CPEN441: user interface design

evaluation II: questionnaires

continuing evaluation lectures

- learn basics of **questionnaire** construction, and how / when to use them
- practice evaluation techniques

questionnaires

querying users via questionnaires
(also called 'surveys')

- closed or open questions
- evidence of wide general opinion
- only as good as the questions asked

pros/cons:

+ preparation "expensive," but administration cheap
  - can reach a wide subject group (e.g. mail or email)
+ does not require presence of evaluator
+ results can be quantified
- can have low response rate

questionnaires: designing questions

establish the purpose of the questionnaire:
- what information is sought?
- how would you analyze the results?
- what would you do with your analysis?

determine the audience you want to reach
- typical: random sample of between 50 and 1000 users of the product **-- why a random sample?**

test everything before sending it out: test the wording, test the timing, test the validity test the analysis

administering questionnaires

in-person administration	• requires time to administer, but highest completion rate
"take home" (conventional)	often subjects don't complete / return the questionnaire
email	• permits subjects to answer on their own time • responses may tend to be more free-form • attachments may be a problem • response rates depend on trust in source
web-based forms	• standardize formats and responses • Javascript or Java can ensure correctness and completeness
general issues	•payment or incentives, anonymity, self-selection

styles of questions: open-ended

- asks for opinions
- good for general subjective information
  - but difficult to analyze rigorously

for example,

"Can you suggest any improvements to the interface?"

styles of questions: closed

- restricts responses by supplying the choices for answers
- can be easily analyzed …
- but can still be hard to interpret, if questions / responses not well designed!

→ alternative answers should be very specific

Do you use computers at work:
O often ✓ sometimes O rarely

vs

In your typical work day, do you use computers:
O over 4 hrs a day
✓ between 2 and 4 hrs daily
O between 1 and 2 hrs daily
O less than 1 hr a day

styles of questions: scalar --- Likert scale

- measure opinions, attitudes, and beliefs
- ask user to judge a specific statement on a numeric scale
- scale usually corresponds to agreement or disagreement with a statement

Characters on the computer screen are hard to read.

strongly agree				strongly disagree
1	2	3	(4)	5

styles of questions:
scalar --- semantic differential scale

- explore a range of bipolar attitudes about a particular item
- each pair of attitudes is represented as a pair of adjectives

WebCT is:

poorly designed	1	2	3	4	(5)	well designed
clear	1	2	3	(4)	5	confusing
attractive	1	2	(3)	4	5	ugly

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styles of questions:
ranked

- respondent places an ordering on items in a list
- useful to indicate a user's preferences
- forced choice

Rank the usefulness of these methods of issuing a command
(1 most useful, 2 next most useful..., 0 if not used)
__2__ command line
__1__ menu selection
__3__ control key accelerator

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styles of questions:
combining open-ended and closed questions

- gets specific response, but allows room for user's opinion

It is easy to recover from mistakes:

disagree				agree	comment:
1	2	3	(4)	5	the undo facility is great!

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be considerate of your respondents

not just because it's nice, but it works better.

questionnaire length (short is good):
think in terms of reasonable completion times
do not ask questions whose answers you will not use!

privacy invasions: be careful how / what you ask

motivation
- why should the respondent bother?
- usually need to offer something in return

… but be careful about introducing bias.

summary: questionnaires

1. establish purpose
2. determine audience
3. variety of administration methods (for different audiences)
4. design questions: many kinds, depend on what you want to learn
5. be considerate of your respondents
6. motivate your respondents (without biasing them).

Example: Midterm Survey

1. Start with purpose:

- identify which video editing tools students used
- know which questions were found to be easy and hard
- know if enough time given to answer each question
- know if students want this format for the final exam
- if we do have it, know students feelings about how much total video time would be preferred
- know if students felt it was effective
- know if I can share some so that I can follow up with students
- know if there's interest in having students show 'the making of..' tutorial to help other students
- open ended feedback about the exam: likes, dislikes and any other comments

Example Midterm Survey

2. Identify audience:

* students in CPEN441

3. Administrative issues

- use Google forms
- send announcement from Canvas to make sure only class gets it

Example: Midterm survey

4. Design survey

good form: https://forms.gle/wGd3EkDJMzGKLtk19

bad form: https://forms.gle/4NiqeFrEBQSypxQX9

5. Test it out!

6. Distribute

7. Analyze data