“I always stick with the first thing that comes up on Google.”
Motivating student engagement with the digital information service environment

Lynn Silipigni Connaway, Ph.D.
Senior Research Scientist
“I find Google a lot easier… so many journals come up and when you look at the first ten and they just don’t make any sense. I, kind of, give up.”

(USU7, Female, Age 19)
Then and Now

- Then: The user built workflow around the library
- Now: The library must build its services around user workflow
- Then: Resources scarce, attention abundant
- Now: Attention scarce, resources abundant

(Dempsey 2008)
Understanding Motivations & Engagement
Visitors and Residents: What motivates engagement with the digital information environment?

• Funded by
  • JISC
  • OCLC
    • Lynn Silipigni Connaway, Ph.D.
  • Oxford University
    • David White
    • Alison Le Cornu, Ph.D.

• In partnership with
  • University of North Carolina, Charlotte
    • Donna Lanclos, Ph.D.
Residents

- Significant online presence & usage
- Collaborative activity online
- Contribute online
- Mobile device dependence
- >10 hours online/week

(White and Connaway 2011-2012)
Visitors

- Functional use of technology
- Formal need
- Passive online presence
- Favor FtF interactions
- <6 hours online/week

(White and Connaway 2011-2012)
Visitor

| Video: goo.gl/wW1oB |

| First Monday Paper: goo.gl/RFSLz |

Resident

(White and Connaway 2011)
Why Visitors and Residents Project?

• If we build it, they will NOT come.
• Shifting changes in engagement with information environment
  • Effect of larger cultural changes influenced by Web?
  • New attitudes towards education?
• Gap in user behavior studies
  • Need for longitudinal studies
• Inform project & service design to improve engagement & uptake

(White and Connaway 2011-2012)
(Connaway and Dickey 2010)
Why Visitors and Residents Project?

- Understand motivations & expectations for using technologies
  - Enable educators & service providers to make informed decisions
- Position role of library within the workflows & information-seeking patterns of students & faculty
- Influence design & delivery of digital platforms & services
- Investigate & describe user-owned digital literacies

(White and Connaway 2011-2012)
Visitors and Residents

1. Emerging
   (Late stage secondary school – first year undergraduate)

2. Establishing
   (Second/third year undergraduate)

3. Embedding
   (Postgraduates, PhD students)

4. Experiencing
   (Scholars, Lifelong learners)

(White and Connaway 2011-2012)
Objectives

• Examine links between age & technological engagement
• Describe social network in which digital & analog information-seeking strategies are embedded
• Inform JISC Developing Digital Literacies strand
• Create matrix of implementation options

(White and Connaway 2011-2012)
Triangulation of Data

• Several methods:
  • Semi-structured interviews (qualitative)
  • Diaries (qualitative)
  • Online survey (quantitative)
• Enables triangulation of data

(Connaway et al. forthcoming)
Ethnography enables us to establish rapport with target communities & become immersed in other people’s existence

(Connaway and Powell 2010)
Diaries

- Ethnographic data collection technique
- Get people to describe what has happened
- Center on defined events or moments

(Connaway and Powell 2010)
Interviews

- Allows for probing, clarification, new questions, focused questions, exploring
- Enables data collection for extended period of time

(Connaway and Powell 2010)
Surveys/Questionnaires

- Encourages frank answers
- Eliminates variation in the question process
- Can collect large amount of data in short period of time

Delivery
  - In-person
  - Telephone
  - Mail
  - Email
  - Online

Point of contact

(Connaway and Powell 2010)
Project Phases

• Phase 1:
  • Interviewed **Emerging** educational stage individuals
    • Last year of secondary/high school & first year of university
    • Majority of students aged 18 & 19 with a few outliers

• Phase 2:
  • Interviewed individuals in
    • **Establishing** (second/third year undergraduate),
    • **Embedding** (postgraduates, PhD students), &
    • **Experienced** ( Scholars) stages
  • Some Phase 1 and Phase 2 participants agreed to submit monthly diaries

(White and Connaway 2011-2012)
Project Phases

• Phase 3:
  • Continued interviews
  • Continue collecting diaries
  • Test interview & diary results with in-depth survey
    • 50 participants from each educational stage from US & UK
  • Use findings to
    • Explore possible trends
    • Identify transitions between stages

• Phase 4:
  • Interview second group of 6 students in Emerging stage
    • Help determine if methods of engagement change over time

(White and Connaway 2011-2012)
Phase 1

- Emerging educational stage
  - 31 participants
    - 16 US
    - 15 UK
- Quantitative data:
  - Demographics, number of occurrences of technologies, sources, & behaviors
- Qualitative data:
  - Themes & direct quotes

(White and Connaway 2011-2012)
Phase 2

- Continued interviews
  - Establishing (2\textsuperscript{nd}-3\textsuperscript{rd} year undergraduates)
    - 10 (5 US, 5 UK)
  - Embedding (postgraduates, PhD students)
    - 10 (5 US, 5 UK)
  - Experienced (scholars)
    - 10 (5 US, 5 UK)
- Began data analysis

(White and Connaway 2011-2012)
Phase I and 2: Participant Demographics

- 61 participants
  - 15 secondary students
  - 46 university students and faculty

- 34 females
- 27 males

- 38 Caucasian
- 5 African-American
- 2 Two or more
- 1 Asian
- 1 Hispanic
- 14 Unidentified

(White and Connaway 2011-2012)
Participant Gender (US vs. UK)

(White and Connaway 2011-2012)
Participant Gender (By Stages)

Emerging: 12 Male, 7 Female
Establishing: 2 Male, 7 Female
Embedding: 2 Male, 6 Female
Experiencing: 6 Male, 6 Female

(White and Connaway 2011-2012)
Participant Ages (US vs. UK)

(White and Connaway 2011-2012)
Participant Ages (By Stages)

Emerging:
- Unidentified: 1
- 50-59 years old: 2
- 40-49 years old: 1
- 30-39 years old: 1
- 20-29 years old: 1
- 16-19 years old: 5

Establishing:
- Unidentified: 2
- 50-59 years old: 1
- 40-49 years old: 1
- 30-39 years old: 4
- 20-29 years old: 2
- 16-19 years old: 2

Embedding:
- Unidentified: 5
- 50-59 years old: 2
- 40-49 years old: 3
- 30-39 years old: 2
- 20-29 years old: 2
- 16-19 years old: 2

Experiencing:
- Unidentified: 6
- 50-59 years old: 2
- 40-49 years old: 2
- 30-39 years old: 2
- 20-29 years old: 2
- 16-19 years old: 2

(White and Connaway 2011-2012)
Participant Ethnicity (US vs. UK)

(White and Connaway 2011-2012)
Participant Ethnicity (By Stages)

Emerging: 22
- Caucasian: 4
- Hispanic: 1
- Asian: 1
- African American: 4
- Unidentified: 2

Establishing: 6
- Caucasian: 3
- Hispanic: 1
- African American: 1

Embedding: 5
- Caucasian: 3
- Hispanic: 1

Experiencing: 4
- Caucasian: 3
- African American: 1

(White and Connaway 2011-2012)
Academic Disciplines (By Stages)

Emerging
- Professions & Applied Sciences: 2
- Social Sciences: 1
- Humanities: 1
- Natural Sciences: 2
- Formal Sciences: 4
- Undeclared: 1
- Double Major: 4
- Unidentified: 8

Establishing
- Professions & Applied Sciences: 4
- Social Sciences: 2
- Humanities: 1

Embedding
- Professions & Applied Sciences: 3
- Social Sciences: 2
- Humanities: 1

Experiencing
- Professions & Applied Sciences: 3

(White and Connaway 2011-2012)
1. Describe the things you enjoy doing with technology and the web each week.

2. Think of the ways you have used technology and the web for your studies. Describe a typical week.

3. Think about the next stage of your education. Tell me what you think this will be like.
Participant Interview Questions

4. Think of a time when you had a situation where you needed answers or solutions and you did a quick search and made do with it. You knew there were other sources but you decided not to use them. Please include sources such as friends, family, teachers, coaches, etc.

5. Have there been times when you were told to use a library or virtual learning environment (or learning platform), and used other source(s) instead?

6. If you had a magic wand, what would your ideal way of getting information be? How would you go about using the systems and services? When? Where? How?

(Connaway and Radford 2005-2007)

(Dervin, Connaway, and Prabha 2003-2005)
I. Place
II. Sources
III. Tools
IV. Agency
V. Situation/context
VI. Quotes
VII. Contact
VIII. Technology Ownership
IX. Network used

(White and Connaway 2011-2012)
I. Place
   A. Internet
      1. Search engine
         a. Google
         b. Yahoo
      2. Social Media
         a. FaceBook
         b. Twitter
         c. You Tube
         d. Flickr/image sharing
         e. Blogging
   B. Library
      1. Academic
      2. Public
      3. School (K-12)
   C. Home
   D. School, classroom, computer lab
   E. Other

(White and Connaway 2011-2012)
Nvivo 9

- Qualitative research software
- Upload documents, PDFs, & videos
- Create nodes & code transcripts
- Merge files
- Queries
- Reports
- Models

(QSR International 2011)
The world's libraries. Connected.

Emerging: 86%
Establishing: 98%
Embedding: 100%
Experiencing: 84%

(White and Connaway 2011-2012)
Social Media & Safety, Security

Emerging

Establishing

Embedding

Experiencing

(White and Connaway 2011-2012)

Facebook AND Caution
Credibility

Wikipedia AND Authority, Legitimacy

Emerging: 45%
Establishing: 20%
Embedding: 15%
Experiencing: 10%

(White and Connaway 2011-2012)
Opportunism

Emerging | Establishing | Embedding | Experiencing
--- | --- | --- | ---
84% | 98% | 98% | 84%

(White and Connaway 2011-2012)
Sources

(White and Connaway 2011-2012)
Libraries = Books

(White and Connaway 2011-2012)
Sources

Emerging  Establishing  Embedding  Experiencing

Librarians
Teachers, Professors
Peers

(White and Connaway 2011-2012)
Decompartmentalization

(White and Connaway 2011-2012)
Control, Choice

(White and Connaway 2011-2012)
Emerging
Establishing
Embedding
Experiencing

(White and Connaway 2011-2012)
“I always stick with the first thing that comes up on Google because I think that’s the most popular site which means that’s the most correct.”

(USS1, Female, Age 17)
“I knew that the internet wouldn’t give me a wrong answer.”
(UKS4, Female, Age 17)
“I simply just type it into Google and just see what comes up.”
(UKS4, Female, Age 17)
“...Google doesn’t judge you.”
(UKF3, Male, Age Unidentified)
Diaries

- 14 agreed to be diarists
  - 8 US & 6 UK
- 7 continue to submit diaries
  - 4 US & 3 UK
- Share information-seeking situations each month
- Communicate in any format
All except one selected **EMAIL**

**Why?**

“It’s for formal communication”
Information Literacy vs. Digital Literacy

Information literacy
- Evaluating information for authenticity

Digital literacy
- Searching internet, using technology and social media
Learning
Black Market

http://wp.me/pLtlj-fH
Personal

Visitor

Institutional

Resident

(White and Connaway 2011-2012)
II. Sources

A. Human
B. Digital

1. E-books
2. Online textbooks
3. Databases
4. Websites
   a. Discovery Channel
   b. Textbook Sites
   c. University databases
   d. Major media sites
   e. Non-English Language
   f. Dictionary
   g. Wikipedia
   h. University Websites
   i. Music Websites
   j. Fan Websites
   k. iPlayer/television programs
   l. Retail websites
   m. Exam board sites (UK)
   n. Syllabus- and discipline-based sites
   o. iTunesU
   p. Photo websites
   q. Other

(White and Connaway 2011-2012)
<table>
<thead>
<tr>
<th>Sources</th>
<th>Syllabus &amp; discipline based sites</th>
<th>Retail</th>
<th>University websites</th>
<th>University databases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wikipedia</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Syllabus &amp; discipline based sites</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major media site</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
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<td>Other</td>
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<tr>
<td>Other</td>
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</tbody>
</table>

(iPlayer/TV | Photo sites | Non English Language | Textbook websites) |

(Exam board | Dictionary | Fan sites | Disc Ch)

(White and Connaway 2011-2012)
VII. Contact

A. Face-to-Face
B. Phone Call
C. Video chat
D. IM/Chat
E. Texting
F. Private messaging
G. Commenting
H. Media posting
I. Visible messaging
J. Letters (Post/Mail)
K. Email

(White and Connaway 2011-2012)
<table>
<thead>
<tr>
<th>Phone call</th>
<th>Email</th>
<th>Face to Face</th>
<th>IM chat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Texting</td>
<td>Private messaging (via social networking sites)</td>
<td>Video chat</td>
<td>Visible messaging</td>
</tr>
</tbody>
</table>

(White and Connaway 2011-2012)
IV. Agency

A. Evaluation

B. Decision/Choice

1. Convenience/ease of use/accessible
2. Familiarity
3. Repetition
4. Relevance
5. Authority/Legitimacy
6. Available Time
7. Speed
8. Privacy
9. Safety, security
   a. Caution
   b. Confidence
10. Multitasking
11. Browsing
12. Searching
13. Currency
14. Fun, enjoyment
15. Addiction
16. Distraction
17. Time wasting
18. Quantity
19. Reliability
20. Avoidance

C. Motivation

1. Create
2. Collaborate (helping others)
3. Connection; sharing with others

(White and Connaway 2011-2012)
<table>
<thead>
<tr>
<th>Convenience, ease of use, accessibility</th>
<th>Connection, sharing with others</th>
<th>Speed</th>
<th>Relevance</th>
<th>Distraction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Searching</td>
<td>Authority, legitimacy</td>
<td>Collaborate</td>
<td>Fun, enjoyment</td>
<td>Create</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Reliability</td>
<td>Quantity</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Browsing</td>
</tr>
</tbody>
</table>

(White and Connaway 2011-2012)
II. Sources

A. Human
   1. Mother
   2. Father
   3. Extended family
   4. Experts/Professionals
   5. Friends/Colleagues
   6. Teachers/Professors
   7. Peers
   8. Librarians
   9. Other

B. Digital

C. Physical

(White and Connaway 2011-2012)
Human Sources

Teachers, professors

Friends, colleagues

Peers

Mother

Extended family

Experts, professionals

Librarians

Father

Other

(White and Connaway 2011-2012)
09:27
I do tend to prefer working on my own but in my French class we have all got a study buddy but that is mainly us doing some grammar work together, we have a little blog and we have to do it together but we normally just do it by ourselves and check answers afterwards.

19:34
It tends to be if I can’t be bothered to read a huge book on something I will surf on the internet for it because it will come in shorter pieces. Or I will just go and see a professor.

23:40
When I am writing bibliography and I put too many websites in it makes me feel really bad.

18:06
For an essay I would prefer to hand write it but now when you look at it I would prefer to word process it because you have a word limit and you don’t want to go over that and a word processor is just so much easier.

03:09
I would say about 80% of the people on Facebook I know them, I either know them quite well or I know them enough to be comfortable to have them accessing my personal information.

00:28
I hate to say it but I am a bit of a Facebook addict... It is just convenient to talk to my friends because I am quite a social person.

04:58
Maybe not 24/7 but at least half the day I will spend either talking on the phone or using it for some text purposes.

08:20
Sometimes I do maybe Google, Wikipedia some subjects. For example I have an Italian presentation on Tuesday and I needed to research that quite a bit to make sure I didn’t say anything stupid.

24:44
My friend in computer science he had a written exam and he said “My gosh I had such a bad hand cramp” and I said “Is that because you always type?” He said “Yes, I haven’t written a proper sentence in two years by hand.”
05:30
Who are you Facebooking? – Friends. I won’t be on it much. I just see if anybody’s sent me a message and if there’s nobody on it I just get off.

08:43
Well I got English this semester and it requires us to diagnose plays and stuff like that. So if I don’t understand one I might go online and try to get an overview or a better understanding of what the play means or something like that.

23:32
Well they usually give us a list of the difference between primary, secondary. Like books, documentaries, journal entries, I think that would be primary. And the secondary would be like the internet.

19:03
Yes. Like he wanted a bibliography. And I only had one source. So I just tried to scorch for other sources. Because that one website I got the majority of my information from.

05:44
Email, I talk to everybody on email because I’ve got a lot of social activities that I have to be responsible of. So I have a lot of people to talk to, to come in contact with. Like adults and stuff like that.

10:29
Well Math, our teacher told us today to go to this website called ‘Khan academy.’ And it’s like an online tutorial for all subjects in Math. So I might check that out.

18:30
I just typed in Jupiter’s rings and I clicked on a link and it looked pretty accurate so I just used that one. Because it had a lot of information. So I felt like that was the best one.
18:31
I generally don’t go past the first page on Google and the sad thing with Google is they don’t always pick up the entire sentence that you’re looking for.

12:51
...most homework is online and I submit most of my homework online. I don’t really turn in; I have a physical for English. Even like my engineering papers I turn in online.

11:50
The university has a Moodle website where you can keep track of all of your classes and your homework that your teachers can post on there for you. So, I think I check that a couple of times a day. Then the math department has another website called WeBWork that you do your online math homework through.

30:59
A lot of students will still use Wikipedia and then cite another source... Teachers don’t just like it because it’s not the most reliable source since anyone can post something on there even though the site is monitored, it’s because it’s too easy.

05:43
Cell phone is probably the biggest thing. I think I’m on that 24/7 but that’s also like my lifeline to the fraternity so it’s got a bit of a valid reason. So, cell phone is the biggest thing from texting. I get my emails on there and I can surf the web on it, so that kind of all in one thing.

07:38
...even if I didn’t know the person really well, like if they were in my classes and they added me, I’d accept it. Then if I needed help with homework it’s a good way to talk to five, six, ten different people on Facebook about your homework. About up and coming tests, helping the studies, seeing what they are doing etc.

10:08
...my phone is always on, I’m always getting an email from the school or from my parents or from a friend or whatever or I’ll get a text or a phone call or a Facebook notification. Like there is almost always something popping up.
“A strategic instructional venture isn’t about just training students how to search database interfaces, but about building their fluency with data, visual, spatial, media, information, and technology literacies…This is how we transform scholarship.”

(Mathews 2012)
“By focusing on relationship building instead of service excellence, organizations can uncover new needs and be in position to make a stronger impact.”

(Mathews 2012)
Future Phases

• Phase 3: Months 13-24
  • Continue diaries with 24 participants
  • Online survey of 400 students and scholars

• Phase 4: Months 25-36
  • Interview 6 new Emerging students
  • Analyze data
  • Report findings


Kolowich, S. 2011. Study: College students rarely use librarians’ expertise. *USA Today*, (August 22). Retrieved from  

Mathews, B. 2012. *Think like a startup: A white paper to inspire library entrepreneurialism*.  

Selected Readings


The researchers would like to thank Erin Hood for her assistance in keeping the team organized, analyzing the data, and disseminating the results.
Residents
http://www.flickr.com/photos/nicocavallotto/363251198/

Phase 1
http://www.flickr.com/photos/orangeacid/252090910

Phase I and 2 Participant Demographics
http://www.flickr.com/photos/doug88888/4570566630/

US vs. UK Participant University Majors
http://www.flickr.com/photos/kkoshy/2927378663/

Codebook
http://www.flickr.com/photos/themadguru/3546619930/

Preliminary Findings (Guilty dog)
http://www.flickr.com/photos/59262640@N00/61264743/

“I always stick with the first...” (USS1)
http://www.flickr.com/photos/pinksherbet/2001899627/

Slide 41: “I knew that the internet wouldn’t give me a wrong answer.” (UKS4)
http://www.flickr.com/photos/ravages/236981527/

Slide 42: “I simply just type it into Google and just see what comes up.” (UKS4)
http://www.flickr.com/photos/ana_cotta/2532911186/

Slide 43: “Google doesn’t judge me” (UKF3)
http://www.flickr.com/photos/cubmundo/6184306158/

Slide 53: People: Professor
http://www.flickr.com/photos/lafayette-college/5515447182/
Lynn Silipigni Connaway, Ph.D.

connawal@oclc.org

Questions & Discussion