

Usability of Library Websites

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A stylized silhouette of a mountain range in shades of teal, located at the bottom right of the slide.

Learning Objectives

1. Rationale for conducting usability research – focus on users.
2. Identification of main usability methods
3. Determine roles of qualitative and quantitative testing
4. Use of “Think Aloud” Protocol
5. The components of usability
6. How to measure usability
7. Recognize limitations of usability testing

Web-based User interface

Web-based user interfaces, which accept input and provide output by generating web pages which are transported via the Internet and viewed by the user using a web browser program.

User interface design issues

- ◆ What appears on the screen and how
- ◆ How the user is able to manipulate the interaction with the computer system.
- ◆ Considerations – fonts, colours, logos, keyboard controls, menus and buttons.

Functional design

- ◆ Functions that are offered to the user, including:
 - ◆ Selection of sub-sets of digital objects
 - ◆ Browsing a list
 - ◆ Storing the results
 - ◆ Help information
 - ◆ Manipulation of onscreen objects

Data and metadata

- ◆ Enable the functions to be carried out.

Conceptual model (Arms)

User interface design

Functional design

Data and metadata

Computer systems and networks

Why conduct usability research?



Usability

- ◆ Usability is a quality attribute
- ◆ Focus on the user
- ◆ assesses :
 - how easy user interfaces are to use.
 - methods for improving ease-of-use during the design process.

Usability

- ◆ Usability is the degree to which the design of a particular user interface takes into account the human psychology and physiology of the users, and makes the process of using the system effective, efficient and satisfying.

- ◆ Framework of VE Usability Characteristics [Gabbard, 1997]
- ◆ www.sv.vt.edu/.../class00/gabbard/method.html

Main usability methods

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Main usability methods

- User testing - case studies
- Expert reviews – case studies
- Participatory design
- Online Surveys
- Focus Groups – case studies

Qualitative and quantitative testing

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Quantitative Qualitative

- ◆ Quantities should be of qualities
- ◆ Numbers according to degree
- ◆ E.g. Augustine and Greene
- ◆ Screening survey and results of test – quantities but also qualified by comments from participants

“Think aloud” Protocol



“Think Aloud” protocol

- ◆ Ask them to “think out loud” while they work. They can say anything that is on their minds, such as:
- ◆ “Well, at this point I am going to try searching by keyword...”
- ◆ “Now I'm typing the author....”
... any comment, either describing their task or offering an opinion about that task or the design itself.

Components of usability



Five components (Neilsen)

- ◆ “Learnability”
- ◆ Efficiency
- ◆ “Memorability”
- ◆ Error Recovery
- ◆ Satisfaction

“Learnability”

- ◆ Ease of learning how to locate information
- ◆ How easy is it for users to accomplish basic tasks the first time they encounter the design?

Efficiency

- ◆ Once users have learned the design, how quickly can they perform tasks?

“Memorability”

- ◆ Memorability: When users return to the design after a period of not using it, how easily can they re-establish proficiency?

Error recovery

- ◆ How many errors do users make, how severe are these errors, and how easily can they recover from the errors?

Satisfaction with the design

- ◆ Satisfaction: How pleasant is it to use the design?

Measuring usability

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Measuring usability

- ◆ Planning a study
- ◆ Recruiting participants
- ◆ Creating tasks for a study
- ◆ Conducting a study
- ◆ Incorporating ethical considerations
- ◆ Analyzing and reporting the findings

Planning a study

- ◆ Form the team

 - Identify Moderator and recorders

- ◆ Establish goals and objectives

 - To determine how users search

 - To test the ease of navigation

- ◆ Determine the types of questions and tasks

Study team

- ◆ Reference librarians
- ◆ Student assistants
- ◆ IT / Web librarians
- ◆ Cataloguing librarians
- ◆ Cataloguing assistants

Creating tasks for a study

- ◆ Finding a book by topic
- ◆ Finding a book by title
- ◆ Finding articles in electronic journals
- ◆ Finding examination papers
- ◆ Identifying good features
- ◆ Identifying problem features

What to test

- ◆ Ability to do basic tasks
- ◆ Speed when initially undertaking tasks
- ◆ Number of clicks
- ◆ Comparison with “expert paths”
- ◆ Speed on return after a period
- ◆ Errors and recovery

Incorporating ethical considerations

- ◆ Need to preserve the confidentiality of participants' identities;
- ◆ Test participants should therefore not be identifiable individually;
- ◆ Some institutions have review boards for research proposals.

Conducting a study

- ◆ Screening survey and pre-test – background of participants and agreement to participate;
- ◆ Test based on tasks
- ◆ Exit survey
- ◆ Analysis of results and findings
- ◆ Conclusions

Screening survey pre-test

- ◆ Basic information on the user
- ◆ Computer and Internet experience
- ◆ Agreement to participate

Test based on tasks

- ◆ Task to identify the user's methods of performing a series of tasks
- ◆ Intended to address specific functions or portions of the website.
- ◆ Patterns of use which points to strengths and weaknesses

Exit survey

- ◆ Users are requested to complete a questionnaire on their experience in doing the test.
- ◆ They are permitted to state levels of agreement or satisfaction with the tasks and with the website.

Results, analysis and conclusions



Results summarized by category

Task	% performing task correctly	Mean time: minutes
1	76%	2.5
2	58%	2
3	63%	2.6
4	70%	3.4
5	10%	3.6

MEAN 55.4

STANDARD

DEVIATION

26.28

MEDIAN

63

8. Limitations of usability



- ◆ Usability testing detailed, based on small samples 5 – 12 users
- ◆ Samples may not be representative of the population

Reliability

- ◆ Reliability – the same results may not be produced from repeated samples of the same population
- ◆ Testing of atypical users may increase the risk of gathering unreliable data
- ◆ Individual variation within the population may reduce reliability

Validity

- ◆ Internal validity
- ◆ The researchers cannot be fully assured that they will measure what they intend to measure
- ◆ Data collected depends on the accuracy of the tasks, the scenarios of the search process and the testing environment.

Validity

- ◆ External validity
- ◆ Results cannot be generalized to the entire population

How can testers compensate for limitations?

- ◆ Choice of participants from various groups e.g. Public library
- ◆ Board members
- ◆ Members of long standing (5 years?)
- ◆ People with disabilities
- ◆ Young people (12-17)
- ◆ Adults (18+)
- ◆ “Friends of the Library”?

Compensating for limitations

- ◆ Periodical testing of groups of users.

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