



Florida Cooperative Extension Service

Writing Options for Mail Questionnaires¹

C.L. Taylor and W.R. Summerhill²

For all except open-ended questions, you need to provide options (possible answers) for respondents to choose from. Well-written options are more likely to elicit reliable and accurate responses and provide the information you want. Confusing options lead to unreliable results and, usually, low response rates. The following suggestions should help you in your practice.

Generally speaking, depending upon what you are measuring, there are two types of options you can choose from. There are options that are *points along a scale* and there are options that are *independent alternatives*.

POINTS ALONG A SCALE

Example 1

Good				Bad
_____	_____	_____	_____	_____
Slow				Fast
_____	_____	_____	_____	_____
Large				Small
_____	_____	_____	_____	_____

In Example 1, Example 2, and Example 3 the respondent will choose a point along the scale that reflects his or her attitude or opinion towards a subject. The different points are assigned a number

and data analysis is done based on the scores on the scale.

Example 2

	Like				Dislike
"School"	_____	_____	_____	_____	_____

Example 3

	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
Capital punishment is a necessary penalty.	_____	_____	_____	_____	_____

Example 2 and Example 3 measure the respondent's attitude towards school and capital punishment. The respondent chooses the point that best reflects his/her feeling or attitude. There are no right or wrong answers to these questions. The difference between these options lies in the intensity and direction of the respondent's feeling.

These questions are not either-or, yes or no questions, but may be answered over a range of options. When the question is concerned with people's affective characteristics (feeling, emotions,

1. This document is Circular PE-18, a series of Program Evaluation and Organizational Development Department, Florida Cooperative Extension Service. Publication date: October 1992.
2. C. L. Taylor, Professor and Extension Specialist, Program Evaluation and Organizational Development and W. R. Summerhill, Professor, Director of IFAS Personnel Relations, Cooperative Extension Service, Institute of Food and Agricultural Sciences (IFAS), University of Florida, Gainesville FL 32611.

The Institute of Food and Agricultural Sciences is an equal opportunity/affirmative action employer authorized to provide research, educational information and other services only to individuals and institutions that function without regard to race, color, sex, age, handicap, or national origin. For information on obtaining other extension publications, contact your county Cooperative Extension Service office.
Florida Cooperative Extension Service / Institute of Food and Agricultural Sciences / University of Florida / John T. Woeste, Dean

attitude or self-concept), the options are usually formatted as points along a scale.

All affective characteristics have three attributes: intensity, direction, and target. The intensity refers to the degree or strength of the feeling. The direction refers to the positive, neutral, or negative aspect of the feeling. The target identifies the object, behavior, or idea at which the feeling is being directed (Gable, 1986). These three attributes can be incorporated into a scale. In the previous example of capital punishment, the object is capital punishment, the direction is positive to neutral to negative, and the intensity is reflected by the difference between strongly agree and strongly disagree.

INDEPENDENT ALTERNATIVES

There are other options that are not points along a scale. They are independent of each other in the sense that they are not meant to be ordered along any scale. The difference between these options is either right or wrong, yes or no, but not a difference in intensity or direction.

Example 1

What is needed to move cars, heat hamburgers, and light rooms?

- conservation
- efficiency
- energy
- friction
- magnetism
- don't know

In example 1, there is a single right answer and the options can not be ordered along any scale.

Example 2

Are you a Democrat?

- YES
- NO

Example 2 is a true-false question. The possible answers are either Yes or No. These options do not denote a sense of intensity or direction.

GUIDELINES IN WRITING BOTH KINDS OF OPTIONS

Include All Possible Alternatives

Make sure you include the complete range of options relevant to the question. Omitting an option forces people either to answer in a way that does not accurately reflect reality or not to answer at all. For example, the following question for car owners does not include a complete range of options.

How many cylinders does your car's engine have?

- a. 6
- b. 8

At least two more options should be included, "4" and "other."

Make Options Mutually Exclusive

The alternatives in a set of options must be mutually exclusive. Options such as the following overlap with each other. As a result, more than one option can be chosen.

Example

Please circle your age category

- (1) 20-30
- (2) 30-40
- (3) 40-50
- (4) etc.

In this case, people of age 30 can choose either (1) or (2), and people of age 40 can choose either (2) or (3). This would cause a problem in coding, analyzing, and describing data. To eliminate the problem, make the options mutually exclusive, as follows:

- (1) 20-30
- (2) 31-40
- (3) 41-50
- (4) etc.

Here is another example where options are not mutually exclusive:

Which one of the following are you?

- a. American
- b. Indian
- c. Black
- d. Hispanic

The reformulation below eliminates the problem:

- a. Black American
- b. American Indian
- c. Hispanic
- d. Other

Consider a further example of overlapping options. The following set of options seeks to determine sources of information.

- (1) Friend or relative
- (2) At work
- (3) Meeting I attended
- (4) From my spouse
- (5) TV or radio
- (6) Extension Service

It would be very difficult to correct this set of options: because the options belong to different categories (people, place, media), it is impossible to make them mutually exclusive. To improve it, concentrate on one category—for example, media:

- (1) TV
- (2) radio
- (3) book
- (4) journal
- (5) microfiche
- (6) etc.

Balance Points Along a Scale

When attempting to gauge people's attitudes by using a scale, make sure there are an equal number of points on each side of the middle point of the scale.

Example

- a. strongly agree
- b. agree
- c. no opinion
- d. disagree
- e. strongly disagree

Providing neutral or undecided positions may increase rates of response and the reliability of the survey data (Heller and Rife, 1987). Be aware that some researchers believe that if the midpoint of an agree-disagree scale is labeled "undecided," responses will differ from scales where the midpoint is labeled "neutral" (Berdie et al., 1986).

Generally speaking, you can start the scale with either "strongly disagree" or "strongly agree"; it may not have any effect on the response. However, when the question involves social desirability, start the scale with the least socially desirable option. Otherwise, people may immediately choose the socially desirable one and skip the other choices (Berdie et al., 1986). Be cautious in applying this rule. In some situations, social desirability does not have significant influence on response, as Wise found (1980). In his study, a questionnaire concerning certain unacademic activities, such as cheating on exams, was given to 158 participants. No evidence was found that social desirability was a factor in participant response to the items.

Include a "Don't Know" Option

A "don't know" option should be used when attempting to assess people's knowledge. Sometimes the "don't know" information itself is very important.

Example

Which one of the following has the power to declare an act of Congress unconstitutional? (circle appropriate letter)

- a. the Congress
- b. the President
- c. the United States Supreme Court
- d. the United States Department of Justice
- e. don't know
- f. other

Provide Memory Cues for the Respondent

Aided-recall may help eliminate the problem of not responding to the item. That is, the options should be structured to provide memory cues to the respondent as part of the question.

Example

To get a survey of people’s recreational activity, rather than ask what they did, provide a list from which people can choose.

Did you do the following activities during the past month? (check)

	Yes	No
a. go to a movie	___	___
	-	
b. dine at a restaurant for pleasure	___	___
	-	
c. go on a picnic	___	___
	-	
d. go hunting or fishing	___	___
	-	
e. do gardening for pleasure	___	___
	-	
etc.		

Choose the Appropriate Arrangement for Your Options

After you have written the options, you must decide on a scheme for ordering them and laying them out. Options can be arranged vertically or horizontally.

Horizontal options

Water pollution is a serious threat to the Middle Suwannee River Basin. Check your opinion.

- | | | |
|--------------------|-----------------------|----------------|
| ___ strongly agree | ___ agree | ___ no opinion |
| ___ disagree | ___ strongly disagree | |

Vertical options

Current water quality restrictions in the Middle Suwannee River Basin are greater than they should be. Check your opinion.

- ___ strongly agree
-
- ___ agree
-
- ___ no opinion
-
- ___ disagree
-
- ___ strongly disagree
-

One consideration when deciding on option arrangement is that respondents may mark the wrong blank for horizontal options because they do not know whether they should mark the blank before the option or the blank after. Vertical options may reduce the chance of this mistake (Berdie et al., 1986).

TECHNIQUES FOR REPRESENTING OPTIONS

The questionnaire’s designer may choose different techniques to represent options: numbers, letters, words, blanks, or boxes. It is probably better to repeat actual words or use letters than to use numbers, blanks, or boxes. Numbers may imply quantity or rank, and people may forget what the blanks or boxes represent, while letters and words appear to remind the respondent of the nature of the option. Numbers, blanks, letters, boxes, and words must be interpreted and described in text or verbally or both. Therefore, select techniques that can be summarized and described in a meaningful way.

Examples:

Options represented by numbers

The symposium objectives are listed below. To what extent do you feel they were reached? (circle response selected)

	To Full extent	To some extent	To little extent
a. To explore national marine programming trends and emerging issues	3	2	1

Options represented by letters

How much did this workshop increase your understanding of the following topics (circle your response)?

	Much	Some	Little	None
Difference between men's and women's farm and household activities	M	S	L	N

Options represented by words

How helpful were the nursery tours in doing the following:

- a. Made you aware of the sub-tropical materials that are being grown.

very helpful	helpful	slightly helpful	not helpful
--------------	---------	------------------	-------------

Options represented by boxes

- | | Yes | No |
|---|--------------------------|--------------------------|
| 1. When you get together with your friends, do you discuss topics like water quality, water supply, and water regulation? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Have you tried to convince anyone that he/she should be concerned about water in your county? | <input type="checkbox"/> | <input type="checkbox"/> |

Options represented by blanks

Example

Please check (✓) the foods you regularly cooked, both before you took the microwave workshop and after you took the workshop.

	Before	After
1. baked potatoes	_____	_____
2. fried bacon	_____	_____
3. heat water for beverages	_____	_____
4. cook frozen vegetables	_____	_____

Example

- 1. In 1988, how many bulls did you run with the cows and heifers? _____
- 2. What percent of cattle do you artificially inseminate? _____%

INSTRUCTIONS FOR IDENTIFYING OPTIONS

The questionnaire designer may provide different instructions for the respondent to indicate his/her selected options. For example, the respondent can either check boxes or blanks, circle numbers or letters or words, or fill in blanks. People seem to prefer circling letters or words. The words or letters remind them of the nature of the option, numbers do not.

Example for checking boxes

Since February 1990, Iowa has had an atrazine management rule. How has this rule affected your use of atrazine? (Check all the boxes that apply)

- a. am not familiar with the rule
- b. did not use atrazine prior to 1990
- c. use has not been affected

Example for circling numbers

Please circle the number that best represents your opinion.

	Great extent	Moderate extent	Not at all
To what extent			
a. would you like information about the salary model?	5	4	3 2 1

Example for checking blanks

Please choose the most appropriate answer to the following questions and **check the corresponding blank**.

- The reliability of a test depends on _____.
- _____ the length of the test
 - _____ the time interval between pretest and post test
 - _____ homogeneity of the test items
 - _____ all of the above

Example for true-false instruction

Please fill in the blanks with a **T**, indicating True, or **F**, indicating False, for the following statements.

1. A person can contract AIDS by drinking from the same cup with an AIDS patient. _____
2. Smoking is good for your health. _____

Example for ranking options

What do you think are the three most important problems facing the cattle industry? Rank by order of importance with 1 being most important, 2 second most important, and 3 third most important:

- _____ retail price of beef
- _____ price rancher receives for calves
- _____ demand for beef
- _____ environmental regulations
- _____ land use issues
- _____ production efficiency
- _____ other (specify): _____

Example for blacken the circle

Blacken the appropriate circle to indicate the size of your herd.

- have none
- 26-50
- less than 25
- over 50

"CHECK ALL THAT APPLY" vs. "YES/NO"

You may use a "check all that apply" form or write a yes-no answer for each item. "Check all that apply" tends to save space, require less time of the respondent, and make data easier and less costly to analyze. However, when options are not selected, the researcher never really knows if the options did not apply to the respondent or if the respondent just failed to mark the options. A yes-no system is easy to code and analyze, and eliminates the potential inaccuracy of options not checked.

Example

In "Check all that apply" form, the options would appear as follows:

What, if anything, did you learn in pesticide applicator training that assisted you in reducing your dependence upon pesticides?

- a. Learned to effectively calibrate spray equipment
- b. Better understand Integrated Pest Management (IPM) techniques like scouting, economic injury levels, etc.
- c. Better understand alternatives to pesticide use, such as early harvesting of crop

In "yes-no" form, one is requested to respond to all items listed.

What, if anything, did you learn in pesticide applicator training that assisted you in reducing your dependence upon pesticides? (Circle the answer)

- | | | |
|--|-----|----|
| a. Learned to effectively calibrate spray equipment | Yes | No |
| b. Better understand Integrated Pest Management (IPM) techniques like scouting, economic injury levels, etc. | Yes | No |
| c. Better understand alternatives to pesticide use, such as early harvesting of alfalfa | Yes | No |

CHOOSE THE RIGHT NUMBER OF OPTIONS

The number of options for a question depends on the nature of the issue. Finer discrimination can be made on certain issues. For attitudes, a five-point option series appears to be the most useful. This allows some discrimination, but not an excessive amount. An example would be the Likert scale:

- a. strongly disagree
- b. disagree
- c. no opinion
- d. agree
- e. strongly agree

ORDERING YOUR OPTIONS

Generally, the order of options should have no effect on response. However, in some situations, for certain types of questions, changing the order of the options might elicit a different response. Israel and Taylor (1990) found order effects responses to multiple choice questions and attributive questions but not to single-response items. The effect of response order also depends on the question's complexity and social desirability and on associations between items. Because of the lack of conclusive evidence on this subject, generalization of these results should be made cautiously.

REFERENCES

Anderson, L. W. (1981). *Assessing Affective Characteristics in the Schools*. Boston: Allyn and Bacon.

Berdie, D. R., Anderson J. F., and Niebuhr, M. A. *Questionnaires: Design and Use, 2d ed.* The Scarecrow Press: Metuchen, 1986.

Bradborn, N. M., Sudman, S. et al. *Improving Interview Method and Questionnaire Design*. Jossey-Bass Publishers: San Francisco, 1980.

Gable, Robert K. *Instrument Development in the Affective Domain*, Kluwer-Nijhoff Publishing: Boston, 1986.

Heller, Eric S. & Rife, F.N. "Questionnaire Response Scales: Design Factors that influence respondent satisfaction." Paper presented at the Annual Meeting of the American Educational Research Association (Washington, DC, April 20-24, 1987).

Israel, G. D. & Taylor, C. L. "Can response-order bias evaluations?" *Evaluation and Program Planning*, 13(4), 1990.

Sudman S. and Bradburn, N. M. *Asking Questions*. Jossey-Bass Publishers: San Francisco, 1982.

Wise, S. L. "An Approach to Sensitive Questions: The Randomized Response Technique." Paper presented at the Annual Meeting of the American Educational Research Association (Boston, April, 1980).