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Information Gathering: Interactive Methods

Systems Analysis and Design, 8e
Kendall & Kendall

Objectives

- 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.

Major Topics

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

Interviewing

- Interviewing is an important method for collecting data on human and system information requirements.
- Interviews reveal information about:
  - Interviewee opinions
  - Interviewee feelings
  - Goals
  - Key HCI concerns

Interview Preparation

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

Question Types

- Open-ended
- Closed

Open-Ended Questions

- 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.

Advantages of Open-Ended Questions

- 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)

- 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

- 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

- 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.

Benefits of Closed Interview Questions

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

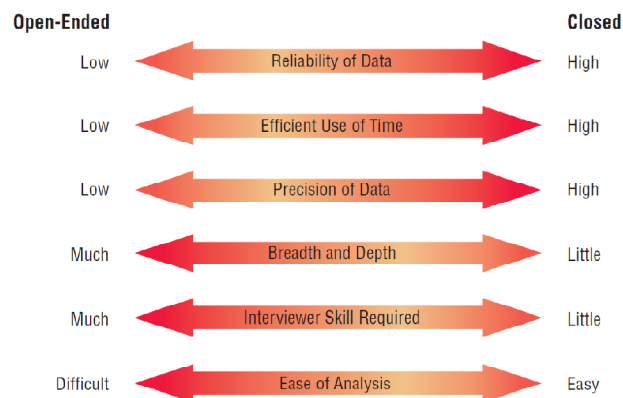# Disadvantages of Closed Interview Questions

- Boring for the interviewee.
- Failure to obtain rich details.
- Missing main ideas.
- Failing to build rapport between interviewer and interviewee.

Attributes of Open-Ended and Closed Questions (Figure 4.5)

Open-Ended		Closed
Low	Reliability of Data	High
Low	Efficient Use of Time	High
Low	Precision of Data	High
Much	Breadth and Depth	Little
Much	Interviewer Skill Required	Little
Difficult	Ease of Analysis	Easy

Bipolar Questions

- 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.

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Probes

- 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.

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Arranging Questions

- 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.
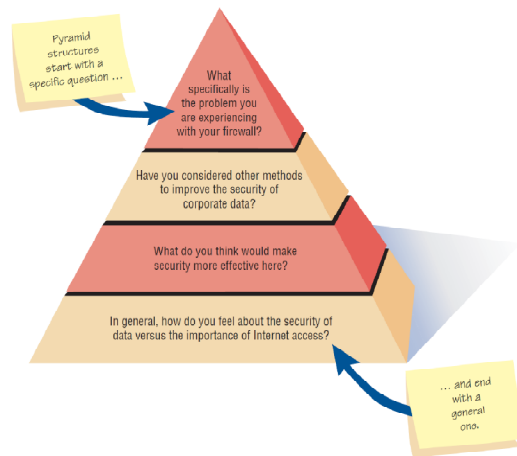
Pyramid Structure

- 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 to the topic or seem reluctant to address the topic.

Pyramid Structure for Interviewing Goes from Specific to General Questions (Figure 4.7)


Funnel Structure

- Begins with generalized, open-ended questions.
- Concludes by narrowing the possible responses using closed questions.
- Provides an easy, nonthreatening way to begin an interview.
- Is useful when the interviewee feels emotionally about the topic.

Funnel Structure for Interviewing Begins with Broad Questions then Funnels to Specific Questions (Figure 4.8)
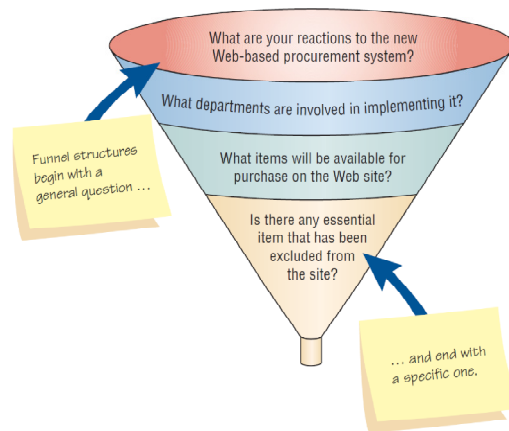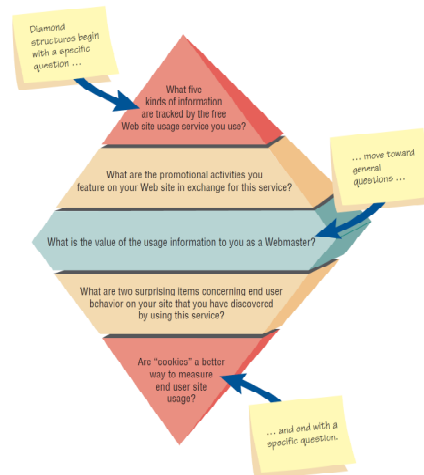
Diamond Structure

- 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

Diamond-Shaped Structure for Interviewing Combines the Pyramid and Funnel Structures (Figure 4.9)

Closing the Interview

- 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

- 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)

- 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.

Conditions that Support the Use of JAD

- 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.

JAD Involves

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

Where to Hold JAD Meetings

- Offsite
  - Comfortable surroundings
  - Minimize distractions
- Attendance
  - Schedule when participants can attend
  - Agenda
  - Orientation meeting

Benefits of JAD

- 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

- 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

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

- Attitudes
- Beliefs
- Behaviors
- Characteristics

Use questionnaires when:

- People to be questioned are widely dispersed.
- Many people are involved with the project, and need to know the approval level of a proposed system.
- Exploratory work is needed to gauge opinion.
- Need to identify and address problems with the current system.

Question Types

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.

Tradeoffs between the Use of Open-Ended and Closed Questions on Questionnaires (Figure 4.12)

Open-Ended		Closed
Slow	Speed of Completion	Fast
High	Exploratory Nature	Low
High	Breadth and Depth	Low
Easy	Ease of Preparation	Difficult
Difficult	Ease of Analysis	Easy

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Questionnaire Language

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

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Measurement Scales

- The two different forms of measurement scales are:
  - Nominal
  - Interval

Nominal Scales

- Nominal scales are used to classify things.
- It is the weakest form of measurement.
- Used to get totals for each category.

> 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.

How useful is the support given by the Technical Support Group?				
NOT USEFUL				EXTREMELY
AT ALL				USEFUL
1	2	3	4	5

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Validity And Reliability

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

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Problems with Scales

- Leniency
- Central tendency
- Halo effect

Leniency

- Caused by easy raters
  - Solution: move the "average" category to the left or right of center

Central Tendency

- 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

- When the impression about an item in one question carries into the next question.
  - Solution: change the focus from items to traits, by placing one trait and several items on each page.

Designing the Questionnaire

- 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

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

When Designing a Web Survey, Keep in Mind that There Are Different Ways to Capture Responses (Figure 4.13)

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		Used to obtain a yes-no answer (e.g., Do you wish to be included on the mailing list?)
Radio button		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	Button	Most often used for an action (e.g., a respondent pushes a button marked "Submit" or "Clear")

Methods of Administering the Questionnaire

- 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

- Reduced costs.
- Collecting and storing the results electronically.

Summary

- 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

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