

# Use of Online Digital Learning Materials and Digital Libraries: Comparison By Discipline

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## ABSTRACT

In this paper, we describe the results of a national survey of higher education faculty concerning their use of digital resources and collections of these resources. We explore the differences in resource use by discipline groups and suggest implications for development of discipline specific libraries and faculty development practices.

## Categories and Subject Descriptors

H.3.7 [Digital Libraries]: User Issues.

## General Terms

Design, Human Factors.

## Keywords

Digital resources, usage, higher education, instructional materials

## 1. INTRODUCTION

We report the analysis of responses to a nation-wide survey of more than 4500 instructors from 120 higher education institutions that was administered from October 2006 to January 2007. This report focuses on segmenting the data on the use of digital learning materials and digital libraries by instructor discipline.

## 2. Results

When we examine the broad categories of disciplines (life science, physical science, computer science and engineering, mathematics, social science, and humanities) we find obvious differences in the perceived value of digital resources and their use of specific types of materials.

We asked participants their perception of digital resources for instructing students, specifically whether they are of great value, some value, or no value. Approximately 70% of life scientists found the resource to be of great value while less than 40% of mathematicians responded with that answer. Despite this large difference, there is much less variation at the other extreme. Less than 1% of life scientists to less than 4% of mathematicians held the opinion that digital resources have no value for instructing students.

When we examine specific digital resource types, we find the use of images, video clips and other highly granular objects have the greatest variation across the disciplines. Life and physical sciences show the highest use of these visual materials, followed by computer science & engineering, humanities, and social sciences. Lowest utilization of digital visual materials occurs in mathematics. Simulations show less diversity in levels of usage with a division between the social sciences & humanities using them less often than the other disciplines. The use of online scholarly resources (e.g. journals and databases) for instruction show a high level of usage across disciplines, but mathematics and computer science & engineering report utilizing them at a lower level with students. Use of data sets in instruction showed little variation with the exception of lower reported use by mathematicians. The only resource type that did not demonstrate a major variation across the disciplines was teaching activities (e.g. case studies, lesson plans).

The type of institution does not appear to offer any striking differences in resource utilization with the exception of two-year institutions. In the life and physical sciences respondents reported increased usage of simulations. Respondents of all disciplines at two-year institutions reported lower use of online scholarly resources. In both cases, this is likely a financial resource issue.

## 3. Discussion

Our work highlights the need for a two pronged approach to working with educators. Data from our faculty focus groups suggests that potential users do not often return to collections of materials if their searches are not successful. Stewards of digital libraries need to understand the types of materials that their audience seeks to be sure current needs are met. At the same time, faculty developers need to offer scaffolding to use materials that might be outside the users' current capacity for use. Next, we will be working to better understand the specific reasons for the variation we identified by working with specific discipline groups. For additional information about the project and our results please visit: <http://serc.carleton.edu/facultypart/index.html>.

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