Understanding Student Use of Digital Learning Resources

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Why Study Use of Digital Resources

• How people interact with scholarly content is changing

• Roots in NSDL and other digital library initiatives

• People had only studied how faculty used specific collections

• No one knew how faculty found & used materials
We Started Out Looking at Faculty Use of Digital Resources

• 2006 – 2009 – National survey of STEM instructors regarding their use of digital resources in teaching (n=4,439)

• 2009 – Large international survey of Physics instructors (n=9,275)

• 2011 – National study of Social Science faculty (n=1,037)
Research Questions - Faculty

• What do faculty members do with the online digital resources they find at digital libraries, online collections, etc.?

• Do faculty value digital resources?

• How do faculty use digital resources for teaching purposes?

• What are the barriers to their use of resources and digital libraries/collections?
How different are faculty from one another?

• When we look at traditionally identified faculty populations, we saw few differences.
  • The type of institution where they serve
  • The amount of time that they have been teaching
  • Even discipline was less a factor than expected

• As far as these traditional groups go, we have a homogenous population
### Types of Digital Resources

<table>
<thead>
<tr>
<th>Type of Resource</th>
<th>% Use Very Frequently</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital images - visual</td>
<td>42</td>
</tr>
<tr>
<td>Animations</td>
<td>11</td>
</tr>
<tr>
<td>Data Sets</td>
<td>22</td>
</tr>
<tr>
<td>Teaching, Learning Exercises</td>
<td>28</td>
</tr>
<tr>
<td>Online scholarly resources</td>
<td>49</td>
</tr>
</tbody>
</table>
Digital Resources – other findings

• Google favorite starting point
• Iterative process (satisficing)
• Most are not authors of DRs
• Tend to use DRs developed by others ‘as is’
Motivations

• Strong Agreement
  • Top – Improve student learning
  • Stay abreast of professional developments
  • Keep material fresh
  • Help students learn difficult concepts

• Agreement
  • Incorporating DR’s in class is fun
  • *Saves time
Barriers to use

• Agreement
  • *More time
  • More useful DR available
  • More/better training in

• Ambivalent
  • Institutional rewards for use

• Disagreement
  • Access to dependable technology
  • Greater priority to institution
Conclusions about Faculty

- Instructors are changing more slowly than the educational landscape
- Need activation to overcome barriers and encourage adoption
- Intrinsic motivation is a powerful force (but people do not have limitless reservoirs)
- Still, students are a powerful extrinsic motivator
How do students use digital resources in their learning?
Research Questions - Students

- What are the circumstances that motivate students to look for DRs?
- Where do students start searching?
- What criteria do students use to assess DRs?
- What barriers do students face in finding & using DRs?
- What kinds of DRs do students prefer?
- Do students value “collections”?
Student Study – 2011 - 2013

1. Interviews & focus groups
2. Qualitative data analysis
3. Survey instrument development
4. Survey
5. Summary Report & findings
6. Case study of Physics students & other intensive users
7. Follow up interviews & focus groups
8. Survey data analysis
Qualitative Findings

• Students making far more independent use of DRs than anticipated

• Students desire content that is well organized and that teachers teach it to them
  • They seek information/explanation when teachers are doing a poor job of it.

• Students seek video, but it is unclear if they prefer it
  • Differences between recordings of full lectures vs. chunks.

• Students may be turning to new or different content providers faster than we discover them e.g. YouTube channels

• Students may value collections more than their propensity to turn to Google may indicate, especially when directed to ‘authoritative’ sources
How and Why Students Use Digital Resources

Learning happens both inside the formal syllabus or curriculum & outside

Inside the formal curriculum learning -- lectures, labs, assigned readings etc

How do students use Digital Resources in class -- what is their perception of this? - what would make it better - barriers

Outside the formal curriculum -- the realm of the free range learner

Learners have always been a bit free range

Back in the day was things like groups, conversation, friends etc

Our hypothesis is that we are seeing either more free range learning, or maybe just a different type of free range learning -- technology does enable, or make easier a different level of this sort of activity

Has the non-tech free ranging activity gone down in frequency or changed in any way?

Who are the tech enabled free rangers?

Are there different types of free rangers is a typology?

What does free ranging activity look like

Paths through the information -- Trawler -- Sport -- Lobster -- Ahab

Filters -- Wikipedia -- Google

Reformulations of question -- Beekeeping

What stuff gets in the way of more free ranging - barriers

Demographics

Are there students who don’t free range and why not

What are they doing to fill that role?

Are they not doing it because of barriers?
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What does free ranging activity look like

Demographics

Motivation for free ranging

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Are they not doing it because of barriers?
Formal Syllabus
• Learning happens both inside and outside
• Outside is the realm of the “free range learner”
• Learners have always been a bit “free range”

Hypothesis
• That we are seeing more free range learning – or a different type of free range learning
• Who are the free rangers?
• Are there different types of free ranger?

Free Rangers
• Demographics
• Motivation
• Barriers

Non Free Rangers
• Are there students who don’t free range, and why not?
• What are they doing to fill that role
Survey strategy
Student Survey Lines of Inquiry

- Where do students turn when they run into problems with schoolwork
- Where do students turn when they are interested in a topic
- General motivations for studying and academic work
- Use of digital resources in class and students preferences
Pilot Survey

- **Online survey**

- **Conducting pilot**
  - 2 faculty at UCF advertised to their classes
  - ~50 responses
  - Asked students for feedback regarding questions that were confusing
Survey Strategy

- Using survey administration company

- Maintain large database of people
- Can pre-screen on demographics
- National sample
- Removes researcher pressure on participants
- Sample size of 40,000-60,000
- Plan on 5% response rate
Survey Comparisons

• The nature of this sample is providing us with three comparison groups:
  • Full & Part-time Students**
  • Former Students
  • Never Been / Not Currently Students
Survey Follow Ups

• Our Motto is: “Explore BIG – Focused Refinement”

• Possible Follow Ups:
  • Physics Students
  • UW-Madison / IL Students
  • Others?
Questions

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