesting to inform survey development at the NIH
- Think-aloud exercise
- Other uses of cognitive pretesting
- References

Cognitive Pretesting

- Overview
 - Helps researchers detect problems
 - Helps researchers understand what respondents are thinking
 - Tests standard questions that have been used in other contexts
 - Has become a “best-practice” in the survey industry

Fundamentals of Cognitive Testing

- Cognitive theory
 1. Comprehension
 2. Retrieval
 3. Response formation
 4. Reporting

1. Comprehension

- What does the respondent think the question is asking?
- What do specific words or phrases mean?
- Does the respondent's comprehension match the researcher's intent for the question?

Example: “Additional guidance provided to illustrate the relative balance of strengths and weaknesses associated with each score assisted me in determining the criterion scores for the applications.”

2. Retrieval

- What type of information does the respondent need to recall?
- How does the respondent attempt to recall the information?
- Does the respondent have all of the information required?
- *Example:* “What is the total number of years you have received research funding from NIH as a PI?”

3. Response Formation

- Also referred to as “manipulation”
- Does the respondent have the tools required to manipulate the information?
- Does the respondent have the motivation to manipulate the information as required?
- Is the respondent able to come up with an answer?

Example: “On average, how many hours did you spend reading and reviewing each individual application?”

4. Reporting

- Can the respondent match their answer to the available response categories?
- Is the respondent going to be truthful, or edit their answer?
- *Example:* “On average, how many hours did you spend reading and reviewing each individual application?”

Cognitive Pretesting Techniques

- Types
 - Think-aloud
 - Probe
 - Scripted
 - Generic
 - Specific
 - Unscripted
 - Debrief

Think-aloud

Examples:

I would like you to tell me all the things that go through your mind as you are trying to answer the question.

Please tell me what you are thinking.

Think-aloud Exercise

- Pair up with person beside you
- Role play as respondent and interviewer
- Do a “think-aloud” with one of the following example questions:
 - How many windows are in the place where you work?
 - How many years of professional experience do you have?
 - How long have you been at the NIH?

Scripted Probes

- Generic – examples:
 - *Could you please tell me more about that?*
 - *Was that hard or easy to answer?*
 - *How did you decide on your answer?*
 - *How confident are you in your answer?*
 - *I noticed that you hesitated – please tell me what you were thinking.*
- Specific – examples:
 - *What does the term “overall impact/priority score” mean to you?*
 - *How did you interpret “recent application?”*

Debrief

- Examples:
 - Overall, did you find the questionnaire easy or difficult to answer?
 - Overall, how likely do you think other applicants would be to complete this questionnaire?
 - Were there any questions that were asked that did not seem to belong in this questionnaire?

Cognitive Pretesting at the NIH

- Inform development of Peer Review Enhancement Surveys
 - Interviewer training
 - Cognitive interviews
 - Analysis and reporting

Review of Survey Protocols

- Overview
 - Self-Administered Questionnaire (Web)
 - Versions
 - Applicant (with and without enhancement experience)
 - Reviewer (with and without enhancement experience)

Applicant & Reviewer Questionnaires

- Overview
 - Introduction
 - Transition sentences
 - Questions
 - Response categories
- Protocol
 - Walk-through (Round-robin)
 - Focus on interviewer instructions and probes

Role Play

- Mock-interviews
- Practice recording information

Interviewer Training Wrap-up

- Review
- Q&A

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Cognitive Pretesting at the NIH

- Inform development of Peer Review Enhancement Surveys
 - Interviewer training
 - Cognitive interviews
 - Analysis and reporting
 - Themes/thematic coding
 - General findings
 - QxQ results

Informing Design

- Example of change using results of testing
 - “On average, how many hours did you spend reading and reviewing each individual application?”
 - Answers were based largely on averages, guesses, and general practices, not on actual experience
 - Recall of experience imperfect, or based on past instead of most recent experience
 - Respondents used mix of units: “days” for writing, “hours” for reading; decimal points
 - Question dropped

Other Applications of Cognitive Pretesting

- Testing:
 - Screeners
 - Advance materials (letters, reminder post cards, etc.)
 - Instructions
 - Forms
 - Websites

References

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