

# **Creative Survey Design: Crafting Survey Instruments to Meet Your Library's Research and Evaluation Needs**

Dr. Kawanna Bright  
Assistant Professor  
East Carolina University

**12 MONTHS TO BETTER LIBRARY DATA**



## Agenda

- Surveying VS Survey Design: A Shared Understanding
- Principles of Survey Design
- Additional Survey Design Elements
- Cognitive Interviewing

## Learning Outcomes

- Understand the value of good survey design for library research and evaluation
- Recognize the principles of good survey design and apply those principles to example survey items
- Understand the practice of cognitive interviewing and its role in the development of well-crafted surveys



# Surveying Versus Survey Design



**Creating  
Shared  
Understanding**



# Survey Research Method vs. Survey Design

## Research Method

- Studies *relationships* between specific variables
- Variables are identified at the outset of the study
- Starts with a hypothesis or a research question
- Can be descriptive or exploratory

## Design

- Creation of an instrument to help you collect data for your specific need
- Focuses on developing questions
- Can be utilized as the data collection instrument for the survey research method



# Use of Surveys

## Collect data to help:

- Determine impact or usefulness
- Determine satisfaction levels
- Determine usage of services
- Generate new ideas
- Determine user needs
- Get a basic understanding of “what is”
- Understand people’s thoughts, feelings, attitudes, beliefs, values, perceptions, personality, intentions...



# Importance of Purpose and Intent



- What are you planning to do with your data?
- Are you interested in the past, present, or future?
- Quantitative
  - Present counts, descriptive statistics
  - Identify, trends, patterns, change
  - Test a hypothesis
- Qualitative
  - Look for themes, patterns, similarities, differences
  - Present counts and textual patterns
  - Tell a story



Question Focus	Past (Retrospective)	Present (Current)	Future (Prospective)
<b>Behavior</b>	When you were a teenager, how often did you visit your public library?	How often do you visit your public library?	Do you plan to visit your public library within the next few months?
<b>Experiences</b>	What was it like attending storytime when you were a child?	What is it like attending crafting programs at the library?	What do you think library programs will look like in 10 years?
<b>Attitudes, opinions, beliefs, values</b>	When you were a child, did you like coming to the library?	Do you believe that libraries should host Drag Queen story times?	Do you feel your public library should still offer storytimes next year?
<b>Knowledge</b>	Did you know what the Dewey Decimal System was when you first started using the library?	What is the Dewey Decimal System?	Do you think you will learn to locate books organized within the Dewey Decimal System?
<b>Background and demographic</b>	How old were you when you first used the public library?	What is your current age?	At what age do you plan to retire?

# 15 Principles of Survey Design





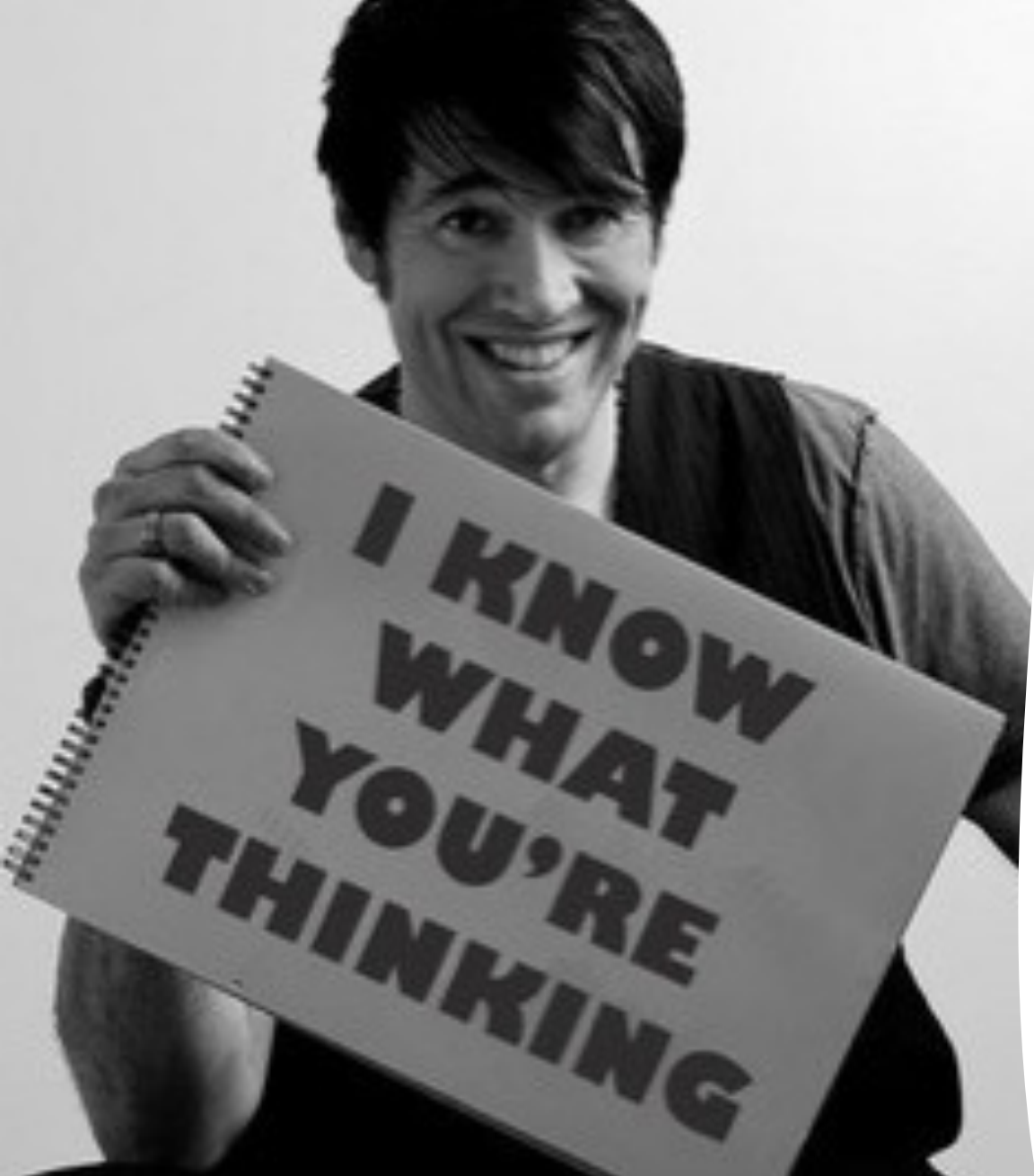
# Principles of Survey Design

1. Items match research objectives
2. Understand research participants
3. Use natural and familiar language
4. Write clear, precise, and short items
5. Avoid leading or loaded questions
6. Avoid double-barreled questions
7. Avoid double negatives
8. Determine whether open-ended or closed-ended question type needed
9. Use mutually exclusive & exhaustive response categories (closed-ended)
10. Consider different response categories for closed-ended questions
11. Use multiple items for abstract constructs
12. Consider multiple methods when measuring abstract constructs
13. Be careful with reverse wording
14. Ensure proper organization that is easy to use
15. Pilot!

# Principle 1. Matching the Research Objectives

- What is the intent of your study/project?
  - Exploratory? Your survey will be less detailed and more open
  - Confirmatory? Your survey will be more detailed and specific
- Review existing literature and find other instruments related to your objective before constructing your survey





## Principle 2: Understand Your Research Participants

- Goal is to think like your participants will think
- Try to empathize with your participants

# **Principle 3: Use Natural and Familiar Language**

- Use language that is understandable to the people completing your questionnaire
- Avoid jargon or technical terms
- Consider age, educational level, cultural characteristics, and any other information you know about your participants
- Use the reading level appropriate to your participant group



# Principle 3 Practice

- Write a question related to technology use that fits one of the following audience members:
  - Teenagers
  - Seniors
  - Parents of young children

<https://padlet.com/drbright/creative-survey-design-3bk4wg8mylqkz0t4>



# Principle 4: Clear, Precise, and Short Items

- Write items so that all participants interpret the meaning in exactly the same way
- If you need to use a technical term, be sure to define it
- Keep items as short as possible, since longer items can be confusing

The Library's OPAC offers three ways for you to search for books. Each method will lead to the same results. Which search method do you most commonly use to search the OPAC? Are you satisfied with that method? (Yes or No)



# Principle 4 Practice

How would you change this question to improve it?

The Library's OPAC offers three ways for you to search for books. Each method will lead to the same results. Which search method do you most commonly use to search the OPAC? Are you satisfied with that method? (Yes or No)

<https://padlet.com/drbrigh/creative-survey-design-principle-4-practice-12lta36j2rv6huhg>

- Spell out OPAC
- List or show the search methods
- Create separate questions – one for the commonly used search method and one for satisfaction

# Principle 5: Avoid Leading & Loaded Questions

Leading or loaded questions bias the participant's response

- **Loaded questions** contain words that can create a positive or negative reaction from the participant
- **Leading questions** are phrased in a way that they suggest a certain answer

How would you fix this leading question?

Don't you agree that public libraries deserve more funding from the government?

<https://padlet.com/drbright/creative-survey-design-principle-5-practice-cccciyrkdcodg6e>

# Principle 6: Avoid Double-barreled Questions

**Double-barreled questions** combine two or more issues/topics in a single item

- Respondents may feel differently about the two items, and be unsure of how to answer or rate the question
  - What is your level of agreement with the following statement: “All public library staff should be trained to use AEDs and administer NARCAN.”

**How would you interpret their response?**

- If you see “**and**” or “**or**” be aware of the possibility of a double-barreled question



# Principle 7: Avoid Double Negatives

Double negatives happen in surveys when the response to the question leads to a sentence construction that includes two negatives

- Typically happens when the question includes a negative and asks for agreement or disagreement or can be yes/no
  - What is your level of agreement with this statement? “Librarians should not be allowed to not check out books to children without a parent present.”
- If negatives are needed in the item, emphasize them for the participant

# Principle 8: Open-Ended or Closed-Ended?

- **Open-ended questions** allow participants to respond in any way they want to
  - Provide mostly qualitative data, but can offer quantitative data
  - Used most often in exploratory research
- **Closed-ended questions** require participants to choose from a limited number of responses that the researcher predetermines
  - Provide mostly quantitative data
  - Best when the dimensions of a variable are already known
  - Used most often in confirmatory research

# Principle 9: Closed-ended Questions and Possible Answers

Make sure response categories are **mutually exclusive** (do not overlap)

Which age group do you belong to?

- 18 or below
- 18 to 29
- 29 to 39
- 39 to 49
- 49 to 59
- 59 to 69

Response categories should also be **exhaustive**, offering all legitimate options

Which age group do you belong to?

- Under 18
- 18 to 24
- 25 to 34
- 35 to 44
- 45 to 54
- 55 to 64
- 65 or above



# Principle 10: Response Categories

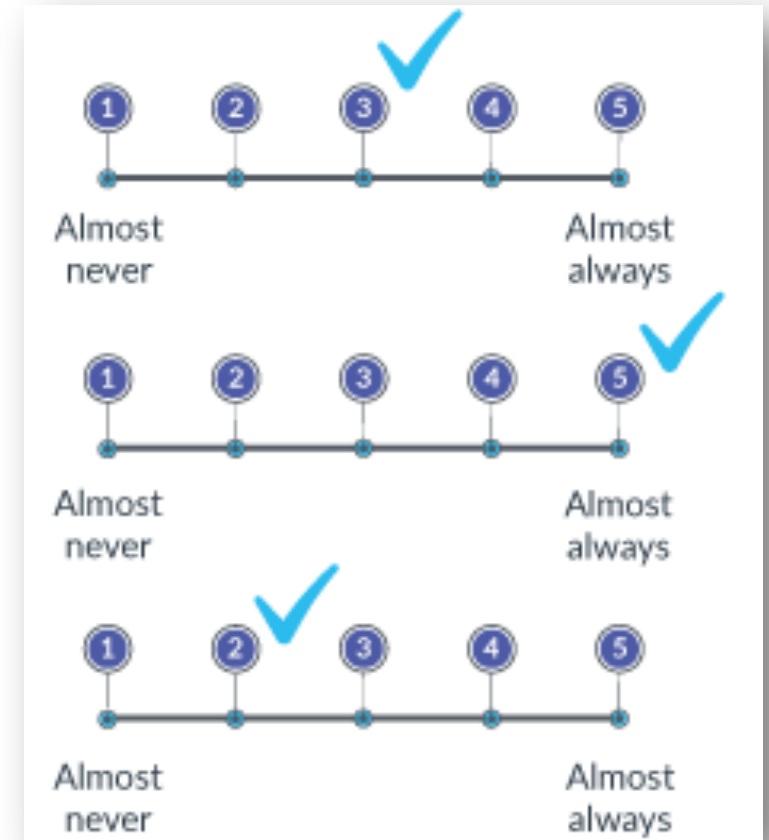
**Rating Scales:** Continuum of choices that respondents use to indicate their response; Produce numerical (quantitative) data

- Numerical rating scales
- Rankings
- Semantic differential
- Checklists

# Response Category: Numerical Rating Scales

Numerical rating scales consist of a set of numbers and “anchored” points. Anchored points are labeled with a written description

- You can anchor just the endpoints, all points (**fully anchored**), or any other combination
- If anchoring just the ends, use an odd number of points
- Anchors provide reference points for respondents that help direct how they will express their opinions. Make sure you keep them balanced



# Numerical Rating Scale Structure

- How many points?
  - Between 4 and 11 (5 to 7 most common)
  - Fewer than four and responses become unreliable
  - More than 11 and respondents become confused
    - Err on the side of more: remember, you can collapse categories during data analysis, but you can't add them
- Middle or No Middle?
  - Middle categories offer a neutral response
  - No middle category forces respondents to pick a side



# Response Category: Rankings

- Ask respondents to indicate the importance or priority that they assign to an attitudinal object
- Respondents usually asked to order their responses in ascending or descending order
- Can be used with both open-ended and closed-ended questions
- Avoid asking respondents to rank a large number of items (usually more than 5)

Please rate the following library services from 1 to 4, with 1 being the service you're most likely to use and 4 being the one you're least likely to use.

Self-Checkout ☐

Curbside Pickup ☐

Between Branches Transfer ☐

Hold Shelf ☐

# Response Category: Semantic Differential

- Scaling technique designed to measure the meaning respondents give to different attitudinal objects or concepts
- Use a bi-polar rating scale with a series of 6 to 7 points in between
  - Scale considered bi-polar because the endpoints are anchored by contrasting adjectives (antonyms)
- Best for attitudinal objects that will help you to profile something or someone

Please tell us whether our staff made you feel:

*Please don't select more than 1 answer(s) per row.*

	+2	+1	0	-1	-2	
Valued	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unvalued
Comfortable	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Uncomfortable
Safe	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Unsafe

# Response Category: Checklists

- A list of response categories that allow respondents to check all that apply
- Most useful for descriptive purposes
- General rule is to avoid them because they are difficult to analyze and may suffer from primary effects (tendency to check items earlier in the list)
  - Response scales for each category are usually seen as a better option



# Principle 11: Multiple Items for Abstract Constructs

- Using multiple items will increase both reliability and validity
- Most common option is a Likert or summated rating scale
  - Used rather than a single item stem and rating scale.
  - Includes multiple items that are designed to measure the same construct
- Advantages include more reliable scores, and more variability in responses

TABLE 1.1  
The Work Locus of Control Scale (WLCS)

*The following questions concern your beliefs about jobs in general. They do not refer only to your present job.*

1 = Disagree very much  
2 = Disagree moderately  
3 = Disagree slightly

4 = Agree slightly  
5 = Agree moderately  
6 = Agree very much

1. A job is what you make of it.	1	2	3	4	5	6
2. On most jobs, people can pretty much accomplish whatever they set out to accomplish.	1	2	3	4	5	6
3. If you know what you want out of a job, you can find a job that gives it to you.	1	2	3	4	5	6
4. If employees are unhappy with a decision made by their boss, they should do something about it.	1	2	3	4	5	6
5. Getting the job you want is mostly a matter of luck.	1	2	3	4	5	6
6. Making money is primarily a matter of good fortune.	1	2	3	4	5	6
7. Most people are capable of doing their jobs well if they make the effort.	1	2	3	4	5	6
8. In order to get a really good job, you need to have family members or friends in high places.	1	2	3	4	5	6
9. Promotions are usually a matter of good fortune.	1	2	3	4	5	6
10. When it comes to landing a really good job, who you know is more important than what you know.	1	2	3	4	5	6
11. Promotions are given to employees who perform well on the job.	1	2	3	4	5	6
12. To make a lot of money you have to know the right people.	1	2	3	4	5	6
13. It takes a lot of luck to be an outstanding employee on most jobs.	1	2	3	4	5	6
14. People who perform their jobs well generally get rewarded.	1	2	3	4	5	6
15. Most employees have more influence on their supervisors than they think they do.	1	2	3	4	5	6
16. The main difference between people who make a lot of money and people who make a little money is luck.	1	2	3	4	5	6

Spector, 1992, p. 3



# Principle 12: Use Multiple Methods for Abstract Constructs

Using one method of measurement can lead to correlation of variables based solely on measurement procedure

The more methods you use to measure relevant concepts and constructs, the more confidence that you are seeing the characteristics of the construct and not the method used to measure it

# Principle 13: Reverse Wording

- Used to avoid creating **response sets** – the tendency for respondents to respond to a series of items in a specific direction regardless of the item content
  - **Acquiescence response set:** tendency to say yes rather than no, agree rather than disagree on a whole series of items
  - **Social desirability response set:** tendency to provide answers that are socially desirable
- Reverse wording usually forces respondents to read each item carefully
  - May reduce reliability and validity of multi-item scale
- Reverse only when response sets are a major concern

# Principle 14: Organization & Ease of Use

- Consider order of questions
  - Most important questions first, demographic questions last
- Begin with positive, non-threatening items
- Make sure questionnaire is not overly long
- Limit **contingency questions** in printed surveys
  - Used to filter respondents based on their responses to a question
- Include clear instructions and limit number of questions on a page
- Use lead-in statements to help respondents transition if covering a number of topics
- Maximize white space throughout

# Principle 15: Pilot!

- Pilot your survey before administering it officially
- Minimum of 5 to 10 people
- Okay to start with friends, but also pilot with those similar to your participant group
- **Think-aloud technique:** have testers verbalize their thoughts while they work through the activity
- Helps to locate any issues with wording, organization, etc. of questionnaire
- Follow up with “debriefs” of testers





# **Additional Survey Design Elements**

# Survey Administration

- Determine which method or combination of methods will reach the largest number of potential participants
  - E-mail
  - Phone
  - In-person
  - Mail (Print)

# Bias in Survey Design

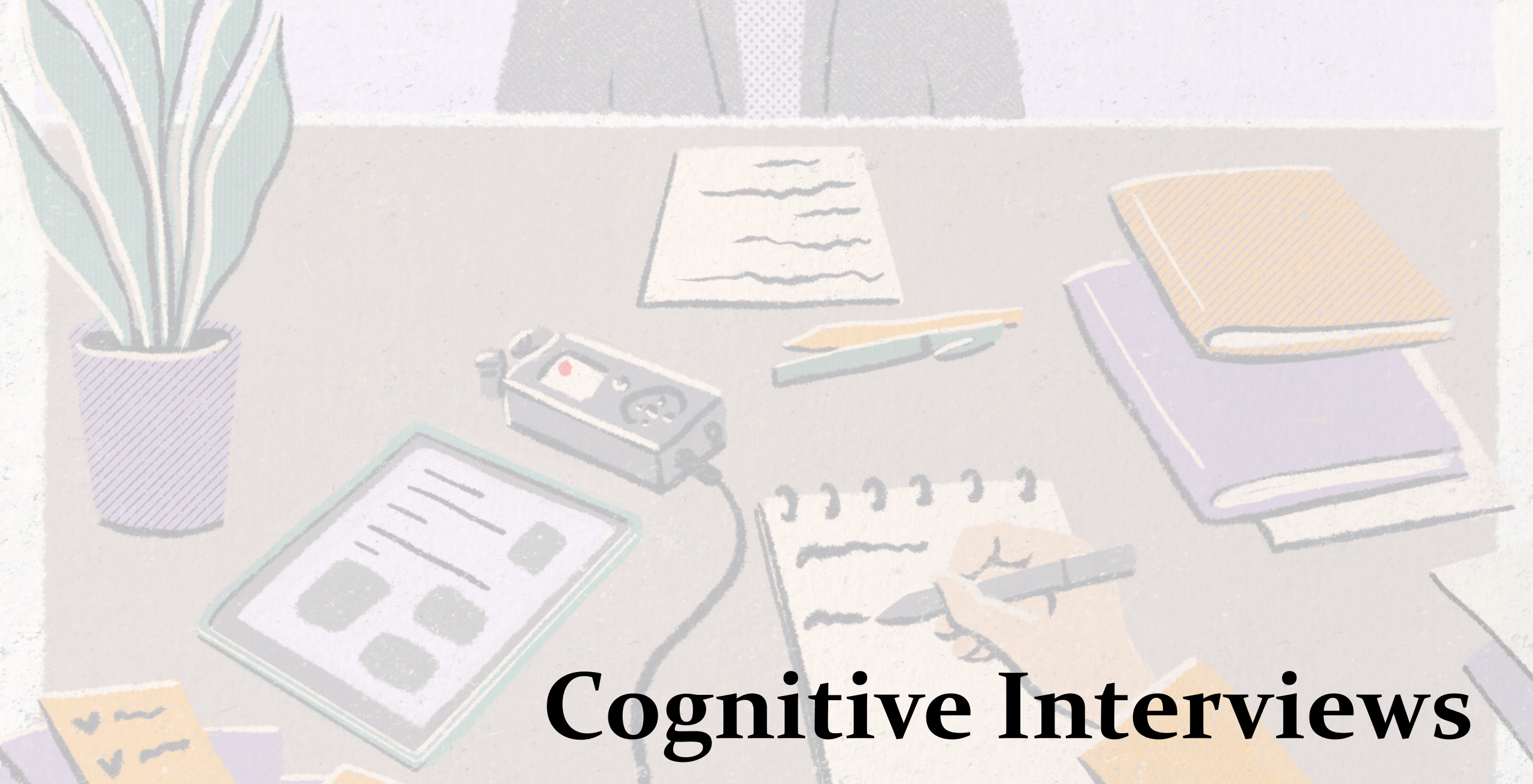
- All surveys will have elements of bias built into them
  - The key is to acknowledge that bias and to keep it at a low level
- Avoid injecting bias into your survey questions
  - No leading or loaded questions
  - Include a balance of positive and negative toned questions
  - Be careful of word choice and use inclusive language
  - Acknowledge assumptions about survey completers
    - Clearly identify your audience before creating questions
- Check your demographics

# Survey Platforms

- Google Forms
- Survey Monkey
- Alchemer
- Qualtrics

Reviews and other software: <https://mopinion.com/best-online-survey-software/>





# Cognitive Interviews



# Cognitive Interview Preparation

- Identify testers who are similar to desired participants
  - Though you can start with colleagues/friends
- Prepare to record interview whether virtual or in-person
- Determine who will read the questions
  - Interviewer, Tester, or Neutral Party



# Conducting Cognitive Interviews: Pointers

- Have tester respond aloud
- Listen for issues with wording, understanding, or tester's ability to respond to questions
- Debrief tester, including asking if there were any questions they expected to be asked or felt should have been asked





The background of the slide features a light green surface with a subtle pattern of small white polka dots. On the left side, there are several pieces of white paper that have been crumpled into balls. On the right side, there is a single piece of white paper that has been folded into a complex, three-dimensional origami-like shape with sharp points and deep creases. The lighting is soft, creating gentle shadows on the surface.

[https://padlet.com/drkawannab/  
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**Practice! Questions!**



# Resources

Babbie, E. (1990). *Survey research methods*. Wadsworth.

Bhaskaran, V. & LeClaire, J. (2010). *Online survey for dummies*. Wiley.

Fowler Jr, F. J. (2013). *Survey research methods*. Sage Publications.

Johnson, B., & Christensen, L. (2016). *Educational research: Quantitative, qualitative, and mixed approaches* (6th ed.). Thousand Oaks, CA: Sage.