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Designing an Effective Questionnaire

Where to Begin

Questionnaires are the most commonly used method for collecting information from program participants when evaluating educational and extension programs. When designing a questionnaire, it is important to keep some key points in mind in order to best meet the evaluation needs of a specific program or intervention. First, what type of information is needed both to capture the important objectives of your program and to fulfill the purpose of your evaluation? Second, what type of question(s) and response(s) will best capture the information you seek? Finally, in what format should the questionnaire be designed to make it user-friendly and to also capture the breadth of information needed to measure a program's impact?

Kinds of Information

The first question to ask is: "What type of information do I need to collect?" The answer to this depends on the goals and content of your program. For example, if you have a program that teaches parents age-appropriate discipline for children you will need to design a questionnaire that collects information on the basic content areas covered by this curriculum. A good way to start is to go through your curriculum and make a list of the key concepts or skills that parents should learn in each section. Then, you can design questions to capture whether parents learned new skills, changed their attitudes, and/or whether they ultimately changed their parenting practices in each of the areas covered by your program.

Frequently, survey questions capture information in several categories, including, but not limited to, knowledge, attitudes, and behavior.

Knowledge refers to what participants understand about program content, ideas or concepts. When capturing this information, it is usually best to offer response choices that are factual in nature to measure content comprehension. For example, "it is true that…"

Attitudes can include participant's perceptions, feelings, or judgments, collected in an effort to assess participant views on a subject or on the program itself. For example, "the biggest challenge parents face is disciplining their child(ren)…"

Behavior can include what people do, will do, or have done in areas related to the topic area of a program. For example, in a parent program about appropriate discipline, one behavior to measure is frequency of yelling at home. Behavior change is often hard to capture, especially if the duration of a program or intervention is short. Accurate assessment of behavior change frequently requires the opportunity to implement a pre and post test, and ideally, some follow-up data after the program has been completed. In essence, behavioral changes illustrate the translation of knowledge and attitudinal changes to skill sets and actions – which can take some time to happen depending on the area of intervention.

Types of Questions

Once you have identified the type of information you want to collect, based on the content areas and intended outcomes of your program, the next step is to draft questions for each piece of relevant information you hope to capture with your questionnaire.

Open ended questions are those that do not place restrictions on the answers respondents can provide. One such example is, "What are the biggest challenges you face when disciplining your child?" This question allows participants to answer in their own words. As a result, open-ended questions yield more varied responses than closed-ended questions, and may highlight responses that evaluators could not have anticipated. However, the information yielded from open ended questions takes much longer to read through and to code in order to identify common responses, which could slow down the reporting of results. As such, one must weigh the importance of free expression of responses against the time required to get useful information from each question.

In addition, because open-ended questions capture only one person's experience on a given question, it is difficult to report results for the entire group. This is due to the many possible interpretations of each respondent's views, and the inability to state with certainty that each participant's interpretation of both the question and their responses are consistent. However, open-ended data can be useful when exploring the range of possible responses to a question or topic, especially when pilot testing a program prior to its implementation.

Another type of question is a *close-ended question* in which respondents much choose among specific response options for each question. For example, when asking "What are the biggest challenges you face when disciplining your child?" a close-ended question may offer the following choice of answers: 1) getting my child to listen; 2) losing my temper; or 3) there are no challenges to disciplining my child. There are many possible ways to structure responses to close-ended questions, including forced choices, agree/disagree and Likert scales (discussed below).

Advantages of close-ended questions are that carefully chosen response options allow for the same frame of reference for all participants when choosing an answer. The answers to a close-ended question are pre-determined, and as a result, they are both more specific than open-ended questions and are more likely to promote consistency among respondents in terms of understanding both the question and responses.

For example, Converse and Presser (1986) provide a classic scenario: consider the open- ended question, "*People look for different things in a job. What would you most prefer in a job*?" They found that the most common answer was "pay." However, upon further analysis it appeared that some respondents meant "high pay" and some meant "steady pay." Because the wording of answer choices was not specific enough, it was not possible to know which person meant which. Contrast this with a closed-ended question, "*People look for different things in a job. Which one of the five following things would you most prefer in a job*?" that offers the following response choices:

1. work that pays well;
2. work that I am proud of;
3. autonomy;
4. friendly co-workers; or
5. steady pay/job security.

Because the respondents who meant "steady pay" chose "steady pay/job security" and the others who meant "high pay" on the open ended question could choose "work that pays well" the distinction among them was apparent based on the answer choices available for the question. As a result, areas in which an answer to an open-ended question can be unclear are easily solved by using a closed-ended question with greater specificity in response choices. It is the greater specificity and consistency yielded by closed-ended questions that allows one to generalize results that can be reported across respondents. In addition, the use of closed-ended choices allows for a timelier and more systematic analysis of data collected. Instead, one only needs to compute frequency of responses for each question, or means on a Likert scale to gauge impact of the program itself. Disadvantages are that there is no room for participants to express responses in their own words, as they must use only pre-determined choices to answer a question.

When deciding whether to use open- or closed-ended questions, it is important to think about your goals. A general rule of thumb to follow is – if an educator knows the specific information needed to answer a question – and requires a single frame of reference among respondents, closed-ended responses are preferred (Converse and Presser, p.33). If however, an educator is not sure what the range of possible responses are to a question, and hopes to conduct a preliminary exploration of a topic, open-ended questions will work better. Note also that previous research[1] shows that respondents are more willing to offer sensitive information on a survey using an open-ended response.

Common Pitfalls in Designing Questions

Leading Questions: Regardless if a question is open- or closed-ended, it is important that it not lead a participant to your preferred response. An example of a leading question is, "Do you believe it is okay to spank young children despite the AAP recommendations not to do so?" in which it is clear that the acceptable answer is "no."

Double barreled questions: Make sure each question addresses only one issue. For example, do NOT ask, "Did this program teach you how to discipline you child and manage your home finances?" It is possible that the program was successful in one domain but not the other, and this

[1] Converse and Presser 1986; Taylor-Powell 1998; and Bradburn, et al. 2004.

question does not allow for that distinction to be made.

Unclear or ambiguous questions: Each question needs to be written very clearly. For example, asking “Do you think children require strict discipline?” requires each respondent to answer based on their own definition of “strict”. In contrast, asking “Is it appropriate to spank a child who breaks your rules?” is much more specific. It is also important provide as much information as possible to make sure that each question is clear and interpreted the same way by everyone. For example, “Do you think youth should be spanked?” is not as clear as “Do you think it is appropriate to spank a child between 12-16 years old?”

Invasive/personal: Questions about personal information are difficult to phrase in a non-intrusive way. One possible solution is to provide broad categories of responses from which to choose. For example, a participant may be more comfortable reporting his or her income as part of a category (e.g. \$20,000 – \$30,000) rather than a specific number.

It is helpful to re-read your questionnaire to see each question through the survey respondent’s eyes by asking if each question is: too personal; judgmental; ambiguous or unclear; leading; or capturing more than one idea. Finally, it is very important to collect demographic data (such as age, sex, educational level or race) from participants when possible, preferably at the end of the survey instrument. This data allows educators to better understand their audience and also allows researchers to examine whether a program may affect different groups in different ways. For example, one program may have better outcomes for women than for men, or older versus younger parents. This ability to correlate outcomes and participant characteristics allows for the identification of shortcomings or strengths in a given curricula for certain audiences, and thus, can guide any needed modifications of the curriculum.

Choosing Response Options

When using closed-ended questions, you will need to carefully consider what response options you would like to provide to the respondents. Generally, responses should be a set of mutually-exclusive categorical choices. For example, when asking about income, a range of choices may be presented such as (1) less than \$20,000 a year; (2) \$21,000 – 40,000 a year; (3) 41,000 – 60,000 a year; or (4) more than 61,000 a year. These types of categories remove the possibility that more than one answer may apply to a participant. Note also that Bradburn (2004) cautions against the use of categories such as (1)never, (2) rarely, (3) occasionally, (4)fairly often, and (5) often; as these types of choices “can confuse and annoy respondents,” and also because a researcher has no way of knowing what “often” means to each participant. It is very important that categories chosen as responses capture all possible choices, but are also carefully worded to avoid ambiguity of interpretation to reduce the likelihood of invalid responses on your questionnaire.

Another popular way structure response choice is to use a Likert Scale. A **Likert scale** is used to rate each item on a response scale. For instance, participants are asked to answer each question by rating each item on a 1-to-3, 1-to4, 1-to-5, 1-to-6, or 1-to-7 response scale. In general, a 5-point Likert scale is an appropriate choice and would include the items: “strongly agree,” “agree,” “neutral,” “disagree,” and “strongly disagree.” Using this type of scale allows you to ask many questions as statements like “Children should be yelled at as infrequently as possible” in which participants choose how strongly they agree or disagree with that statement.

Circle the number that corresponds to your feelings about each statement…

	Strongly Agree	Agree	No opinion	Disagree	Strongly disagree
Children should be yelled at as infrequently as possible.	5	4	3	2	1
Reading books with a child under age 3 is important to foster early literacy skills.	5	4	3	2	1

One primary reason to use a Likert Scale is the data are easy to code and report back by simply assigning codes to the responses (for example strongly agree = 5, agree = 4, neutral = 3, disagree = 2, and strongly disagree = 1) so that a higher score reflects a higher level of agreement of each item. This is important because after you enter the individual scores, you can easily calculate an average – or mean score for the whole group for each survey question. In the case of assigning higher values to stronger agreement, then higher mean scores for each question will translate into levels of agreement for each item, and thus, lower scores will reflect participants' disagreement with each item asked.[2]

Questionnaire Format

The layout of a questionnaire determines how easy it is for respondents to read, understand and answer each question you ask. As such, questionnaire format heavily influences the quality of the data you collect. Specific things to consider in design include general appearance, typeface, blank space, order of questions, and the placement and clarity of instructions on the questionnaire. Finally, it is also recommended that, if time permits, the instrument be piloted before implementation to identify any problem areas in both format and content of the questionnaire.

Here are some general tips[3] on format:

1. Start with a clear introduction that is both informative about the purpose of the questionnaire, explains how the information collected will be used (e.g., improve program, etc), and assures them that their personal information will remain confidential (alternatively, you could number instruments and remove names altogether – you must, however, match the pre and post instruments by participant number if using that design).
2. Use an easy to read typeface, and allow for some blank space between questions.
3. Do not break question text or instructions to turn pages; keep all text together for each question.
4. Use italics or bold for instructions to distinguish them from the question itself.
5. Arrange the answers vertically under each question. For example,

   How often do you read to your elementary school aged child?

   __Every day
   __4-6 times a week
   __1-3 times a week
   __Less that once a week
6. If needed, place any explanatory text or definitions in a parenthesis immediately after the question.
7. The first questions should be easy to read, cover the more important topics of interest, and if possible, be closed ended.
8. It is also good to start with more general questions and then move to greater specificity towards the end of the questionnaire.
9. Pay attention to the flow of questions; the instrument should be logical, and easy to follow. If possible, keep questions on similar topics close together. Check and re-check all instructions and/or skip patterns.
10. When switching to different topic areas use a transitional statement to help guide the respondent through the questionnaire.

Note also that asking too many questions is burdensome to both the program's participants and the staff who need to analyze and report the evaluative data. As a result, it is important that each question included gathers essential information (Taylor-Powell, 1998). Remember also to think about the educator's time constraints for implementation of the questionnaire, the possible literacy level variation or any possible language barriers the participants may have that impact the educator's ability to administer the survey.

Summary

When writing questions for an evaluative survey, it is important to recall the objective of the program delivered, and the information required to measure the success in meeting the objectives. Educators need also to focus on the type of information needed to assess the program impact, deciding whether to include knowledge, attitudes, skills and/or behavior. Good survey design also includes attention to the audience completing the questions (e.g., literacy, language, etc.), and the purpose of the question (outcome data, qualitative feedback, satisfaction with the program and/or audience demographics). The flow of the entire questionnaire is also critical, and educators need to ensure that each question is clear and the directions are equally easy to understand. Most importantly, remember that the quality of the information gathered from a survey instrument is dependent on the clarity of each question asked on a questionnaire. This reinforces the importance of thoughtful design for questionnaires to capture and report the true experience and change of participants in programs.

[2] For more information, see *Measuring Evaluation Results with Microsoft Excel* available at http://www.parenting.cit.cornell.edu/Excel%20Tutorial1_RED3.pdf

[3] For more detail see reference by Ellen Taylor-Powell, 1998 cited at the end of this brief.

Steps to Developing an Effective Questionnaire

- Decide what information you need to collect for your program;
- Search for previous evaluative efforts on programs similar to yours to see what others may have done (and review their questionnaires if possible, *but be sure to obtain permission if using a questionnaire or items developed by someone else*);
- Draft your questions or modify questions on an existing survey to fit your own program needs;
- Place the questions in logical order;
- Re-read the entire questionnaire and add specific instructions, transitions, and any clarifying information for questions or responses (in parentheses where applicable);
- Focus on the format of the questionnaire with attention to layout, readability, time demands on respondents, logic and clarity of content;
- If time allows, have a few co-workers complete the questionnaire to identify problem areas in your survey;
- Revise the instrument as needed based on feedback provided;
- Prepare educators on protocol for implementing the questionnaire; and
- You are ready to go!

References

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