



Module 5

Data Collection Options and Methods



Learning Objectives

- To become more knowledgeable about basic data collection options
- To become more knowledgeable about the strengths and weaknesses of different data collection approaches



Basic Types of Data

Quantitative

- use when you want to do statistical analysis, want to be precise, know exactly what you want to measure, want to measure achievements and/or want to cover a large group

Qualitative

- use when you want anecdotes or in-depth information, when it is difficult to measure what you want to measure, want to know reasons for achievements and problems and/or there is no need to quantify



Quantitative Data

- Highly structured
- Precise measures every time
- Reliable
- Hard to develop
- Easy to analyze
- May not explain why



Qualitative Data

- Unstructured or semi-structured
- Easier to develop
- Data collection is non-linear
- “Rich”—lots of data
- Labor intensive
- Risk of bias in interpreting
- Hard to analyze



Some Common Data Collection Methods/ Tools)

1. Questionnaires (structured and unstructured)
2. Interviews (individual, groups)
3. Focus groups
4. Observations
5. Case Studies
6. Existing Data



Mixed Methods (Triangulation)

- Often helpful to use several different approaches so that the weaknesses of one is offset by the strengths of another.
- Some examples
 - Available data with surveys
 - Surveys with observations
 - Observations with available data
 - Surveys with focus groups



Case Discussion

Quantitative Data

- Number of training sessions
- Number of teachers trained
- Student test scores
- Attitudes of teachers
- Quality of teaching



Case Discussion: Quantitative Data

- Attitudes of teachers
- Quality of teaching
 - These are quantitative data because the evaluators developed approaches to actually measure (count) the attitudes (survey with a numeric scale) and quality of teaching (a rating sheet with a numeric scale).



Case Discussion: Qualitative Data

- Looking at the PDM:
 - What qualitative data are used?
- Are there questions that could be asked but are not because the answers would be qualitative?

Let's look at some of the data collection methods in detail !





1. Questionnaires

Used for data collection in surveys

Types

- Self Administered
 - Mail or e-mail questionnaire
 - In-person or group
 - Computer-based
- Administered to
 - Phone Survey
 - In-person Interviews



1. Questionnaires (cont'd)

Options

- Structured
 - close-ended questions
- Unstructured
 - open-ended questions



1. Questionnaires (cont'd)

Developing Questionnaires

- Use clear, simple language
- Encourage a range of responses
- Ask only one question at a time
- Focus on current experiences
- Leave exits (no opinion, not applicable)
- Pre-test, pre-test, pre-test



Advantages of Questionnaire

- Can obtain the same information from a large number of people
- Easy to analyze
- Easy to compare responses



Disadvantages of Questionnaire

It is difficult to write questionnaires because questionnaire developers must ensure that

- questionnaire instructions are clear
- respondents understand the meaning of the questions avoid misinterpretations
- respondents can easily complete the questionnaire (e.g., participants are not confused about how to respond)
- questions measure what you expect them to measure



2. Interviews

Types

- Structured
- Semi-structured
- Unstructured

(individual or group)



2. Interviews (cont'd)

Advantages

- Can learn the perspectives of participants
- Knowledge of participants can reveal new insights for the study
- Interview data can be matched to individuals or circumstances



2. Interviews (cont'd)

Disadvantages

- May be difficult to find willing participants
- Requires skills in interviewing and listening
- Note-taking or tape-recording can be a problem
- Can be less systematic
- Interviewee may intentionally or unintentionally leave out salient topics information
- Data organization can be challenging



3. Focus Groups

- Small groups (6-12 people)
- Comfortable, safe environment
- Good facilitation essential
- Facilitator and note-taker
- Tape record if possible
- Ask few open-ended questions
- Provide food, transportation, child care, incentives
- How many focus groups?
 - until no new themes emerge



3. Focus Groups (cont'd)

- **Advantages:**
 - relatively quick to set-up and do
 - provides flexibility to make changes in process
 - can examine different perspectives
- **Disadvantages:**
 - analysis is very time consuming
 - risk of interpretation bias
 - have to control dominant talkers



4. Observation

- Select a site
- Identify who or what to observe, when, and for how long
- Design observational protocol for recording notes
- Record aspects – setting, activities, behavior, your reactions, portraits of those observed



4. Observation (cont'd)

- **Advantages:**

- actual situation or behavior (not self-report)
- reduces problem of reactivity
- real-time (avoids memory decay).

- **Disadvantages:**

- observer bias
- coding problem
- can be labor intensive and costly.



4. Observation (cont'd)

- How could observation be used in the case?
 - Are the teachers actually using the new material?
 - Do they appear competent in teaching the new material?
 - Do the students appear to be actively engaged in learning?



5. Case-Studies

- Involves intensive examination of a single unit (e.g., person, community, village, a company, a country, etc)
- Measures/looks at what is there and “how” it got there (historical) (determine the present situation, gather background information about the past and key variables)



5. Case-Studies (cont'd)

Advantages

- Could go into depth in understanding a situation

Disadvantages

- Time consuming
- Does not allow generalization (unless several cases are studied)

6. Existing Data



Sources:

- Files/records
- Computer data bases
- Other reports
- Census data
- Surveys
- Documents (budget, position descriptions, staff, etc.)



6. Existing Data (cont'd)

Key Issues

Are the data:

- Valid?
- Reliable?
- Accurate?



6. Existing Data (cont'd)

- **Advantages:**

- often cheaper and faster than collecting data yourself.

- **Disadvantages:**

- Exact data you need may not be available
- May have difficulty getting access
- Errors in the data base
- Different Measures or Metrics



6. Existing Data (cont'd)

How could existing data be used in the case?

- The number of training sessions and number of participants should be found in their monitoring reports.
- Past test score data: National Examination Council records



Exercise 4

- Review teacher attitude questionnaire (in workbook)
- Discuss: how effective do you think this questionnaire is in terms of measuring teacher attitudes?
 - Is it clear?
 - It is understandable?
 - Is it complete?
 - What changes, if any, would you make?



Exercise 5

Given what you know about the case, develop 3 questions you might ask if you were conducting a focus group with teachers who completed the training.



Sampling

Why Sample?

- Efficient method of data collection
- A sample allows us to make statements about the larger population based on what we learn from the subset.
- Two general types of sampling:
 - Random sampling
 - Non-random sampling



Random Sampling

- Each person has an equal chance of being selected
- Challenge:
 - To locate a complete listing of the entire population from which to select a sample.



Types of Random Samples

Simple random sample

- Simplest
- Subset of the entire population

Stratified random sample

- Population is separated into strata (or groups).
- Each stratum is randomly sampled

Cluster Sample

- When no list is available
- Example: Schools, classrooms, students



Non-Random Sampling

- Quota
- Accidental
- Snow-ball
- Judgmental
- Convenience



Non-Random Sampling

Potential Bias

- Were these people selected in a biased way?
- Are they substantially different from the rest of the population?
- It helps to collect some data to show that the people selected are fairly similar to the larger population (e.g. demographics)



Non-Random Sampling

- The results of non-probability samples cannot be generalized.
 - Data is reported in terms “Of the respondents....”
- Sample size not that important
 - Enough so it seems reasonable
 - Purposeful selection



Data Collection Methods

SUMMARY

- Good data collection supports a good indicator
- You may need both quantitative and qualitative data
- Each data collection method has its strengths and weaknesses, so...
- Optimize your data collection strategy



Exercise 6

Review your evaluation grid:

- For each measure, how would you collect the data?



Discussion

Discuss Exercise 6
Evaluation Grid (Design Matrix)