Identifying and overcoming barriers to the use of digital learning materials

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Barriers work two ways

• Imagine two people pushing from opposite directions on a swinging door
• What was wrong with the users?
• What is wrong with content providers?
• Where is the balance?
Our work

- NSDL (500 collections)
- Understand the users and potential users
- How users currently work
- What are they looking for and how are they using it
- How do they find it
- What impedes their use of materials
Research method

• Focus groups
  – How faculty find and use content
  – FG results used to build a survey

• Survey
  – 120 US higher education institutions and 4500+ respondents
Instructors

Representation across academy
4% teach in two or more disciplines
Content types

- Visual materials and historical documents
  - Primary sources of evidence
- Simulations and animations
  - demonstrate process/concept
- Online datasets
  - e.g. genomic databases
- Teaching / learning activities
  - PBL activities, syllabi
- Online scholarly activities
  - online journals, other disciplinary activities
What content is most used?

- Online Scholarly activities
- Visual materials
- Teaching / Learning activities
- Data sets
- Animations / Simulations

* How they are used is very interesting
How are visual materials used?

• Primarily lecture
• Almost everywhere else, except
  – Quizzing
  – Grant writing
  – Discussion boards
• Many more respondents created or modified these materials
How are OSR used?

- Grant writing
- Professional development as a teacher
- Assignments for students
- Study aid for students
- Materials used were created by others and used without modification
Simulations and Animations

- **Never use** selected by 34% of respondents
- Never and rarely use combined is 56% of the respondents
- When they did use them, others made them
Collection vs. Search Engine

• Gathering information for teaching (content) - Search
• Pedagogical information - collection (except when seeking syllabi - search)
• Primary source material that can be integrated into a course - Collections
Professional Development

• Vacillates between collection and search
• My interpretation:
  – When the individual has an organizing schema, they search
  – When they do not, they seek a collection of materials
Their opinions of digital resources

- Most think DRs improve student learning (~70% agree or strongly agree)
- The majority also find DRs save them time*
- DRs can help with difficult concepts
- They were neutral in the question of there was student pressure to use DRs.

* I’ll come back to this on the next slide
Barriers

• Time*
• Availability of useful DRs
• More / Better training
• Inadequate institutional rewards
• Some things are not seen a barrier
  – Access/ dependability of technology
  – Institutional priority
  – Personal priority
Features of DRs in collections

- 1st Organized to quickly content
- 2nd Peer review
- 3rd Supplemental material on how to use in teaching
- 4th Supplemental material on how to use the material to improve the teacher
My thoughts

- Faculty work practice - content and tools that match will be adopted
- Faculty bounded by discipline community
  - try to bring students to that community
- Two-pronged approach
  - meet instructors where they are
  - Development activities that support usage of materials outside their work practice
More information

• [http://serc.carleton.edu/facultypart](http://serc.carleton.edu/facultypart)

• Or contact
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