Steps Towards Establishing Shared Evaluation Goals and Procedures in the National Science Digital Library

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Abstract

A community-based process was used to develop shared evaluation goals and instruments to begin evaluating the National Science Digital Library (NSDL). Results from a pilot study examining library usage, collections growth, and library governance processes are reported. The methods used in the pilot included web log usage analysis, collections assessment techniques, survey instruments, and semi-structured interviews.

1. Project Overview

The National Science Digital Library (NSDL) is envisioned to be a comprehensive source for resources, research and tools in science, technology, engineering and mathematics education. This NSF-funded program consists of over one hundred projects, led by principal investigators from a variety of institutions across the country. Some are developing collections, others are developing library services, some are engaged in library research, and one large effort is charged with developing core integration services. These core services include a central portal, a metadata repository, and the social and technical infrastructure necessary for integrating distributed libraries, services and collections.

Part of the social infrastructure supporting library integration includes a community governance process. This governance process includes Standing Committees charged with providing formative input into library development in a number of areas including content, sustainability, evaluation, etc. Evaluating NSDL is challenging due to its distributed nature; users are not interacting with a single system or artifact, they arrive into the library network from a variety of entry points that are separately designed and managed. Within this distributed context, the NSDL Evaluation and Educational Impact Standing Committee is developing shared instruments and procedures that work across a variety of libraries and programs to provide individual projects and the NSDL program as a whole with useful formative tools. Through an open, community-based participatory process, the Standing Committee has taken important steps towards creating a shared vision for evaluation as an integral activity within the NSDL. This consensual and participatory approach is crucial for enculturating evaluation activities and concerns within NSDL. A key activity of the committee to date has been to design and conduct a pilot study to examine the following four questions:

1. How are people using the libraries?
2. How are collections growing and changing?
3. How well are the distributed library building and governance processes working?
4. What is the time and effort required, both centrally and at distributed sites, to participate in this evaluation? Do the results justify this effort?

Six digital library projects participated in the pilot study, which ran for 3 months beginning 01 April 2002 and ending 30 June 2002. To examine the questions of library usage and collections growth, a suite of usage metrics and indicators were devised based on analyses of web server logs. Collections growth metrics and indicators examined changes in the amounts and types of metadata records over the period of the pilot. These were completed monthly, that is 3 times, during the pilot. A survey instrument was used to examine the question surrounding library building and governance processes. This survey was administered to project personnel at each participating pilot site. Interviews were conducted with selected respondents to help assess the overall value of the study to participating sites and the NSF.

2. Results

The results of the pilot study indicate that there is already considerable use of library sites within NSDL (millions of user sessions per month), and that library collections grew steadily during the pilot to just over a million objects. Significant amounts of content at participating sites were non-traditional in nature, i.e., discussion forums, newsletters, data archives, etc and as such do not have item-level metadata. A key finding from the survey is that personnel at distributed project sites perceive collaboration to be critical to success, at both the project and program levels, but are frustrated with perceived inadequacies in current communication and collaboration mechanisms. The most important outcomes of the pilot study concerned recommendations for improving the evaluation methodology and instruments, particularly with respect to data reliability and scalability. Study instruments, results, and recommendations are available at the NSDL Communications Portal (http://comm.nsdlib.org) and should be of use to other distributed library projects considering coordinated evaluation activities.