



Journey from Subjective to Objective: Capturing User Experience

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

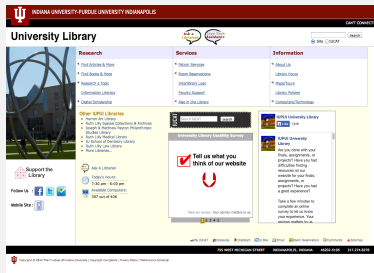
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Eric Snajdr
Lisa Calvert
Andy Smith

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2. Usability vs. User Experience
3. UX Method & Data Analysis
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Introduction

Background Information



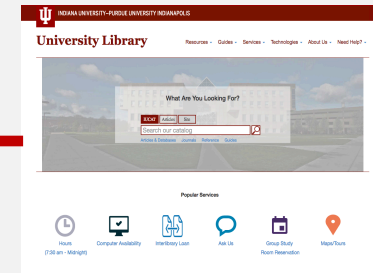
2014

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

Project launch

User research

Design & Implementation



2015.07 Launch

- Surveys
- Google Analytics
- User behavior

- Wireframes
- Mockups
- Prototypes

Evaluation

- Informal UX Testing

- UX in the library instruction

Introduction

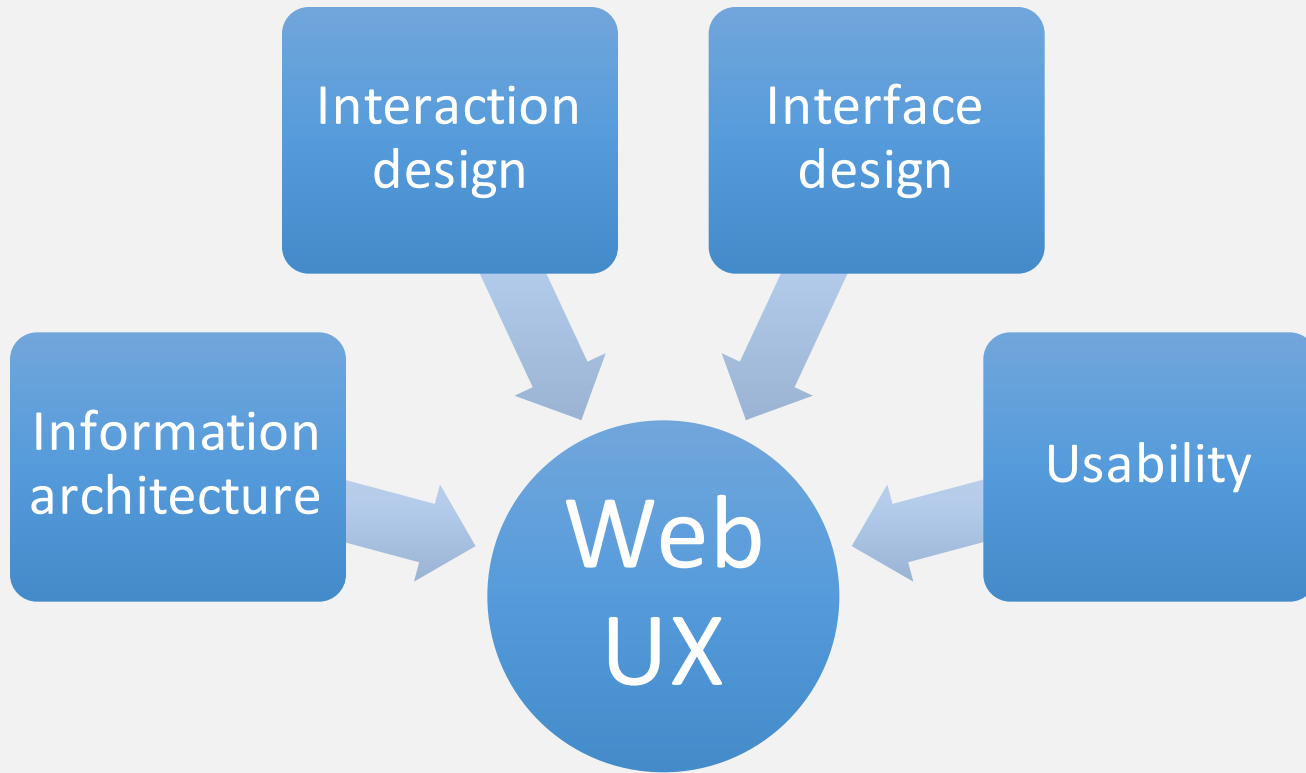
Research Questions?

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



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

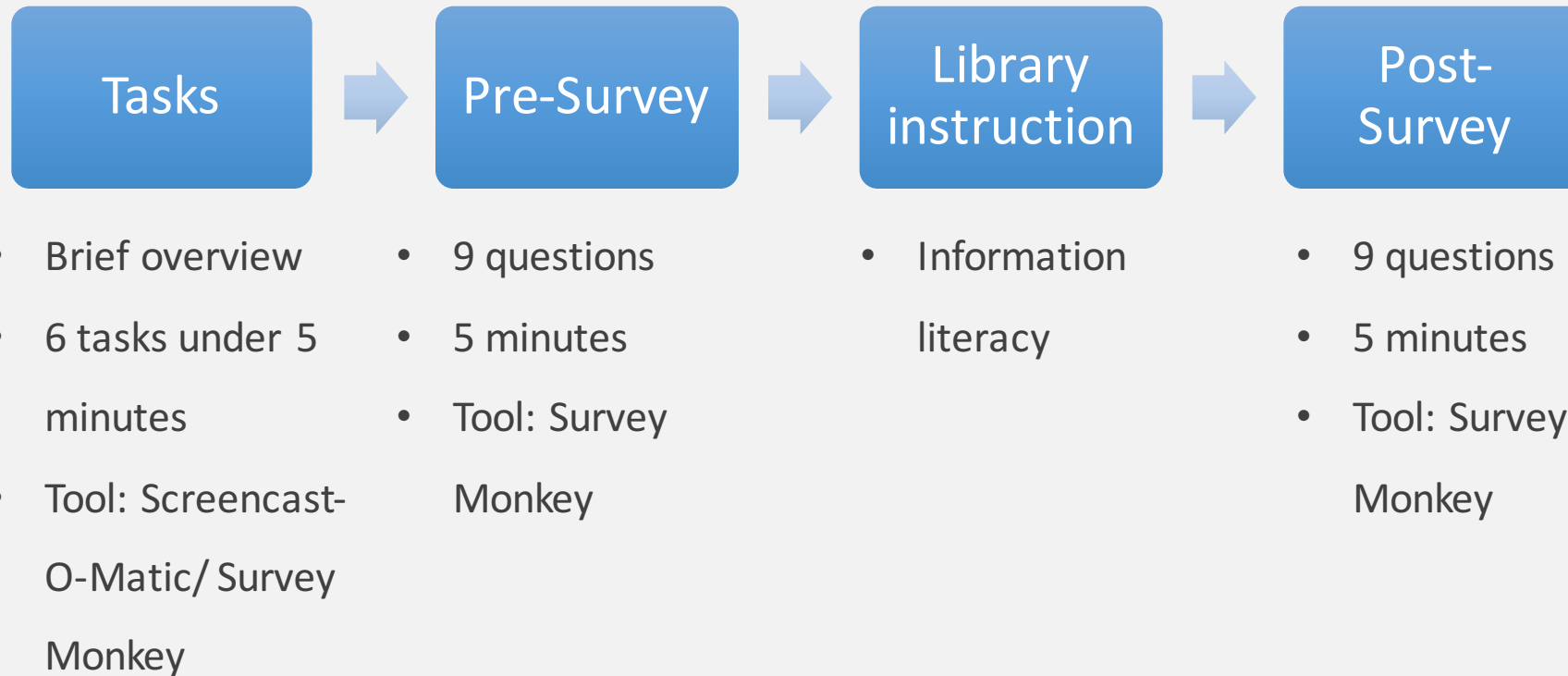
Why in the library instruction?

Participants

- Enrolled in sciences program
- Lower level: 107 students
- Upper level: 53 students

UX Method

How to capture UX?



UX Method

Tools used

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



Video

PLAY

UX Method

Data Coding

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A-Z Databases

Find the best library databases for your research.

All Subjects ▾ All Database Types ▾ All Vendors / Providers ▾

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621 Databases found

A

ABC-CLIO eBook Collection

ABC-CLIO eBook Collection is a collection of electronic books on a variety of history and other humanities topics.

ABI/INFORM Complete (ProQuest)

ABI/INFORM Complete includes three distinct databases: ABI/INFORM Complete - Local and regional coverage of company, industry and business news; excellent source of information about private and small public companies not typically found in the national business press ABI/INFORM Global - Search 1000 premier worldwide business periodicals for information on business topics: advertising, marketing, economics, human resources, finance, taxation, management; also company and industry information ABI/INFORM Trade & Industry - Contains more than 700 trade publications covering every major industry, including finance, insurance, transportation, construction, and health.

Abstracts in Social Gerontology (EBSCO)

Abstracts in Social Gerontology includes bibliographic records covering essential areas related to social gerontology, including the psychology of aging, elder abuse, society and the elderly, and other areas of key relevance to the discipline.

Academic Search Premier (EBSCO)

This multi-disciplinary database provides full text for nearly 4,500 journals, including full text for more than 3,600 peer-reviewed titles. PDF backfiles to 1975 or further are available for well over one hundred journals, and searchable cited references are provided for 1,000 titles. Academic Search Premier is updated on a daily basis. This database is partially paid for by INSPIRE.

DataEntry_All_Final_for_DataAnalysis

Home Insert Page Layout Formulas Data Review View

Calibri (Body) 12

General

Conditional Formatting Format as Table Cell Styles

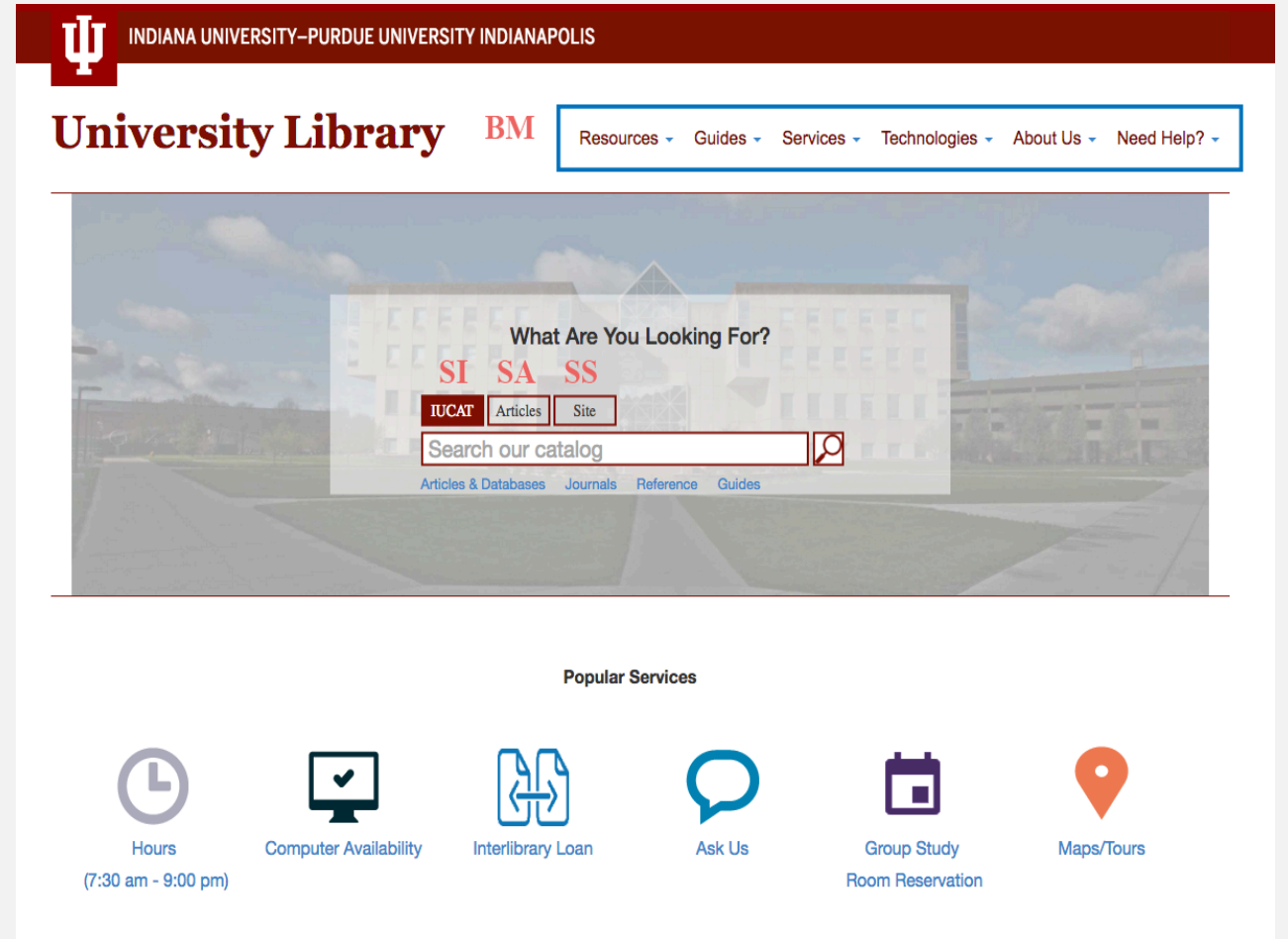
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3	2	4	2	4	2	4	2	4	2	Y	NC	NC	N	NC	N			BPI, SD, SD, SI	S	
4	1	4	2	2	2	4	1	4	2	Y	Y	Y	Y	NC	Y	BP, BS, BS, F, BP, BM, BM	BP, BM	BP	E	
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UX Method

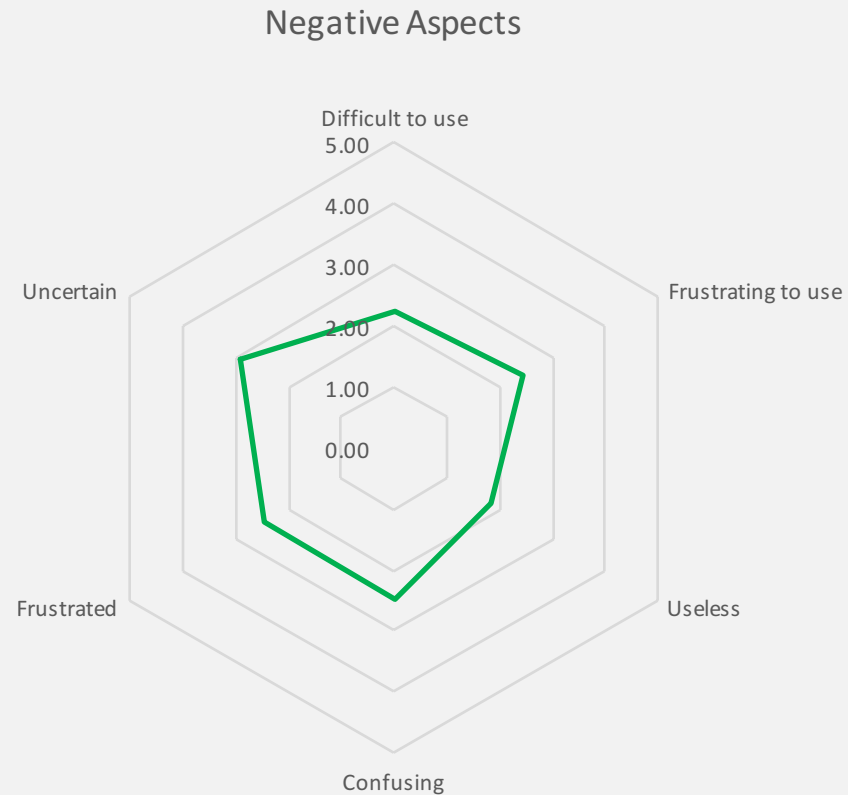
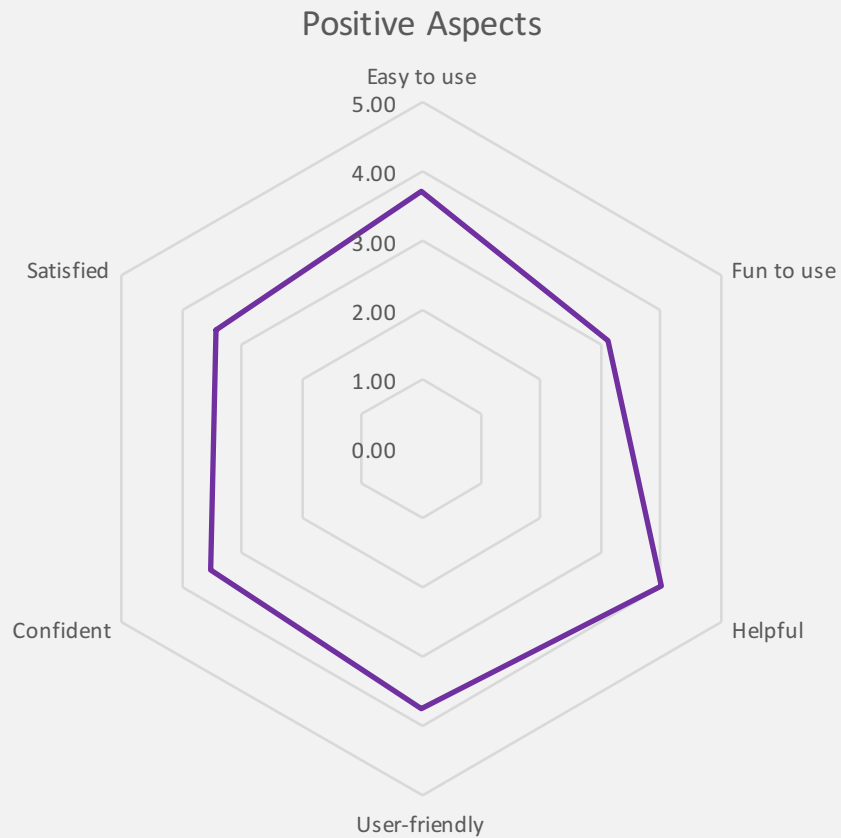
Data Coding

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



Results

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

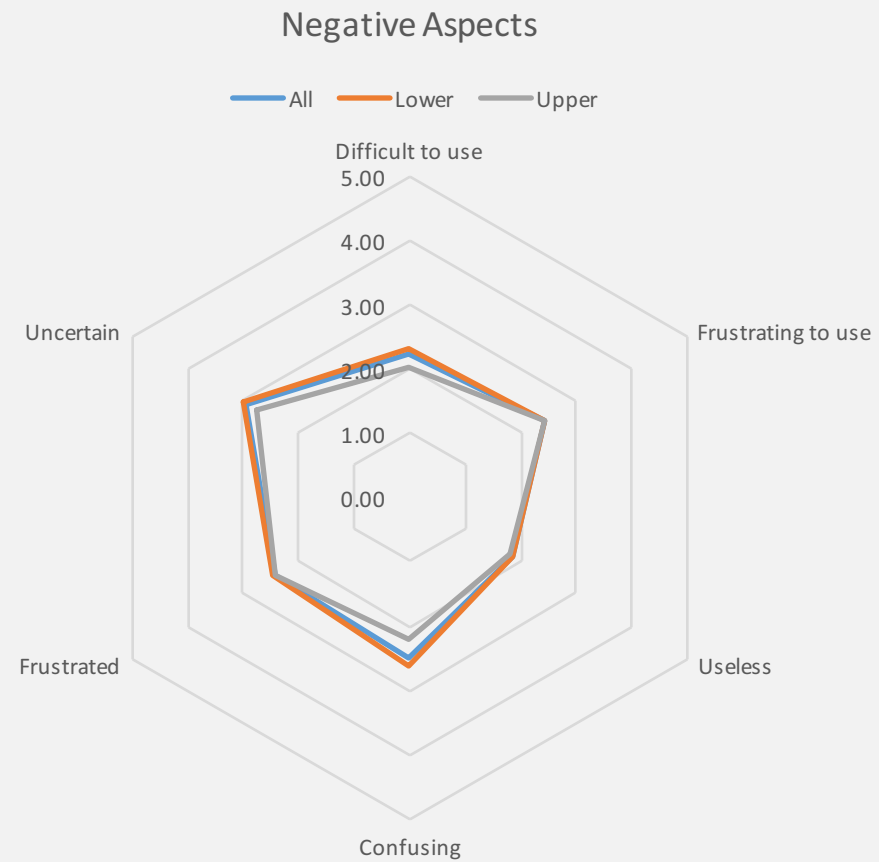
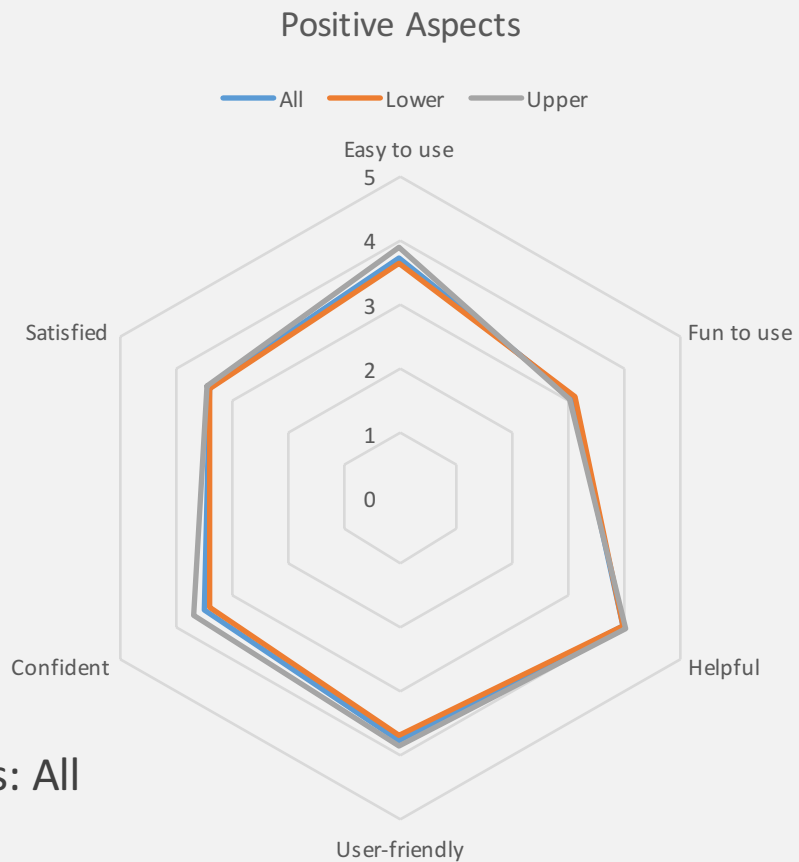


- 5: Strongly agree
- 4: Agree
- 3: Neither agree nor disagree
- 2: Disagree
- 1: Strongly disagree
- 0: N/A

Results

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

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



Data sets: All
 $\alpha = 0.05$

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.

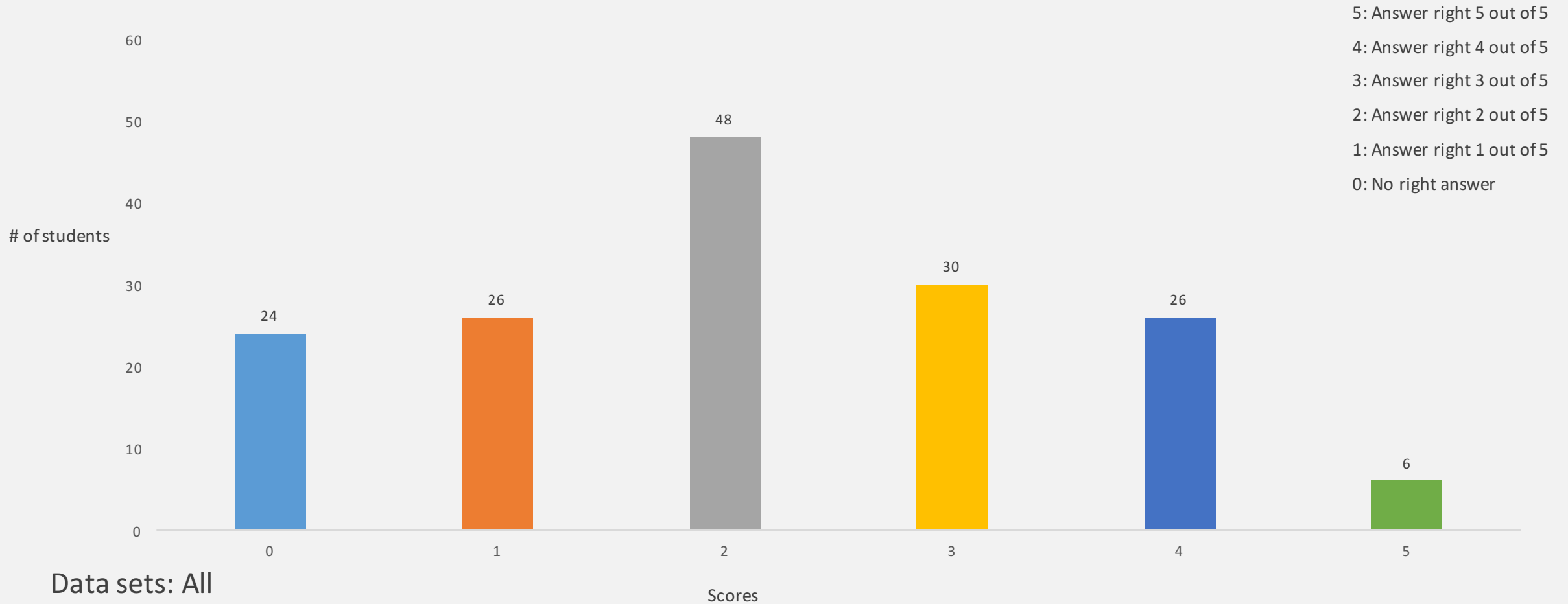
T4: Where would you go when you don't know where to start on your research project?

T5: Find one scholarly article in your major.

T6: Find one database in your major.

Results

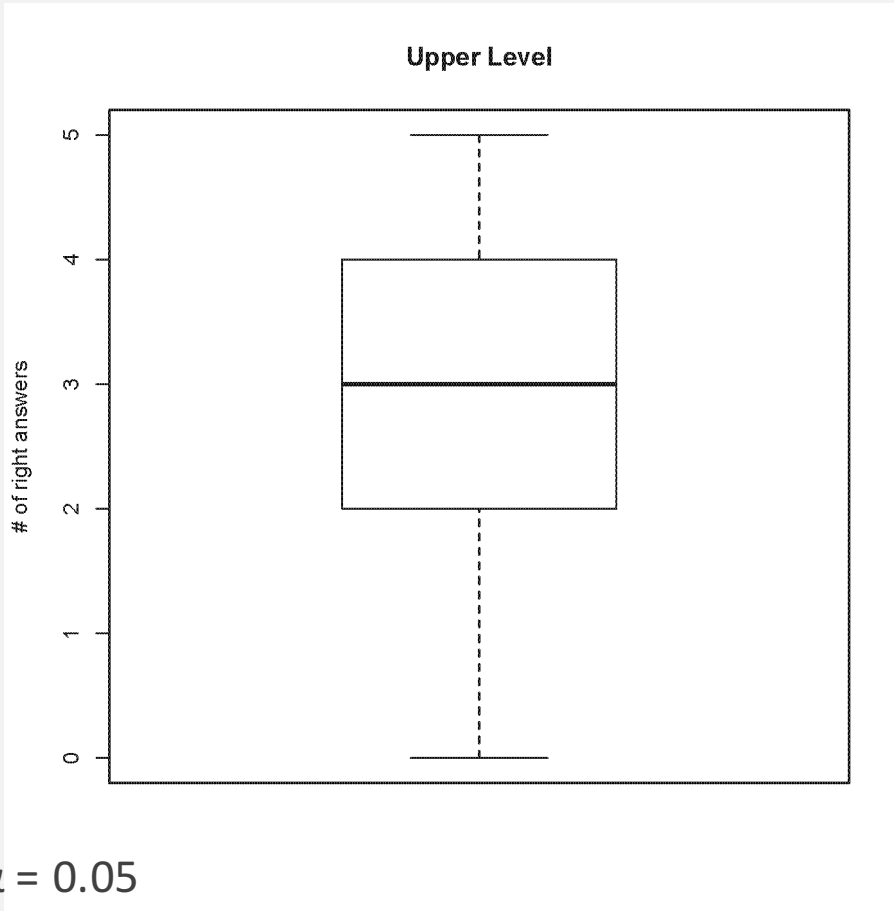
Overall Task Performance (Right Answer)



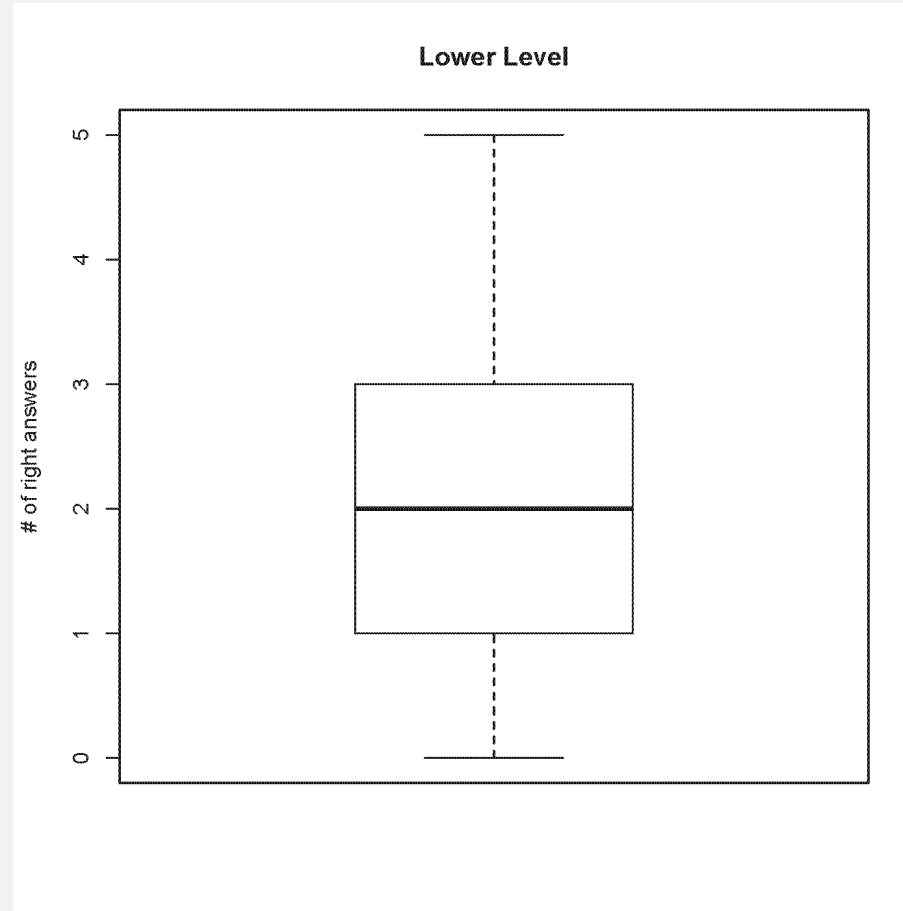
Results

Overall Task Performance

Upper Level



Lower Level



Mean of Upper: 2.77

Mean of Lower: 1.86

P-value: 0.0001851

$\alpha = 0.05$

Results

Overall Task Performance (Previous Library Instruction)

	A	B
Mean	2.07	2.12
Variance	1.48	2.01
Observations	46.00	42.00
Pooled Variance	1.73	
Hypothesized Mean Difference	0.00	
df	86.00	
t Stat	-0.19	
P(T<=t) one-tail	0.42	
t Critical one-tail	1.66	
P(T<=t) two-tail	0.85	
t Critical two-tail	1.99	

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

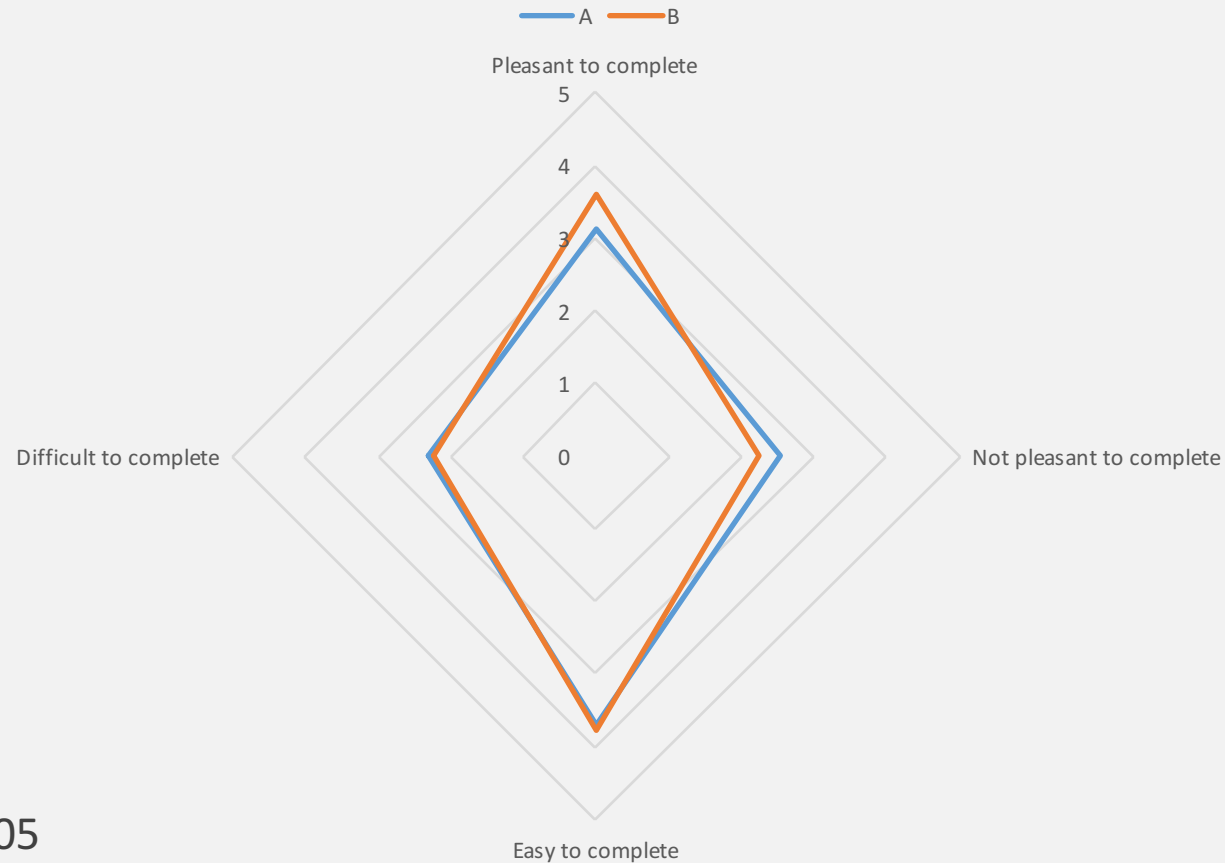
1: Answer right 1 out of 5

0: No right answer

$\alpha = 0.05$

Results

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

$\alpha = 0.05$

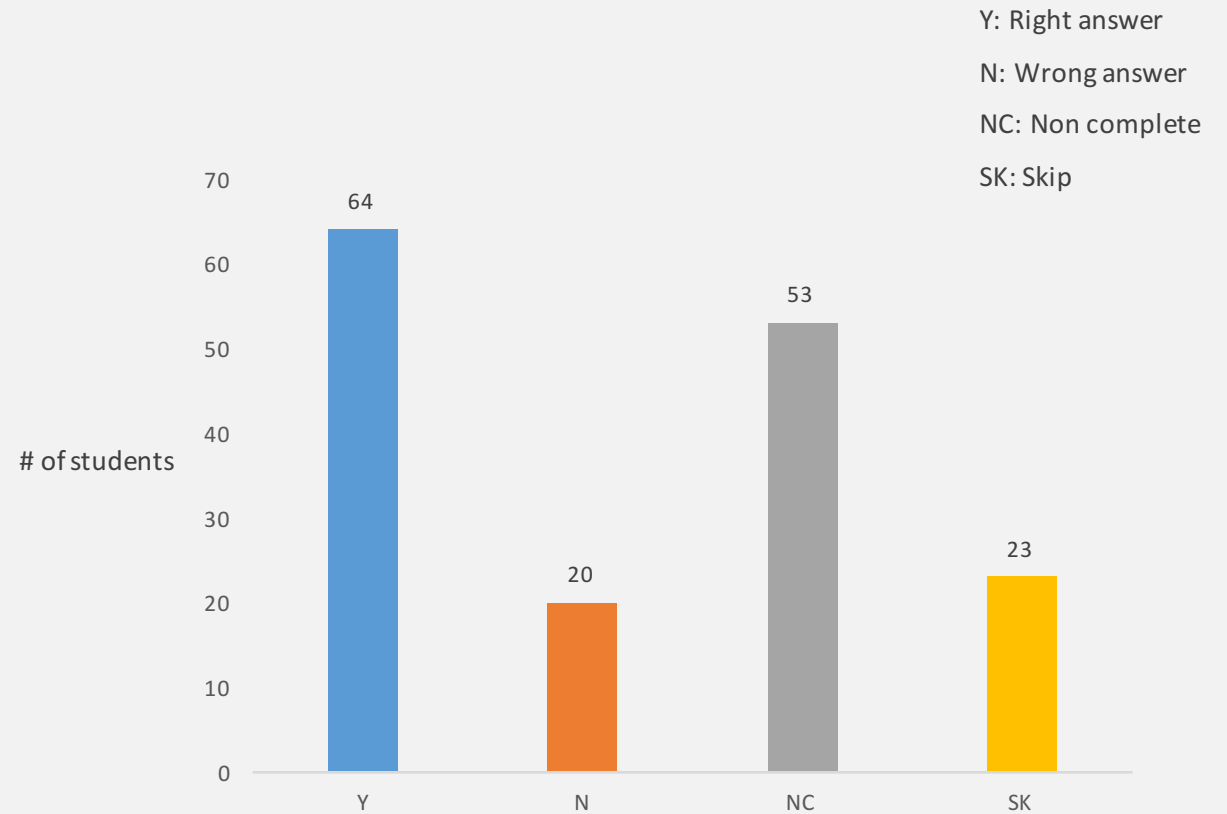
@DUX_YooYoung

Results

Overall Task Performance (Summary)

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

Data sets: All



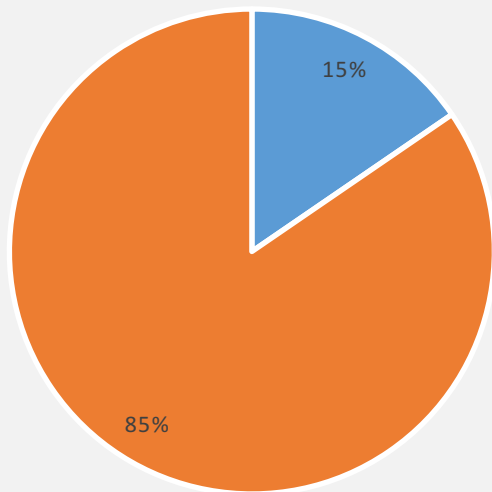
Results

Overall Task Performance (Behavior)

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

- 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

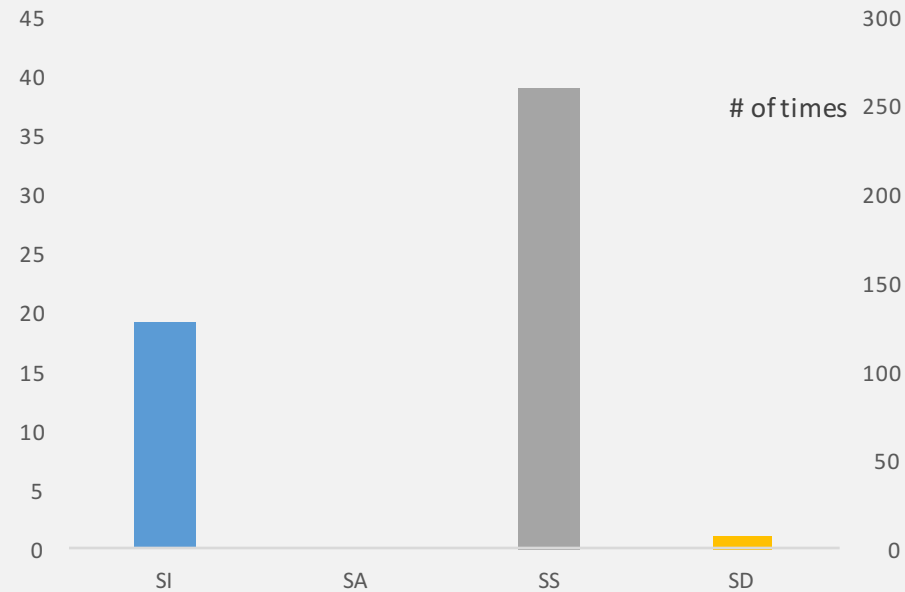
Search vs. Browse



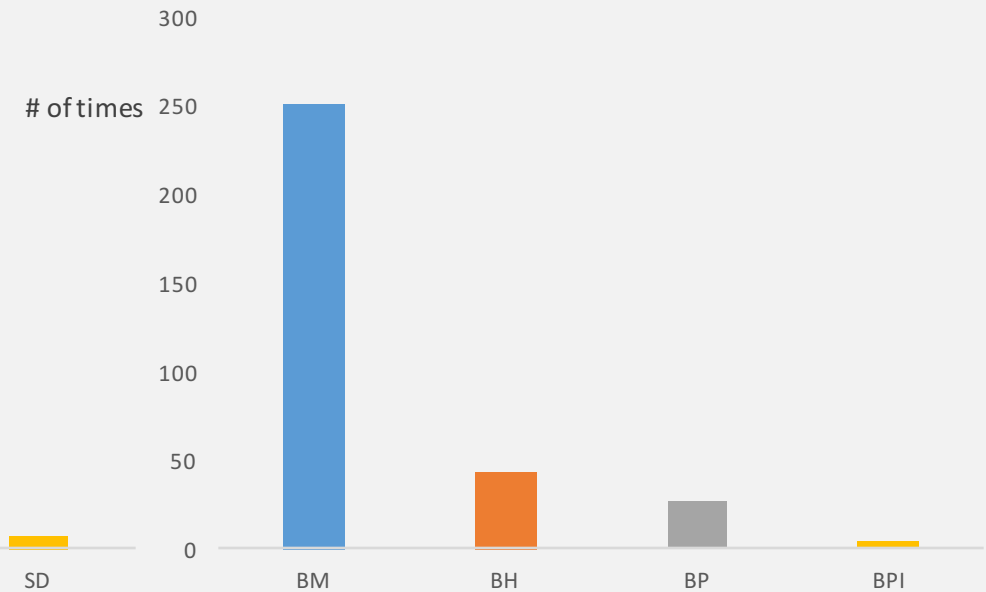
of times

■ S
■ B

Search



Browse



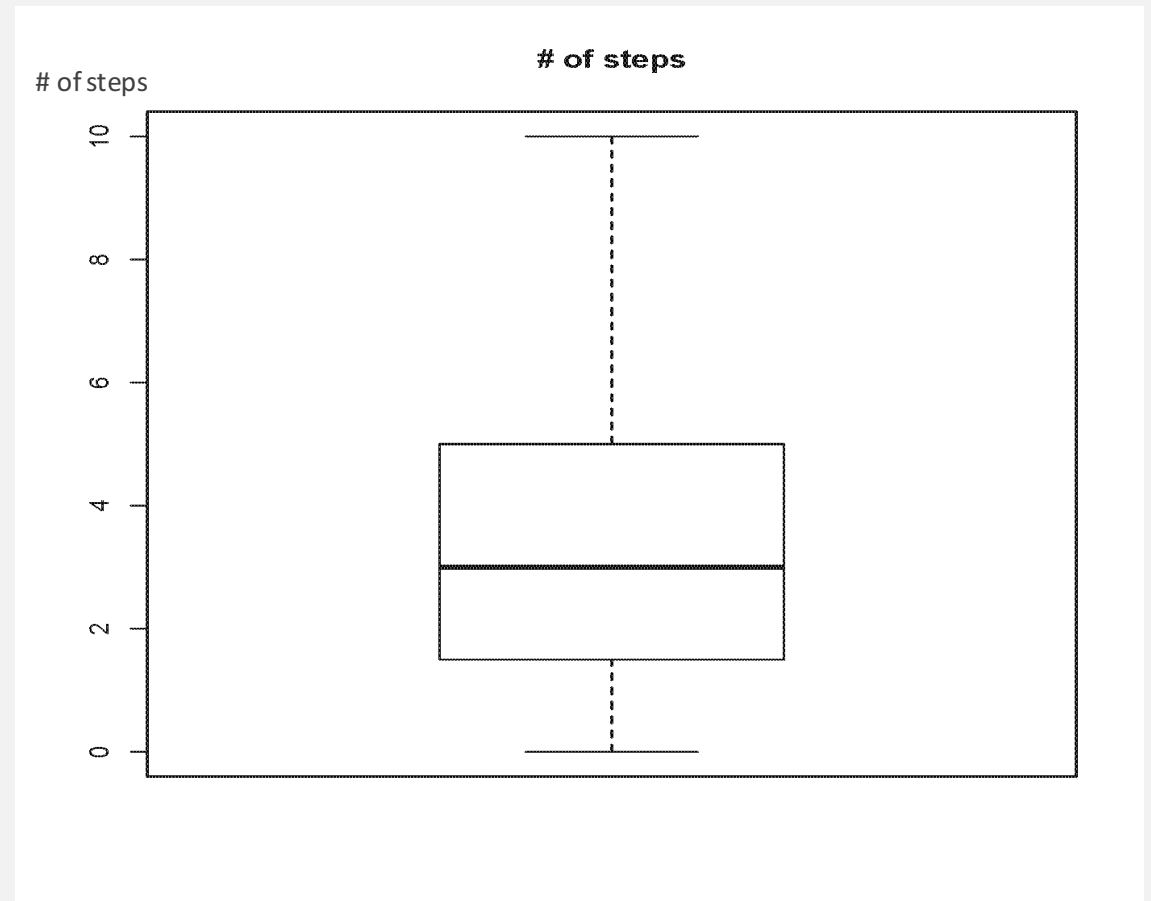
Results

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



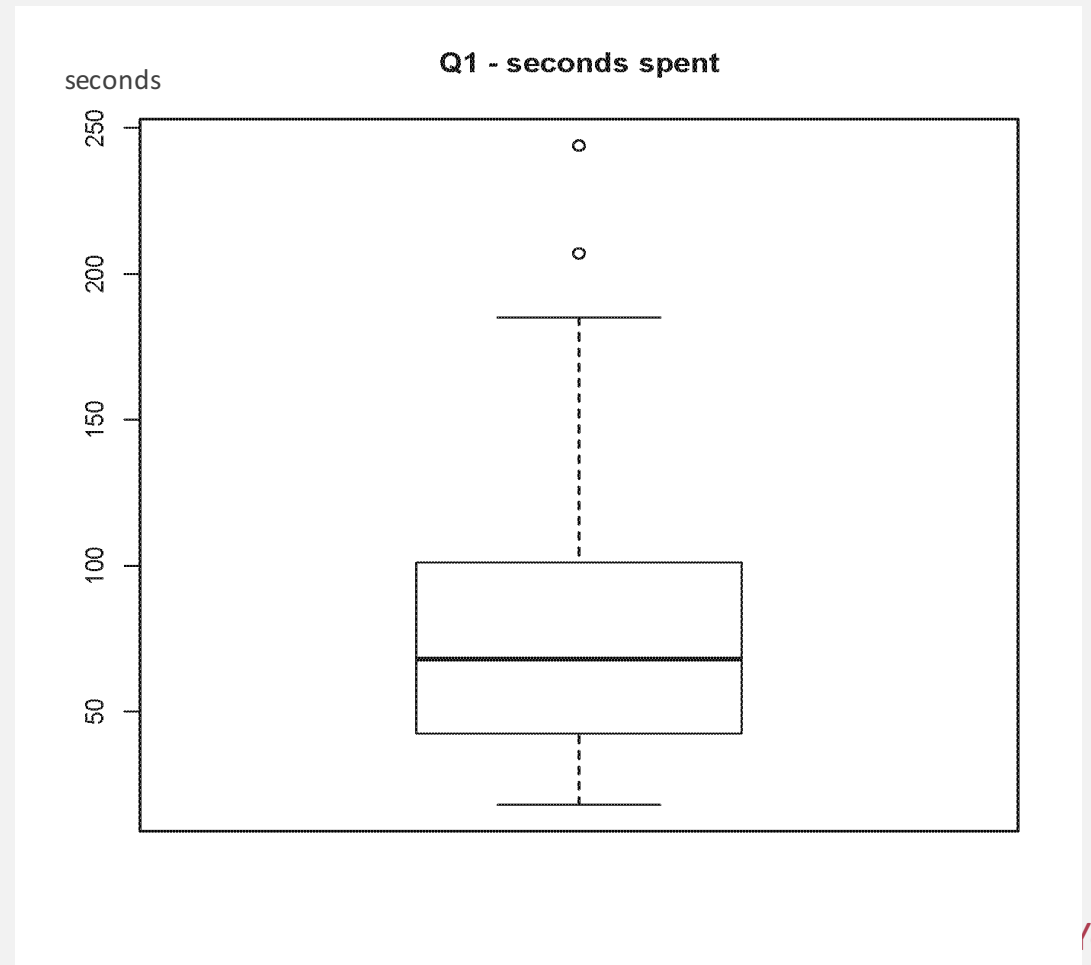
Results

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

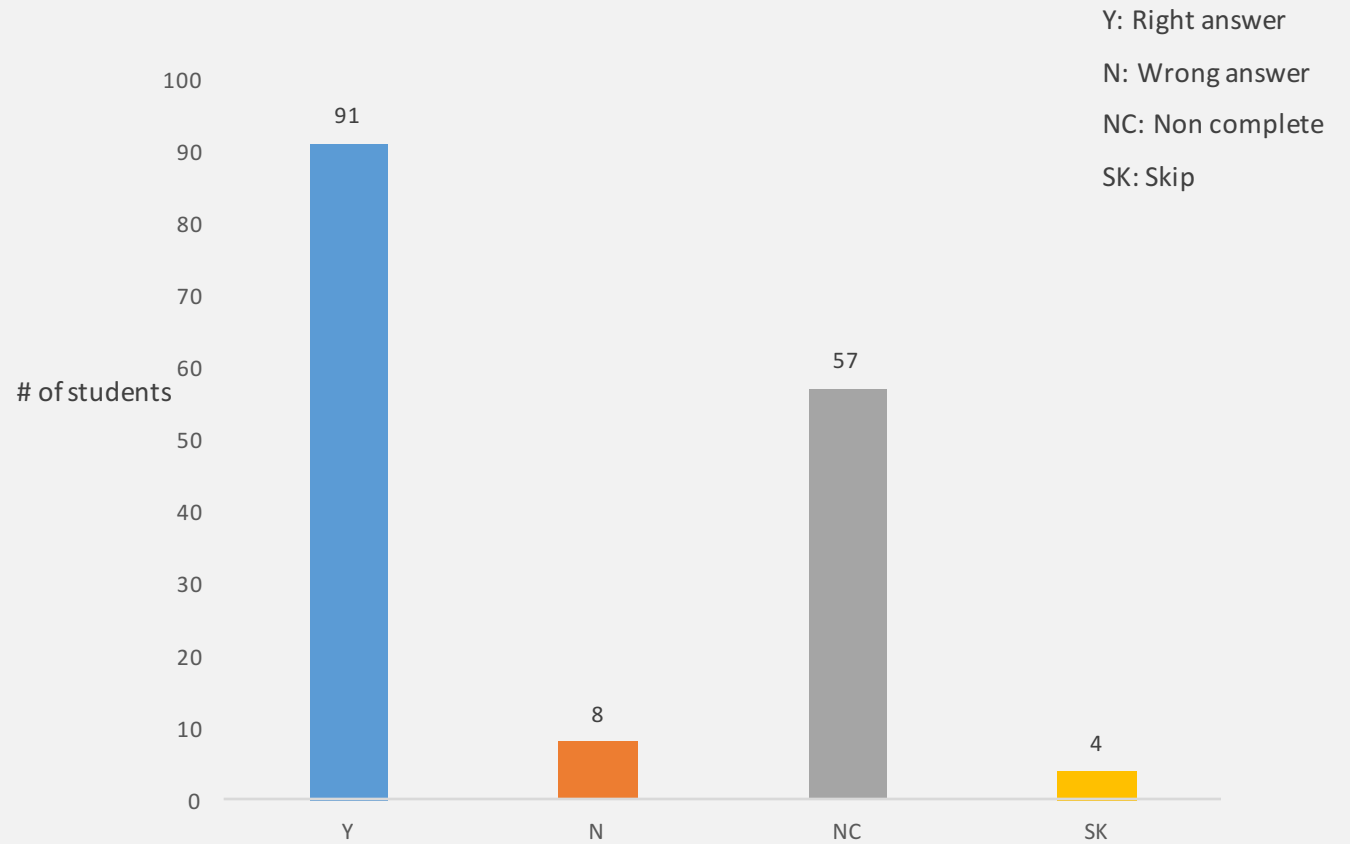


Results

Overall Task Performance

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

Data sets: All



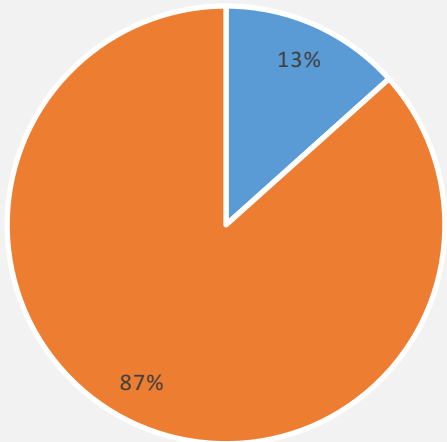
Results

Overall Task Performance (Behavior)

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

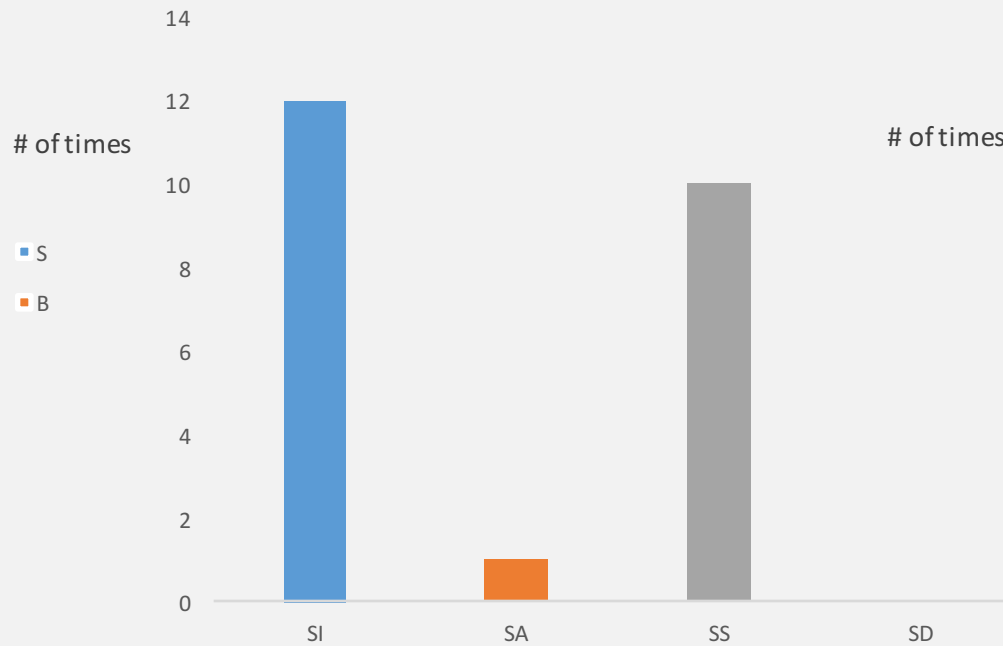
- SI: Search IUCAT
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- BM: Browse Menus
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- BP: Browse from Previous Tasks
- BPI: Browse from Previous IUCAT

Search vs. Browse

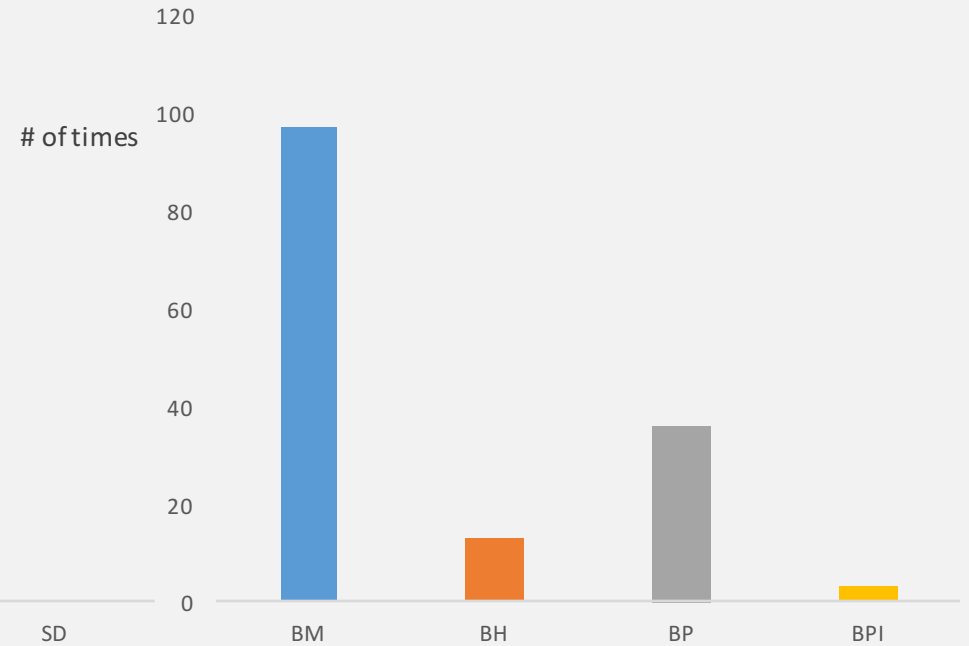


Data sets: All

Search



Browse



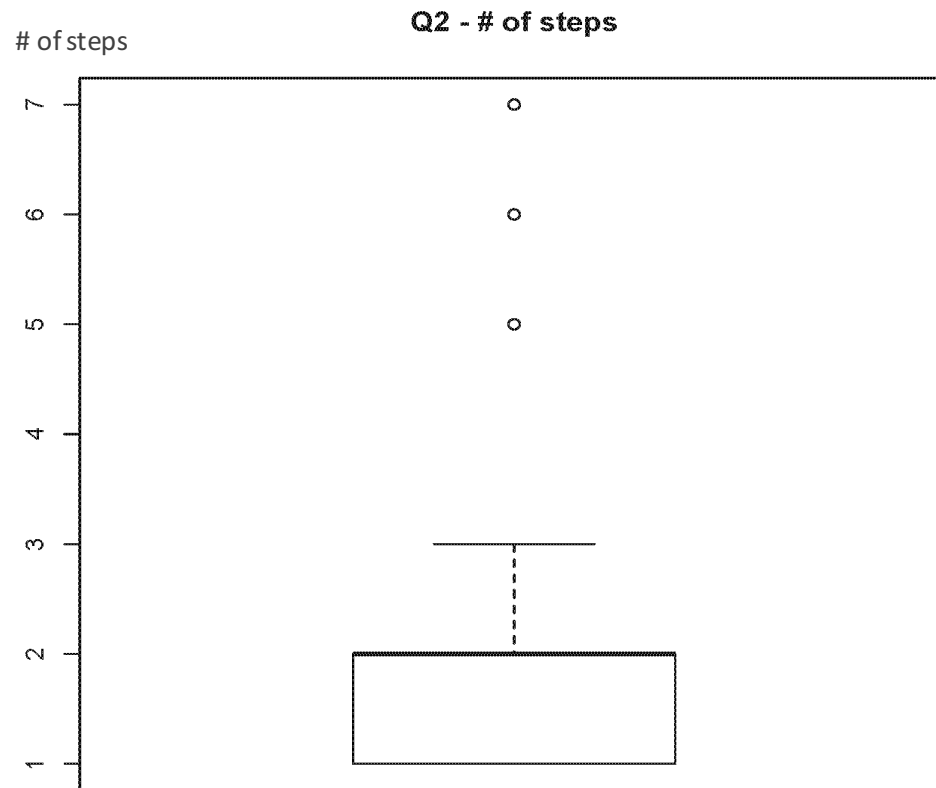
Results

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



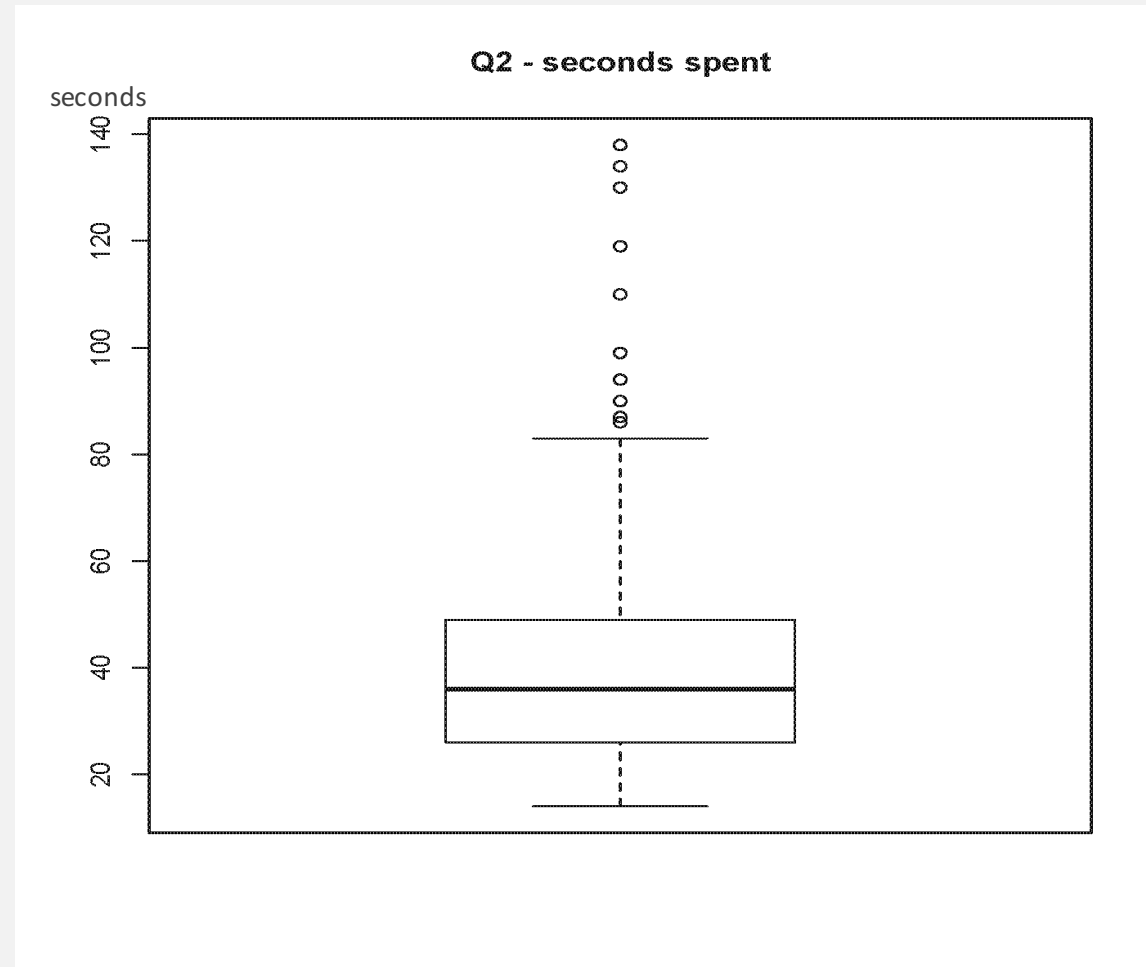
Results

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

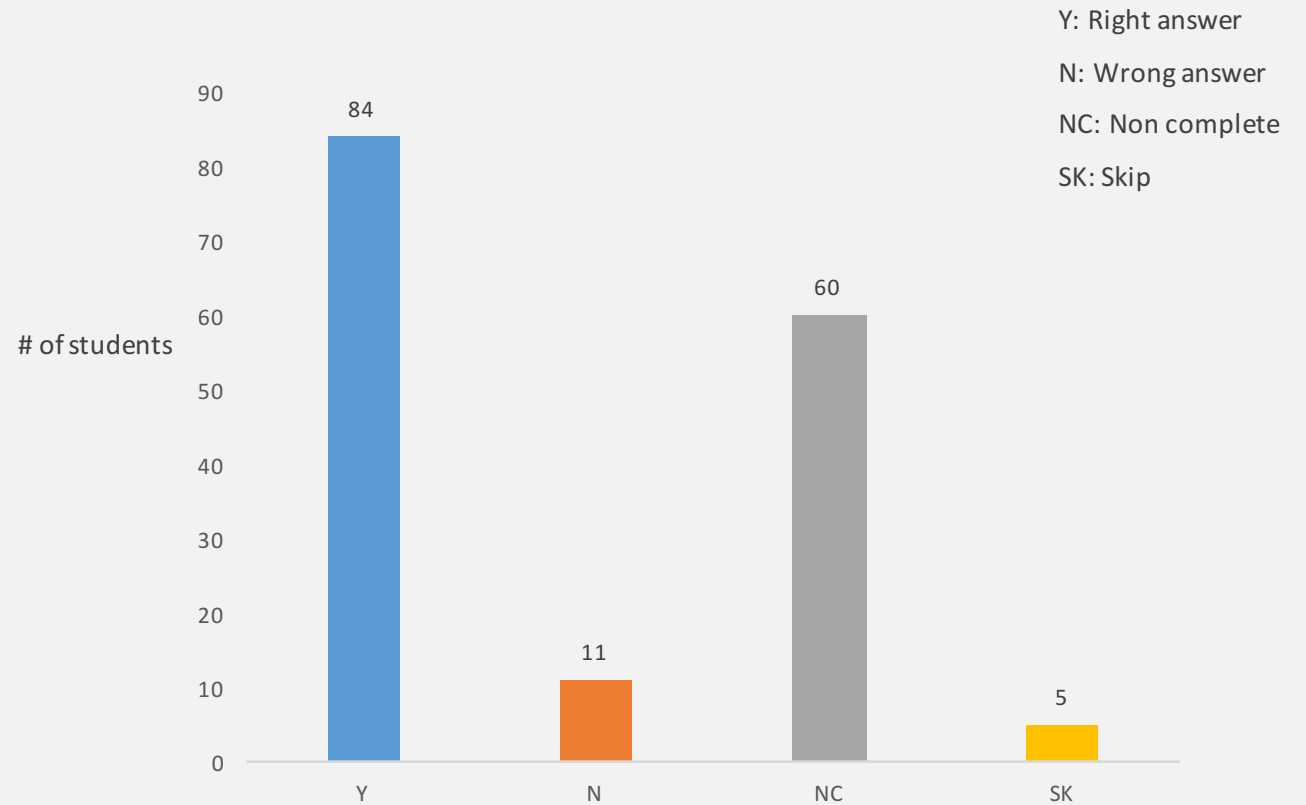


Results

Overall Task Performance

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

Data sets: All



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?

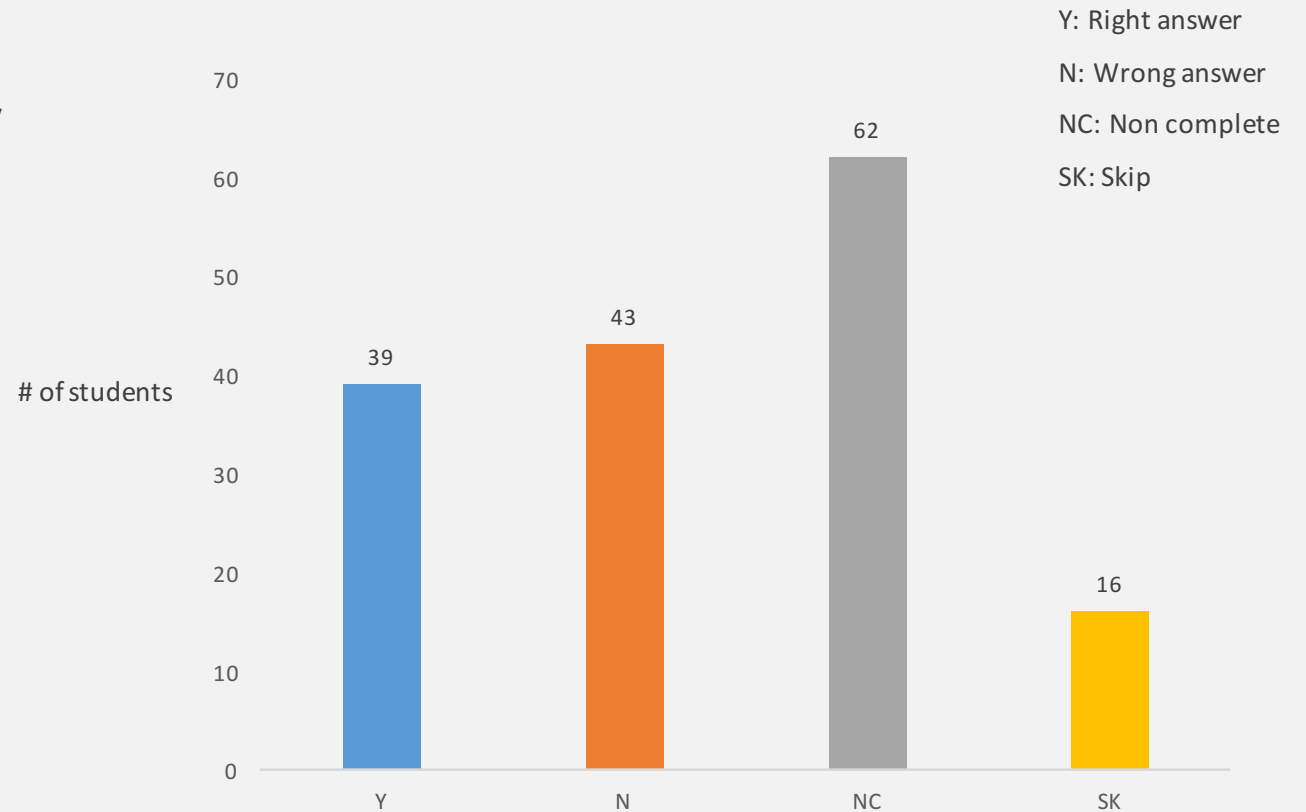
Categories	# of students
NC	61
SK	15
Ask Us	5
UL Main Web	2
A-Z Databases	7
How to Guides	25
Subject Guides	16
IUCAT	7
Reference Collections	7
Find...	8
Library tips	1
E-journal homepage	1
Irrelevant	5

Results

Overall Task Performance

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

Data sets: All



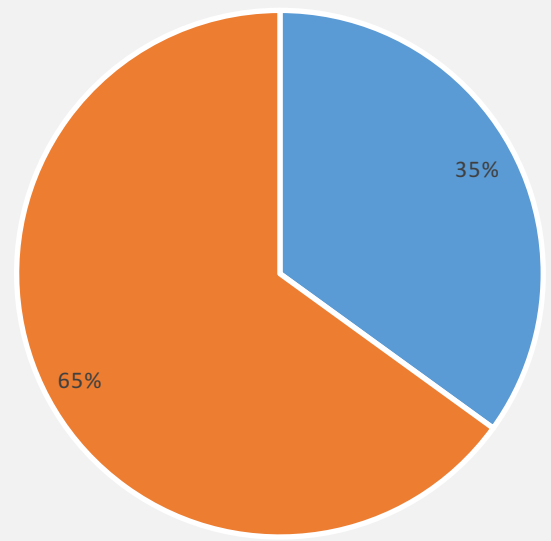
Results

Overall Task Performance (Behavior)

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

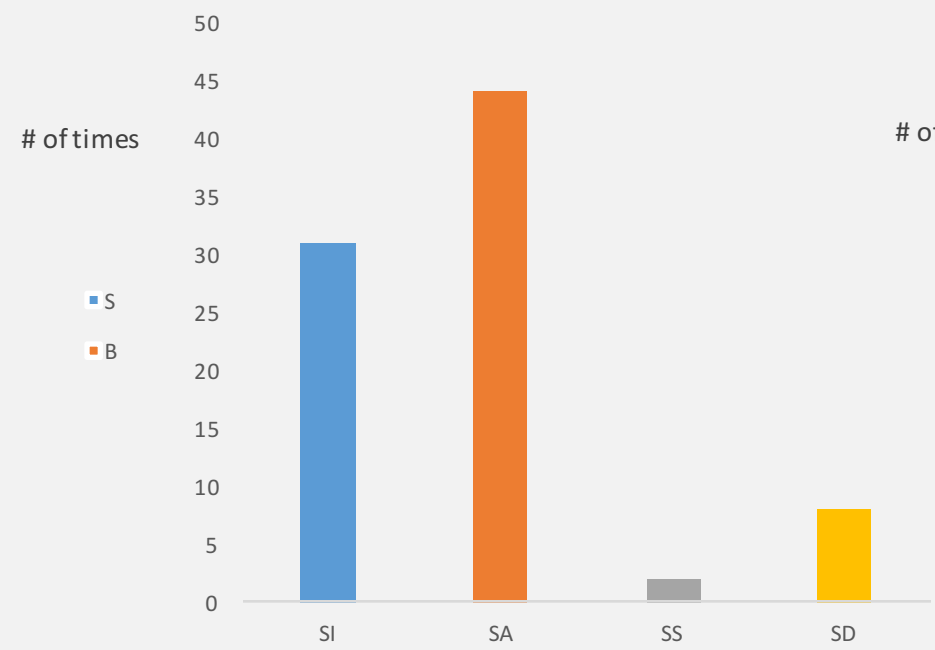
- SI: Search IUCAT
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- BH: Browse Homepage
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- BPI: Browse from Previous IUCAT

Search vs. Browse

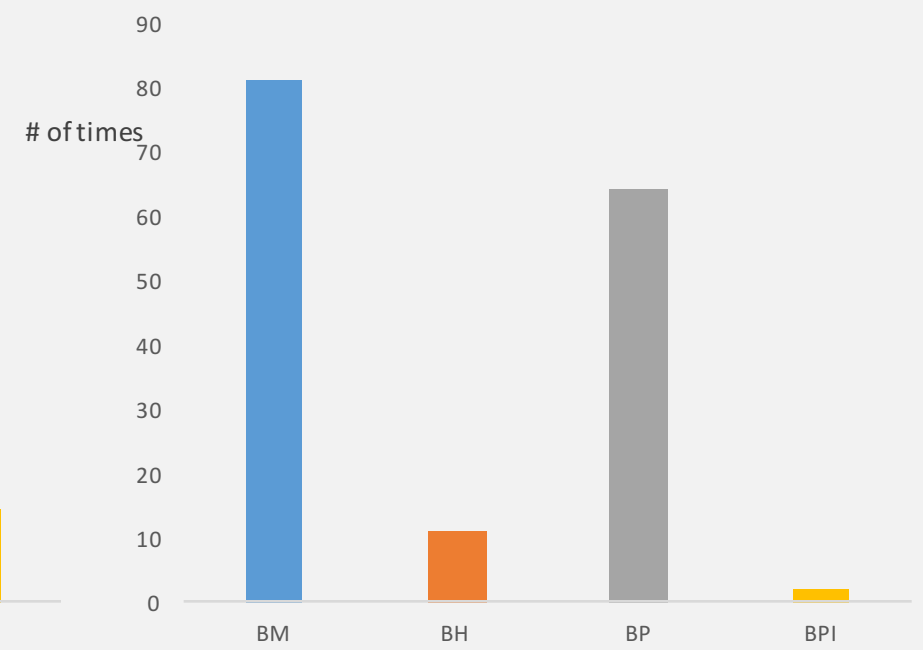


Data sets: All

Search



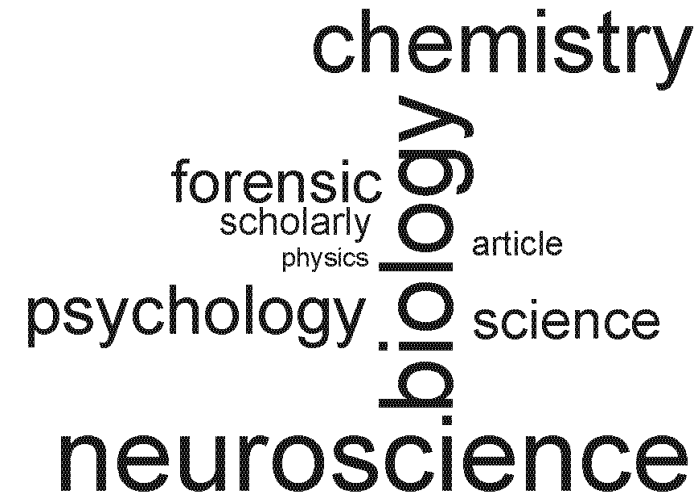
Browse



Results

Overall Task Performance (Keywords)

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

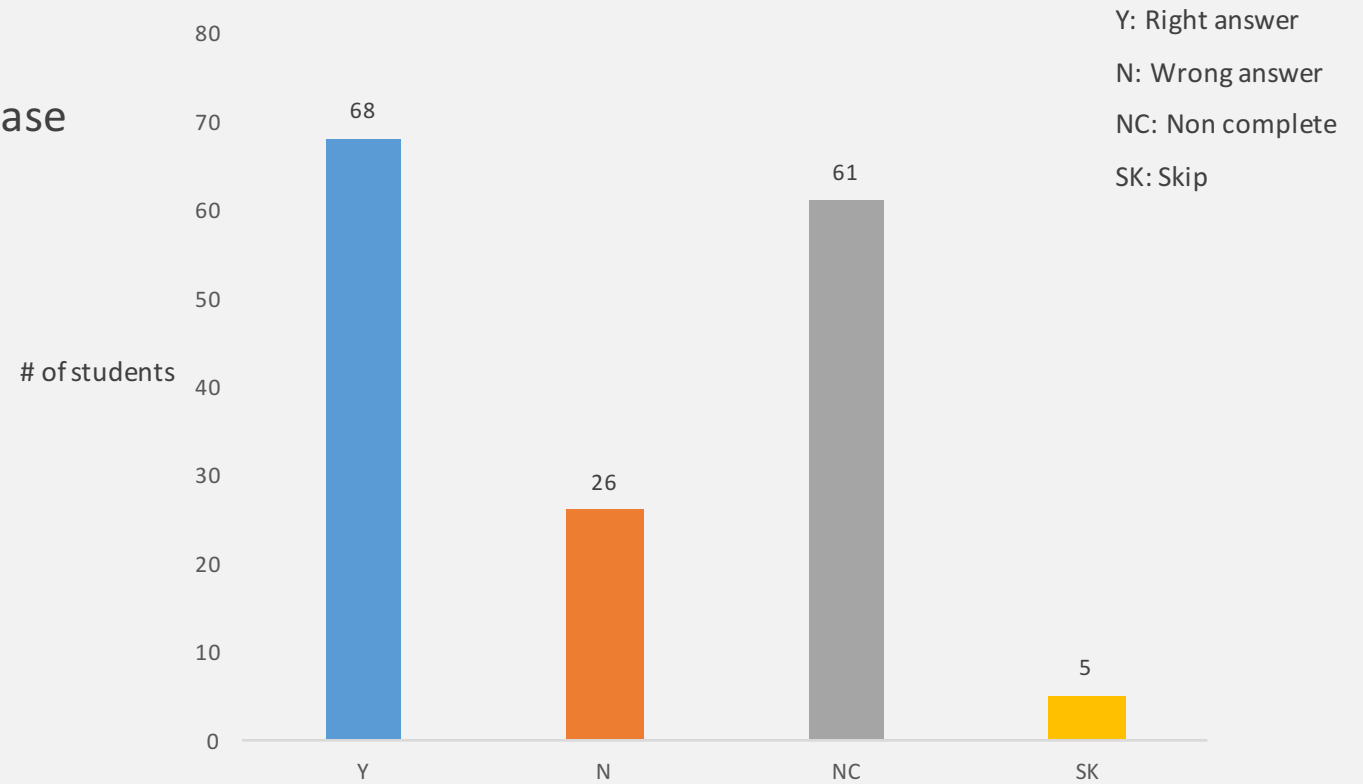


Results

Overall Task Performance

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

Data sets: All



Results

Overall Task Performance (# of steps)

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



A word cloud visualization showing search terms. The words are arranged in a roughly triangular shape pointing downwards. The largest words are 'forensic', 'neuroscience', and 'biology'. Other words include 'psychology', 'science', 'chemistry', and 'database'.

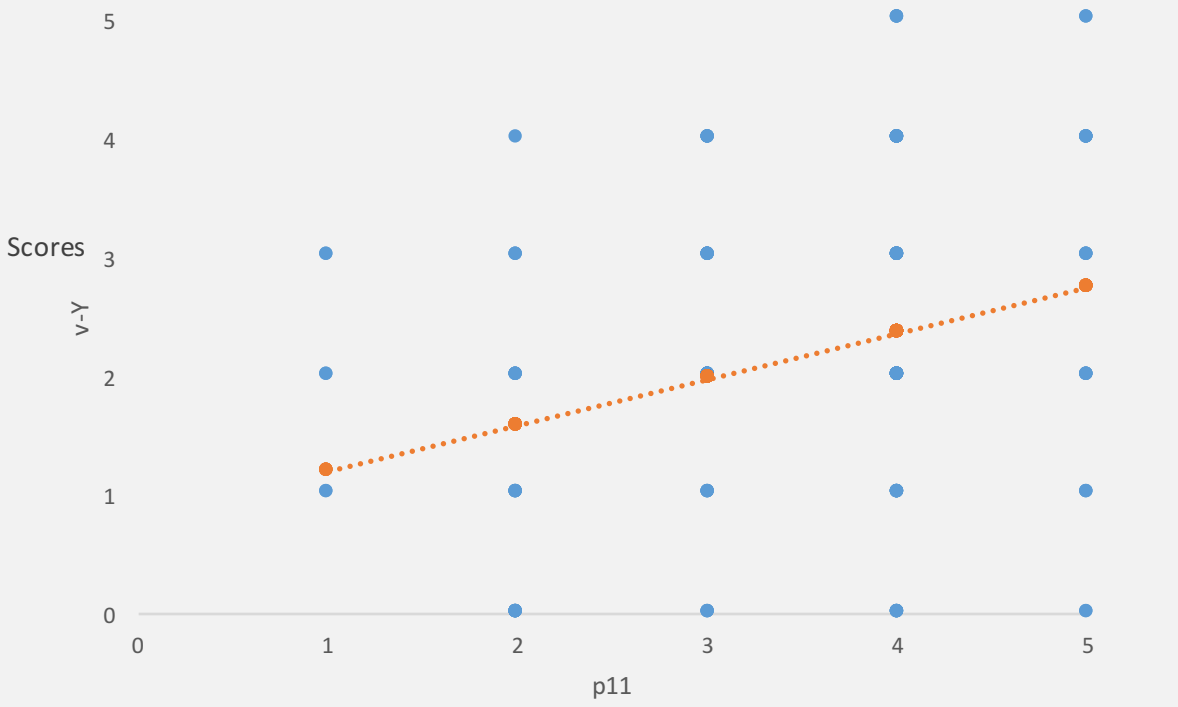
forensic
neuroscience
biology
psychology
science
chemistry
database

Results

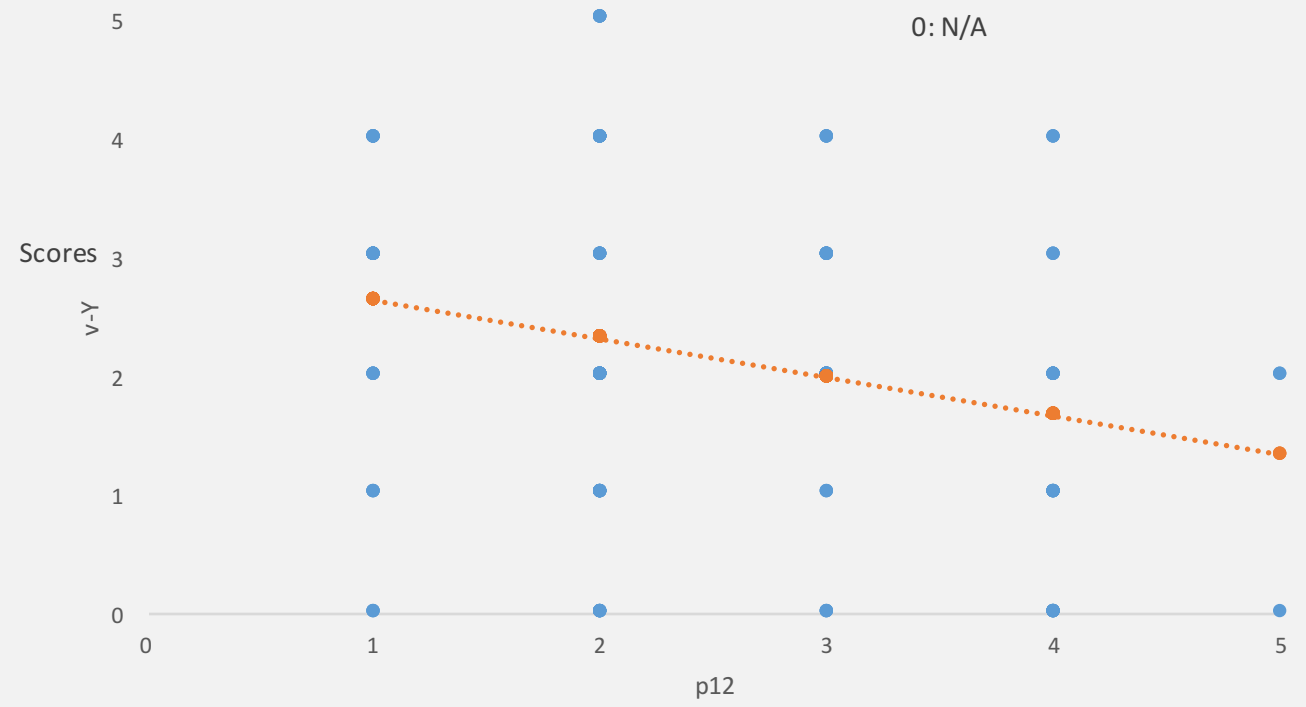
Difference between what they said and what they did?

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

Confident & Right answer



Frustrated & Right answer



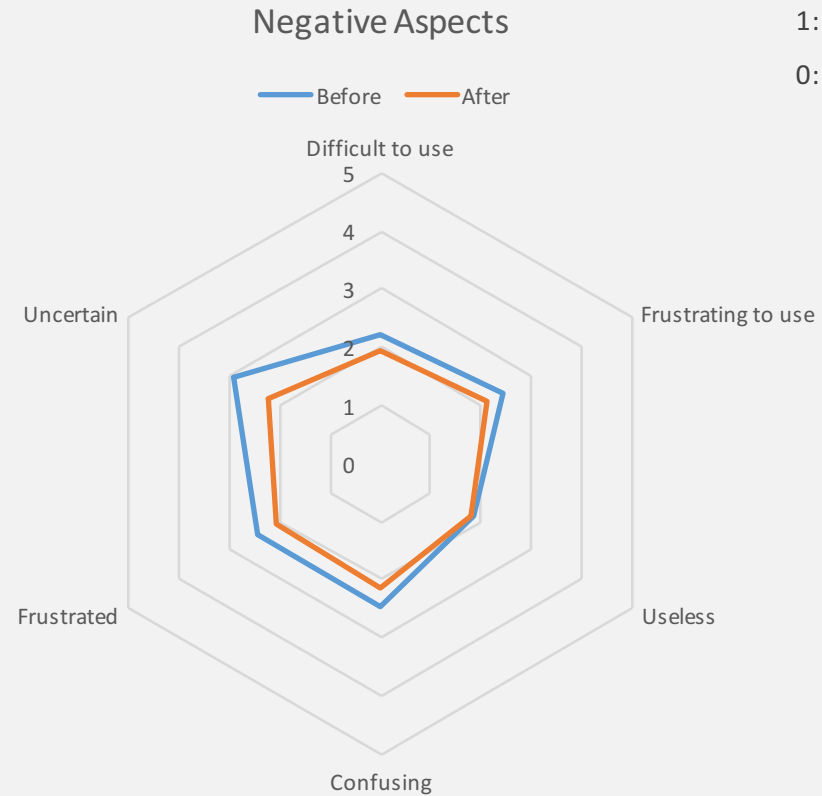
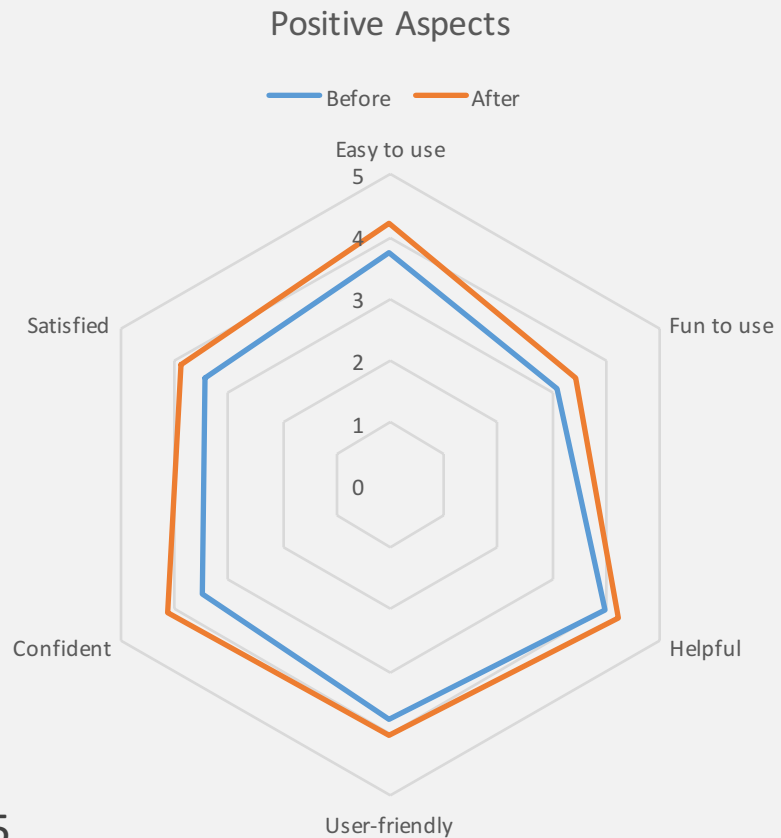
● v-Y ● Predicted v-Y Linear (Predicted v-Y)

● v-Y ● Predicted v-Y Linear (Predicted v-Y)

Results

The Role of Library Instruction in DUX

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



$\alpha = 0.05$

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

Q&A

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