

Faculty Use of Digital Resources and the Implications for Digital Libraries

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Introduction

As is often noted, the “build it and they will come” approach has not met expectations of digital library/repository developers or their funders, despite these collections’ growing numbers of available resources for teaching and research. When considering digital learning materials, understanding users’ needs and the work practices that surround the materials need to be carefully considered.

There have been numerous studies examining the transition from paper to electronic journals, especially regarding use of these resources in research. Our understanding of the types of materials sought and how they are used in instruction is less well understood. As instructors seek digital learning materials to meet their instructional goals, collection builders seek to direct users toward institutional and national repositories and collections. To better understand users of the National Science Digital Library and other digital libraries, we were funded by the NSF to study the use of digital learning materials and digital libraries by higher education instructors. In turn, we are beginning discussions of how this knowledge may be used to scaffold the materials in digital libraries to better support our instructors.

Study method

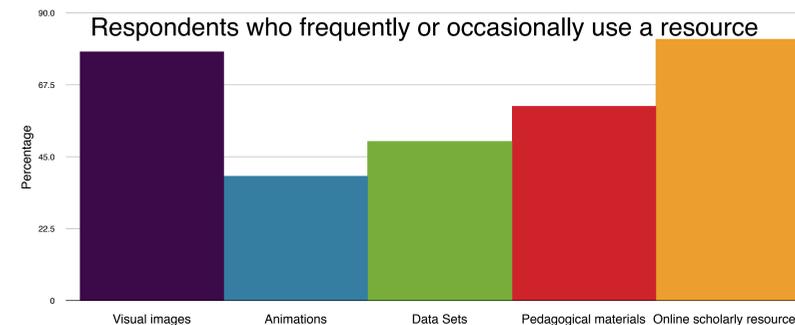
The purpose of this study was to provide a description of use by higher education instructors at the national level and without restriction to any particular educational digital library or collection. We examined the barriers such as resource constraints, lack of access to high quality materials, lack of adaptability of the materials themselves, and intellectual property.

Focus groups were used to gather preliminary data to inform the design of the survey instrument used to survey this population. Because of the diverse nature of colleges and universities to be sampled in survey, we conducted eleven focus groups at institutions representing the diversity of higher education institutions. Using grounded theory procedures, we analyzed and identified the underlying themes that emerged from the focus group data.

The survey instrument reflected the themes both from the literature and from the focus groups and contained 105 items (with skip logic to minimize survey fatigue). It was administered through 119 participating institutions and approximately 4600 individuals responded. Only the 4439 who were actively teaching students were included in the analysis. Instructors from the physical, life, and health sciences, technology, engineering, mathematics, social sciences, and humanities participated. The institutions participating included all the major categories of the Carnegie Foundation classification of institutions.

For more details, please see the publications listed in the references section.

Provide users what they seek



While this may appear obvious, some collections of resources grew from the visions of individuals or groups who had existing resources and this may artificially constrain the growth of the collection. As these collections mature and expand, the curators of these collections need to reconsider the needs of their audiences and their collection building policies.

Themes from the focus groups on issues related to materials sought:

- Most often seek materials that are highly granular for use with students
 - Images, video clips; OSRs are used more for instructor preparation
- Claim to desire the ability to edit the materials
 - Few could cite examples where they did
- Have concerns about IP rights
 - What they can do with others’ materials
 - Protecting their own IP, when they consider sharing
- Like to see how others use materials
 - CMSs and other “walled gardens” limit this form of sharing

Peer review

When asked to rank the importance of some digital library features including peer review of materials, appropriate organization (findability), pedagogical supplements, and professional development supplements 80% ranked peer review either in first or second in priority.

While this in itself it not terribly surprising, the responses in the focus groups differed significantly on what would be acceptable levels of peer review for teaching learning materials. Many felt traditional, labor-intensive models were required. Others discussed that materials being referred to a collection by a qualified peer was sufficient. Understanding your audience could have significant implications on how materials are accessioned into collections.

Offer pedagogical resources.

While few respondents ranked pedagogical resources as a primary or secondary consideration (30%) when listing importance of digital library features, it is still an important consideration. A separate study by our research team (Manduca, et al., 2005) found careful digital library design with embedded links to appropriate pedagogical can direct people at a time of need to new ways of teaching with the content in digital libraries.

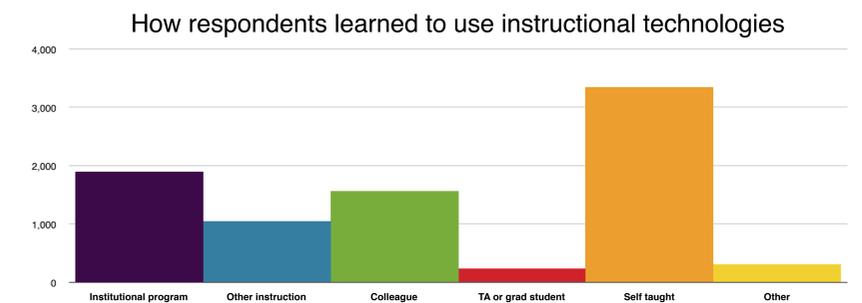
Embrace Googling

When we asked respondents to rank their likelihood to use a search engine or to use a collection of resources (i.e. digital library) with few exceptions faculty were more likely to search.

In the focus groups, participants noted that they were often seeking the resources shortly before needing them, and are capable of evaluating the validity of the resources so search better met their needs. Still others noted spending long periods of time seeking the perfect image to illustrate a concept.

- Allow major search engines to crawl your collections
- Consider search engine optimization
- Brand your content at all levels so users know where content came from
- Offer users assistance in using search engines more effectively

Help the helpers



Most respondents are self-taught, but significant numbers rely on others for support at least some of the time, notably institutional and other formal instruction (e.g. from professional societies), but colleague support is important, too.

- Provide these helpers with information and support to use your collections
- Advertise where these people seek information (e.g. Educause)
- Training will likely have a compound effect through collegial relationships
- Embrace Google (see above)

Acknowledgments

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Source Literature

McMartin, F., E. Iverson, C. Manduca, A. Wolf, G. Morgan (2006) Factors Motivating Use of Digital Libraries Proceedings of the 6th ACM/IEEE-CS joint conference on Digital libraries, ACM Press.

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Manduca, C.A., Iverson, E.R., Fox, S.P., McMartin, F. (2005). Influencing User Behavior through Digital Library Design: An Example from the Geosciences, D-Lib, vol 11(5).

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