

## 2.4 Creating Questions

Surveys are a very common data-collection device and can be conducted in a variety of ways: face-to-face interviews, focus groups, mail-in or telephone questionnaires, and even via the Internet. In all cases, however, surveys comprise a series of carefully selected questions.

In this section, you will be introduced to some of the key skills in questionnaire and survey design. Each question that is developed for a research-quality survey is tested, requiring the skills of a highly trained researcher. Although obtaining the services of a skilled researcher is beyond the scope of this course, you should test your draft questionnaire with students who will not form part of your survey sample.

Information you collect firsthand is called **primary data**. This type of data is easy to work with because you control how it is collected. Information obtained from similar studies conducted by other researchers is called **secondary data**. The results obtained from other surveys can be used in your study, or you can adapt the research questions to create your own survey.

One other consideration is whether to allow your respondents to remain anonymous. Often, respondents will be more forthright and honest if they are assured their identity will not be disclosed. Nevertheless, obtaining respondents' names allows you to confirm questionable responses at a later date, if necessary.

Finally, care must be taken when formatting your survey. If you want respondents to take it seriously, your questionnaire must look professional.

**primary data**—data collected by the researcher

**secondary data**—data collected from other sources

### Project Connection

If you are using a questionnaire, have five or six classmates read it and make suggestions for improvement.

*Every questionnaire must be handcrafted. It is not only the questionnaire writing that must be “artful”; each questionnaire is also unique, an original. A designer must cut and try, see how it looks and sounds, see how people react to it, and then cut again, and try again.<sup>1</sup>*

## SURVEY QUESTION STYLES

### Open Questions

Questions that will be answered in the respondent's own words are open questions. This type of question allows for a wide variety of possibilities that sometimes are difficult to interpret. For example:

- How do you think most Canadians feel about the salaries paid to professional athletes?
- What is the most important issue for teenagers in your community?

<sup>1</sup> J. Converse and S. Presser, *Survey Questions: Handcrafting the Standardized Questionnaire* (Beverly Hills: Sage Publications, 1986) 48.



### Think about Closed Questions

How can you account for a wide variety of responses and still use a closed question?

## Closed Questions

Questions that require the respondent to select from a given list of responses, or has an exact response, are closed. These answers are then easily analyzed; however, the options presented may bias the results. For example:

- Which of these statements describes how salaries for pro athletes compare to average Canadian wages?
  - ☐ much lower
  - ☐ about the same
  - ☐ much higher
  - ☐ somewhat lower
  - ☐ somewhat higher
- Which of these issues is most important for teenagers in your community?
  - ☐ homelessness
  - ☐ poverty
  - ☐ crime
  - ☐ youth gangs
  - ☐ drug use

## SURVEY QUESTION TYPES

### Information Questions

Circle the appropriate response.

- (a) Gender:            M                                    F  
(b) Age:                under 14                    15 or 16  
                              17 or 18                    19 and over

### Checklist Questions

Which of the following sports do you enjoy watching? (Check as many as apply.)

- |                                     |                                   |
|-------------------------------------|-----------------------------------|
| <input type="checkbox"/> basketball | <input type="checkbox"/> baseball |
| <input type="checkbox"/> cricket    | <input type="checkbox"/> hockey   |
| <input type="checkbox"/> lacrosse   | <input type="checkbox"/> soccer   |

### Ranking Questions

Here is a list of concerns for teenagers. Please rank them in order of importance from 1 (most important) to 4 (least important).

- |                            |                       |
|----------------------------|-----------------------|
| ___ graduating high school | ___ finding a friend  |
| ___ getting a summer job   | ___ learning to drive |
| ___ choosing a career      |                       |

### Rating Questions

How satisfied were you with the DJ for the Valentine's Day dance?

- |   |  |
|---|--|
| <input type="checkbox"/> very satisfied | <input type="checkbox"/> satisfied         |
| <input type="checkbox"/> dissatisfied   | <input type="checkbox"/> very dissatisfied |

### Remember:

#### Good questions are

- simple
- relevant
- specific
- readable

#### Good questions avoid

- jargon (e.g., Are *ribbies* the most important statistic for determining batting success? Comment: *ribbies* = *baseball jargon for “runs batted in”*)
- abbreviations (e.g., On a scale of 1 to 5, how effective is the *CSA* in promoting space exploration to school children? *CSA* = *Canadian Space Agency*)
- negatives (e.g., From the list below, indicate which books you *wouldn’t* recommend parents/guardians read to their toddlers.)
- leading respondents (e.g., Using the three-point scale, indicate your satisfaction with White-O, the most popular toothpaste in Canada.)
- insensitivity (insensitive questions belittle or insult individuals or groups)

### KEY IDEAS

**primary data**—data collected by the researcher

**secondary data**—data collected from other sources

**question styles**—open questions (respondents reply in their own words); closed questions (respondents are given a limited number of responses from which to choose)

**question types**—information questions; checklist questions; ranking questions; rating questions

## 2.4 Exercises

**A**

1. **Knowledge and Understanding** Write an open question to collect the following data.
  - (a) the respondent’s opinion on the quantity of homework assigned so far in the course
  - (b) the respondent’s degree of preference for different musical styles
  - (c) the respondent’s plans for post-secondary education
  - (d) the respondent’s favourite type (genre) of television program
  - (e) the respondent’s confidence in his or her swimming ability

2. Write a closed question to collect the same data as listed in Question 1.
3. (a) Create a checklist question that collects student opinions about their timetabled courses this year.  
 (b) Create a ranking question that collects information about this year's student council.  
 (c) Create a rating question that collects information about one TV program that your classmates watch.
4. Match each of the question types with an example.
 

(a) information question	(b) checklist question
(c) ranking question	(d) rating question

  - (i) Please provide the following information:  
 Gender \_\_\_\_\_ Grade \_\_\_\_\_
  - (ii) Please provide the following information:  
 Gender ☐ M ☐ F Grade ☐ 9 ☐ 10 ☐ 11 ☐ 12
  - (iii) With 1 meaning *most helpful* and 10 meaning *not at all helpful*, rate each of the chapters of the textbook.  
 \_\_\_\_\_ Chapter 1      \_\_\_\_\_ Chapter 2      \_\_\_\_\_ Chapter 3  
 \_\_\_\_\_ Chapter 4      \_\_\_\_\_ Chapter 5      \_\_\_\_\_ Chapter 6
  - (iv) Rank the chapters of this textbook by giving a 1 to the most useful, 2 to the second, and so on.  
 \_\_\_\_\_ Chapter 1      \_\_\_\_\_ Chapter 2      \_\_\_\_\_ Chapter 3  
 \_\_\_\_\_ Chapter 4      \_\_\_\_\_ Chapter 5      \_\_\_\_\_ Chapter 6

Criterion	Criterion Met Y/N
Simple	
Specific	
Readable	
Avoids jargon	
Avoids abbreviations	
Avoids negatives	
Avoids being leading	
Avoids insensitivity	

5. **Application** Assess each of following questions based on the criteria listed in the chart in the margin. Rewrite the questions where one or more criteria are not met.
  - (a) List adjectives that describe (in an accurate and compelling way) the state of the environment and the extent of pollution in our province.
  - (b) Should municipalities be responsible for water quality?  
☐ Yes ☐ No
  - (c) Should the OMB be funded to initiate waste audits across the province?  
☐ Yes ☐ No
  - (d) Given the large amount of sulfur dioxide that is spewed out of smelters, should mining companies be forced to clean up their act? Please comment.
  - (e) On a 5-point scale, do you agree with the bleeding-heart Liberals that all corporations should pay higher taxes?
  - (f) Why shouldn't forestry companies clear cut? Please explain.

**B**

6. Describe in detail the advantages and disadvantages of open and closed questions.
7. (a) What kind of data can be collected using each of the following types of question formats?
  - (i) information questions                      (ii) ranking questions
  - (iii) checklist questions                      (iv) rating questions
 (b) Provide examples of information that cannot be collected using each type of question listed in part (a).
8. Identify the question type that is best suited to collect the following information about the respondent.
  - (a) name
  - (b) birth date
  - (c) favourite teacher
  - (d) most difficult course
  - (e) last major restaurant visited
  - (f) type of computer at home
  - (g) top three favourite books



### Think about Question Writing

Remember that good questions are simple, specific, relevant, and readable. How good do you think these questions are?

9. **Communication** Create a questionnaire to determine the relationship, if any, between academic achievement and extracurricular participation. In your design, make the best use of open and closed questions in collecting
  - (i) student data (e.g., age, grade, gender, and so on)
  - (ii) student academic achievement
  - (iii) student participation in extracurricular activities
10. (a) Create an effective rating question that gathers opinions from students about the quality of cafeteria food at your school.  
 (b) Create an effective ranking question that gathers opinions about different musical styles.  
 (c) Create an effective checklist question that gathers opinions from students about what activities to offer at a school fundraiser.  
 (d) Create a questionnaire that combines rating, ranking, checklist, and information questions to collect opinions from teachers at your school about their favourite cars.
11. Olivia is employed by an insurance company and must design a questionnaire to obtain information about prospective customers' driving histories. What data will she need to collect to better inform her company's decision-makers about prospective customers? Design a clear, concise, single-page form to collect this data.



### Think about Question 11

What type of information does the Ontario Code of Human Rights forbid a company from asking a job applicant?

12. Answer the following questions for each of parts (a) through (f).
- (i) Is the survey question open or closed?
  - (ii) If it is closed, is it an information, checklist, ranking, or rating question?
  - (iii) Is the survey question well-designed? If so, in what ways? If not, state why and then rewrite the question.
  - (a) You are presently in Grade (circle the appropriate answer):  
9      10      11      12
  - (b) I find mathematics stimulating because:  
\_\_\_\_\_
  - (c) Rank the following foods from favourite (1) to least favourite (5):  

_____ pizza	_____ watermelon
_____ hamburgers	_____ veggie dogs
_____ tacos	
  - (d) Do you wear a wristwatch?  

___ always	___ sometimes
___ seldom	___ never
  - (e) Name: \_\_\_\_\_
  - (f) Estimate your net income:  

___ \$15 000–\$19 999	___ \$20 000–\$39 999
___ \$40 000–\$59 999	___ \$60 000+

- C** 13. **Thinking, Inquiry, Problem Solving** What follows is the referendum question that was posed to the voting public in the province of Québec on October 30, 1995. If the majority of Quebecers had voted *Yes*, the Québec government would have had the mandate to take Québec out of Canada (i.e., Québec would have become a sovereign state). If they voted *No*, Québec would remain a province of Canada.

*Do you agree that Quebec should become sovereign, after having made a formal offer to Canada for a new Economic and Political Partnership, within the scope of the Bill respecting the future of Québec and of the agreement signed on June 12, 1995?*

*Yes*

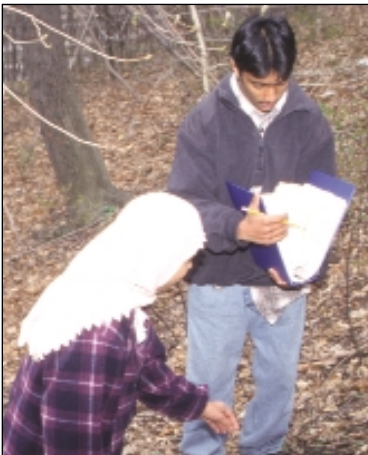
*No*

- (a) Is this a clear question? Explain.
- (b) Would this be a clear question if the voter had read the Bill, and in particular, the following sentence from that Bill? Explain.

*We, the people of Québec, declare it is our will to be in full possession of all the powers of a State: to vote all our laws, to levy all our taxes, to sign all our treaties and to exercise the highest power of all, conceiving, and controlling, by ourselves, our fundamental law.*

## ADDITIONAL ACHIEVEMENT CHART QUESTIONS

- 14. Knowledge and Understanding** Survey questions can be posed using different questioning techniques. Identify the four most commonly used techniques and provide an example for each.
- 15. Application** The following questionnaire was developed by a beverage company that manufactures bottled water and soft drinks. The purpose of the questionnaire was to determine brand recognition and use of one of its products—Mountain Spring Water.
- How much did you earn last year?
  - How many soft drinks did you consume last year?
  - Do you drink bottled water?
  - Do you drink Mountain Spring Water or an inferior brand?
  - What is your weight?
  - What product does the brand name Mountain Spring refer to?
- (a) Comment on the clarity and the appropriateness of each question.  
(b) Create a short questionnaire that is more suitable than the one given.
- 16. Thinking, Inquiry, Problem Solving** Create a 5-to-10 question survey that measures the level of interest of your class in the physical sciences. The questions should reveal interest or lack of interest. Your inquiry could start by dividing potential reasons for student interest into different categories. For example:
- motivation (necessary for post-secondary program, a subject in which good marks are attained, career aspirations, etc.)
  - inspiration (personal experiences, teachers, nuances of the subject, etc.)
- 17. Communication** Explain the difference between primary data and secondary data. Describe a situation that involves the collection of primary data and another that involves the collection of secondary data.



### Chapter Problem

#### Mystery Most Mathematical—Part IV

Subject: Re: Puzzle - Part 4  
Date: Tuesday 12:05:28 -0700 (EDT)  
From: sqrt-1@homework.com  
To: jto@coldmail.com

Develop five questions that can be used to survey your classmates about their academic interests using at least three different question styles. Then, complete the questionnaire yourself.