DESIGNING QUESTIONNAIRES

Purpose
The purpose of this activity is to lay out the steps in designing a questionnaire.

Target Audience
Committee, who will take the draft product to staff for review and approval.

Time
It will take at least a week of solid work for a committee to design questionnaires. The draft questionnaire will then need to be reviewed by staff, rewritten and reviewed again until the questionnaire contains all that staff want it to contain.

Materials
Paper and pens, or computer and projector, examples of other questionnaires.

Good questionnaires have the following features:

Overview
- A strong purpose so participants will want to complete the questionnaire.
- Short and to the point (both questions and questionnaire).
- Questions that everyone can understand in the same way.
- Questions that proceed from general statements to more specific statements.
- Response options that make sense for the questions.

Whatever type of questionnaire you decide to use for data gathering, the questionnaire must be based upon the underlying assumption that the respondents will give truthful answers. To this end, you must ask questions that are—

- valid—ask the right questions.
- reliable—will result in the same answers if given more than once.
- understandable—respondents know what you are asking.
- quick to complete—brain-compatible, designed well, and short.
- able to get the first response from the respondent—quality administration and setup.
- justifiable—based on a solid foundation.

Figure C1–1
QUESTIONNAIRE PROCESS OVERVIEW

DETERMINE PURPOSE:
What do you want to learn? How do you want to use the results in conjunction with your continuous school improvement plan?

DETERMINE CONTENT:
What content is desired and from whom?

DEVELOP INSTRUMENT AND PILOT:
Create instrument, pilot, and revise as necessary. Is the questionnaire working the way you want it to work?

COLLECT THE DATA:
How will the questionnaire be administered and when?

ANALYZE RESULTS:
How can the results be analyzed to show the information gleaned from the questionnaire?

REPORT RESULTS:
How can the data be graphed and reported to effectively show the results?

SHARE AND REVIEW RESULTS:
How and when are you going to share results with stakeholders?

USE RESULTS:
How can you use the results for continuous school improvement?
Process Protocol

Step 1. Outline Content. Begin by thinking about what you want to know and by pulling together concepts or key theories that you want to test through the questionnaire. For example, the Education for the Future student questionnaires were suggested by teachers who wanted this questionnaire to be about what they wanted their students to be able to say by the time they had implemented their vision— that they feel safe at school, have freedom, fun, and like school. Once you determine what you want to know, outline the key points and jot down ideas related to the key points. (See Education for the Future questionnaire resources:
http://eff.csuchico.edu/html/questionnaire_resources.html)

Step 2. Draft the Questions. Look first for existing questionnaires. If there is no existing questionnaire to adapt, formulate questions that address issues based upon what you want to know. There are many different ways to ask questions. Figure C1-2, at the end of this activity, describes different types of questions, advantages and disadvantages for each type, and when it is appropriate to use each type of question. You can create forms that will allow you to use different types of questions; however, it is probably not wise to use more than two or three different types of questions in a form. The key to successful questionnaires is to make them interesting, easy, and quick to complete. Be sure to:

- Ask purposeful questions—don’t just ask questions for the sake of asking questions.
- Make sure the questions will be interpreted the same way by many different people.

Think about the impact of every question on your respondents. Will it offend anyone? Hints in developing the questions are summarized below.

Helpful hints include—

- Simple is best.
- Phrase all questions positively. Movement up the scale indicates a more positive result; respondents will not be required to constantly reorient themselves as to how the question relates to the scale, and results can be analyzed and graphed.
- Ask all questions in the same way (e.g., all positive so double negatives are not possible).
- Keep items and the questions short (definitely less than 20 words).
- Eliminate all jargon and bureaucratic wording.
- Spell out abbreviations and acronyms.
- Be sure that phrasing does not suggest a response.
- Use a logical sequence in asking questions (general to specific).
- Ask questions that everyone understands in the same way.
- Make sure that, if necessary, your questions will allow you to disaggregate responses in your analyses.
- List question first and response options second (left-to-right is brain-compatible for most of the world).
- List response options from left (least positive) to right (most positive).
Process Protocol (Continued)

Avoid—
- Trying to assess a little bit of everything.
- Conjunctions (and, or) in questions.
- Adverbs such as “sometimes,” “nearly,” and “always” in the questions—let the response options discriminate responses.
- Leading questions.
- Jumping around, content-wise.
- Showing response options first and then the question—you are asking respondents to skip a part of the process and then come back to it—not efficient.
- Asking the same question more than once.

Step 3. Determine the Scales. Questionnaires are collections of items or questions intended to reveal levels of information not readily observable. Scales are used with items so responses can describe phenomena more specifically. Most questionnaires that utilize scales have a question or statement and then a series of response options. Those response options are types of scales. If you want to notice subtle differences in your analyses, you will want to use some sort of scale.

Many types of scales can be used with questionnaires. What type is used depends on the purpose of the questionnaire item and how the results will be used. General terms related to scales include nominal, ordinal, interval, and ratio.

If you want to notice subtle differences in your analyses, your item options will need to discriminate among responses. Consider these questions about the items you put together:
- How many response options does it take to discriminate meaningfully?
- How many response options will confuse or bore respondents?
- Presented with many response options, will respondents use only those responses that are multiples of five, for instance, reducing the number of options anyway?

There are several kinds of response options. The response option chosen depends upon the purpose for using the questionnaire and the types of questions desired. For the majority of questionnaires, five-point options are adequate. Possible labels include—
- **Endorsement**: strongly disagree, disagree, neutral, agree, strongly agree.
- **Frequency**: never, almost never, sometimes, very often, always.
- **Intensity**: really apprehensive, somewhat apprehensive, mixed feelings, somewhat excited, really excited.
- **Influence**: big problem, moderate problem, small problem, very small problem, no problem.
- **Comparison**: much less than others, less than others, about the same as others, more than others, much more than others; much worse than others, worse than others, no difference, better than others, much better than others.
Process Protocol (Continued)

Each scale implies how it can be analyzed. Equal interval scales can be averaged. The others must be displayed as frequency distributions or summed in bar graphs. Please note that if more than one scale is used in a questionnaire, the results will need to be analyzed separately—in other words, questions with different scales will probably need to be graphed separately. An often-neglected, but very important, factor that must be taken into consideration when establishing a scale and format for a questionnaire is the age and attention span of the respondent. Young children do best with two or three response options—smiling faces versus frowning faces. Adults will not finish a questionnaire that requires over thirty minutes of their time.

The Education for the Future questionnaires utilize a five-point endorsement scale. Each item is presented as a declarative sentence, followed by response options that indicate varying degrees of agreement with the statement—from strongly disagree to strongly agree. The questionnaires go from strongly disagree to strongly agree because it is our opinion that this direction is left-to-right—the way our western brains work. That is also why our response options are to the right of the questions.

People often ask about the center option. They worry that most individuals will use the middle response option if it is made available. Education for the Future’s experience with thousands of questionnaires shows that people do not automatically choose the middle response. If participants commit to responding to a questionnaire, they will typically respond with precision. When responses on a questionnaire do appear in the middle, the questionnaire constructor needs to examine the questions to determine if it is causing indecision, if the response option and the statement do not go well together, or if, indeed, the respondent does not have a definite response to the question. One of the first things to check is whether there is a conjunction or an adverb in the statement that would cause people to say: Well, I agree with this part of the question, and I disagree with that part of the question. Researchers often add the middle response to give respondents a legitimate response option for opinions that are divided or neutral, and to make the scale an equal interval scale. If you prefer to force your respondents to make a decision, you can always use an even-point scale that has no middle point. You will not be able to average the responses if you do this because you will no longer have an equal interval scale. We add that middle-response option because we think it is a reasonable response option, and because it creates an interval scale giving us the ability to average. We want to graph all the item averages together to show relationships.

Education for the Future has piloted many different scales, including 100, 10, 7, 6, 5, 4, and 3-point scales. We ultimately and easily chose a 5-point scale. Any scale that had more than 5 points upset the respondents—it was too fine a distinction, too hard for participants to respond. Respondents give us less information and do not complete the questionnaire when they do not like the response options. The even-numbered scales did not allow us to average the responses. Averaging provides the easiest understanding of the relationship of the responses to each other. The even-numbered scales did not allow respondents to give a response that indicated half the time “yes” and half the time “no,” or “just do not have an opinion at this time.” The 3-point scale did not discriminate enough.

What about offering “don’t know” or “not applicable” as a response option? Some researchers say that “don’t know” does not affect the proportion of responses. Depending upon the question, a “not applicable” response might give you more information than getting no response. We tend to stay away from both these response options.
Process Protocol (Continued)

Step 4. Create the Form. Appearance and arrangement of the questionnaire frequently determine whether respondents will complete it. In fact, research shows that individuals determine within five seconds whether or not they will respond to a questionnaire. Think about what would get you to psychologically commit to completing a questionnaire, and build in those same considerations for your respondents. The good news is that once respondents take the effort to read a questionnaire, they make a psychological commitment to complete it.

Upon first glance, we definitely want the questionnaire to be appealing to the eye. We want to have white space. We want to keep the questionnaire consistent. Never split questions, instructions, or the responses from the questions between pages. Use an easy-to-read, equally spaced font for the questions themselves. Avoid italics. Make the questionnaire look professional. We typically want to end the questionnaire by giving each respondent a chance to comment on the topic as a paper questionnaire. Figure C1-3 offers tips to consider when creating the paper form (as a paper questionnaire). Figure C1-4 offers tips to consider when writing and placing open-ended questions in a questionnaire. Take the time to make the appearance pleasing and the instructions clear to the respondent. Also, take the time to make the questionnaire brain-compatible. Written in a common sense, logical fashion like our western brains work, i.e., left-to-right, top-to-bottom.

Step 5. Review and Revise Your Instrument. Examine the content in relation to the other steps in the process: type of questions, scaling, respondents, the potential data analysis and presentation of results. Revise to the best of your abilities. Figure C1-5 describes design considerations for online questionnaires.

Step 6. Pilot the Questionnaire. No matter how many times you review the questionnaire after you construct it, you won't know how the questions will actually be interpreted until you administer them to a small number of respondents in your target group as a pilot test. We highly recommend piloting the questionnaire and analyzing the data to understand if you are asking questions that respondents understand and questions that provide responses that lead to your purpose. We also recommend piloting an already developed questionnaire that you might decide to use to make sure it is doing what you want it to do.

To pilot the questionnaire, you can use one of two approaches. One, organize a small group of respondents who are similar to the larger target group. Administer the questionnaire and analyze the results. Include questions on the pilot questionnaire to help you know if the pilot group understood everything on the questionnaire, if they thought the questions were relevant, if there are other questions they feel you should be asking, if they feel the questionnaire was easy to respond to, and to solicit their general overall comments. Another approach would be to administer the questionnaire individually to two or three people from each major demographic subgroup. Have each person read the items aloud, offer responses, and tell you orally what she/he thinks the question is asking, and what her/his responses mean. This is a very powerful information gatherer and quicker than traditional pilot tests. If you are going to use open-ended responses on your questionnaire, be sure to include them as part of the pilot.

Step 7. Analyze Pilot Results. After you have piloted the questionnaire, look at each of the questions with responses to see if each item was understandable. Look at the open-ended responses for clues to responses that may not seem logical. If respondents are available, ask them to tell you why particular questions were hard to understand.
Process Protocol (Continued)

Step 8. Revise, Review Again, and Finalize. After you study the responses from the pilot group, revise the questionnaire to reflect what you have learned. If you feel that the questions need to be piloted again, do so. It is much better to try out a questionnaire on a different, small group again than to administer a poor questionnaire to a large group. Have several people review the final version of the questionnaire to ensure there are no typographical errors and to ensure that the content flow is as you intend. When you feel that all of the bases have been covered, print the forms and post them online for the “real” questionnaire administration.

Comments to the Facilitator

Creating a questionnaire can be an arduous task. Many people who want to design questionnaires often stop when it comes to writing the questions. It is definitely one of those tasks that looks much easier than it actually is. However, questionnaires provide us with valuable information that is well worth the effort.
### Types of Questions

<table>
<thead>
<tr>
<th>Types of Questions</th>
<th>Advantages</th>
<th>Disadvantages</th>
<th>Appropriate When—</th>
</tr>
</thead>
</table>
| **Written (Open-ended)** | • Spontaneity of the response.  
• Can understand what the respondent thinks.  
• Can get deep into the topic.  
• Can use to build multiple choice items.  
• Sometimes respondents provide quotable material.  
• Can ask all types of individuals, regardless of language differences. | • Must pay for someone’s time to transcribe and synthesize.  
• Takes time—on everyone’s part.  
• Coding can be unreliable.  
• Cannot always read the response.  
• Some handicapped people might have difficulty responding.  
• Language translations are expensive.  
• Difficult to interpret.  
• Many people might have said the same thing with prompting.  
• Difficult to categorize when taking frequencies of types of responses. | • Not sure about what respondents are thinking and feeling about a topic.  
• Want to gain insight into the respondents’ thinking.  
• Are in the process of designing closed-ended questions.  
• Want to supplement or better understand closed-ended responses. |
| **Multiple Choice (Nominal, Closed-ended)** | • Fast to complete.  
• Respondents do not need to write.  
• Relatively inexpensive.  
• Easy to administer.  
• Easy to score.  
• Can compare groups and disaggregate easily.  
• Responses can be scanned and interpreted easily. | • Unless one has thought through how the items will be scored and has the capabilities of scoring items mechanically before sending out the questionnaires, it can be expensive to do, time-consuming, and easy to make mistakes.  
• Lose spontaneity.  
• Don’t always know what you have as results.  
• Respondents are not always fond of these questions.  
• Some respondents may resent the questioner’s pre-selected choices.  
• Multiple-choice questions are more difficult to write than open-ended.  
• Can make the wrong assumption in analyzing the results when response options are not the same as what respondents are thinking. | • Want to make group comparisons.  
• Know some of the responses that the sample is considering, and want to know which option they are leaning toward.  
• Have large samples.  
• Want to give respondents finite response choices. |
| **Ranking (Ordinal, Closed-ended)** | • Allows understanding of all reasons in priority order. | • More than seven response options will confuse respondents.  
• May leave out important item response options.  
• Relatively hard to analyze—you will know the number of respondents who rated item one as 1, etc. | • Want to know all responses in an order.  
• Are clear on common response options.  
• Do not want people to add to list. |

**Example:**

- **Written (Open-ended):**
  - What do you like about this school? (Write your response in the space provided below.)

- **Multiple Choice (Nominal, Closed-ended):**
  - Suppose you are a school board member. What is the most important concept you think the school should focus on to ensure well-prepared students?
  - (Circle the one response option below that best represents your position.)
  1. Basic skills
  2. Technology
  3. Problem-solving skills
  4. Lifelong learning
  5. Collaborating with others

- **Ranking (Ordinal, Closed-ended):**
  - Why did you choose to enroll your child in this school? (Mark a 1 by the most important reason, 2 by the second most important reason, etc.)
  - It is our neighborhood school
  - Reputation as a quality school
  - Know someone else who attends
  - I went there when I was in elementary school
  - My child needs more challenge
  - My child needs more personal help
### Figure C1–2 (Continued)

<table>
<thead>
<tr>
<th>Types of Questions (Continued)</th>
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</tr>
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</table>
| **Rating**<br> *Interval,*<br> **Closed-ended***<br>(Write your response in the space provided below.)<br><br>*I feel like I belong at this school.*<br><br>Strongly Disagree | Disagree | Neutral | Strongly Agree<br><br>1 2 3 4 5 | *Want respondents to rate or order choices, such as: strongly disagree to strongly agree, on a show passion.*<br> *Want to make group comparisons.*<br> *Have large samples.*<br> *Want to understand where problems are in the organization.* |<br>*Do not know if every respondent is reading the question and response options in the same way.*<br>*Do not know what you have when neutral is circled—might be a bad question or the respondent doesn’t care, or it might be a viable option.*<br>*Unless one has thought through how the items will be scored and has the capability of scoring items mechanically before sending out the questionnaires, it can be expensive to do, time-consuming, and easy to make mistakes.*<br>*Questions are more difficult to write than open-ended.*<br>*If charted together, questions must be written so the desired responses fall in the same direction (in other words—all written positively).* |<br>*Amazing you to see the passion behind respondents’ feelings, i.e., strongly agree/strongly disagree.*<br>*Easy to administer.*<br>*Easy to score.*<br>*Can compare group responses.*<br>*If an ordinal scale is created similar to the 5-point example, one can average the results.*<br>*There are many ways one can analyze the results.*<br>*Since there are usually only five options, frequencies of each response can be taken, along with the mode to determine most popular responses.* |<br>*Very young children can answer questions with these response options.*<br>*Very easy to score, analyze, and chart.*<br>*Very sure how meaningful the data are.*<br>*Responses do not give enough information.*<br>*Want all or nothing responses.*<br>*Have a sample that would have difficulty responding to more options.*<br> |<br>**Yes – No**<br> **Closed-ended***<br>(Closed-ended)<br><br>*I like this school*<br><br>Yes No |<br>*Want to disaggregate data by sex/sex, ethnicity, program.*<br>*Want to know the impact of a program on different types of individuals.*<br>*Want to know if respondents resemble the population.*<br> |<br>**Nominal**<br> **(Categorical)**<br>(Closed-ended)<br><br>*I am—*<br>*Male 0 Female 0* |<br>*Factual: no value judgment.*<br>*Useful for disaggregating other question responses.*<br>*Lets you know if sample is representative of the total population.*<br>*Some people will not respond to these types of questions.*<br>*Some people respond falsely to these questions.*<br>*With small groups, one might be able to identify the respondent on an anonymous questionnaire because of the demographic information given.*<br> |<br>*Want to disaggregate data by sex/sex, ethnicity, program.*<br>*Want to know the impact of a program on different types of individuals.*<br>*Want to know if respondents resemble the population.*<br>
Design Considerations for Multiple Choice Paper Questionnaires:

The appearance and arrangement of the questionnaire frequently determine whether or not the respondents will complete it. Try to fit the questions and answers onto one page, if possible. You want the questionnaire to be quick to complete so that the respondent will answer all of the questions.

- The majority of western respondents read from left to right. If the layout of the questions and responses is consistent with this pattern, it will increase the accuracy, and will be easier and faster for respondents to complete.
- A clear label shows respondents for whom the questionnaire is intended.
- Begin with more general questions and lead up to the more specific.
- Write instructions that tell your respondents what you would like them to do.
- Leaving white space makes the questionnaire easier to read.
- Do not use questions that have conjunctions. Use two separate questions instead.
- Ask questions to address the issues that are based on what you want to know, and that cannot be gathered from other sources.
- For evidence of school improvement, ask questions that you want to ask over time to see growth.
- Think about the impact of every question on your respondent. Make sure the questions will not offend anyone.
- Make the questions simple, short, and free of jargon/bureaucratic words.
- Avoid:
  - trying to assess a little of everything
  - leading questions
  - jumping around content-wise
  - double negatives
- Placing response options close to the questions decreases the chance of error due to respondents mismatching lines.
- If the questions are worded so that the answers fit into one scale, it will be easier for the respondent to complete and for you to analyze and graph later.
- Make it obvious where respondents should make their mark.

**Figure C1–3**

**Education for the Future**

Parents

- I feel welcome at my child’s school
- I am informed about my child’s progress
- I know what my child’s teacher expects of my child
- My child is safe at school
- My child is safe going to and from school
- There is adequate supervision during school
- There is adequate supervision before and after school
- Teachers show respect for the students
- Students show respect for other students
- The school meets the social needs of the students
- The school meets the academic needs of the students
- The school expertly quality work of its students
- The school has an excellent learning environment
- I know how well my child is progressing in school
- I like the school’s report cards/progress report
- I respect the school’s teachers
- I respect the school’s principal
- Overall, the school performs well academically
- The school succeeds at preparing children for future work
- The school has a good public image
- The school’s assessment practices are fair
- My child’s teacher helps me to help my child learn at home
- I support my child’s learning at home
- I feel good about myself as a parent

**Children’s grades:**
- Kindergarten
- First Grade
- Second Grade
- Third Grade
- Fourth Grade
- Fifth Grade
- Sixth Grade
- Seventh Grade
- Eighth Grade
- Ninth Grade
- Tenth Grade
- Eleventh Grade
- Twelfth Grade

**Number of children in this school:**

**Number of children in the household:**

**Ethnic background:**

**Responding:**
- Mother
- Father
- Grandparent
- Other

Make sure that, however you wish to disaggregate the data later, the information is captured on the form.

In other words, if you want to know the difference between males and females on their responses to particular questions, ask your respondents their gender on the questionnaire.
Design Considerations for Open-ended Questions

Ask only two to three open-ended questions because of the length of time it takes respondents to reply and because of the difficulty of analyzing the responses. Open-ended questions usually appear at the end of the questionnaire. If all scannable items can be put on one page, place the open-ended on the back.

**What are the strengths of your child’s school?**

**What needs to be strengthened at your child’s school?**

Place open-ended section at the end of the questionnaire.

Leave enough space for respondents to comment.

Do not use lines. Lines limit feedback. Do provide sufficient space for comments.
Design Considerations for Online Questionnaires

In addition to the same considerations regarding the content of paper questionnaires, you will also want online questionnaires to be quick to complete and easy to navigate so that respondents will answer all of the questions.

Customize for the school and type of respondent.

Write a purpose for the questionnaire.

Write instructions that tell the respondents what you would like them to do.

Always thank respondents for taking the questionnaire.

When there is a stem, group few items together. When scrolling, respondents will forget the stem if more than 5 items are in a group.

Set up the questions so respondents read left-to-right. It is brain-compatible.

Do not use questions that have conjunctions. Use two separate questions instead.

If the questions are worded so that the answers fit into one scale, it will be easier for the respondents to complete and for you to analyze and graph later.

Make it obvious where respondents should make their mark.
Figure C1–5 (Continued)

Design Considerations for Online Questionnaires

If you want, you may add two to three open-ended questions to the questionnaire after the multiple-choice questions and before the demographic options.

Do not use certain demographics if individuals can be identified (i.e., some demographic groups might be so small they would identify individuals).

Make sure that, however you wish to disaggregate the data later, the information is captured on the form.

In other words, if you want to know the differences among grade levels on their responses to particular questions, ask your respondents the grade level they teach on the questionnaire.