Journey from Subjective to Objective: Capturing User Experience

Digital User Experience (DUX) Working Group in Collaboration with Sciences Librarian
Indiana University – Purdue University Indianapolis

Yoo Young Lee
Eric Snajdr
Lisa Calvert
Andy Smith

@DUX_YooYoung
1. Introduction

2. Usability vs. User Experience

3. UX Method & Data Analysis

4. Results

5. Discussion & Next Steps

6. Q&A
Introduction

Background Information

- DUX working group formed
- Project of the redesign of UL website initiated

2014

- Surveys
- Google Analytics
- User behavior

Design & Implementation

- Wireframes
- Mockups
- Prototypes

2015.07 Launch

Evaluation

- UX in the library instruction
- Informal UX Testing

@DUX_YooYoung
Introduction

Research Questions?

1. Measure overall UX evaluation
2. Measure overall task performance
3. Difference between what they said and what they did?
4. Library instruction affects UX? If so, what ways?
Usability vs. UX

Image Credit: Facebook – Aménagement Paysager Jarda

@DUX_YooYoung
Usability vs. UX

User experience for the web is all about how users feel when interacting with a website or interface. (Schmidt, 2012)
UX Method

How to capture UX?

• In the library instruction: 9 different sessions

• Total participants: 213 students

• Valid data: 160 students

Valid data
• Over 18 years old
• Completed all four: tasks/ pre&post surveys/ instruction

Why in the library instruction?

Participants
• Enrolled in sciences program
• Lower level: 107 students
• Upper level: 53 students
How to capture UX?

- **Tasks**
  - Brief overview
  - 6 tasks under 5 minutes
  - Tool: Screencast-O-Matic/Survey Monkey

- **Pre-Survey**
  - 9 questions
  - 5 minutes
  - Tool: Survey Monkey

- **Library instruction**
  - Information literacy

- **Post-Survey**
  - 9 questions
  - 5 minutes
  - Tool: Survey Monkey
UX Method

**Tools used**

- Online survey: Survey Monkey
- Screen capture: Screencast-O-Matic
- Analysis: R for data analysis and R and Excel for display
UX Method

Data Coding
UX Method

Data Coding

- Task: Yes/ No/ Skip/ Non complete/ Title of the page
- Behavior
- Time
Results

Overall UX Evaluation on Website (Pre-survey right after tasks)

Positive Aspects
- Easy to use
- Fun to use
- Satisfied
- Confident
- Helpful
- User-friendly

Negative Aspects
- Difficult to use
- Uncertain
- Frustrated
- Useless
- Confusing

Data sets: All

5: Strongly agree
4: Agree
3: Neither agree nor disagree
2: Disagree
1: Strongly disagree
0: N/A
Results

Overall UX Evaluation on Website (Pre-survey right after tasks)

Positive Aspects

Easy to use
Satisfied
Confident
Fun to use
Helpful
User-friendly

Negative Aspects

Difficult to use
Uncertain
Frustrated
Useless
Confusing

Data sets: All
α = 0.05
Results

Overall Task Performance

T1: Find information on how many books you can borrow.

T2: Find your subject guide.

T3: Find information about the 3D Printing Studio.

T4: Where would you go when you don’t know where to start on your research project?

T5: Find one scholarly article in your major.

T6: Find one database in your major.
Results

Overall Task Performance (Right Answer)

Scores # of students
0 24
1 26
2 48
3 30
4 26
5 6

Data sets: All

Scores:
5: Answer right 5 out of 5
4: Answer right 4 out of 5
3: Answer right 3 out of 5
2: Answer right 2 out of 5
1: Answer right 1 out of 5
0: No right answer
Results

Overall Task Performance

Upper Level

Lower Level

Mean of Upper: 2.77
Mean of Lower: 1.86
P-value: 0.0001851

α = 0.05
### Overall Task Performance (Previous Library Instruction)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.07</td>
<td>2.12</td>
</tr>
<tr>
<td>Variance</td>
<td>1.48</td>
<td>2.01</td>
</tr>
<tr>
<td>Observations</td>
<td>46.00</td>
<td>42.00</td>
</tr>
<tr>
<td>Pooled Variance</td>
<td>1.73</td>
<td></td>
</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0.00</td>
<td></td>
</tr>
<tr>
<td>df</td>
<td>86.00</td>
<td></td>
</tr>
<tr>
<td>t Stat</td>
<td>-0.19</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>0.42</td>
<td></td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>1.66</td>
<td></td>
</tr>
<tr>
<td>P(T&lt;=t) two-tail</td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>t Critical two-tail</td>
<td>1.99</td>
<td></td>
</tr>
</tbody>
</table>

- **A**: Students who have never had library instruction before
- **B**: Students who have had 1-3 library instruction sessions before

- 5: Answer right 5 out of 5
- 4: Answer right 4 out of 5
- 3: Answer right 3 out of 5
- 2: Answer right 2 out of 5
- 1: Answer right 1 out of 5
- 0: No right answer

α = 0.05
Overall Task Performance (Previous Library Instruction)

A: Students who have never had library instruction before
B: Students who have had 1-3 library instruction sessions before

5: Strongly agree
4: Agree
3: Neither agree nor disagree
2: Disagree
1: Strongly disagree
0: N/A

α = 0.05
Results

Overall Task Performance (Summary)

T1: On the Library website, find information on how many books you can borrow.

Data sets: All

<table>
<thead>
<tr>
<th>Y</th>
<th>N</th>
<th>NC</th>
<th>SK</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>20</td>
<td>53</td>
<td>23</td>
</tr>
</tbody>
</table>
Overall Task Performance (Behavior)

T1: On the Library website, find information on how many books you can borrow.

Data sets: All

SI: Search IUCAT
SA: Search Articles
SS: Search Site
SD: Search Databases
BM: Browse Menus
BH: Browse Homepage
BP: Browse from Previous Tasks
BPI: Browse from Previous IUCAT
Results

Overall Task Performance (# of steps)

T1: On the Library website, find information on how many books you can borrow.

Average: 3.4 steps

Data sets: students who got right or wrong answer. Filter by Y or N
Results

Overall Task Performance (seconds spent)

T1: On the Library website, find information on how many books you can borrow.

Average: 79.22 seconds

Data sets: students who got right or wrong answer. Filter by Y or N.
Results

Overall Task Performance

T2: On the Library website, find your subject guide.

Data sets: All

Y: Right answer
N: Wrong answer
NC: Non complete
SK: Skip
**Results**

**Overall Task Performance (Behavior)**

T2: On the Library website, find your subject guide.

- **Search vs. Browse**

  - **Pie Chart**
    - 87% Search
    - 13% Browse

- **Bar Graphs**
  - **Search**
    - SI: Search IUCAT
    - SA: Search Articles
    - SS: Search Site
    - SD: Search Databases
  - **Browse**
    - BM: Browse Menus
    - BH: Browse Homepage
    - BP: Browse from Previous Tasks
    - BPI: Browse from Previous IUCAT

  - **Data sets:** All

@DUX_YooYoung
Results

Overall Task Performance (# of steps)

T2: On the Library website, find your subject guide.

Average: 1.8 steps

Data sets: students who got right or wrong answer. Filter by Y or N
Results

Overall Task Performance (seconds spent)

T2: On the Library website, find your subject guide.

Average: 43.09 seconds

Data sets: students who got right or wrong answer. Filter by Y or N
Results

Overall Task Performance

T3: On the Library website, find information about the 3D Printing Studio.

Data sets: All

Y: Right answer
N: Wrong answer
NC: Non complete
SK: Skip
## Results

### Overall Task Performance

T4: On the Library website, where would you go when you don’t know where to start on your research project?

<table>
<thead>
<tr>
<th>Categories</th>
<th># of students</th>
</tr>
</thead>
<tbody>
<tr>
<td>NC</td>
<td>61</td>
</tr>
<tr>
<td>SK</td>
<td>15</td>
</tr>
<tr>
<td>Ask Us</td>
<td>5</td>
</tr>
<tr>
<td>UL Main Web</td>
<td>2</td>
</tr>
<tr>
<td>A-Z Databases</td>
<td>7</td>
</tr>
<tr>
<td>How to Guides</td>
<td>25</td>
</tr>
<tr>
<td>Subject Guides</td>
<td>16</td>
</tr>
<tr>
<td>IUCAT</td>
<td>7</td>
</tr>
<tr>
<td>Reference Collections</td>
<td>7</td>
</tr>
<tr>
<td>Find...</td>
<td>8</td>
</tr>
<tr>
<td>Library tips</td>
<td>1</td>
</tr>
<tr>
<td>E-journal homepage</td>
<td>1</td>
</tr>
<tr>
<td>Irrelevant</td>
<td>5</td>
</tr>
</tbody>
</table>

@DUX_YooYoung
Results

Overall Task Performance

T5: Using the Library website, find one scholarly article in your major.

Data sets: All
Results

Overall Task Performance (Behavior)

T5: Using the Library website, find one scholarly article in your major.

Data sets: All

SI: Search IUCAT
SA: Search Articles
SS: Search Site
SD: Search Databases
BM: Browse Menus
BH: Browse Homepage
BP: Browse from Previous Tasks
BPI: Browse from Previous IUCAT

@DUX_YooYoung
Results

Overall Task Performance (Keywords)

T5: Using the Library website, find one scholarly article in your major.
Results

Overall Task Performance

T6: Using the Library website, find one database in your major.

Data sets: All

Y: Right answer
N: Wrong answer
NC: Non complete
SK: Skip
Results

Overall Task Performance (# of steps)

T6: Using the Library website, find one database in your major.
Results

Difference between what they said and what they did?

Confident & Right answer

Scores

Frustrated & Right answer

Scores

Scores

5: Strongly agree
4: Agree
3: Neither agree nor disagree
2: Disagree
1: Strongly disagree
0: N/A
Results

The Role of Library Instruction in DUX

Positive Aspects

- Easy to use
- Fun to use
- Helpful
- Confident
- Satisfied

Negative Aspects

- Difficult to use
- Confusing
- Frustrated
- Uncertain
- Useless

α = 0.05

5: Strongly agree
4: Agree
3: Neither agree nor disagree
2: Disagree
1: Strongly disagree
0: N/A
Discussion & Next Steps

1. One search box
   - Although browse is still dominant, three search boxes are not ideal... If students decide to search, students attempt to use IUCAT first without notice.
   - Solution => [QuickSearch](#) from North Carolina State University Library
Discussion & Next Steps

2. How to make the UL library website fun for learning?
   • Low point still after library instruction

3. How to bring library instruction to web design?
   • Solution: Working with Educational Services Charter Group (ESCG)
   • ESCG develops more fine-tuned and specialized tutorial guides
Discussion & Next Steps

4. How to maintain students’ information literacy skills after library instruction? How to design UL website to make students better information literate?

• Solution - Start with LibGuides: Pathfinder vs. Pedagogical with Educational Development Librarian
Challenges

1. Library Instruction
   - Time limit: some of students were late, so they missed the tasks and pre-survey => non-valid data
   - Professor? Instructor?
2. Data coding
   - 160 pre & post survey data
   - 160 video to be analyzed
3. We knew what they did, but didn’t know why they did it
Questions?
Journey from Subjective to Objective: Capturing User Experience

Digital User Experience (DUX) Working Group in Collaboration with Sciences Librarian
Indiana University – Purdue University Indianapolis

Yoo Young Lee
Eric Snajdr
Lisa Calvert
Andy Smith

Image Credit: http://www.ploink-brothers.com/2016/03/23/get-results-by-not-making-these-web-design-mistakes/