

Teaching Art History in a Digital Age

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The Early Days

Using digital images to study art history had been proposed by the Office of Information Technology when the College of Staten Island (CSI) moved to its new campus in 1993. At that time, the available technology consisted of CRT based projectors with a maximum resolution of 640 x 480 pixels, along with 486 computers with 120 megabytes of disk storage, but this was inadequate to show high-resolution images of major art works. Over the following years, both computers and display technology evolved, and the Office of Information Technology attempted to entice faculty to reconsider “going digital.” CSI’s art historians were not thrilled with the demonstrations, however, and repeatedly stated that slide film was the only acceptable means of displaying images in a classroom setting. We were also reminded that computer projection systems could never match the image quality or resolution of slides. Clearly, the technology was not suitable for the demands placed on it.

Paradigm Shift

There were several key events that finally induced the faculty to consider digital image display in the classroom. The first of these was the Internet. This evolved into the World Wide Web and technologies came into play that allowed the storage, access and transmission of high quality images, resources such as ArtStor became inevitable. Also, when you consider the wealth of images that Google can provide, it is no wonder the professors’ interests were piqued. The next event was the decision by Kodak to leave the slide projector market in 2004. This fundamentally signaled a transformation in the world of slides as the universal switch from analog to digital took place. Gradually other technology, such as projectors and computers, improved as well, creating a realistic alternative to slide projectors and slides.

The Digital Art History Classroom

In the summer of 2006, the College of Staten Island built two state-of-the-art classrooms that were dedicated to digital Art History instruction. The key to making these rooms successful was to incorporate features that faculty needed and then extend these by using sophisticated technology. The collaboration between the faculty and the technologists was necessary to provide a framework for the design of these rooms. A critical element that the faculty required was the ability to mimic the dual slide projector format. Use of a split screen display did not provide a

large enough image to suit the needs of faculty who were used to having two independently controlled slide projectors in the classroom. As a result, the dual projector model became the key feature of the design. This would be both a challenge and an opportunity to create a space that had not existed at CSI before, and so the staff began to research whether such a design had been implemented at any other college in the vicinity. The idea was not to re-invent the wheel, but to implement and perhaps improve an existing design. Several colleges with art programs were contacted and a search of the Web did not yield any similar projects in our immediate vicinity. It became apparent that we would have to design and create the space ourselves.

Our main concern was to make these rooms user friendly and to mimic a dual slide projector set-up as closely as possible. In order to accomplish this, we realized that only one computer should serve both projectors. We wanted the faculty to be able to easily control either projected image and to have a preview monitor that would act as a main control display. After researching how to effectively display a unique image on multiple monitors, the video gaming world seemed to offer the answer. It had long held the ability to use a multi-headed display card with several monitors. Looking at what was available at the time, a Matrox G450¹ quad display adapter was purchased. This card has the ability to display an image on four monitors simultaneously. For our purposes, only three outputs are needed, so the fourth would be a spare. The next issue was what software to use to accomplish this task, and since the art historians were already using PowerPoint² for their classroom presentations, it was agreed upon to continue that, especially because this would minimize retraining, as well as increase the comfort level of the faculty. Although PowerPoint has the ability to use dual monitors, this mode failed to meet our needs. Once again the Web was consulted in search of software that would allow PowerPoint to display a separate image on each projector and provide a control interface for both presentations on the preview monitor. The package that met these criteria was a plug-in to PowerPoint called Power-show³. It allowed for the independent display and control of multiple PowerPoint presentations and had an easy-to-use interface. After installing the graphics card and software into a spare PC, the functionality and performance of the system was tested, and everything worked as expected. At this point it was time to demonstrate this prototypical system to the art history faculty to get their feedback before proceeding any further. The total investment had been minimal, so if this did not meet with faculty needs, we would have the chance to go back to the proverbial drawing board.

A demo was arranged with a group of art history faculty in the classroom designated to be converted to the digital image classroom. The prototype was brought to the room and preloaded with several PowerPoint presentations that were used in class by the art historians, so that there would be a common point of comparison. Prior to their arrival the equipment was set-up and connected to two portable LCD projectors and a monitor. The demonstration began when the faculty arrived. Their first comment concerned the accuracy of the color compared to slide images. We explained that this system had not been adjusted in any way from the factory defaults, but that there were a multitude of adjustments that could be made. The faculty then had an opportunity to try to operate the slide show to test its ease of use and the level of control, and they were quite satisfied with the software. At this point a decision was made with the faculty to proceed with the permanent installation, and since the faculty seemed quite confident with this design, we decided to convert two rooms simultaneously.

The remainder of the equipment necessary to begin both installations was purchased. The working timeframe to complete the project was the month of August, with a little time to spare before

the start of the Fall 2006 semester. We wanted to allow at least a week for debugging and training as well. As had been done with all of our smart classroom installations on campus, an outside contractor was hired to install all the cabling, as well as install the LCD projectors and screens. All the electronics would be housed in a Mediatech⁴ MT-400 smart lectern. These were the standard lecterns used for other smart classrooms on campus and were well suited for the special purpose we had in mind. The other equipment that needed to be installed aside from the PC and projectors, was a Symposium⁵ touch screen monitor made by Smart Technologies, a combination DVD/VCR player, an audio amplifier and speakers. The reason for installing the additional equipment was to provide as much capability in this space as possible. All the equipment was secured to the lectern with cable locks to prevent possible theft. Additionally, locks were installed in the lectern that limited the access to the equipment and cables. The installation was trouble free, since it was based on previous similar installations, and debugging was minimal. The time period set for debugging was used instead to provide longer training for the faculty who would be using the room in the fall. With the installation phase completed, a plan was developed to provide support for anyone initially using this classroom. For at least the first few sessions, a technician would be available in the room just in case something didn't work. Thankfully, this level of support quickly became unnecessary.

Over the course of the semester, both rooms were monitored closely. Faculty members were frequently contacted to make sure that everything was working. Although there were a few minor glitches over the course of the semester, they were easily and quickly resolved. The art history faculty became very fond of these two classrooms. In effect, this project proved to be a catalyst for changing over from 35mm slides to digital images on the campus. This proved fortuitous as there were several ongoing departmental projects involving digitizing images; it seemed appropriate to consider the needs of storing and retrieving these images for use in the classroom.

Using funding from a campus based grant, a collaborative project with several departments was undertaken to create an image repository server for use by the faculty. The idea was to create a server on which faculty could store digital images and access them easily through the Web. In order to make this affordable, an open source package was selected to perform the function of image storage, access and management. Called the Madison Digital Image Database (MDID)⁶, the package has all the capabilities required of an online image database and multimedia instructional system. The software was developed at James Madison University to meet the needs of art history faculty. In order to deploy this software, a Dell PowerEdge 2950 server running Windows Server 2003 was purchased. The server has one terabyte of hard disk storage, which is more than sufficient to handle our present needs.

This endeavor is in the very early stages of deployment and a lot of work still remains to be done. Not only will images have to be scanned and loaded onto the server, but they will have to be cataloged in order to provide easy access to the thousands of images that will be housed on the server. One of the several departments that are participating in this project is the library, which will facilitate the cataloging of the images.

Final Thoughts and the Future

These are truly exciting times at the College. With the large-scale deployment of smart classrooms throughout the campus, faculty will have the ability to access the campus' digital image collection in any smart classroom. Additionally, the two dedicated digital image classrooms

2007 ASCUE Proceedings

provide unique capabilities for both faculty and students. We look forward to stretching the envelope even further as our faculty become more adapt at using all of the capabilities of these unique spaces and systems.

Notes

1. Matrox, Inc. <http://www.matrox.com>
2. PowerPoint <http://office.microsoft.com/en-us/powerpoint/default.aspx>
3. OfficeOne PowerShow <http://officeone.mvps.org/index.html>
4. Mediatech, Inc. <http://www.gomEDIATECH.com>
5. SMART Technologies Inc. <http://smarttech.com>
6. MDID http://mdid.org/mdidwiki/index.php?title=Main_Page