Lecture Notes

# Chapter 9: How to Construct a Questionnaire

## Learning Objectives

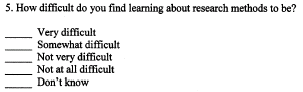
* 1. Explain each of the 15 principles of questionnaire construction.
  2. Know when open-ended questions and closed-ended questions should be used.
  3. Give multiple examples of response categories used for completely anchored rating scales.
  4. Explain how the different parts of a questionnaire are organized into a smoothly operating whole.
  5. List and explain the five major steps in questionnaire construction.
  6. Summarize and explain the content in the checklist for questionnaire development.

## Chapter Summary

This chapter describes what questionnaires are and presents 15 principles of questionnaire constructions. It concludes with putting all of the information together to assist in questionnaire development for research studies.

## Annotated Chapter Outline

1. Introduction
   1. Last chapter discussed different ways that researchers can use to collect data: tests; questionnaires; interviews; focus groups; observation; and constructed, secondary, and existing data.
   2. This chapter will describe questionnaires as well as the 15 principles that researchers should follow when constructing or evaluating questionnaires. A questionnaire may be the only data collection tool used or it may be one of many tools used in a research study.
2. What Is a Questionnaire?
   1. Questionnaire: a self-report data collection instrument filled out by research participants.
      1. Can be used to collect quantitative, qualitative, and mixed methods data.
         1. Is a versatile tool
      2. Includes questions and statements
         1. Participants answer questions about past, present, and/or future.
         2. Participants may react to statements
         3. Table 9.1 presents examples of questionnaire item types. As shown in Table 9.1, questionnaires are used to measure individuals’ thinking about behavior, experiences, attitudes, opinions, beliefs, values, knowledge, process, and background or demographic information. Each of these can be asked about with reference to the past, present, or future. In short, a lot of information can be obtained via questionnaires.
   2. Discussion Question: Have students discuss what questionnaires are and what they do.
3. Principles of Questionnaire Construction: Goal of the questionnaire is to help the researcher understand the participants’ opinions about variables related to your research objectives. It is important for the questions to provide clear data about participants’ feelings and thoughts. Fifteen principles of questionnaire construction are summarized in Table 9.2.
   1. Principle 1: Make sure the questionnaire items match your research objectives.
      1. For exploratory studies, questionnaires should be very broad and general.
      2. For confirmatory studies, questionnaires should be detailed and specific.
      3. Review research literature and existing instruments prior to development.
      4. Discussion Question: Why is this principle important to questionnaire development?
   2. Principle 2: Understand your research participants.
      1. Your participants (not you!) will be filling out the questionnaire.
      2. Consider the demographic and cultural characteristics of your potential participants so that you can make it understandable to them.
      3. Think like your participants.
      4. Discussion Question: Why is this principle important to questionnaire development?
   3. Principle 3: Use natural and familiar language.
      1. Familiar language is comforting; jargon is not.
      2. Language not at the right level will impact participants’ responses.
      3. Discussion Question: Why is this principle important to questionnaire development?
   4. Principle 4: Write items that are clear, precise, and relatively short.
      1. If your participants do not understand the items, your data will be invalid (i.e., your research study will have the garbage in, garbage out (GIGO) syndrome).
      2. Short items are more easily understood and less stressful than long items. Discussion Question: Why is this principle important to questionnaire development?
   5. Principle 5: Do not use “leading” or “loaded” questions.
      1. **Leading questions** (a question that suggests a certain answer) lead the participant to where you want him or her to be.
      2. **Loaded questions** (a question containing emotionally charged words) include loaded words (i.e., words that create an emotional reaction or response by your participants).
      3. Always remember that you do not want the participant’s response to be the result of how you worded the question. Always use neutral wording.
      4. Discussion Question: Why is this principle important to questionnaire development?
   6. Principle 6: Avoid double-barreled questions.
      1. A **double-barreled question** combines two or more issues or attitude objects in a single question (e.g., “Do you elicit information from parents and other teachers?” It is double barreled because if someone answered it, you would not know whether they were referring to parents or teachers or both).
      2. Does the question include the word “and”? If yes, it might be a double-barreled question.
      3. Answers to double-barreled questions are ambiguous because two or more ideas are confounded.
      4. Discussion Question: Why is this principle important to questionnaire development?
   7. Principle 7: Avoid **double negatives** (a sentence construction that includes two negatives).
      1. Does the answer provided by the participant require combining two negatives? (e.g., “I disagree that teachers should not be required to supervise their students during library time”). If yes, rewrite it.
      2. If you must use a negative item, underline the negative word or words to catch participants’ attention
      3. Discussion Question: Why is this principle important to questionnaire development?
   8. Principle 8: Determine whether an open-ended or a closed-ended question is needed.
      1. **Open-ended questions** (a question that allows participants to respond in their own words) provide qualitative data in the participants’ own words. Here is an open-ended question: “How can your principal improve the morale at your school?”
      2. On the questionnaire, make sure you provide plenty of blank space for responses; do not provide blank lines for responses.
      3. **Closed-ended questions** (a question that forces participants to choose from a set of predetermined responses) provide quantitative data based on the researcher’s response categories. Here is an example of a closed-ended question:



* + 1. Open-ended and closed-ended questions often have the same **item stem** (the set of words forming a question or statement) but what differs is how participants respond to the question.
    2. Questionnaires with mostly open-ended items are **qualitative questionnaires** (a questionnaire based on open-ended items and typically used in exploratory or qualitative research). See Exhibit 9.1.
    3. Questionnaires with mostly closed-ended items are **quantitative questionnaires (**a questionnaire based on closed-ended items and typically used in confirmatory or quantitative research). The Principle of Standardization (providing exactly the same stimulus to each research participant) is in effect and with these types of questionnaires each person responds to a common stimulus.
    4. Most questionnaires are **mixed questionnaires** (a questionnaire that includes a mixture of open-ended and closed-ended items).
    5. Discussion Question: Why is this principle important to questionnaire development?
  1. Principle 9: Use mutually exclusive and exhaustive response categories for closed-ended questions.
     1. **Mutually exclusive response** categories do not overlap (e.g., ages 0-10, 10-20, 20-30 are NOT mutually exclusive and should be rewritten as less than 10, 10-19, 20-29, 30-39, . . . ).
     2. **Exhaustive categories:** response categories that include all possible responses (e.g., if you are doing a national survey of adult citizens (i.e., 18 or older), then the these categories (18-19, 20-29, 30-39, 40-49, 50-59, 60-69) are NOT exhaustive because there is nowhere to put someone who is 70 years old or older.
     3. Discussion Question: Why is this principle important to questionnaire development?
  2. Principle 10: Consider the different types of response categories available for closed-ended questionnaire items.
     1. **Rating scales** (a continuum of response choices) are the most commonly used.
     2. **Numerical rating scales** (a rating scale that includes a set of number with anchored endpoints) where the end points are anchored; sometimes the center point or area is also labeled). **Anchor:** a written description for a point on a rating scale.

1 2 3 4 5 6 7

Very Low Very High

* + 1. **Fully anchored rating scales**: A rating scale on which all points are anchored.

1 2 3 4 5

Strongly Disagree Neutral Agree Strongly

Disagree Agree

* + 1. Omitting the center point on a rating scale (e.g., using a 4-point rather than a 5-point rating scale) does not appreciably affect the response pattern. Some researchers prefer 5-point rating scales; other researchers prefer 4-point rating scales. Both generally work well.

1 2 3 4

Strongly Disagree Agree Strongly

Disagree Agree

* + 1. You should use somewhere from 4 to 11 points on your rating scale. Personally, I like the 4- and 5-point scales because all of the points are easily anchored.
    2. A 1–10 scale is not recommended because too many respondents mistakenly view 5 as the center point. If you want to use a wide scale like this, use a 0–10 scale (where 5 is the middle point) and label the 5 with the anchor “medium” or some other appropriate anchor.
    3. See Exhibit 9.2 for examples of commonly used response categories for rating scales.
    4. **Rankings** (the ordering of responses in ascending or descending order). Do not ask participants to rank more than 3–5 items.
    5. **Semantic differential**: A scaling technique in which participants rate a series of objects or concepts. Typically, 1-item stem and multiple scales that are anchored with polar opposites or antonyms, are included and are rated by the participants). Useful to profile or describe multiple characteristics associated with an attitudinal object. Examples are given in Exhibit 9.3.
    6. **Checklists**: a list of response categories that respondents check if appropriate (i.e., where participants “check all of the responses in a list that apply to them”). Checklists or multiple response items should be avoided except in cases where description is all that is needed; only use when you do not need to examine the relationship between the multiple response item and other items in your questionnaire; difficult to analyze.
    7. Discussion Question: Compare and contrast the different response options for closed-ended questionnaires.
  1. Principle 11: Use multiple items to measure abstract constructs.
     1. This is required if you want your measures to have high reliability and validity.
     2. One approach is to use a **summated** **rating scale** (a multi-item scale that has the responses for each person summed into a single score). Also have more variability in scores that helps make finer distinctions.
     3. Another name for a summated rating scale is a Likert-type scale because the summated rating scale was pretty much invented by the famous social psychologist named Rensis Likert.
     4. The Rosenberg Self-Esteem Scale in Figure 9.1 is a summated rating scale.
     5. Discussion Question: Why is this principle important to questionnaire development?
  2. Principle 12: Consider using multiple methods when measuring abstract constructs.
     1. The idea here is that if you only use one method of measurement, then your measurement may be an artifact of that method of measurement.
     2. On the other hand, if you use two or more methods of measurement, you will be able to see whether the answers depend on the method (i.e., are the answers corroborated across the methods of measurement or do you get different answers for the different methods?). For example, you might measure student’s self-esteem via the Rosenberg Scale just shown (which is used in a self-report form) as well as using teachers’ ratings of the students’ self-esteem; you might even want to observe the students in situations that should provide indications of high and low self-esteem. Also, use open- and closed-ended items on questionnaire.
     3. Discussion Question: Why is this principle important to questionnaire development?
  3. Principle 13: Use caution if you reverse the wording in some of the items to prevent response sets in multi-item scales. (A **response set** is the tendency to respond in a specific direction regardless of content.)
     1. **Acquiescence response set:** the tendency either to agree or disagree
     2. **Social desirability response set:** the tendency to provide answers that are socially desirable.
     3. **Reverse-worded item:** an item on which a lower score indicates a higher level on the construct of interest.
     4. Reversing the wording of some items can help ensure that participants do not just “speed through” the instrument, checking “yes” or “strongly agree” for all the items.
     5. On the other hand, you may want to avoid reverse wording if it creates a double negative.
     6. Also, recent research suggests that the use of reverse wording reduces the reliability and validity of scales. Therefore, you should generally use reverse wording sparingly, if at all.
     7. Discussion Question: Compare and contrast the different response sets. How can researchers prevent response sets?
  4. Principle 14: Develop a questionnaire that is properly organized and easy for the participant to use.
     1. The participant must not get confused or lost anywhere in the questionnaire.
     2. Make sure that the directions are clear and that any contingency questions used are easy to follow.
     3. Limit the number of **contingency questions** (an item that directs participants to different follow-up questions depending on their response) if not using a **web survey** (participants read and complete a survey instrument that is developed for and located on the Internet).
     4. Not too many questions on one page
     5. Demographic questions should go at the end of the questionnaire.
     6. Table 9.3 contains a checklist for questionnaire construction.
     7. Discussion Question: Why is this principle important to questionnaire development?
  5. Principle 15: Always pilot test your questionnaire.
     1. **Pilot test**: the preliminary test of your questionnaire.
     2. Use **think-aloud** **technique**: participants verbalize their thoughts and perceptions while engaged in an activity.
     3. You will always find some problems that you have overlooked!
     4. The best pilot tests are with people similar to the ones to be included in your research study.
     5. After pilot testing your questionnaire, revise it and pilot test it again, until it works correctly.
     6. Discussion Question: Why is this principle important to questionnaire development?

1. Putting It All Together
   1. Use the 15 principles to develop a questionnaire.
   2. Principles to develop questionnaires.
   3. Use models from existing questionnaires.
   4. Figure 9.2 is an outline that can help in questionnaire construction.
   5. Discussion Question: Have students explain the steps in questionnaire development.