USING THE NSF DIGITAL LIBRARY TO ENHANCE YOUR TEACHING

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Abstract — This presentation is a work in progress on the launching and continuing development of an educational portal for all areas of computing. The portal is the result of the National Science Foundation’s initiative to develop digital content useful for educators, students, and people in industry. One content area of this initiative encompasses areas of computer science, computer engineering, software engineering, information systems, information technology, and all other areas of computing. A consortium of five institutions, each bringing a different perspective to the project, is responsible for acquiring the computing content. Historical developments in computing serve as a theme in the collection of educational resources. The presentation shows how educators can employ the NSF initiative to enhance their teaching.

Index Terms — Digital libraries, computing education, engineering education, computing history, computing collections

The National Science Foundation has recently launched its digital portal through the National Science, Technology, Engineering, and Mathematics (STEM) educational Digital Library initiative, coined NSDL. Quoting NSF: “NSDL is a digital library of exemplary resource collections and services, organized in support of science education at all levels.” Continuing, “The NSDL mission is to both deepen and extend science literacy through access to materials and methods that reveal the nature of the physical universe and the intellectual means by which we discover and understand it.” Access to the NSDL is free through its portal at <www.nsdl.org>.

One collection area of the NSDL project is the Computing and Information Technology Interactive Digital Educational Library project, also known as CITIDEL. CITIDEL is a consortium of five universities that includes Virginia Tech (the lead institution), Hofstra University, Penn State University, The College of New Jersey, and Villanova University. CITIDEL will establish, operate, and maintain part of the digital library that includes information systems, computer science, information science, information technology, software engineering, computer engineering, and other computing-related fields. The principal investigators of the project draw upon an extensive set of experiences related to the goals of the project. These include involvement in the computing education community, expertise for gathering a broad range of resources, and technical expertise in the development and support of digital libraries. Existing resources include digital libraries of ACM and IEEE/CS and collections and lists of interesting web pages that individuals have gathered and maintained. To date, CITIDEL has over 120,000 computer-related resources in its collection. The collection consists of metadata harvested from applicable repositories. The digital library services and content from the CITIDEL project benefits the educational and training efforts of those in the fields of information technology. You can access CITIDEL directly at <www.citidel.org>.

There are many reasons why the NSDL would be useful to educators. First is quality assurance; almost all content areas have been peer reviewed or refereed. While the digital libraries of ACM and IEEE-CS provide access to the very best articles and publications in the field, they also provide access to newsletters and reports that, for the purposes of rapid dissemination, have not received a rigorous review. Some content includes those products that educators and researchers contributed directly. Content areas also include tools and techniques for making that information meaningful and interesting to learners. Students can learn by taking an active role in their education. The NSDL can serve as a learning environment for these students, just as a campus library often serves this role. Content consists of existing work, allowing it to provide a useful collection of materials in a very short time. The NSDL and CITIDEL are community resources that provide a place for people to come together in support of each other, to find what they need, and to publish what they have. They are distributed digital libraries for all to share and to which one can contribute.

This presentation will present an overview of NSDL and CITIDEL. It will focus on the progress of the projects, and provide strategies on how information technology experts can contribute and benefit from the effort. Three of the principal investigators will address different perspectives and provide guidance on how people, institutions, and organization can benefit from associating with the project.

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