UX Surveys

Embedded Interface Design

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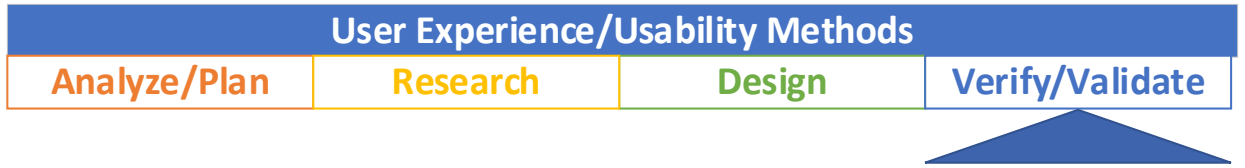
Learning Objectives

Students will be able to…

- Understand the uses of surveys in UX validation and other phases
- Recognize and compare standard pre-validated usability surveys

Surveys



- Time: Fairly brief to use and analyze a pre-validated survey, more effort to do a custom survey – time to gather data can vary depending on approach
- Can provide both quantitative and qualitative input on designs
- Survey design and analysis is a skill, and developing one can be a challenge, but it is a good way to ask specific questions on areas of concern
- Can be used at any stage to gather information about users or issues with a design
- Surveys can be created and provided to respondents using online web-based tools

Survey Tips

- Before you start: know the survey purpose, where respondents will come from, software to be used, how data will be collected and analyzed
- Keep surveys as brief as possible, providing an estimate of completion time for users, as well as a progress indicator
- Mix open-ended and closed choice questions
- Consider a simple first survey that asks a user for permission to do more extensive questions in a follow-up survey
- Reference [1]

Survey Tips

- Be aware, when surveying general populations, response rates are often low
- Surveys can be used in conjunction with other testing, such as providing them for subjects during or after other user-based testing
- Pre-validated general usability surveys are available (some are fee and license-based) and can be used in combination with your extended questions
  - These surveys come with analysis methods to help assess input
  - A web site [2] allows you to provide the survey and gather results

Pre-validated Surveys

Acronym	Instrument	Reference	Institution	Example
QUIS	Questionnaire for User Interface Satisfaction	Chin *et al*, 1988	Maryland	27 questions
PUEU	Perceived Usefulness and Ease of Use	Davis, 1989	IBM	12 questions
NAU	Nielsen's Attributes of Usability	Nielsen, 1993	Bellcore	5 attributes
NHE	Nielsen's Heuristic Evaluation	Nielsen, 1993	Bellcore	10 heuristics
CSUQ	Computer System Usability Questionnaire	Lewis, 1995	IBM	19 questions
ASQ	After Scenario Questionnaire	Lewis, 1995	IBM	3 questions
PHUE	Practical Heuristics for Usability Evaluation	Perlman, 1997	OSU	13 heuristics
PUTQ	Purdue Usability Testing Questionnaire	Lin *et al*, 1997	Purdue	100 questions
USE	USE Questionnaire	Lund, 2001	Sapient	30 questions

Reference [2]

Pre-validated Example: Lewis – CSUQ

- CSUQ – Computer System Usability Questionnaire
- This is a 19 question survey where each question uses a 1-7 level to agree or disagree with statements
- The analysis provides an overall usability measure and three sub-measures for System Usefulness, Information Quality, and Interface Quality
- I have used the CSUQ in my own research
- Reference [3]

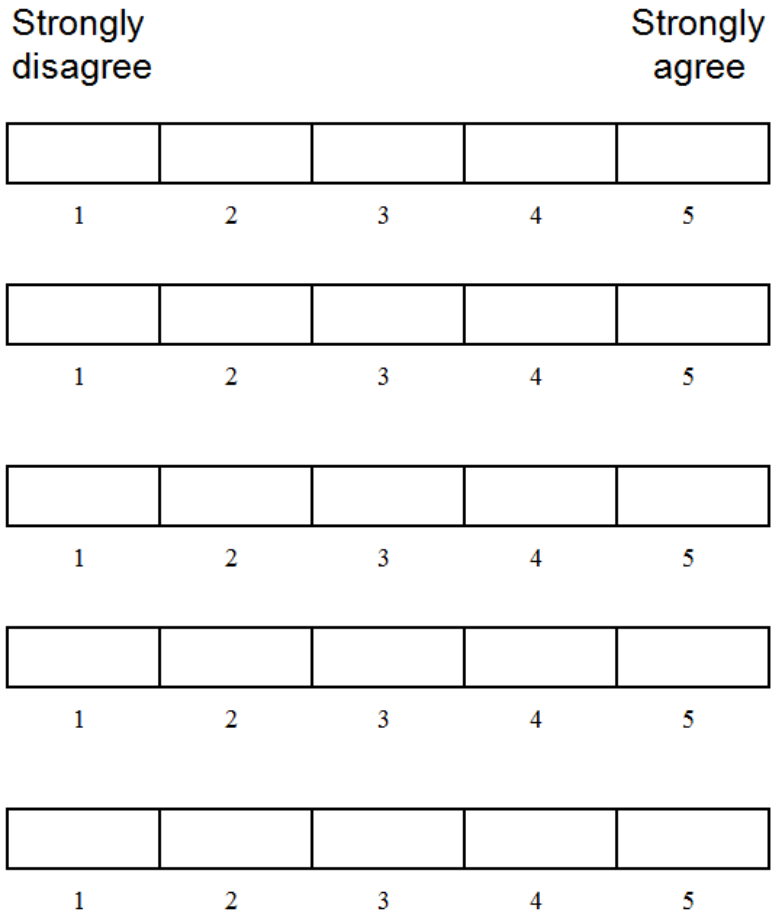
Pre-validated Example: Lewis – CSUQ

		1	2	3	4	5	6	7		NA
1. Overall, I am satisfied with how easy it is to use this system	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
2. It was simple to use this system	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
3. I can effectively complete my work using this system	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
4. I am able to complete my work quickly using this system	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
5. I am able to efficiently complete my work using this system	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
6. I feel comfortable using this system	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
7. It was easy to learn to use this system	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
8. I believe I became productive quickly using this system	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
9. The system gives error messages that clearly tell me how to fix problems	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
10. Whenever I make a mistake using the system, I recover easily and quickly	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
11. The information (such as online help, on-screen messages, and other documentation) provided with this system is clear	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
12. It is easy to find the information I needed	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
13. The information provided for the system is easy to understand	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
14. The information is effective in helping me complete the tasks and scenarios	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
15. The organization of information on the system screens is clear	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
16. The interface of this system is pleasant	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
17. I like using the interface of this system	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
18. This system has all the functions and capabilities I expect it to have	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
19. Overall, I am satisfied with this system	strongly disagree	○	○	○	○	○	○	○	strongly agree	○
		1	2	3	4	5	6	7		NA

Pre-validated Example: Brooke – SUS

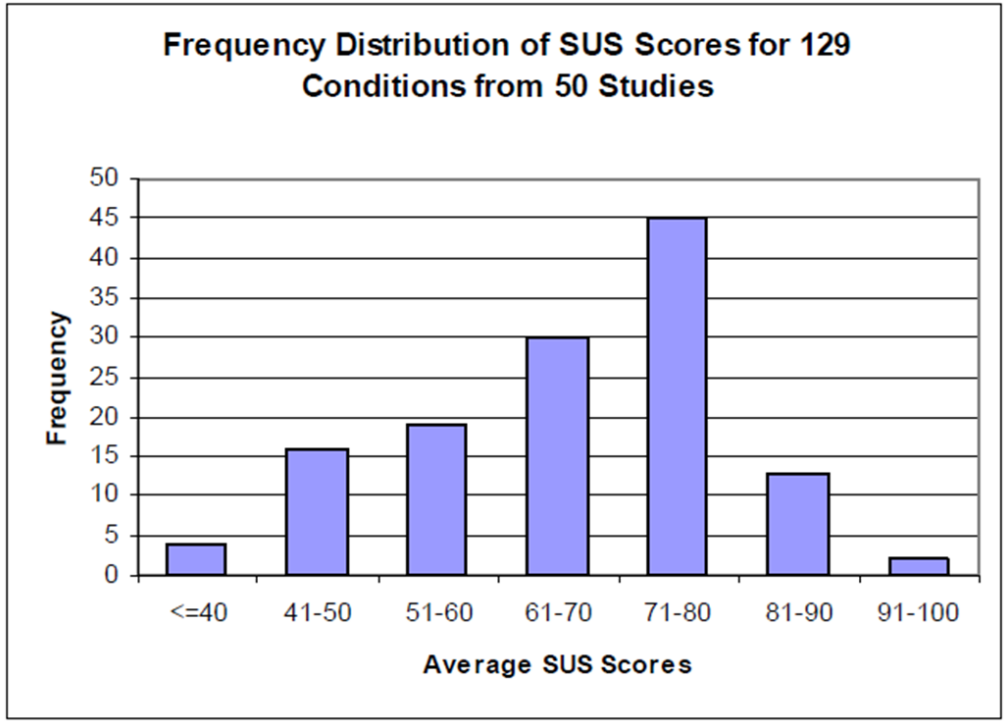
- SUS – System Usability Survey
- Cited as the most used usability survey
- Technology independent - usable for devices, systems, web pages, etc.
- 10 Statements, Scale of 1-5 for disagree/agree
- SUS yields a single number (0 to 100) as a measure of the overall usability of the system
- Scores for individual items are not meaningful on their own
- Reference [4]

Pre-validated Example: Brooke – SUS

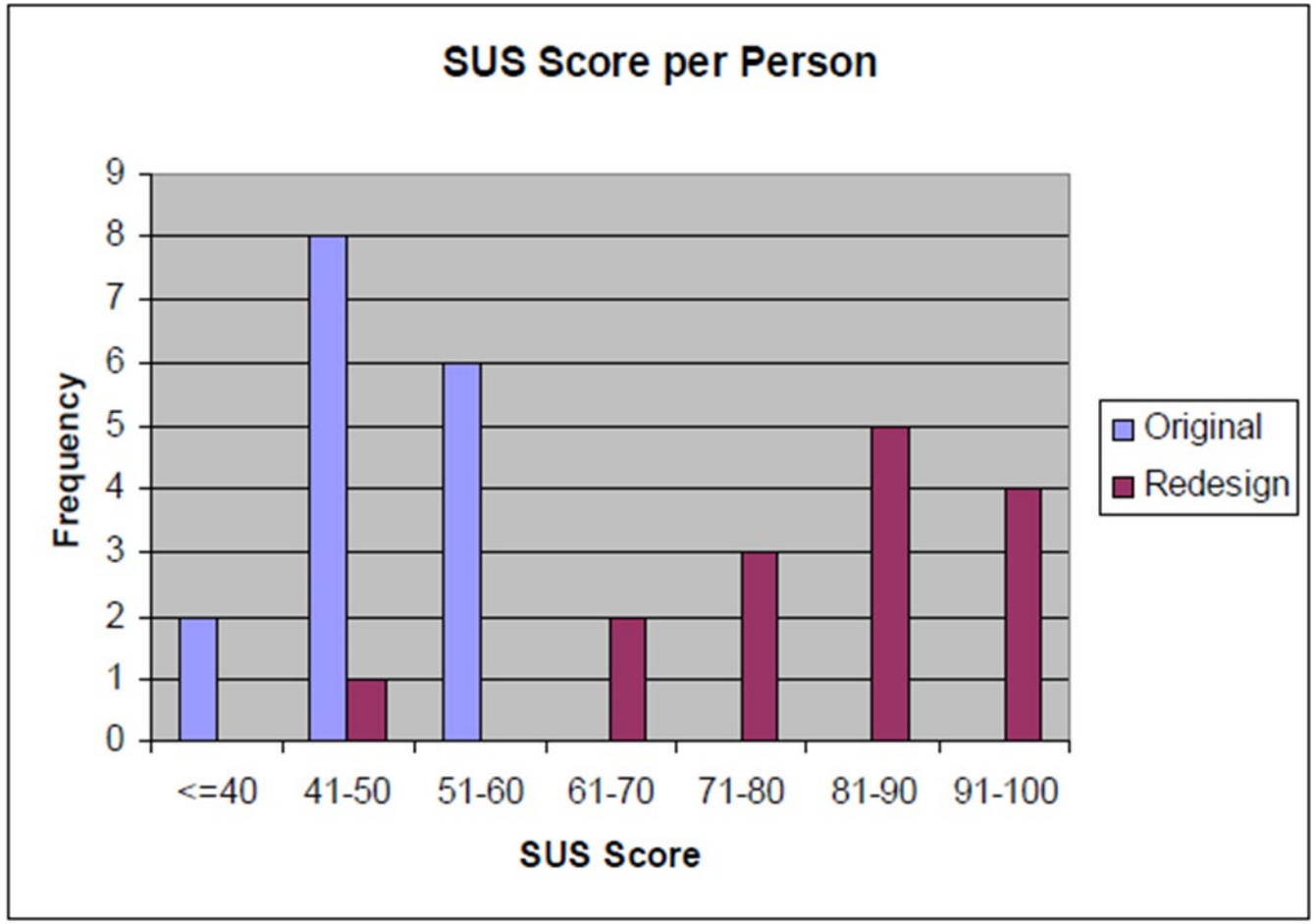


Pre-validated Example: Brooke – SUS

- To calculate the SUS score:
  - Each item's score will range from 0 to 4
  - For items 1,3,5,7,and 9 the score contribution is the scale position minus 1
  - For items 2,4,6,8 and 10, the contribution is 5 minus the scale position
  - Multiply the sum of the scores by 2.5 to obtain the overall SUS score
- SUS scores have a range of 0 to 100
  - Scores are NOT percentages
  - Average score over 500 studies was a 68
- Reference [4]



Comparing SUS Scores



- Example of visualizing original vs. redesigned usability using the SUS results of a study
- Reference [5]

Summary

- Usability surveys are a very effective tool for gathering data and assessing designs, whether qualitative opinions or quantitative measures
- Using pre-validated questionnaires provides quantitative data, proven analysis methods, and confidence in results
- Great method for before and after assessments
- On to statistics…

References

[1] https://www.usability.gov/how-to-and-tools/methods/online-surveys.html
[2] https://garyperlman.com/quest/
[3] https://garyperlman.com/quest/quest.cgi?form=CSUQ
[4] https://measuringu.com/sus/
[5] http://www.measuringux.com/Tips&Tricks-Boston-UPA-2008.pdf