

U3D3_T 3.2 Effective Surveys

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U3D3_T 3.2
Effective ...

U3D3 MAP4CI

3.2 Effective Surveys

Purpose: To learn how to design and conduct an effective and fair survey.

Definitions:

Primary Data Data gathered by performing an experiment or by conducting an observational study

Secondary Data Data collected by others

Outlier An extreme value in a set of data which does not follow the pattern of the other values in the data set.

Influential Point An extreme value in a set of data which has a large effect on the slope of the line of best fit.

Population All individuals or items belonging to the group being studied.

Sample A group of individuals or items that are representative of the population from which they are taken.

Bias An unwanted influence on a sample that prevents it from being representative of a population. (Can be caused by an unrepresentative sample, the wording of survey question(s), and/or the interpretation and presentation of the survey results.

2. Warm-Up (work in groups of 3):

a) Make up one survey question to find out your classmates' musical preferences.

Bias Do you like Jazz?

Bias Do you prefer Country or Pop?

✓ What is your favourite Genre of music?

Bias. 9/10 students prefer Country Music, do you prefer Country Music?

b) Do you think the participants can answer the questions honestly, without the questions having any influence on their answers?

c) Do any of the questions contain bias? If yes, how could these questions be rewritten so they are not biased?

3. As a class, discuss: How important is it to have accurate surveys and accurate results?

Refer to **Summary of 10 Tips** on Pg. 152

1. State the purpose of the survey
2. Provide instructions for answering the survey
3. Keep the questions short and clear
4. Ask questions that are easily answered
5. Ensure your questions are not biased
6. If providing a list of possible answers, cover the entire range of answers but keep the list short
7. Make sure your questionnaire flows
8. Use plain English
9. Avoid asking for personal information unless it is important to the study
10. Test the survey

3 Principles of Proper Surveying (See Examples on Pg 154-155)

Example 1

Principles of Proper Surveying

Identify which principles of surveying are not being followed in each example.

- a) In a telephone survey, the surveyor immediately began asking the respondent questions, without indicating that a survey was being conducted.
- b) At the end of an Internet survey, the following statement was given: "By pressing FINISH, you agree that the information you provided can be shared with our sister companies within the corporation. The information will be used for marketing purposes only."
- c) Which type of radio station do you listen to?
Rock Easy Listening Country Other
- d) How do you rate your server?
Excellent Fair Poor
- e) Do you think safety is the most important issue when selecting a school?

Solution

- a) *Ethics* Participants must be informed what the survey is about. Respondents must be willing participants.
- b) *Ethics, Confidentiality* The disclaimer is stated at the end of the survey.
Design for Honest Responses If personal information is to be shared, participants may lie.
- c) *Eliminate Bias* There is a cultural bias because certain types of radio stations, such as urban or talk, are excluded.
- d) *Design for Honest Responses* The rating scale does not give enough choices to provide an honest response. A restaurant patron may be concerned about giving a rating of fair or poor.
- e) *Eliminate Bias* This is a leading question. A fair question would be: "What do you think is the most important issue when selecting a school?"

Example 2



Types of Survey Questions

Give an example of each survey question type below that would relate to a cellular telephone company.

- a) Dichotomous (two part classification, such as “Yes or No” or “True or False”)
- b) Multiple Choice (limited number of predefined answers)
- c) Rating Scale (values on a scale)
- d) Completion (fill in the blanks or answer with a single response)
- e) Open-ended (respondent can answer freely)

Solution

- a) Do you own a cellular phone? Yes No
- b) Which features do you feel are important on a cellular telephone?
(Select all that apply.)
Camera MP3 Player QWERTY Keyboard
Bluetooth Touch Screen none of these
- c) Do you agree with this statement? “I get good value from my cellular telephone contract.”
Agree strongly Agree Neutral
Disagree Disagree strongly
- d) What is your occupation?
- e) What could this cellular telephone company do to improve service?

1. Ethics in Surveys:

- The introduction must include the intentions of the survey

I am conducting this survey for my math class.

I am researching whether the number of hours a student spends studying each week affects the amount of money they spend on clothes in a year.

(Fill in your survey topic)

- Respondents must be willing to participate.
- Keep it confidential. Do not ask for their names.
- Personal info must be kept private.

2. Design for Honest Responses:

- If answers are kept anonymous and confidential, participants are more likely to be honest with their responses.
- In **multiple choice questions**, include answers like “Do not know”, “Not applicable”, or “Other” as responses, so there is an option that is not part of a given list.
- Make sure **rating scales** are clear and offer a range of ratings (eg. On a scale of 1 to 10 how would you rate...**1 meaning you totally disagree, 10 meaning you totally agree**)
- Do not have too many questions of the same type or require respondent to think hard about their responses.
- Ask more difficult or sensitive questions near end of survey and in a way that does not encourage the participant to lie.

3. Eliminate Bias:

- Avoid questions that lead to a certain answer or contain words that make the respondent think about negative images.
- Pose questions that are neutral to avoid bias that favours certain cultures or ways of life.
- Use a natural order of choices, such as **“Yes or No”** or **“Excellent, Very Good, Good, Fair...”** (from very positive to very negative).
- Consider mode of delivery (personal interview, by telephone, by mail, via the Internet) that is appropriate for the types of questions asked.

5 Types of Questions that can be used in a Survey

1. Dichotomous Two part classification, such as “Yes or No” or “True or False”
2. Multiple Choice Limited number of predefined answers
3. Rating Scale Values on a scale
4. Completion Fill in the blanks or answer with a single response
5. Open-ended Respondent can answer freely

Homework: Pg 156 # 1 – 11

By the end of class: Write up the 5-6 survey questions for your Survey Assignment.

If there is time, have Mrs. Behnke check them over for bias and appropriateness for the assignment.