

CGT 353: Principles of Interactive and Dynamic Media

Testing, Assessment, and Evaluation – Interface Analysis Methods

Introduction:

- Testing and assessment is essential to all forms of interactive design.
- Without doing so, there is no validation of the product...
- Can result in significant losses....



Mayhew's Ten Benefits of Implementing Human Factors Design:

1. Increased sales
2. Decreased cost of providing training
3. Decreased customer support costs
4. Decreased developmental costs
5. Decreased maintenance costs
6. Increased user productivity
7. Decreased user errors
8. Improved quality of service
9. Decreased training time
10. Decreased user turnover



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Primary Categories:

- **QA - Quality Assurance** – Does it work?
- **Usability**
 1. **Efficiency** - time
 2. **Effectiveness** - error rate
 3. **Subjective User Satisfaction**



Important Note:

- Interface assessment is not a “plug-and chug” affair...
- No two assessment designs are the same...
- Although you can (and should) use other designs as a reference, the ability to design an effective assessment strategy is an art unto itself.
- How you test depends on WHAT you want to examine or improve....which is solely up to the individual....

Which Type of Assessment Design?

- Remember, the goal is not to gather data... **the goal is to improve the system.**
- Has it improved the system? Usability, error rate, etc....

Many to choose from.....but for any given project the choices depend on:

1. The system in question...
2. The users in question...
3. What element do you wish to improve or examine?

Interface Analysis Methods:

- Used to assess a number of different aspects associated with a different interface.
 - **Usability**
 - **Aesthetics**
 - **User satisfaction**
 - **Error**
 - **Layout**
 - **Labeling**
 - **Information architecture**
 - **Navigation and wayfinding**
- Methods students in this class could possibly employ:
 - Checklists
 - Heuristic analysis
 - Interface surveys
 - User Trials
 - Cognitive Walkthrough
 - Interviews
 - Focus Groups

Setting a Baseline:

- Baber (2005) notes that interface assessment cannot be conducted in isolation.
- Must establish an appropriate referent model.
- Necessary to make a **comparison with either another product or to define a target against which to make a judgment.**

Assessment Advantages:

1. Most methods are relatively simple...
2. Very useful output...

3. Simple to implement...
4. Require relatively small amounts of training to implement (not design...)

Disadvantages:

1. Time consuming...
2. Can be subjective...

General Procedures:

1. Identify system or subsystem you want to design or redesign - problems with system..
2. Establish user profile...
3. Identify metrics and assessment elements of focus (based on goals of redesign and assessment mechanism)
4. Establish task scenarios...
5. Choose assessment mechanism(s)
6. Evaluate primary system with assessment mechanisms...
7. Design the system or subsystem...
8. Evaluate secondary with assessment mechanisms for redesigned systems..

How many assessment mechanisms do you use?

As many as needed in order to improve the system to an acceptable degree.

Assessment Method - Checklists:

- Check system(s) against a pre-defined set of criteria...
- Very flexible, immediately useful...
- Based on established knowledge of human performance...
- Low resource use...
- Number of checklists available:
 - Ravden and Johnson's (1989) – HCI Checklist
 - Tillman and Tillman's (1992) – Human engineering checklist
 - Stanton and Young (1999)

Disadvantages:

1. Doesn't account for errors or cognitive problems associated with the device well
2. Context is ignored
3. Checklist data is subjective. One analysts "good" is another's "bad"
4. Low consistency
5. Simplistic

Sample Checklist:

Clarity of Communication

- Does the site convey a clear sense of its intended audience?
- Does it use language in a way that is familiar to and comfortable for its readers?
- Is it conversational in its tone?

Accessibility

- Is load time appropriate to content, even on a slow dial-in connection?
- Is it accessible to readers with physical impairments?
- Is there an easily discoverable means of communicating with the author or administrator?

Consistency

- Does the site have a consistent, clearly recognizable "look-&-feel"?
- Does it make effective use of repeating visual themes to unify the site?
- Is it visually consistent even *without* graphics?

Navigation

- Does the site use (approximately) standard link colors?
- Are the links obvious in their intent and destination?
- Is there a convenient, obvious way to maneuver among related pages, and between different sections?

Design & maintenance

- Does the site make effective use of hyperlinks to tie related items together?
- Are there dead links? Broken CGI scripts? Functionless forms?
- Is page length appropriate to site content?

Visual Presentation

- Is the site moderate in its use of color?
- Does it avoid juxtaposing text and animations?
- Does it provide feedback whenever possible?

Assessment Method - Heuristic Analysis:

- Involves obtaining analysts subjective opinions based on their interaction with a system.
- Flexible...
- Good for usability, error potential and overall design quality...
- Conducted concurrently...

Steps:

1. Define task under analysis
2. Define heuristic list (usability, ease of use, comfort, etc...)
3. Familiarization with system
4. Perform tasks
5. Propose remedies

Disadvantages:

- Low reliability....
- Subjective....
- Relatively unstructured...
- Problems with consistency....

Assessment Method - Interface Surveys:

- Assessment in terms of controls and displays used, layout, labeling, navigation, and ease of use - conducted after a user trial

Survey Disadvantages:

- Extremely time-consuming
- Inefficient for complex systems
- Operational system required
- Reliability problems