The Computerworld Honors Program

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Final Copy of Case Study

YEAR:
2012

STATUS:
Laureate

Organization name:
University of Houston

Organization URL:
www.coe.uh.edu

Project Name:
University of Houston Digital History

What social/humanitarian issue was the project designed to address? What specific metrics did you use to measure the project's success?

Digital History has two distinct groups of users: American history teachers and students. It is important that students have the opportunity to read and interpret primary sources and do history: posing historical questions, analyzing visual sources, conducting research, and weighing evidence and alternative interpretations. Digital History provides users with a wealth of learning resources, including a comprehensive U.S. history textbook and extensive annotated primary sources, as well as a substantial number of active-learning, inquiry-based modules involving interpretation of art, music, and primary source texts. (See Appendix 1 and 2.) Effective history education requires teachers who are knowledgeable and passionate about their subject and students who are motivated and engaged. Digital History empowers teachers to improve their mastery of American history by providing them with high-quality primary and secondary sources and other online resources as well as hands-on, inquiry-based activities that cover the entire span of American history. Digital History offers teachers a comprehensive online textbook, annotated primary sources, lesson plans, historical maps, music, and speeches, an extensive collection of reference resources, and comprehensive lesson plans and support for "doing history" projects that their students can undertake. We measure Digital History's success in a variety of ways. We carefully monitor the number of unique visitors, page views, pages per visit and average time on site with Google Analytics. And we use in-depth analysis of the audience in terms of demographics, behavior measured in visit duration and page depth, and information about the browser and network used. We use this information to plan future development in specific topic areas as well as optimizing visitor flow in terms of starting pages and resulting interactions with

other pages. We also collect comments from users as well as monitor sites and schools that link to Digital History.

Please describe the technologies used and how those technologies were deployed in an innovative way. Also, please include any technical or other challenges that were overcome for the successful implementation of the project.

Digital History is a dynamic database-driven web site that draws on several robust technologies to maintain its availability, performance, and personal engagement of the learning of history. Digital History is primarily driven from a Microsoft SQL back-end database. This massive relational database includes virtually all the resources on the Digital History website. Users can find overviews of each historical era and relevant textbook chapters, primary sources, images, inquiry-based active learning activities, film trailers, and other resources. By using the ColdFusion web programming language, we made it possible for users to call up the information in almost any way they wish. The process is transparent, and the pages are created dynamically. Digital History's web and database servers are embedded within a high-availability virtualization environment running the VMware hypervisor. The environment contains three hosts with high-availability features. Should the particular host on which Digital History is running fail or degrade, the VMotion technology will move the site to another host instantly, resulting in seconds of downtime. This is especially important for teachers utilizing the site in classroom activities anywhere in the world. Digital History's web and database servers are also backed up via AppAssure's Backup and Recovery software, which allows us to back up to our own private cloud. This gives us specific point-in-time restores should any aspect of the Digital History site static files, code files, or database data become corrupted. The University of Houston is located in an area especially susceptible to hurricane damage. During hurricane season, AppAssure's product allows the entire Digital History site to be constantly offloaded to a standby server that is removed from campus in the event of a closure, an Internet outage or an evacuation, thus assuring its survival should the university suffer a prolonged closure or Internet outage.

Please list the specific humanitarian benefits the project has yielded so far.

Each school day, an avg. of 25,000 users visit the Digital History website to learn about American history and explore over 6,000 resources. (See Appendix 1.) As an example, on January 18, 2012, Digital History delivered 67,589 page views to 25,290 unique visitors in 131 different countries. Digital History's online textbook in American History is being used as the "official textbook" for many high school and college classes. We are currently working on a version of the textbook for lower grades. There is no charge for using any materials. We have showcased the Digital History website at the American Education Research Association conference, American Historical Association Annual Meeting, the AHA/OAH co-sponsored conference on Innovations in Collaboration, the Journal of College Teaching and Learning conference, the National Council for the Social Studies, and Society for Information Technology in Education. Our interactive, inquiry, and active learning approach has also been discussed on the H-Net scholarly discussion lists and shared through video-conferencing with approximately 200 middle and high school history teachers throughout Texas. We plan to continue and enlarge these dissemination efforts through printed and online media, conference presentations, and professional development sessions at local school districts and national conferences. Named to the National Endowment for the Humanities Edsitement list of exemplary resources in the humanities, Digital History is also listed as one of the top five resources in U.S. History by Best of History Websites (http://besthistorysites.net/). Digital History also won 2nd place in Best of the Web and Digital Education Achievement Awards from the Center for Digital Education. Digital History was also named on the Top 101 Websites by the International Society for Technology in Education and has been included in the book 101 Best Web Sites for Secondary Teachers, written by James Lerman.

Please provide the best example of how the project has benefited a specific individual, enterprise or organization. Feel free to include personal quotes from individuals who have directly benefited from the work.

Over the past decade, we have conducted numerous intensive, professional development seminars that use Digital History as the main resource for high school and middle school teachers in Houston Independent School District (HISD) as well as teachers in over 50 school districts throughout Texas. These teachers have provided feedback on Digital History materials through surveys and comments, and many continue to participate in the implementation and evaluation of the growing Digital History resources. Graduate students in the Instructional Technology Program at the University of Houston continue to work with these teachers both individually and in small groups to assist them in gaining additional skills to use Digital History in their classrooms. Our analysis of evaluation data indicates that teachers appreciate and highly value the instructional materials available on Digital History and intend to use them in their classrooms. Data from student test scores in American history in the Houston Independent School District indicate that students of these participating teachers score at or above their respective school averages. In addition, 92% had commended scores equal to or higher than their respective school averages, some significantly higher (>15 points). Angela Miller, manager of Secondary Social Studies Curriculum, said, "HISD has approximately 200,000 students from diverse backgrounds. Based on anecdotal surveys, many of our teachers indicate that they need an increased knowledge of content and access to resources in order to improve their teaching. Resources and professional development offered through Digital History will encourage improved teacher training. It will also allow us to provide access to and training on the availability and interpretation of resources to improve teaching and learning. Because these materials are accessible via the web, they can have a broad impact on all of our students and teachers."