Cognitive interviewing is a qualitative step in the scale development process in which items and response sets are tested with individuals or groups using verbal probing or think-aloud procedures. It can also be called cognitive testing or pretesting. Cognitive interviewing occurs after preliminary items have been developed based on a literature review and theory, and reviewed by experts. The interviews may be conducted in person or over the phone. With the verbal probing technique, research participants are typically asked to read, respond to, and provide feedback about one item at a time (concurrent verbal probing). Alternatively they may be asked to give feedback about a set of questions after responding to all of them (retrospective probing). The think-aloud technique entails having the participant say what he or she is thinking while reading items and choosing responses. The two techniques can also be combined. Vignettes and card sorts have also been used to obtain cognitive information related to item development. Cognitive interviewing can also be used to test and improve data collection techniques, for example, online or paper and pencil methods, or instructions and prompts for in-person data collectors.

Cognitive interviewing data are analyzed using qualitative methods. Results are used formatively to improve questions and response sets. The most systematic (but uncommon) analysis method involves developing a codebook before cognitive testing that describes the intent of each item and definitions of the concepts being evaluated, then training raters to use the codebook reliably to rate items. Cognitive interviewing can provide rich and valuable information about the appropriateness of vocabulary in items, level of comprehension of respondents, and the compatibility of items with their response sets, among other things. It should be considered in all scale development efforts, but may be especially important for scales being developed for populations who are different from the researchers developmentally, culturally, economically, or in terms of life experiences.

**ARTICLES AND CHAPTERS**

**Description of Method**


*This synthesis is a great place to start as you compare and contrast the different paradigms of cognitive interviewing and the considerations and decisions that must be made in connection with each.*

This article provides a brief review of assumptions underlying standardized measurement and a brief summary of the components of measurement error. The cognitive methods toolkit provides information on two basic techniques (think aloud and probing) and provides a useful comparison of the two methods.


Drennan focuses on the use of cognitive interviewing data to explain and prevent non-response. The author points out weaknesses in the literature regarding the analysis of interview data and provides some interesting references for approaches to maximizing validity and objectivity.


The author advocates a mixed-methods approach to establishing validity of a measure of national identity. CFA and EFA are used to identify poor performing items, and cognitive interviews are used to identify the sources of problems with poor performing items.


- [Link](#)


This article reports on the development and evaluation of a procedure to analyze cognitive interviewing data. A codebook specifying what information the researchers wanted to gain from items and a coding scheme was developed. Master’s level social workers were trained in the rating system and evaluated cognitive data using the codebook. Interrater reliability was assessed and found to be adequate.

Applications

This article summarizes the process and results of three rounds of cognitive testing of online survey items with children. Evidence of the benefits of cognitive interviewing for survey development and recommended procedures for testing items with children in middle childhood are presented.


This article describes the application of cognitive interviewing to improve a questionnaire used to answer a research question in educational policy. The article illustrates the complexity of participant thought processes and demonstrates how the use of cognitive interviews can inform improvement of more than just the wording of questionnaire items.


The authors summarize activities and results of a study of the validity of responses to the National Survey of Student Engagement (NSSE).

**TEXTS**


This edited text is an excellent source of information on cognitive interviewing and other methods of pretesting questionnaire items. The book is more theoretical and talks about item development more broadly than Willis’ text, but it is an authoritative and useful reference. The chapters on developing and testing measures for special populations in Part VI provide valuable practical advice.


Willis’ how-to text was a welcome addition to the literature on cognitive interviewing when it came out. His chapters describe the stages of cognitive testing and how they relate to scale development. He also provides concrete strategies for carrying them out. The text includes 12 recommendations for researchers using the method and lots of examples of cognitive data. Highly recommended for anyone new to the approach.
SELECTED INTERNET RESOURCES TO GET YOU STARTED

**Cognitive Interview (Shafer and Lohse)**
This pdf provides step-by-step detailed guidelines on how to conduct cognitive interviews. It provides an example about nutrition education.
- Link

**Cognitive Interview Guide (William Davidson Institute, University of Michigan)**
This pdf is a short guide for cognitive interviewing and data collection. The document provides guidelines for cognitive interviewing and an example of the method.
- Link

**Cognitive Pretesting (GESIS, Leibniz Institute for the Social Science)**
This website has a paper and slides on cognitive pretesting. It provides guidelines on the planning and implementation of cognitive pretests.
- Link