Questionnaire Design

Susan Barnes
National Network of Libraries of Medicine
Outreach Evaluation Resource Center

Today's Topics

- Uses of questionnaires

- Guidelines for writing questions

- Example of combining quantitative with qualitative data in questionnaires

Why would you want to use a questionnaire?

• Learn about characteristics of a group

• Evaluate quality of programs and services

• Document results of programs and services

Examples of learning about group characteristics

- MLA Disaster Information Specialization Marketing Survey

- 2011 PNC/MLA and NN/LM PNR Professional Development Survey

- University of Washington Libraries In-Library Use Survey

- NN/LM Emergency Preparedness Assessment

1. What best describes your current professional role:

- Medical librarian
- Hospital librarian
- Academic librarian
- Public librarian
- Special (non-medical) librarian
- Library staff (non-librarian)
- Healthcare provider
- Public health professional
- Disaster/emergency planner or responder
- Student
- Other (please specify)

Disaster Information Marketing Survey:

Who is in the audience?

Disaster Information Marketing Survey:

What are their interests and experiences?

3. I am interested in providing or using disaster information resources as part of my job.

- Strongly disagree
- Disagree
- Neutral
- Agree
- Strongly agree

4. What is your current level of background knowledge about disaster preparedness, response, recovery and related topics?

- None
- Minimal
- Basic
- Intermediate
- Advanced

5. Have you ever had training on participating in local disaster or emergency response at the level of a qualified community volunteer?

- Yes
- No

2011 PNC/MLA and NN/LM PNR Professional Development Survey:

What are their preferences?

7. What types of online or other distance learning formats do you prefer? Check all answers that apply.

- [ ] Webinar with live audio/slides (e.g. Adobe Connect)
- [ ] Online slide presentations (e.g. Slideshare)
- [ ] Online video presentations (e.g. YouTube)
- [ ] Telephone conference calls with downloaded slide printouts
- [ ] Online course management systems (e.g. Moodle, Blackboard)
- [ ] Podcasts (downloaded audio files)
- [ ] I don't prefer any type of distance learning
- [ ] Other (please specify)

University of Washington Libraries In-Library Use Survey (in development 3/11):

What did they do?

What did you do in this library today? (Please check all that apply)	
☐ Asked library staff for assistance	☐ Brought food or drink in
☐ Looked for books, journals, or other items in the library	☐ Studied individually
☐ Borrowed or returned material	☐ Studied or worked in a group
☐ Used scanner	☐ Used a library computer
☐ Made photocopies	☐ Used personal laptop or mobile device
☐ Printed from computer	☐ Met friends/someone else
Other (Please specify):	

# Emergency Preparedness Assessment:

What do they need?

3. Have any of the following barriers had an effect on your library's ability to develop emergency plans? If you are unsure of an answer, please select "Don't Know."

	Yes	No	Don't Know	Not Applicable
Limited staff time	○	○	○	○
Limited staff knowledge about emergency planning	○	○	○	○
Lack of funds	○	○	○	○
Lack of need	○	○	○	○
Not a priority for the parent organization	○	○	○	○
Already under the parent organization's plan	○	○	○	○

Other (please specify)

[   ]

Why would you want to use a questionnaire?

- Learn about characteristics of a group

→ - Evaluate quality of programs and services

→ - Document results of programs and services

Quality and Results: the Kirkpatrick Model

Results

Behavior

Learning

Reaction
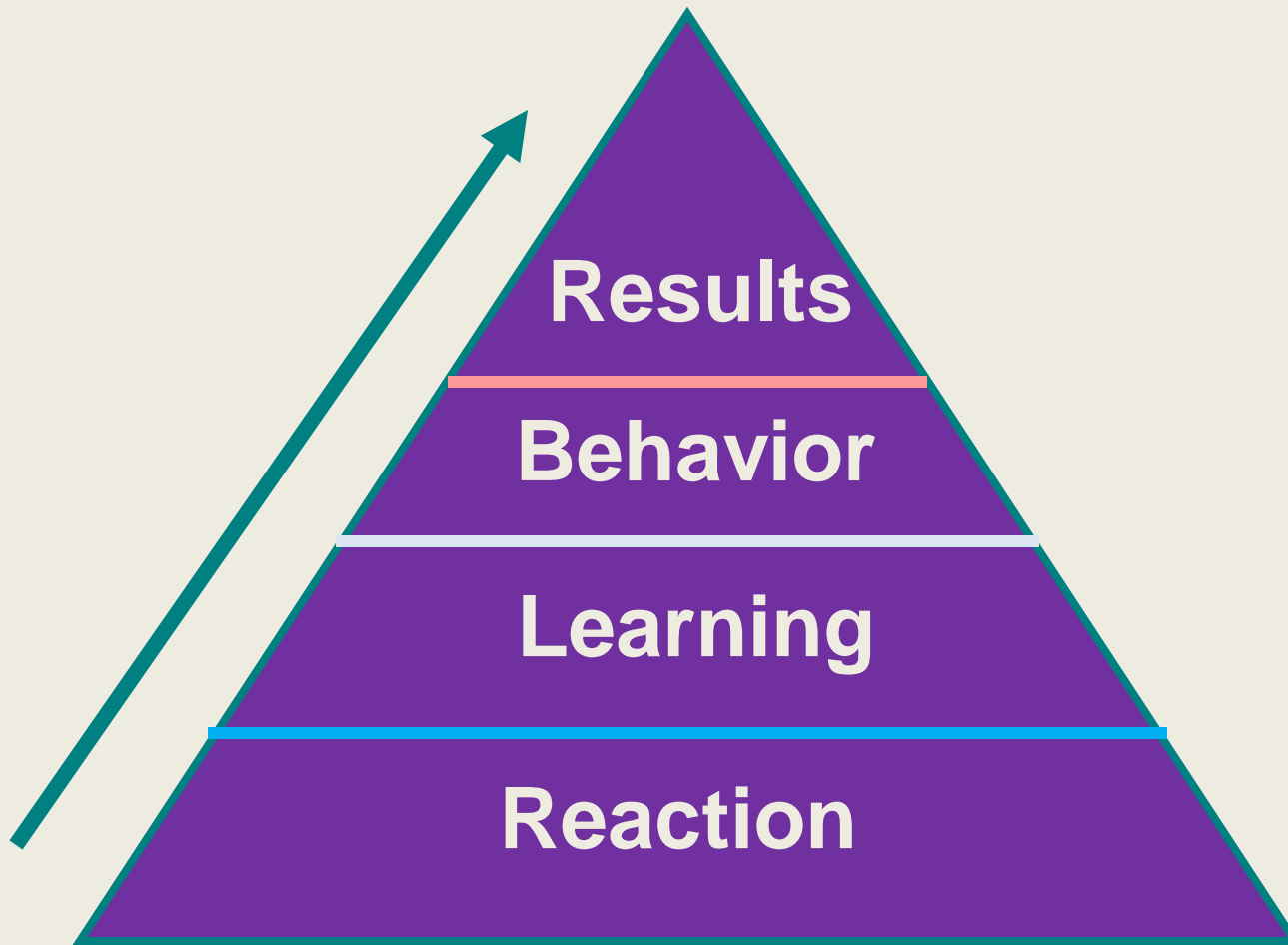
Evaluation of Quality: Examples

- MLA Course Evaluation

- MLA Health Information Literacy Project Training Evaluation

MLA Course Evaluation

1. On a scale of 1 to 4 (with 4 being the highest, best, or most, and 1 being the least or worst), rate the following instructor(s) or Presenter(s) by circling the number that applies.

Instructor(s) or Presenter(s) Name:	Knowledgeable High ... Low	Well prepared/ organized High ... Low	Effective presenter High ... Low	Responsive to Questions High ... Low
1. Susan Barnes	4 3 2 1	4 3 2 1	4 3 2 1	4 3 2 1
2. Cindy Olney	4 3 2 1	4 3 2 1	4 3 2 1	4 3 2 1
3.	4 3 2 1	4 3 2 1	4 3 2 1	4 3 2 1
4.	4 3 2 1	4 3 2 1	4 3 2 1	4 3 2 1

MLA Course Evaluation

2. Please check the appropriate rating for each of the following aspects of this session.

	Agree	Somewhat Agree	Somewhat Disagree	Disagree	N/A
Instructional Materials					
Were used effectively	☐	☐	☐	☐	☐
Were relevant/useful	☐	☐	☐	☐	☐
Hands-on sessions were useful	☐	☐	☐	☐	☐
Session Objectives					
Met my expectations	☐	☐	☐	☐	☐
Session Content					
Was well organized	☐	☐	☐	☐	☐
Length was appropriate for course content	☐	☐	☐	☐	☐
I Acquired					
Knowledge & skills I can use	☐	☐	☐	☐	☐
Facility was					
Conducive to learning	☐	☐	☐	☐	☐

MLA Health Information Literacy Project Evaluation

11. **Please indicate the extent to which you agree or disagree with the following statements regarding training objectives.** (Circle the number that represents your response)

Training Objectives	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
I gained an understanding of the impact low health literacy has on patient health knowledge, practices, and outcomes	1	2	3	4	5
I gained an understanding of health information literacy and the challenges patients face	1	2	3	4	5
I became familiar with five health information literacy resources available to me and my patients	1	2	3	4	5
I learned how to use Information Rx to refer patients to MedlinePlus and to medical librarians for support	1	2	3	4	5
I learned how librarians can support the me and my patients' health information literacy needs	1	2	3	4	5

MLA Health Information Literacy Project Evaluation

7. **Please rate how likely you are in the coming month to use the Information Rx pad you received at this training to refer patients to health information on the Internet.**
(Circle the number that represents your response)

Likely   Not Likely

1   2   3   4   5   ☐ Not applicable

8. **Please rate how likely you are in the coming month to use the Information Rx pad you received at this training to refer patients to the hospital library for help finding health information.** (Circle the number that represents your response)

Likely   Not Likely

1   2   3   4   5   ☐ Not applicable

9. **Please indicate the extent to which you agree or disagree with the following statement: This training session increased my knowledge of health literacy and its impact on patient care.** (Circle the number that represents your response)

Strongly Agree   Strongly Disagree

1   2   3   4   5

10. **What will you do differently as a result of attending this training?**

MLA Health Information Literacy Project Evaluation

12. How effective did you find the following training activities?

(Circle the number that represents your response)

Training Activities	Very Effective	Effective	Neutral	Somewhat Effective	Not at all Effective
Lecture	1	2	3	4	5
Discussion	1	2	3	4	5
Video viewing	1	2	3	4	5
Demonstration of resources	1	2	3	4	5

13. May we contact you via email in two months about the impact this health literacy training session has had on your work?

_____Yes. My email address is _____

_____No. Please do not contact me.

Documenting Results: Examples

• MLA Health Information Literacy Pre- Post-Training Evaluation

• NN/LM National Emergency Preparedness Baseline and Follow-Up Assessment

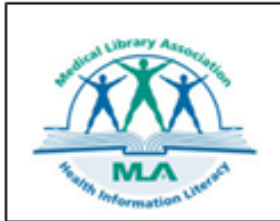# MLA Health Information Literacy Pre- Post-Training Evaluation

Health Literacy Resources and Library Services
Pre-Training Evaluation

1. Have you ever used the following Internet-based health information resources?
(Circle the number the represents your response)

Internet-based health information resources	Yes	No	I do not know this resource
Familydoctor.org	1	2	3
HIVinSite.ucsf.edu	1	2	3
Kidshealth.org	1	2	3
MedlinePlus.gov	1	2	3
NIHSeniorHealth.gov	1	2	3
Other (please name):			

MLA Health Information Literacy Pre- Post-Training Evaluation

Health Literacy Resources and Library Services
Post-Training Evaluation

6. **In the coming month how likely are you to use the following Internet-based health information resources.** (Circle the number that represents your response)

Internet-based health information resources	Likely	Not Likely	I do not know this resource
Familydoctor.org	1	2	3
HIVinSite.ucsf.edu	1	2	3
Kidshealth.org	1	2	3
MedlinePlus.gov	1	2	3
NIHSeniorHealth.gov	1	2	3
Other (please name):			

NN/LM Emergency Preparedness Baseline and Follow-Up Assessments

1. Please tell us about your library's emergency preparedness and response plans by answering the questions below. If you are unsure of an answer, please select "Don't Know."

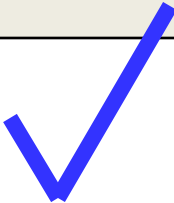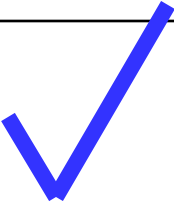|	Yes	In process	No	Don't Know
Does your library have a continuity of services/operations plan? ("Continuity of services" refers to procedures for continuing core library services in the event that your library must shut down due to some kind of emergency.)	○	○	○	○
Does your library have a partnership with another library to provide services that your library cannot provide during emergencies?	○	○	○	○
Does your library have a salvage/recovery plan to mitigate emergency-related damages to library property (such as collections, equipment, facility)?	○	○	○	○
Does someone in your library have emergency preparedness and response responsibilities written into his or her job description?	○	○	○	○
Is someone in your library in charge of a salvage/recovery plan?	○	○	○	○

3. Have any of the following barriers had an effect on your library's ability to develop emergency plans? If you are unsure of an answer, please select "Don't Know."

	Yes	No	Don't Know	Not Applicable
Limited staff time	○	○	○	○
Limited staff knowledge about emergency planning	○	○	○	○
Lack of funds	○	○	○	○
Lack of need	○	○	○	○
Not a priority for the parent organization	○	○	○	○
Already under the parent organization's plan	○	○	○	○

Other (please specify)

[   ]

KEEP YOUR QUESTIONNAIRES ON THE MARK!
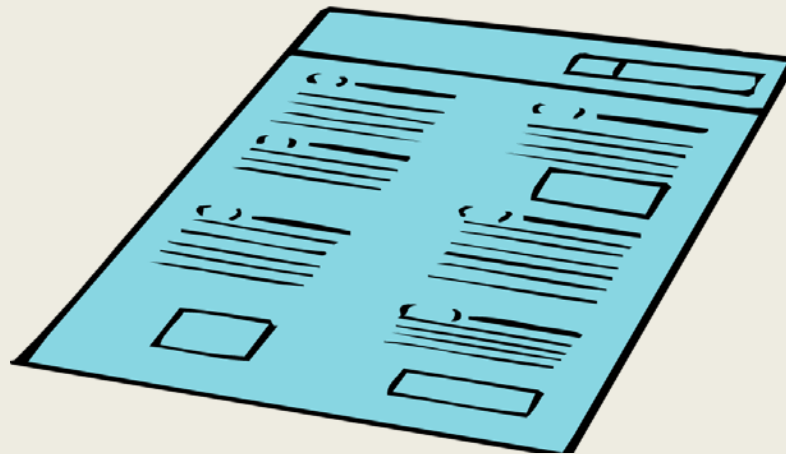
You have three goals when using questionnaires

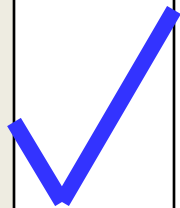| ✓	Collect just the right amount of data
✓	Write questions that get the information you want
✓	Get a high rate of participation from respondents (response rate)

GOAL 1: COLLECT JUST THE RIGHT AMOUNT OF DATA

Prevent getting too much data by only asking necessary questions
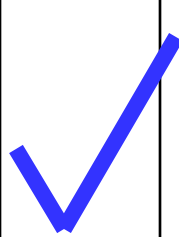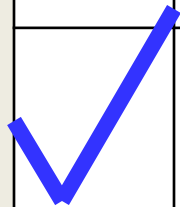
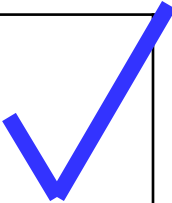| Ask yourself…	
✔	**Can I get this information from other sources?**
✔	**Who is interested in the answer to this question?**
✔	**Where and how will I report the data from this questionnaire?**
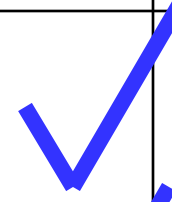
However, be sure to collect all the information you need!

Check if you're covered…	
✓	**Compare the questionnaire to report outline and look for "holes"**
✓	**Check award RFP, your proposal, or your report outline**
✓	**Show your questionnaire to stakeholders**

GOAL 2: WRITE QUESTIONS THAT GET THE INFORMATION YOU WANT

Tips

Handout:
Writing Good Questions

Tips

Handout

Writing Good Questions[1]

Tips

1. Make sure your question is one dimensional (i.e., asks about one issue).

2. Check that your response options are all inclusive *but* mutually exclusive.

3. Be sure your question has no presuppositions about your respondents (e.g., their knowledge about an online resource).

4. Check that the question does not imply a desired response or imply that certain options are more socially desirable.

5. Avoid rank-ordered questions; use rating scales instead.

Tips

6. For rating scales
   - Label for each response value.
   - Use 5-point scales if you believe the respondents may have no opinion in either direction (positive or negative) about the issue under question. Use terms like "neutral" or "neither agree or disagree."
   - Have 4-point scales to force respondents to express a positive or negative position or opinion.
   - Include a "don't know/not applicable" option.
   - Have an equal balance of positive and negative options. Avoid labeling your mid-point as "fair" or "adequate." Neither term is completely neutral.
   - Keep question layout linear (vertical or horizontal). Do not double-bank options to save room

7. Group questions by topic

8. Consider the flow of your questions – they should flow logically from one item to the next.

Make sure there is a response option for everybody

Have you ever taken a MedlinePlus training session offered by a regional medical library?

☐ Yes

☐ No

☐ Do not know

Use caution with "Check All-that-Apply" questions

In the past year, have you used online health information resources to (check all that apply)

___Research a health concern?
___Find information for someone else?
___Look up something you heard in the news?
___Make a presentation?
___Find a health care professional?
___Other

Yes-No questions are better at forcing respondents' attention to the entire list

In the past year, have you used online health information resources to (circle yes or no)

(Y) N Research a health concern?
(Y) N Find information for someone else?
Y (N) Look up something you heard in the news
Y (N) Make a presentation?
(Y) N Find a health care professional?
Y (N) Other

"Best Options" should provide everyone's best option

Which of the following sources are you most likely to go to *first* when you have a question about your health? (Choose one)

___ The Internet
___ Print materials
___ Your doctor/health care provider
___ A family member
___ A friend
___ Other
___ I don't look up health information

Rating scales should have an equal number of positive and negative options

How would you rate the quality of retail shops available to you in the…area?

A=Excellent
B=Very Good
C=Good
D=Fair
E=Poor
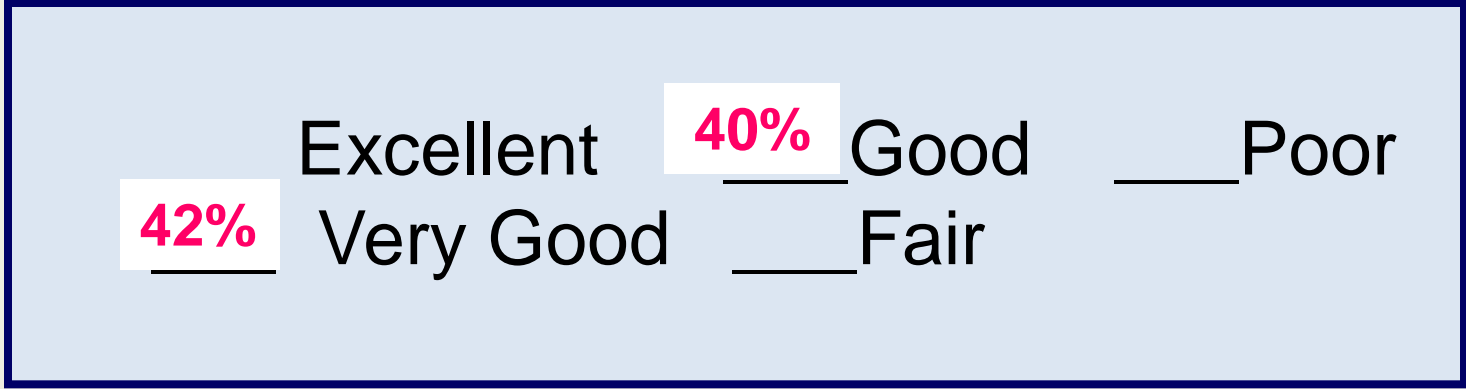
A=Excellent
B=Good
C=Neutral
D=Poor
E. Very Poor

Source Dillman & Christian, (2002).
http://survey.sesrc.wsu.edu/dillman/papers/single_space_fig_table.pdf

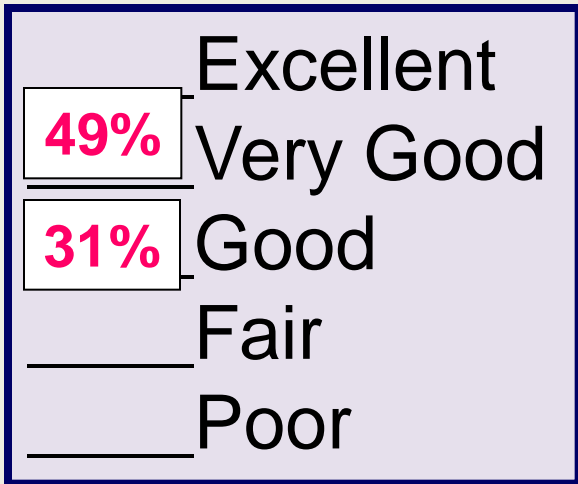# Use horizontal or vertical formats; don't "double bank"

"How would you rate the quality of education you are getting at WSU"

1

_____ Excellent   **40%** ____ Good   ____ Poor
42% ____ Very Good   ____ Fair

2

____ Excellent
49% ____ Very Good
31% ____ Good
____ Fair
____ Poor

Source: Dillman & Christian, (2002).

Polar-point scales may be confusing visually

I am more likely to take workshops that offer continuing education credits

Strongly Agree   1   2   3   4   5   Strongly Disagree

Polar-point scales had more use of middle categories compared to fully labeled scales

Source Dillman & Christian, (2002).
http://survey.sesrc.wsu.edu/dillman/papers/single_space_fig_table.pdf

Equal spacing and numbers indicate "intervals"

I am more likely to take workshops that offer continuing education credits				
Strongly Agree	Agree	Neither Agree nor Disagree	Disagree	Strongly Disagree
1	2	3	4	5

Source Dillman & Christian, (2002).
http://survey.sesrc.wsu.edu/dillman/papers/single_space_fig_table.pdf

Be sure you aren't asking more than one question

How likely are you to run searches for the doctors and nurses at your hospital?

___ Very Likely
___ Somewhat likely
___ Not sure
___ Somewhat unlikely
___ Very unlikely

Avoid rank-ordered questions – they are hard to analyze

Please rank the following habits in terms of how difficult they are for you to follow, with 1 being the *least* difficult and 5 being the *most* difficult

___ Eating 8 servings of fruits and vegetables daily
___ Exercising at least 30 minutes on most days
___ Not smoking
___ Avoiding sweets
___ Maintaining a healthy weight
___ Drinking alcohol in moderation (1-2 servings a day)

Choose demographic questions carefully and put them at the end

Your demographic questions should serve one of three purposes

Compare sample profile to population

Allow grouping data for analysis

Screen respondents

Pre-test/Post-test designs are prone toward "response shift"

Pre-test/Post-Test question for a law enforcement workshop to a Neighborhood Watch Program

How would you grade your ability to protect yourself against burglary?				
A	B	C	D	F
1	2	3	4	5

Retrospective Pre-test may protect against response shift

How would you rate your knowledge of how to protect your house from burglary?					
	Very Poor	Poor	Neutral	Good	Excellent
After this workshop	1	2	3	4	5
Before taking this workshop	1	2	3	4	5

Post test/Retrospective question for
a Neighborhood Watch workshop

Perceived change is an alternative to retrospective pre-test method

Compared to before you took this workshop today, are you…	Better Prepared 3	Equally Prepared 2	Less Prepared 1	…to protect yourself from burglary?

Perceived change question for
a Neighborhood Watch workshop

Brief Tidbits from Don Dillman's 2-day Class in 2010:

Design and Administration of Internet, Mail, and Mixed-Mode Surveys

The Evaluators' Institute

San Francisco, CA

- Amount of space influences answers to open-ended questions

- A questionnaire is a conversation—responding requires comprehension, retrieval, judgment, reporting

- Social exchange theory and questionnaires—rewards, costs, trust

Adapted from: Don A. Dillman,
Washington State University
The Evaluators' Institute, January, 2010

Requiring responses is discouraged because

- Might "train" people to give bad answers where no "right" answer

- Encourages incomplete submissions

- Breaks "contract" with respondent—experience should be positive

- There are better ways to lessen item nonresponse

Pilot Your Questionnaires at Least Twice!

1. Ask a couple of colleagues to work through your questionnaire—actually fill it out—and provide feedback to you. Revise accordingly.

   NOTE: Karen Vargas and Susan Barnes can help you with this!

2. Have a sample of five or six people who are members of the group you are studying (or who are very similar to them) fill out the questionnaire and provide feedback.

Enrich Your Questionnaires: Quantitative + Qualitative Data

1. **The Enhanced Technology Acceptance Model (TAM2**)—A "Standardized" rating scale from the Management Information Systems (MIS) literature

   Measures influence of three factors on technology use:
   - *Perceived Usefulness*
   - *Perceived Ease of Use*
   - *Social Influence*

2. **The Critical Incident Technique**—collects descriptions of significant positive and negative user experiences

TAM2:
Perceived Usefulness Scale Items

- Using [IT artifact]

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Enhances my effectiveness	○	○	○	○	○
Improves my performance	○	○	○	○	○
Increases my productivity	○	○	○	○	○

- I use [IT artifact] because they

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Are useful in my job	○	○	○	○	○

TAM2:
Perceived Ease of Use Scale Items

- Interacting with [IT artifact]

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Is clear and understandable	○	○	○	○	○
Requires minimal mental effort	○	○	○	○	○

- I use [IT artifact] because they

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Are easy to use	○	○	○	○	○

- When I am using [IT artifact]

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I find it easy to do what I want to do	○	○	○	○	○

TAM2:
Social Influence Scale Items

- What do other people think about [IT artifact]

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
People who influence my behavior think I should use them	○	○	○	○	○
People who are important to me think that I should use them	○	○	○	○	○
People who use them have more prestige than those who do not	○	○	○	○	○
People who use them have a high profile	○	○	○	○	○

Critical Incident Technique: Overview

- Participants asked to provide one or two significant positive and negative experiences with IT

> Positive: "helped somebody solve a problem"
> Negative: "solution failed, caused new problems"

- Help understand user behavior

- Either interviews or questionnaires

- Questions include
  - system name
  - description of incident
  - frequency and timing
  - feelings and perceptions
  - actions taken
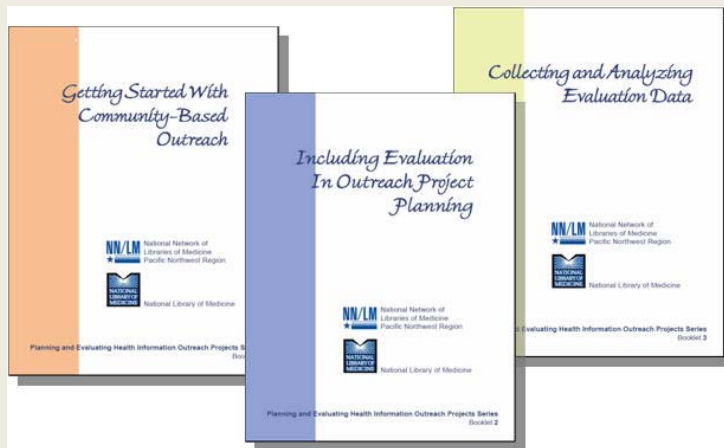 - any resulting changes in system use

GOAL 3: GET A HIGH RATE OF PARTICIPATION FROM RESPONDENTS (RESPONSE RATE)

Tune in to SCR CONNECTions on August 17 at 10:30am CT for Part 2:

"Increasing Response Rate"

For More Information:

Planning and Evaluating Health Information Outreach

– Series of 3 booklets:

1. Getting Started with Community-Based Outreach

2. Including Evaluation in Outreach Project Planning

3. Collecting and Analyzing Evaluation Data

– http://nnlm.gov/evaluation/booklets/

For More Information:

Dillman, et al., *Internet, Mail, and Mixed-Mode Surveys: The Tailored Design Method, Third Edition.* Hoboken: Wiley, 2010.

Serenko, A., & Turel, O. (2010). "Rigor and relevance: The application of the Critical Incident Technique to investigate email usage." *Journal of Organizational Computing and Electronic Commerce, 20*(2), 182-207.

Shipman, et al. (2009). "The Health Information Literacy Project." *Journal of the Medical Library Association.* 97(4): 293–301.

Venkatesh, V., & Davis, F. (2000). "A theoretical extension of the Technology Acceptance Model: Four longitudinal field studies." *Management Science, 46*(2), 186-204.