Geographies of Learning: How Students Navigate Use and Learn from Digital Resources

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Helping with the chat space

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A progress of inquiry

- National Science Digital Library Evaluation
- Faculty Use of Digital Resources 2005-2009
- Student Use of Digital Resources
Our survey – A brief history

3 useful groups to compare:

1) Current students (full time part time, etc.)
2) Past students/Alumni
3) Never students/Never went to college.
The information seeking behavior survey
Some findings...
Student status  (n = 1,740)

- Full-time student: 53%
- Part-time student: 9%
- Former student: 31%
- Never a student: 8%
Type of institution most recently attended (n = 1,555)

- 2 Yr/Comm College: 16%
- 4 Yr School or Univ.: 62%
- Trade/Tech School or Univ.: 2%
- Comp or Research Univ.: 4%
- Other/Do Not know: 2%
Academic standing (n=1,041)

- Freshman: 24%
- Sophomore: 24%
- Junior: 18%
- Senior: 19%
- Other: 12%
- Graduate: 3%
STEM/Non-STEM major (n=1564)

- 31% STEM Major
- 69% NON-STEM Major
Used vs. preferred class technologies

**Experienced Classroom Technologies**

- Video/audio: 74% STEM, 77% Non-STEM
- External Websites: 61% STEM, 65% Non-STEM
- Wikis/blogs: 21% STEM, 27% Non-STEM
- E-books: 42% STEM, 42% Non-STEM
- Sims & Animations: 35% STEM, 19% Non-STEM
- Mobile Apps: 5% STEM, 6% Non-STEM
- Social Networks: 18% STEM, 21% Non-STEM

**Desired Classroom Technologies**

- Video/audio: 33% STEM, 37% Non-STEM
- External Websites: 27% STEM, 32% Non-STEM
- Wikis/blogs: 10% STEM, 11% Non-STEM
- E-books: 23% STEM, 25% Non-STEM
- Sims & Animations: 31% STEM, 34% Non-STEM
- Mobile Apps: 12% STEM, 14% Non-STEM
- Social Networks: 10% STEM, 14% Non-STEM
How students see their search environment
Student self-perception dimensions

Agency

Organization

Preparedness

Engagement

MSA = .82
Residual MSA = .59
Average r = .42
Difficulty in class dimensions

- Internet Search
- Course Related Resources
- Friends, Social Networks
- Seek Expertise

MSA = .71
Residual MSA = .54
Average r = .29
Seeking information about a topic of interest dimensions

Blended Resources

Friends, Social Network

Internet Search

MSA = .82
Residual MSA = .51
Average r = .30
Smallest space analysis of student self-perception and search technique
Personas
How were personas derived?

Started with the questions on learning/studying preferences (same questions used for factor development)

Conducted a **Latent Class Analysis** on these items

Found different, internally consistent subgroups. Developed personas to help explain these subgroups.
Student personas

Went from these…

- I solve problems using a plan
- I am systematic in my learning
- I prefer to set my own learning goals
- I enjoy studying
- I have a need to learn
- I set specific times for studying
- I alter my practices when presented with new information
- When presented with problems I cannot solve, I ask for assistance
- I am confident in my ability to search for information

…To these…

Ambivalent Learners
Adaptive Learners
Free Form Learners
Time Sensitive Learners
Student persona 1: Ambivalent learners

48% of Sample

Largest Segment

- Do not feel strongly about learning.
- Confident in ability to find information.
- Do not enjoy studying.
- Do not have a need to learn.
Student persona 2: Adaptive learners

26% of Sample

- Solve problems with a plan
- Set learning goals
- Ask for help if they experience a problem
- Enjoy studying
- Do NOT set specific times to study
Student persona 3: Free form learners

13% of Sample

- NOT systematic in learning
- Do NOT solve problems with plans
- DO have a need to learn
- ARE willing to change what they do when presented with new information
- Least likely to set specific times to study
Student persona 4: Time sensitive leaners

11% of Sample

-Similar to Adaptive (“Ideal”) Learners in many ways...just not as strong/extreme on the dimensions

-Do NOT solve problems with plans

-This group is MOST likely to set aside specific times to study

-This group is LEAST likely to ask for assistance if they encounter a problem
## Persona demographics

<table>
<thead>
<tr>
<th></th>
<th>Ambivalent Learners</th>
<th>Adaptive Learners</th>
<th>Free Form Learners</th>
<th>Time Sensitive Learners</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>-% full time student</strong></td>
<td>54%</td>
<td>55%</td>
<td>39%</td>
<td>47%</td>
</tr>
<tr>
<td><strong>-% former students</strong></td>
<td>30%</td>
<td>33%</td>
<td>44%</td>
<td>33%</td>
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<tr>
<td><strong>School/ Institution</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-2 year/ community college</td>
<td>13%</td>
<td>15%</td>
<td>21%</td>
<td>28%</td>
</tr>
<tr>
<td>-4 year college/ university</td>
<td>72%</td>
<td>57%</td>
<td>51%</td>
<td>55%</td>
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<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>%- White/ Caucasian</td>
<td>74%</td>
<td>75%</td>
<td>73%</td>
<td>48%</td>
</tr>
<tr>
<td><strong>Is / Was Major</strong></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>-Business, Marketing</td>
<td>17%</td>
<td>14%</td>
<td>17%</td>
<td>25%</td>
</tr>
<tr>
<td>-Humanities &amp; Fine Arts</td>
<td>8%</td>
<td>11%</td>
<td>20%</td>
<td>8%</td>
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<tr>
<td>-Engineering</td>
<td>10%</td>
<td>13%</td>
<td>7%</td>
<td>10%</td>
</tr>
</tbody>
</table>
Personas and blended learning

% within each persona desiring... *All face-to-face, half-and-half, or all online courses*

- **Entirely face-to-face**
  - Ambivalent: 39%
  - Adaptive: 41%
  - Free Form: 60%

- **An equal mix** (Online and face-to-face)
  - Ambivalent: 22%
  - Adaptive: 21%
  - Free Form: 0%

- **Entirely online**
  - Ambivalent: 5%
  - Adaptive: 14%
  - Free Form: 11%
Now what?
Where do we plan to go next?

Understanding Learners

This is next

Inter-personal understanding of learning

Intra-personal understanding of learning

Demographic understanding of learners
Some implications

PRIMARY:

Students are **not** monolithic

- Important for any educational decision maker
- Be mindful of the choices you make in terms of students

OTHER IMPLICATIONS / QUESTIONS

Can understanding interpersonal and intrapersonal aspects of learning help us develop recommendations or techniques that help formulate a literacy around “learn to learn”?

What private sector research processes or techniques can be used to help address questions around teaching, learners and learning?

AND THIS IS JUST THE BEGINNING!
Questions and comments

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