Identifying and overcoming barriers to the use of digital learning materials

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NSDL
THE NATIONAL SCIENCE DIGITAL LIBRARY

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
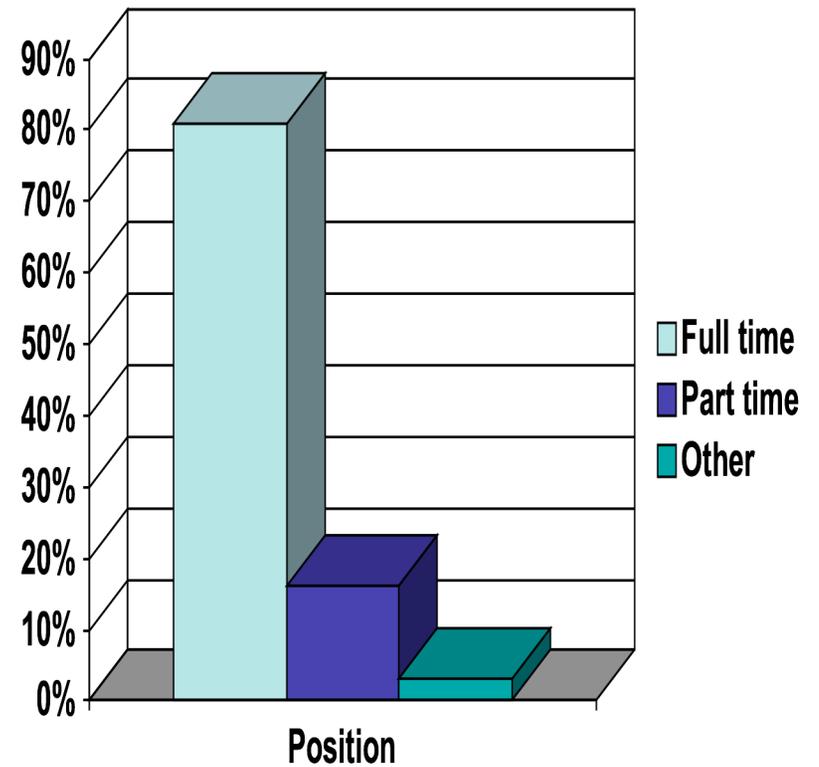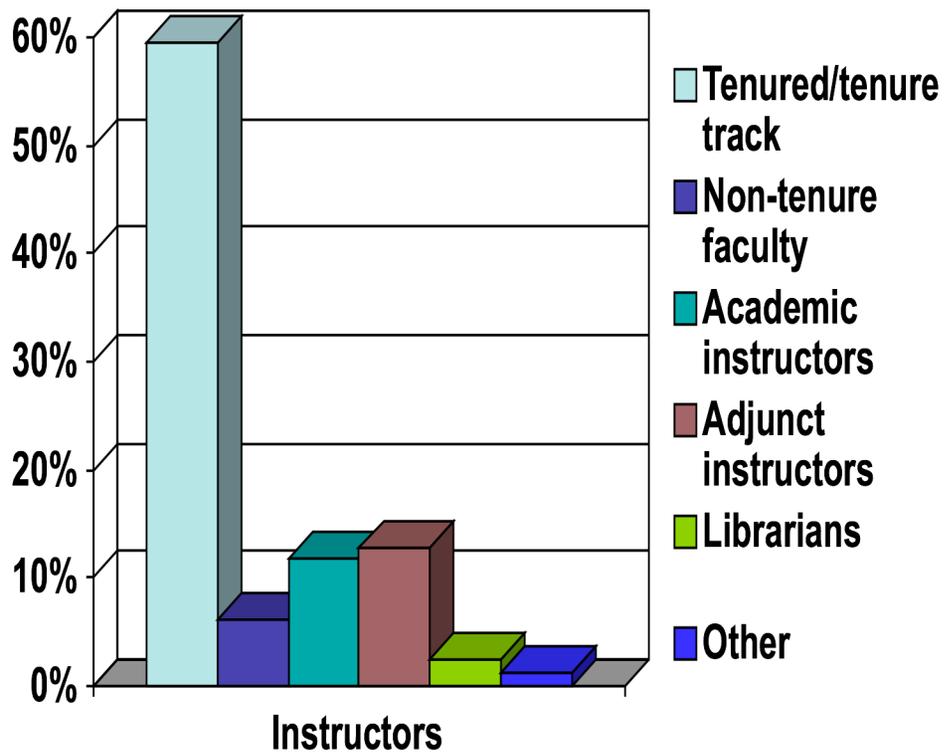
Representation across academy
4% teach in two or more disciplines

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- Visual materials and historical documents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 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

- Or contact
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