

CSE 593

Survey and Questionnaire Design (part 1)

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Logistics

- Students enrolled from the waitlist received deadline extensions. Check your extensions today!
- Grades for assignment 0 (individual), readings 1 & 2 have been released.
- Assignment 0 (Group) due tomorrow!
 - If you do not find a group by the deadline, we will assign you a group in a quasi-random way.
 - If we assign you to a group, you will not be able to claim Assignment 0 (Group) points.
- Assignment 1 is assigned on Thursday

Learning Goals

Define what we mean by research focus.

Learn how to design surveys and questionnaires.

Thursday: Learn to analyze survey data to explore current context of use.

Learning Goals

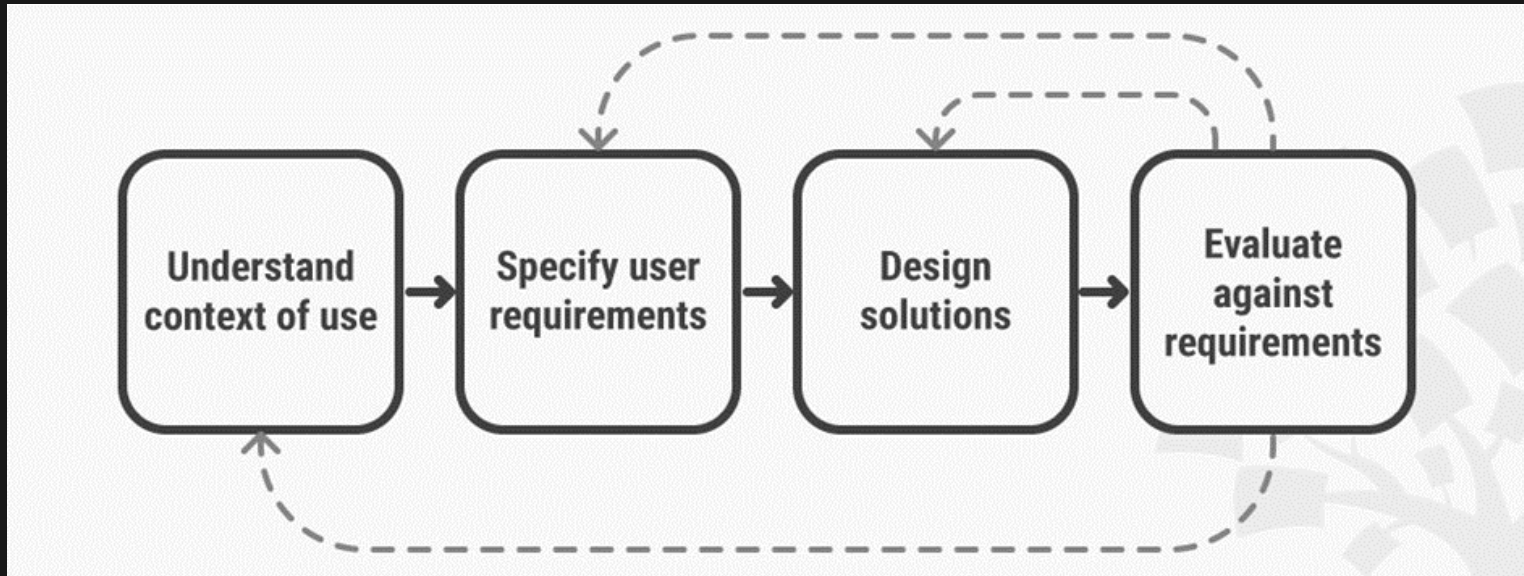
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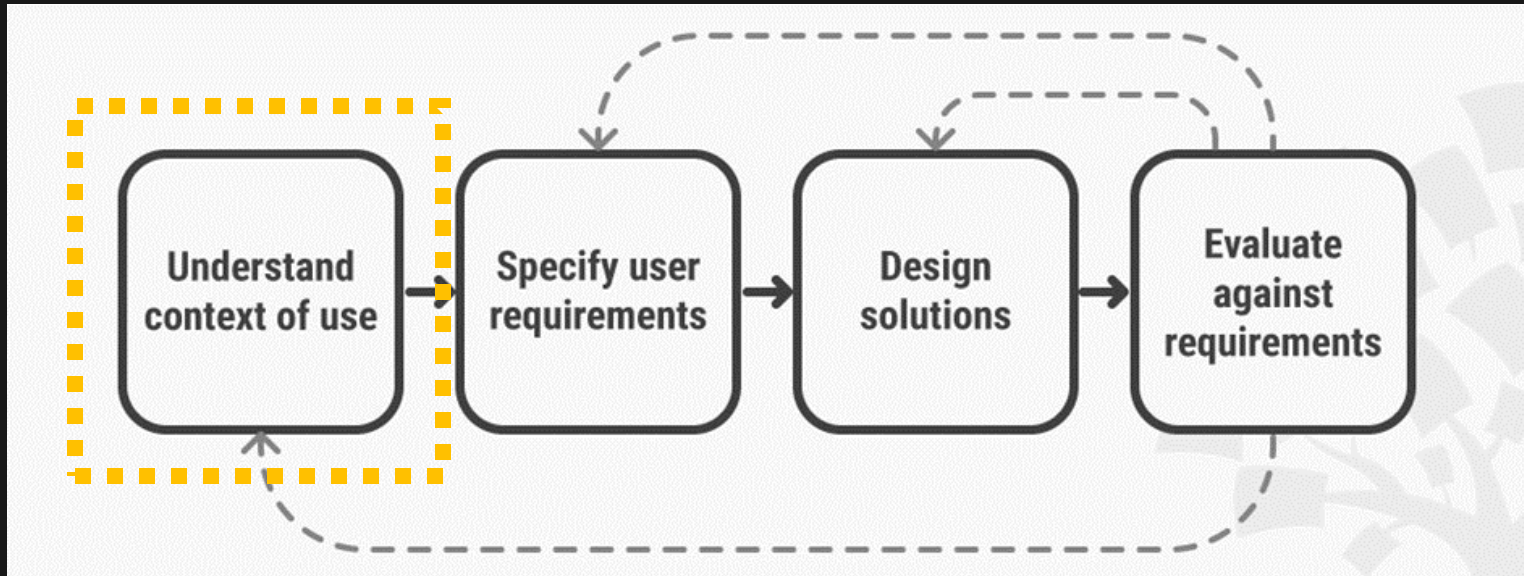
Thursday: Learn to analyze survey data to explore current context of use.

But first, Quiz 1 and Quiz 2 review.

User-Centered Design Process



USER-CENTERED DESIGN PROCESS



What is focus?

What is focus?

“Particular area of interest in the existing context of use relevant to the designer’s purpose.”

How to establish focus?

Existing knowledge

Informal observations

Methods for understanding context of use

Example: text entry

Example: text entry

How do people collaboratively edit text?

How people enter text in VR/AR?

How people with visual impairments enter text?

How people with motor impairments enter text?

What is survey?

What is survey?

“Survey is made up of questions and a protocol for collecting and analyzing answers to those questions.”

What is questionnaire?

What is questionnaire?

“Questionnaire is a written set of questions (with a possible set of answers where appropriate).”

Please answer this question in Canvas.

What are surveys good for? Select all that apply.

- ☐ Getting answers from large number of participants.
- ☐ Getting answers to quick, close-ended questions.
- ☐ Getting answers to long, open-ended questions.
- ☐ Using the answers to narrow down focus of research.

You have 120 seconds...

DONE!

	Survey	Interview
Scale	Can be done async	Needs researcher involvement

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Response quality	more likely to get low effortful answers	Social desirability effect

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	Survey	Interview
Scale	Can be done async	Needs researcher involvement
Response quality	more likely to get low effortful answers	Social desirability effect
Self-censorship	Less of a problem, especially if anonymous	Social desirability effect
Good for:	Subjective quantitative responses (close-ended questions)	Subjective qualitative responses (open-ended questions)

Combining the best of both worlds

LLMs as interviewers or conductors of interactive surveys

Chopra, Felix, and Ingar Haaland. "Conducting qualitative interviews with AI." (2023).

Steps in survey design

- Establish focus

Steps in survey design

- Establish focus
- Define protocol

Survey protocol

- Define inclusion/exclusion criteria
 - E.g., 18 and older
- Design questions (questionnaire)
- Design question paths
- Specify analysis methods

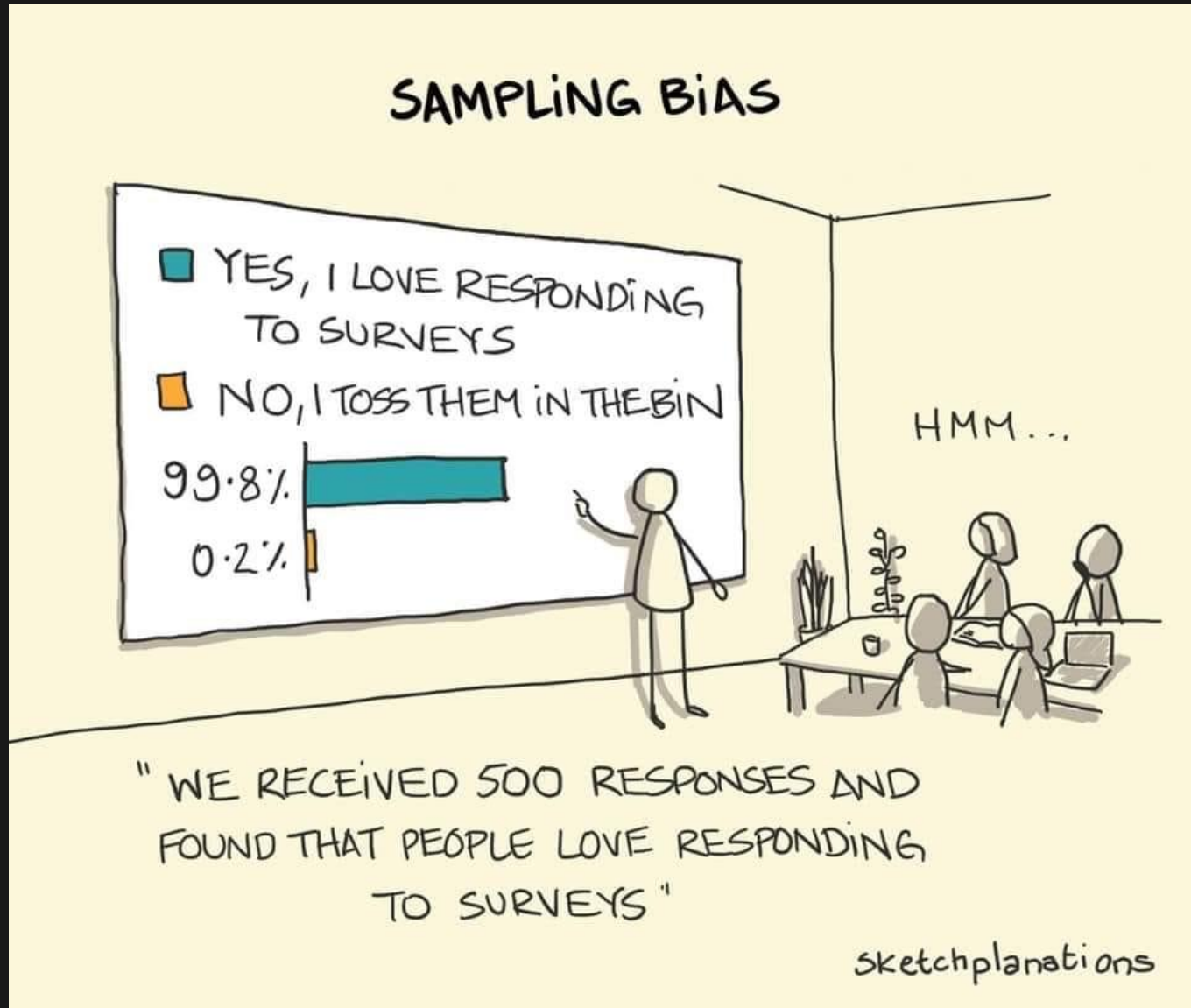
What to ask about?

- Only **relevant** questions!
 - Think about why you are asking and why you need to know.
- Demographics
 - E.g., age, gender, expertise
- Existing experiences
- Existing attitudes

Types of questions

- True/False
- Multiple choice
- Multiple answers
- Likert scale
- Short answer

Survey design common pitfalls



Questionnaire design common pitfalls

- Biased and leading questions

Example: biased/leading questions

What do you like the best about this great class?

- A. The clarity of lectures
- B. The enthusiasm of the instructor
- C. The assignments

Example: biased/leading questions

What do you like the best about this great class?

- A. The clarity of lectures
- B. The enthusiasm of the instructor
- C. The assignments

Example: biased/leading questions

What do you hate about this class?

- A. The clarity of lectures
- B. The enthusiasm of the instructor
- C. The assignments

Example: biased/leading questions

What do you **hate** about this class?

- A. The clarity of lectures
- B. The enthusiasm of the instructor
- C. The assignments

Example: biased/leading questions

What can be improved about this class?

- A. The clarity of lectures
- B. The enthusiasm of the instructor
- C. The assignments

Example: biased/leading questions

What can be improved about this class?

- A. The clarity of lectures
- B. The enthusiasm of the instructor
- C. The assignments

Example: biased/leading questions

Lectures in this class are clear.

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

Example: biased/leading questions

Lectures in this class are **clear**.

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

Example: **slightly less** biased/leading

How would you rate clarity of lectures in this class?

- Very clear
- Clear
- Neither clear nor unclear
- Unclear
- Very unclear

Example: **slightly less** biased/leading

How would you rate clarity of lectures in this class?

- Very clear
- Clear
- Neither clear nor unclear
- Unclear
- Very unclear

Still no point of reference!

Example: **slightly less** biased/leading

How would you rate clarity of lectures in this class **compared to the best lectures you have attended at UM?**

- Very clear
- Clear
- Neither clear nor unclear
- Unclear
- Very unclear

Questionnaire design common pitfalls

- Biased and leading questions
- Unbalanced / unrepresented options

Example: unbalanced options

How would you rate clarity of lectures in this class?

- Super clear
- Very clear
- Clear
- Very unclear

Questionnaire design common pitfalls

- Biased and leading questions
- Unbalanced / unrepresented options
- Forcing answers

Example: forcing answers

How would you rate clarity of lectures in this class?

- Very clear
- Clear
- Unclear
- Very unclear

Example: forcing answers

How would you rate clarity of lectures in this class?

- Very clear
- Clear
- Unclear
- Very unclear

Sometimes a design decision.

Example: forcing answers

What is your gender?

- Male
- Female

Example: forcing answers

What is your gender?

- Woman
- Man
- Non-binary

Example: **less** forcing answers

What is your gender?

- Woman
- Man
- Non-binary
- **Other:** _____

Example: **less** forcing answers

What is your gender?

Questionnaire design common pitfalls

- Biased and leading questions
- Unbalanced / unrepresented options
- Forcing answers
- Asking questions (in a way) that participants do not want to answer

Example: do not want to answer

How old are you?
_____ years

Example: do not want to answer

How old are you?

- 0-19
- 20-39
- 40-59
- 60 and up

Age is usually binned in analyses anyway

Attitude towards $x \sim \text{age} + \text{other factors}$

Questionnaire design common pitfalls

- Biased and leading questions
- Unbalanced / unrepresented options
- Forcing answers
- Asking questions (in a way) that participants do not want to answer
- Overlapping ranges

Example: overlapping ranges

How old are you?

- 0-20
- 20-40
- 40-60
- 80 and up

Example: overlapping ranges

How old are you?

- 0-20
- 20-40
- 40-60
- 80 and up

Example: unbalanced or unrepresented

How old are you?

- 0-20
- 20-40
- 40-60
- 80 and up

Questionnaire design common pitfalls

- Biased and leading questions
- Unbalanced / unrepresented options
- Forcing answers
- Asking questions (in a way) that participants do not want to answer
- Overlapping ranges
- Questionnaires that are too long

Consider the following question

Would you prefer a mobile keyboard that is easy to use?

A. Yes, but if it is also fast.

B. Yes, but if it is also accurate.

Please answer this question in Canvas

What are some of the issues with this question? Select all that apply.

- ☐ Biased or leading question
- ☐ Unbalanced or unrepresented answers
- ☐ Forcing answers
- ☐ Participants might not want to answer
- ☐ Overlapping ranges
- ☐ Other (be ready to tell us what these are)

You have 120 seconds...

DONE!

Consider the following question

High usability of Canvas is due to its modularity.

☐ Strongly agree ☐ Agree ☐ Disagree

Please answer this question in Canvas

What are some of the issues with this question? Select all that apply.

- ☐ Biased or leading question
- ☐ Unbalanced or unrepresented answers
- ☐ Forcing answers
- ☐ Participants might not want to answer
- ☐ Overlapping ranges
- ☐ Other (be ready to tell us what these are)

You have 120 seconds...

DONE!

Consider the following question

What was your income last year?

- A. No income.
- B. Less than zero.
- C. Between -\$5 and \$999
- D. Between \$1,000 and \$49,999
- E. Between \$50,000 and \$99,999
- F. More than \$200,000

Please answer this question in Canvas

What are some of the issues with this question? Select all that apply.

- ☐ Biased or leading question
- ☐ Unbalanced or unrepresented answers
- ☐ Forcing answers
- ☐ Participants might not want to answer
- ☐ Overlapping ranges
- ☐ Other (be ready to tell us what these are)

You have 120 seconds...

DONE!

Consider the following question

How can we improve this class?

A. Assign fewer assignments.

B. Assign more assignments.

C. Assign fewer quizzes.

D. Assign more quizzes.

E. Assign fewer readings.

F. Other: _____

Please answer this question in Canvas

What are some of the issues with this question? Select all that apply.

- ☐ Biased or leading question
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- ☐ Overlapping ranges
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You have 120 seconds...

DONE!



Questions, comments, and/or concerns?

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