Killing two birds with one stone: how to conduct UX research during library instruction

Statewide Libraries Day - May 20, 2016

Yoo Young Lee
Digital User Experience Librarian
Liaison Librarian to the School of Health & Rehabilitation Sciences
yooylee@iupui.edu

Eric Snajdr
Liaison Librarian to Chemistry, Chemical Biology, and Psychology
esnajdr@iupui.edu
Outline

Intersection of User Experience and Library Instruction

2 studies (Fall 2014 and Fall 2015)

For each we’ll discuss...

• Research Questions
• Methods
• Brief Results
• Applications
Intersection of User Experience and Library Instruction

Definition of Learning

“knowledge or skill acquired by instruction or study”

“modification of a behavioral tendency by experience”

http://www.merriam-webster.com/dictionary/learning
Study #1

FALL 2014
Research Questions:

1. When seeking information, how do students interact with the library website? 
   Browse vs. Search
Research Questions:

1. When seeking information, how do students interact with the library website?  
   Browse vs. Search

2. In what ways does library instruction influence students’ web behavior?
Methods

• **Study setting:** Library instruction

• **Sample:** Freshmen students in two separate sections of an intro to science course

• **Tool:** Verify usability tool

• **Method:** Pre & post test for comparison of two sections
Methods - Class outline

Pretest - usability tool  Verify  (5 min.)

Instruction  (60 min.)

Posttest - usability tool  Verify  (5 min.)

(1hr 15 min total)
Methods – Sample pretest/posttest questions

Click on where would you go for...

• Finding a book whose title is “The psychology major: career options”...

• Accessing the “Academic Search Premier Database”

• Finding information about how to cite in APA format
Methods – Sample pretest/posttest questions

Click on where would you go for finding information on...

• group study room reservations
• Rich Media Cluster
• library hours
Method - Two groups

Class 1 (27 students) received Browse Focused Instruction

Class 2 (21 students) received Search Focused Instruction
Methods - What we tested: Browse-focused
Methods - What we tested: Search-focused
Methods – capturing user behavior

About Verify
Verify lets you test screenshots of your design work to gain valuable insights on your users' expectations and reactions to your apps and websites before writing a single line of code. Your team will love the great-looking, actionable, reports that will help them make informed design decisions.

Take a Tour

Number of Designers, Product Peeps and Companies Using ZURBapps 76,316

Learn about Verify in less than 2 minutes!

http://verifyapp.com/
Methods – capturing user behavior
Results - Browse VS. Search

Before instruction – Specific Database: Academic Search Premier

Browse Focused Instruction
- 37% Search
- 59% Browse

Search Focused Instruction
- 33% Search
- 52% Browse
Results - The Role of Instruction

After instruction – Specific Database: Academic Search Premier

**Browse** Focused Instruction
- Search: 19%
- Browse: 78%

**Search** Focused Instruction
- Search: 88%
- Browse: 12%
Results -

Books in General

**Before Instruction**
- 0% Search
- 100% Browse

**After Instruction**
- 18% Search
- 82% Browse
Assessing instruction

Database - Academic Search Premier

% correct

Before Instruction

After Instruction
Assessing instruction

eBook - Specific title

Before Instruction

After Instruction

% correct
Verify tool - strengths

• tracks where students click on a website

• simple and quick

(students were able to do 20 tasks in 5 min.)

• compiles a summary report of clicks for all students for each information seeking task

• discover where students are attempting correct or incorrect pathways to resources
Verify tool - weaknesses

- $$$
- static screen shot interface
- cannot track student behavior through a series of pages
- cannot track pathway of menu items
Study #2
FALL 2015
Research Questions

• Measure overall UX evaluation

• Measure overall task performance

• Difference between what students said and what they did?

• Library instruction affects UX? If so, what ways?
Methods

**Study setting:** Library instruction

**Sample:**
- 9 separate science classes
- Freshman through senior
- Total participants: 213 students

**Tool:** [Screencastomatic]
Methods

Info seeking tasks
- 6 tasks
- 5 minutes
- Tool: [ScreencastOMatic]

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

Library instruction

Post-Survey
- 9 questions
- 5 minutes
- Tool: Survey Monkey
Methods – Information seeking tasks

- Find information on how many books you can borrow.
- Find your subject guide.
- Find information about the 3D Printing Studio.
- Where would you go when you don’t know where to start on your research project?
- Find one scholarly article in your major.
- Find one database in your major.
Methods

![Screencast-O-Matic](https://screencast-o-matic.com/home)

**Fast, free screen recording**

Screencast-O-Matic is trusted by millions of users to create and share screen recordings.

[Start Recording](https://screencast-o-matic.com/home)
Methods – Data coding

- **Task:**
  - Correct
  - Incorrect
  - Skip
  - Non complete
  - Title of the page

- **Behavior**

- **# of Steps**

- **Time**
Methods

SAMPLE VIDEO
Results

Valid data: 160 students  (213 original participants)

• Over 18 years old

• Completed all four: tasks/ pre&post surveys/ instruction

• 107 lower level students

• 53 upper level students
Results - Overall Task Performance

Correct answers

Data sets: All

# of students

# correct

0 1 2 3 4 5

Correct answers
Results - Overall Task Performance

Overall Task Performance

Upper Level Students

Lower Level Students

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

$\alpha = 0.05$
Results – Overall Task Performance

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

Data sets: All
Results – Overall Task Performance (Behavior)

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

- **Browse**: 65%
- **Search**: 35%
Results – Overall Task Performance (Behavior)

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

Browse

- 65% of times
- 35% of times

Search

- 35% of times
- 65% of times

Bar charts showing:
- Menus
- Homepage
- Previous Tasks
- Previous IUCAT

- IUCAT
- Articles
- Site
- Databases
Results – Role of Library Instruction in DUX

Positive Aspects

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

Before vs. After

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

Indiana University Purdue University Indianapolis (IUPUI)
Results – Role of Library Instruction in DUX

Negative Aspects

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

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

Before
After
**Screencast-O-Matic strengths**

- Records video file including sound)
  - all behaviors on screen are captured
  - captures mouse movement
- Free (15 minute time limit for free version)

For instruction
- Easily see what students are doing correctly/incorrectly
- Identify major pitfalls
Screencast-O-Matic weaknesses

• Videos time consuming to analyze (we had over 200 to watch and code)

For instruction
• Organization/set up
• Takes class time
• Obtaining teacher and student consent
Discussion

Students report confidence when completing information seeking tasks, however, their task performance does not display this trait.
Discussion

Particularly, students had trouble locating a scholarly article

Search terms were simplistic (one or two words)
Discussion

Results provide reinforcement of importance of library instruction

For example, many students struggled to locate a database in their major and most students had difficulty locating a single article.

3 key areas...

  • Concepts – example: what is a scholarly article?
  • Pathways to information – libguides, databases
  • Skills – search strategies
Questions?
Thank You!

Yoo Young Lee
Digital User Experience Librarian
Liaison Librarian to the School of Health & Rehabilitation Sciences
yooylee@iupui.edu

Eric Snajdr
Liaison Librarian to Chemistry,
Chemical Biology, and Psychology
esnajdr@iupui.edu