

# Information Gathering: Interactive Methods

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Systems Analysis and Design  
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# Objectives

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- Recognize the value of interactive methods for information gathering
- Construct interview questions to elicit human information requirements
- Structure interviews in a way that is meaningful to users
- Understand the concept of JAD and when to use it
- Write effective questions to survey users about their work
- Design and administer effective questionnaires

# Interactive Methods to Elicit Human Information Requirements

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- Interviewing
- Joint application design (JAD)
- questionnaires

# Major Topics

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- Interviewing
  - Interview preparation
  - Question types
  - Arranging Questions
  - The interview report
- Joint Application Design (JAD)
  - Involvement
  - location
- Questionnaires
  - Writing questions
  - Using Scales
  - Design
  - Administering

# Interview Preparation

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- Reading background material
- Establishing interview objectives
- Deciding whom to interview
- Preparing the interviewee
- Deciding on question types and structure

# Question Types

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- Open-ended
- Closed

# Open-Ended Questions

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- Open-ended interview questions allow interviewees to respond how they wish, and to what length they wish
- Open-ended interview questions are appropriate when the analyst is interested in breadth and depth of reply

# Open-Ended Interview Questions

- What's your opinion of the current state of business-to-business ecommerce in your firm?
- What are the critical objectives of your department?
- Once the data are submitted via the Web site, how are they processed?
- Describe the monitoring process that is available online.
- What are some of the common data entry errors made in this department?
- What are the biggest frustrations you've experienced during the transition to ecommerce?



# Advantages of Open-Ended Questions

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- Puts the interviewee at ease
- Allows the interviewer to pick up on the interviewee's vocabulary
- Provides richness of detail
- Reveals avenues of further questioning that may have gone untapped

# Advantages of Open-Ended Questions (Continued)

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- Provides more interest for the interviewee
- Allows more spontaneity
- Makes phrasing easier for the interviewer
- Useful if the interviewer is unprepared

# Disadvantages of Open-Ended Questions

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- May result in too much irrelevant detail
- Possibly losing control of the interview
- May take too much time for the amount of useful information gained
- Potentially seeming that the interviewer is unprepared
- Possibly giving the impression that the interviewer is on a "fishing expedition"

# Closed Interview Questions

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- Closed interview questions limit the number of possible responses
- Closed interview questions are appropriate for generating precise, reliable data that is easy to analyze
- The methodology is efficient, and it requires little skill for interviewers to administer

# Closed Interview Questions

- How many times a week is the project repository updated?
- On average, how many calls does the call center receive monthly?
- Which of the following sources of information is most valuable to you?
  - Completed customer complaint forms
  - Email complaints from consumers who visit the Web site
  - Face-to-face interaction with customers
  - Returned merchandise
- List your top two priorities for improving the technology infrastructure.
- Who receives this input?

# Benefits of Closed Interview Questions

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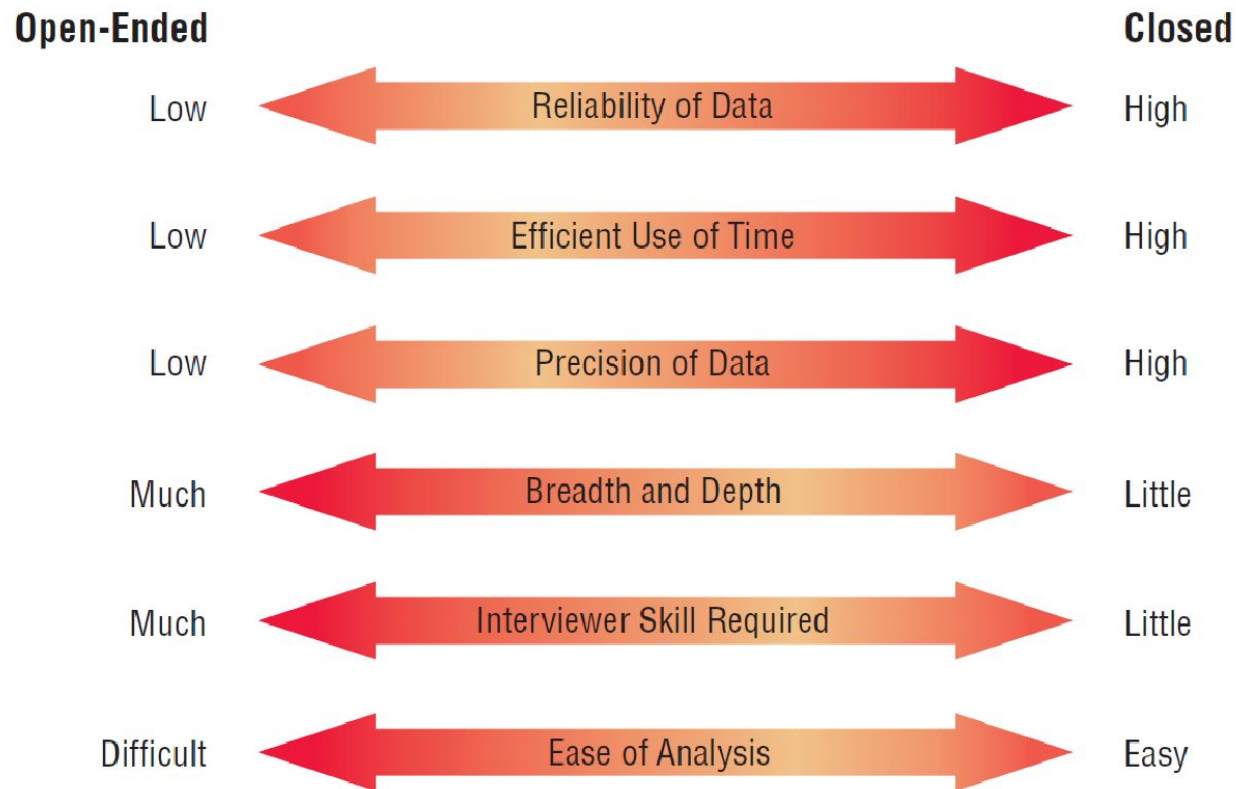
- Saving interview time
- Easily comparing interviews
- Getting to the point
- Keeping control of the interview
- Covering a large area quickly
- Getting to relevant data

# Disadvantages of Closed Interview Questions

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- Boring for the interviewee
- Failure to obtain rich detailing
- Missing main ideas

# Figure 4.5 Attributes of Open-ended and closed questions





# Bipolar Questions

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- Bipolar questions are those that may be answered with a 'yes' or 'no' or 'agree' or 'disagree'
- Bipolar questions should be used sparingly
- A special kind of closed question

# Bipolar Interview Questions

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- Do you use the Web to provide information to vendors?
- Do you agree or disagree that ecommerce on the Web lacks security?
- Do you want to receive a printout of your account status every month?
- Does your Web site maintain a FAQ page for employees with payroll questions?
- Is this form complete?

# Probes

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- Probing questions elicit more detail about previous questions
- The purpose of probing questions is:
  - To get more meaning
  - To clarify
  - To draw out and expand on the interviewee's point
- May be either open-ended or closed

# Probes

- Why?
- Give an example of how ecommerce has been integrated into your business processes.
- Please give an illustration of the security problems you are experiencing with your online bill payment system.
- You mentioned both an intranet and an extranet solution. Please give an example of how you think each differs.
- What makes you feel that way?
- Tell me step by step what happens after a customer clicks the “Submit” button on the Web registration form.

# Arranging Questions

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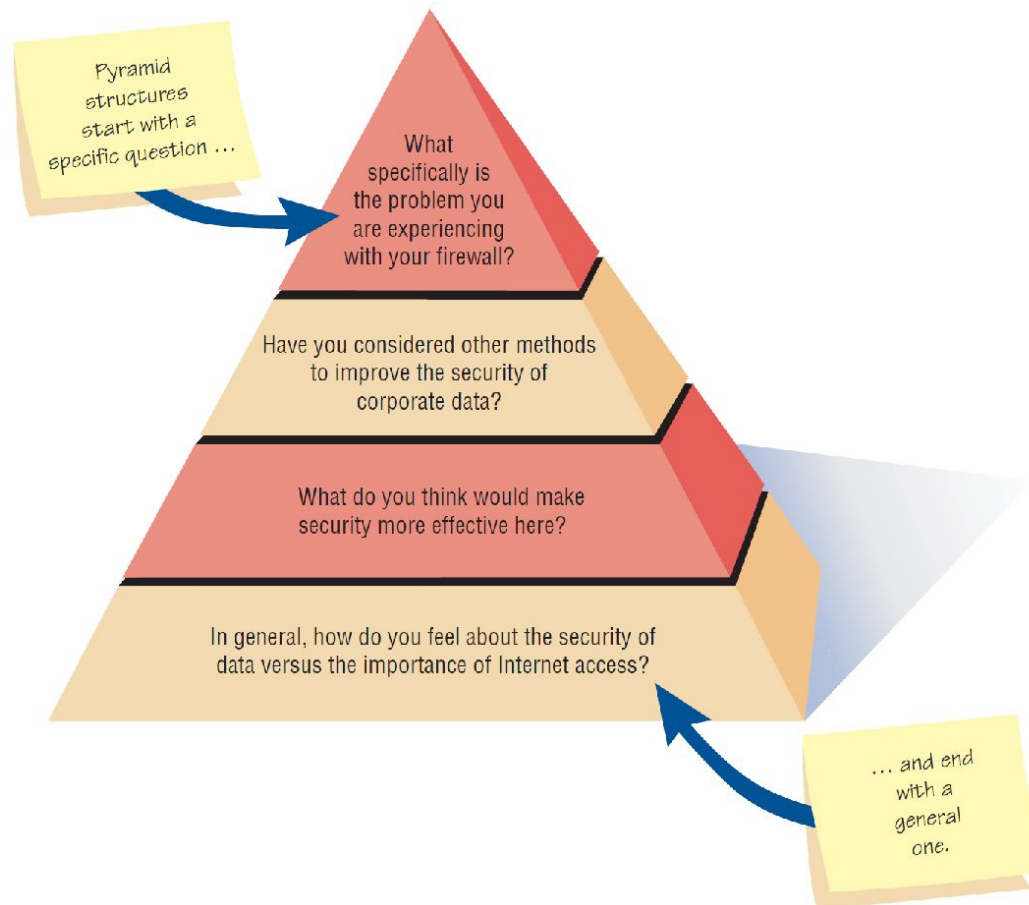
- Pyramid
  - starting with closed questions and working toward open-ended questions
- Funnel
  - starting with open-ended questions and working toward closed questions
- Diamond
  - starting with closed, moving toward open-ended, and ending with closed questions

# Pyramid Structure

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- Begins with very detailed, often closed questions
- Expands by allowing open-ended questions and more generalized responses
- Is useful if interviewees need to be warmed up.

## Figure 4.7 Pyramid structure for interviewing goes from specific to general questions



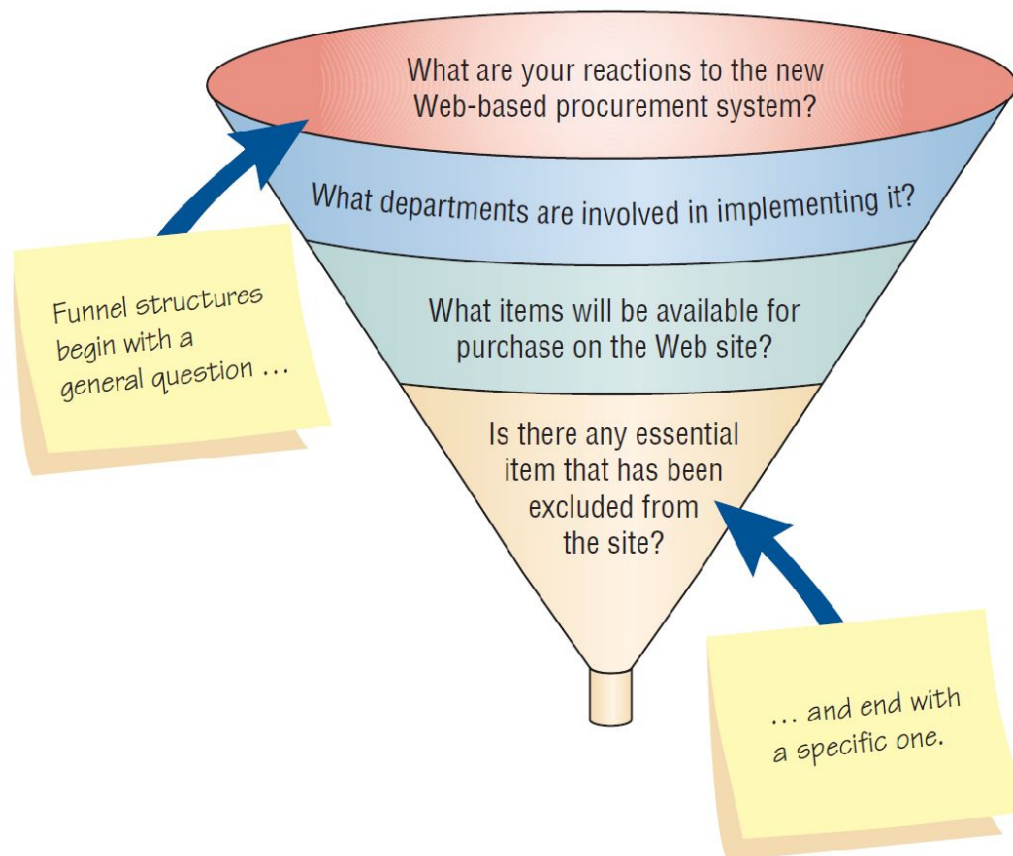
# Funnel Structure

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- Begins with generalized, open-ended questions
- Concludes by narrowing the possible responses using closed questions
- Provides an easy, non-threatening way to begin an interview



## Figure 4.8 Funnel structure for interviewing begins with broad questions then funnels to specific questions

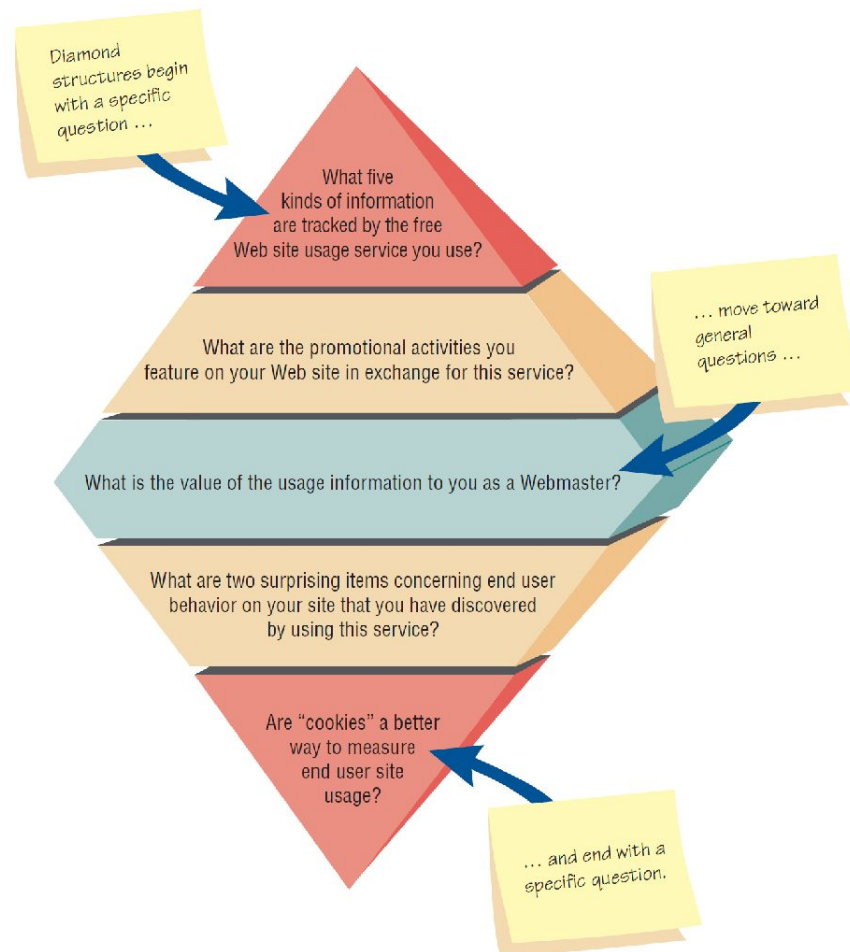


# Diamond Structure

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- A diamond-shaped structure begins in a very specific way
- Then more general issues are examined
- Concludes with specific questions
- Combines the strength of both the pyramid and funnel structures
- Takes longer than the other structures

## Figure 4.9 Diamond-shaped structure for interviewing combines the pyramid and funnel structures



# Closing the Interview

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- Always ask “Is there anything else that you would like to add?”
- Summarize and provide feedback on your impressions
- Ask whom you should talk with next
- Set up any future appointments
- Thank them for their time and shake hands

# Interview Report

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- Write as soon as possible after the interview
- Provide an initial summary, then more detail
- Review the report with the respondent

# Joint Application Design (JAD)

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- Joint Application Design (JAD) can replace a series of interviews with the user community
- JAD is a technique that allows the analyst to accomplish requirements analysis and design the user interface with the users in a group setting
- Developed by IBM.

# Conditions that Support the Use of JAD

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- Users are restless and want something new
- The organizational culture supports joint problem-solving behaviors
- Analysts forecast an increase in the number of ideas using JAD
- Personnel may be absent from their jobs for the length of time required

# Who Is Involved

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- Executive sponsor
- IS Analyst
- Users
- Session leader
- Observers
- Scribe



# Benefits of JAD

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- Time is saved, compared with traditional interviewing
- Rapid development of systems
- Improved user ownership of the system
- Creative idea production is improved

# Drawbacks of Using JAD

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- JAD requires a large block of time to be available for all session participants
- If preparation or the follow-up report is incomplete, the session may not be successful
- The organizational skills and culture may not be conducive to a JAD session

# Questionnaires

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Questionnaires are useful in gathering information from key organization members about:

- Attitudes
- Beliefs
- Behaviors
- Characteristics

# Planning for the Use of Questionnaires

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- Organization members are widely dispersed
- Many members are involved with the project
- Exploratory work is needed
- Problem solving prior to interviews is necessary

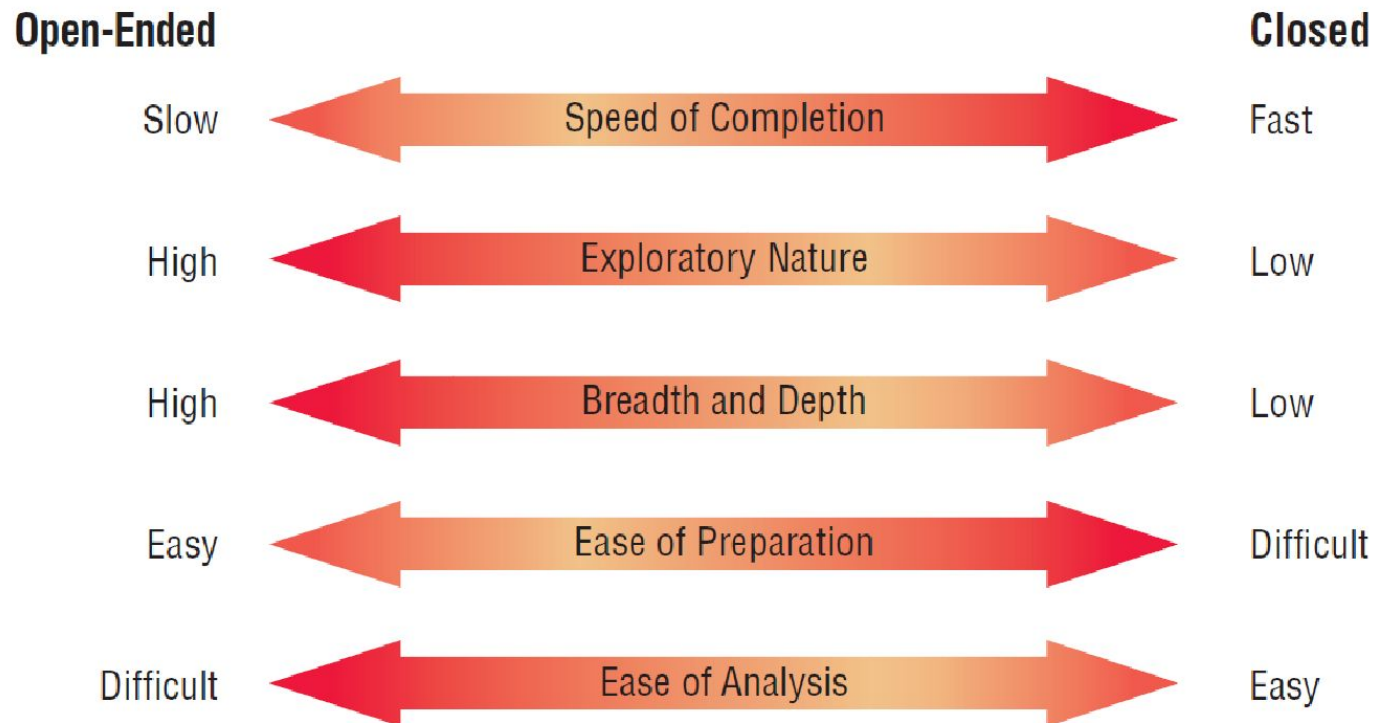
# Question Types

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Questions are designed as either:

- Open-ended
  - Try to anticipate the response you will get
  - Well suited for getting opinions
- Closed
  - Use when all the options may be listed
  - When the options are mutually exclusive

## Figure 4.12 Trade-offs between the use of open-ended and closed questions on questionnaires



# Questionnaire Language

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- Simple
- Specific
- Short
- Not patronizing
- Free of bias
- Addressed to those who are knowledgeable
- Technically accurate
- Appropriate for the reading level of the respondent

# Measurement Scales

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- Scaling is the process of assigning numbers or other symbols to an attribute or characteristic for the purpose of measuring that attribute or characteristic.
- The two different forms of measurement scales are:
  - Nominal
  - Interval



# Nominal Scales

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- Nominal scales are used to classify things
- It is the weakest form of measurement
- Data may be totaled

What type of software do you use the most?

1 = Word Processor

2 = Spreadsheet

3 = Database

4 = An Email Program

# Interval Scales

- An interval scale is used when the intervals are equal
- There is no absolute zero
- Examples of interval scales include the Fahrenheit or Centigrade scale

How useful is the support given by the Technical Support Group?

NOT USEFUL

EXTREMELY

AT ALL

USEFUL

1

2

3

4

5

# Validity And Reliability

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- Reliability of scales refers to consistency in response—getting the same results if the same questionnaire was administered again under the same conditions
- Validity is the degree to which the question measures what the analyst intends to measure

# Problems with Scales

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- Leniency
- Central tendency
- Halo effect

# Leniency

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- Caused by easy raters
  - Solution is to move the “average” category to the left or right of center

# Central Tendency

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- Central tendency occurs when respondents rate everything as average
  - Improve by making the differences smaller at the two ends
  - Adjust the strength of the descriptors
  - Create a scale with more points

# Halo Effect

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- When the impression formed in one question carries into the next question
- Solution is to place one trait and several items on each page

# Designing the Questionnaire

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- Allow ample white space
- Allow ample space to write or type in responses
- Make it easy for respondents to clearly mark their answers
- Be consistent in style







# Order of Questions

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- Place most important questions first
- Cluster items of similar content together
- Introduce less controversial questions first

## Figure 4.13 When designing a Web survey, keep in mind that there are different ways to capture responses

Name	Appearance	Purpose
One-line text box		Used to obtain a small amount of text and limit the answer to a few words
Scrolling text box		Used to obtain one or more paragraphs of text
Check box	<input type="checkbox"/>	Used to obtain a yes-no answer (e.g., Do you wish to be included on the mailing list?)
Radio button	<input type="radio"/>	Used to obtain a yes-no or true-false answer
Drop-down menu		Used to obtain more consistent results (Respondent is able to choose the appropriate answer from a predetermined list [e.g., a list of state abbreviations])
Push button		Most often used for an action (e.g., a respondent pushes a button marked "Submit" or "Clear")

# Methods of Administering the Questionnaire

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- Convening all concerned respondents together at one time
- Personally administering the questionnaire
- Allowing respondents to self-administer the questionnaire
- Mailing questionnaires
- Administering over the Web or via email

# Electronically Submitting Questionnaires

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- Reduced costs
- Collecting and storing the results electronically

# Summary

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- Interviewing
  - Interview preparation
  - Question types
  - Arranging Questions
  - The interview report
- Joint Application Design (JAD)
  - Involvement and location
- Questionnaires
  - Writing questions
  - Using Scales and overcoming problems
  - Design and order
  - Administering and submitting