DUKE DIGITAL INITIATIVE
TECHNOLOGY INITIATIVES IN SUPPORT OF TEACHING & LEARNING

Duke Digital Initiative Midyear Report for 2009-2010

The Duke Digital Initiative (DDI) is a multi-year program of experimentation, development and implementation with new and emerging technologies in support of the university's mission. Funded by the Provost, this initiative is collaboratively planned and implemented by staff from CIT, OIT, and Arts & Sciences, with input from the Nicholas School of the Environment and the Pratt School of Engineering. DDI sponsors grants and loans of equipment, consulting, training and technical assistance, and showcases effective uses of technology for teaching and learning. DDI also supports exploratory investigations of new and emerging technologies.

Goals of the Duke Digital Initiative

- Promote innovative and effective teaching
- Use technology in support of curriculum enhancement
- Develop technology infrastructure
- Share knowledge about effective instructional technology strategies

	Programs & Tools for Fall 2009
Phase 1 ***Experiment & Target***	Microprojectors, remote collaboration, VoiceThread, WordPress MultiUser, Twitter, mobile devices
Phase 2 ***Transition & Evaluate***	Flip cameras, web cameras, hard drive camcorder kits, iPod touch
Phase 3 ***Integrate & Standardize***	Headsets with microphones, iPod with microphones, mini-dv cameras and tripods

Over the last four years, digital video use has spread to a broad number of disciplines and academic use cases. In Fall 2009, DDI encouraged further adoption of digital video by continuing equipment loaner programs that support these activities. DDI also supported programs to enable faculty and students to explore ways that existing social networking and self-publishing tools (e.g. Facebook, Twitter, blogs) can effectively support academic and research tasks. Finally, this year's programs also aim to increase integration of mobile technologies into the academic experience, and to create and use digital media content with increasingly powerful collaborative tools. (see *Programs and Tools for Fall 2009*, right). Although this year's programs are still in progress, this report provides a snapshot of the program's activities and impact in Fall 2009 in order to facilitate planning for the 2010-2011 academic year.

Findings

Detailed findings begin on page 2

1. DDI programs supported over 200 courses in at least 70 different subject areas through equipment loans or access to online tools.
2. Faculty and students reported that DDI programs met needs across all discipline areas, both within and beyond the classroom.
3. An active pilot of WordPress Multiuser collaborative web publishing platform engaged 261 faculty and student contributors who created 43 actively used course and non-course spaces.
4. The VoiceThread collaborative tool continued to be successfully used in Fall 2009 and was transitioned to a simpler access model for Duke affiliates in Spring 2010.
5. An exploratory program with microprojectors successfully tested and compared five models of this new technology, although faculty interest in experimenting with these devices was low.
6. Several faculty explored ways of integrating Twitter and mobile devices into course activities; these areas generated limited models of academic use and interest among faculty.

Detailed Findings

1. DDI programs supported over 200 courses in approximately 70 different subject areas through equipment loans or access to online tools.

The largest component of DDI in Fall 2009 was a loaner pool of equipment available at the Link Service Desk. Cumulatively, DDI provided over 1500 loans of different models and types of video cameras, webcams, video iPods, headsets, and tripods to over 1000 unique student, faculty and staff users. Loans supported courses across all discipline areas [Figure 1, right]. Most loans were cataloged and tracked using the library's existing circulation system. Also, all recipients of loans were asked to describe the planned use and target course (if applicable) for equipment loans.

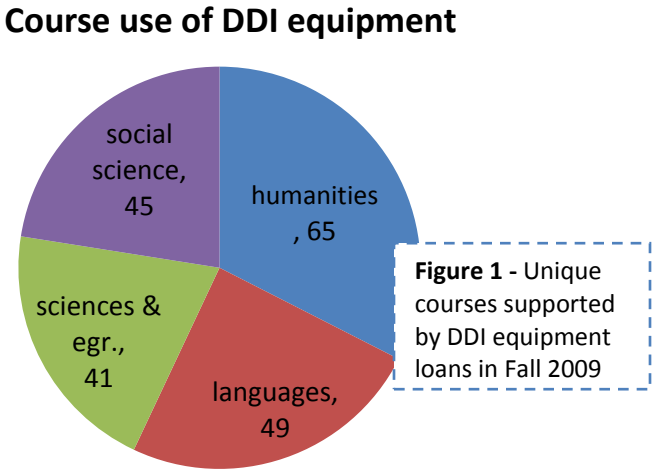

Figure 1 - Unique courses supported by DDI equipment loans in Fall 2009

Over 90% of DDI equipment loans were made to students [Table 1, below]. Flip cameras represented the largest number of loans.

Equipment type (# available)	Undergrad	Grad	Faculty	Staff/ Other	Total
Flip video (HD)	263	137	41	13	454
Flip video (SD)	146	85	12	20	263
Digital video kit	52	24	9	12	97
Hard drive video kit	23	13	4	4	44
High def video kit	12	5	5	4	26
Webcams	14	10	1	3	28
Tripods	129	41	36	16	222
Headsets	120		1	4	125
5th gen iPods	240		5	12	257

A survey conducted of loan program users (n=70) provided mostly positive feedback on the current model of loaner program in place. Although fewer than 10% of borrowers responded to the survey, these respondents did represent borrowers of all types of equipment, and Flip camera borrowers represented the largest proportion of respondents. The survey revealed that users are satisfied with:

- the Link as a pick-up point (extremely 60% / somewhat 26%)
- the process for checkout (extremely 70% / somewhat 20%)
- the length of loan period available (extremely 80% / somewhat 10%)
- types of equipment available (extremely 69% / somewhat 19%)

Users reported nearly always using the equipment as planned (93%), with most describing the loaner equipment as essential to their project (69%), although 23% of borrowers did indicate that they could have completed the assignment in some other way. Suggestions for improvements to the program included additional hard drive cameras and a desire to renew equipment online rather than in person.

2. Faculty and students reported that DDI programs met needs across all discipline areas, within and beyond the classroom.

In addition to course uses, DDI equipment supported field work, independent study, service learning projects, and student life projects. Some of the many curricular activities reported by users of DDI equipment included:

- Accessing multimedia resources on mobile devices
  - Watching conference presentations
  - Preparing for a listening quiz
- Creating audio
  - Recording language learning exercises
  - Capturing lectures
  - Conducting interviews
- Collaborating with video
  - Holding web- and video-conferences with Skype and Adobe Connect
- Video creation
  - Making tutorials & training videos
  - Virtual tours
  - Video blogging
  - Recording lectures, sermons and performances
  - Creating dance and music audition tapes
  - Creating a video segment for a teaching portfolio

Many students specifically cited DukeEngage projects as their intended use of DDI loans. Students used DDI equipment to support DukeEngage projects domestically in Arizona, Missouri, North Carolina, and Oregon and internationally in Beijing, Bolivia, Brazil, Columbia, Costa Rica, Ecuador, Egypt, Haiti, Honduras, Kenya, Nicaragua, Peru, South Africa, and Tanzania.

A wide range of co- and extra-curricular activities were supported through DDI equipment loans. Examples of these types of uses of DDI equipment included:

- Dissertation defense in the Nicholas School
- Singing exercises
- Educational inequalities cause day
- Teach for America webinar
- Duke startup challenge
- Djembe ensemble
- Curriculum revision in physical therapy program
- Haiti memoir project
- Purple educational inequalities committee

3. An active pilot of WordPress Multiuser (MU) web publishing platform engaged 261 faculty and student contributors who created 43 collaborative, actively used course and non-course spaces.

For Fall 2009, the WordPress MU pilot project set out to meet two goals:

- Support the teaching and learning needs of 10-12 undergraduate courses for flexible web publishing.
- Gather feedback and evaluation data to enhance and update the WordPress MU platform for teaching purposes.

The pilot exceeded its participation goal, successfully supporting 12 sections of Writing 20 (3 sections each of four courses) as well as additional courses in Art History, German, French, History and Theater Studies. CIT staff experimented with best combination of software options to meet the needs of the pilot participants, provided consultations on selecting templates , and offered group and individual training as well as drop-in support for faculty and students in use of the WordPress web publishing tool.

A survey of pilot participants yielded 6 instructor and 23 student responses. Responses indicated that participants would be likely to use WordPress again (all faculty; 74% of students). When asked how they could envision using WordPress in the future, students typically thought the software would be most useful as a quick way to create a web page for a course project (65%) or as a tool to support collaborative or community-based projects (43%).

Use of WordPress varied among different courses; sites were commonly used to combine multimedia course elements, facilitate active conversations, showcase student work, and on occasion, to incorporate social media content such as Flickr, Twitter and syndicated content via RSS.

In addition to the two examples of the use of WordPress in Fall 2009 courses highlighted below, additional examples and further details are available at: http://blogs-dev.oit.duke.edu/blog/category/examples/

Feedback from WordPress pilot participants

"I love the possibilities opened up by WordPress for both assignments and course management. It's a highly usable for such a wide variety of classroom/ learning goals. It's an excellent resource that I hope Duke and OIT will continue to support."

"Now that I have a better idea of how it works, I can think of many other uses for WP. I feel as if I only scratched the surface of the blog tools usefulness in my course."

"[Students] were excited, enthusiastic, and worked hard on their own, better than they would have done, I believe, on a research paper."

WordPress MultiUser Course Blogs, Fall 2009 – Two examples

In Dr. Christine Erlien's writing course "The View from Above: Google Earth's Impact," WordPress was used throughout the semester to disseminate topic-related information such as links to Google Earth files, websites and resources. Students wrote their research and then transformed their papers into web-based blog articles, adding multimedia elements such as images and video.

In Laurent DuBois' Cultural Anthropology course, "World Cup and World Politics", students used the site as a platform for lively conversations. These discussions were also used to engage commentators outside of the class. During the semester, student groups created pages to present their research projects, which were opened up and received additional feedback and comments from the wider audience of soccer fanatics, history buffs and even some professional journalists.

4. The VoiceThread collaborative tool continued to be successfully used in Fall 2009 and was transitioned to a simpler access model for Duke affiliates in Spring 2010.

During Fall 2009, the VoiceThread pilot's objectives were twofold:

(1) Expand use of VoiceThread (VT) to include undergraduate faculty from outside languages/humanities (or gather information about why this tool is not perceived as useful to other disciplines).
(2) Gather information about ways in which instructors in varied disciplines use VoiceThread to enhance their teaching and about faculty and student experiences in using the tool.

In Fall 2009, VoiceThread tool was licensed for up to 400 user accounts; of this total, 300 accounts (75%) were used. Users continued to be primarily from Languages. Course activities using VoiceThread included:

- Submitting multi-part audio homework assignments in beginning and intermediate language courses
- Collaborative online discussions of film clips, images
- Peer discussions, editing and feedback on student work
- Creating and sharing short monologues in language courses
- Reviewing and commenting on student oral presentations
- Assigning students to provide oral feedback on visual prompts

Feedback from instructors (n=13) and students (n=23) was overall positive, although many users (particularly students) reported finding VoiceThread initially confusing to use. Some users also reported technical issues such as occasional software glitches such as problems managing group permissions and in using some models of webcams with VoiceThread. Ultimately, all 13 faculty who responded to the survey found the tool to be at least somewhat useful and all indicated that they would be likely to use the tool in the future and to recommend it to a colleague. Of the student respondents, the majority indicated that they eventually felt confident in using the tool. The primary concerns voiced by both faculty and students about the tool were related to an interface that is, at least initially, somewhat confusing for most users.

For Spring 2010 a new arrangement with the vendor enabled a simpler access model offering full campus access. As of January 2010, any user with a Duke NetID is able to access the tool directly rather than needing to request an individual user account from OIT. A few authentication-related issues were encountered during the transition period; these access problems appear to have been resolved. It is not yet clear whether the more open access model will result in greater use of the tool beyond the initial primary user base of language courses, and whether continued support as an infrastructure tool is a cost-effective model for providing access.

VoiceThread Comments from students…

"It was more helpful for collaborative projects than paper editing. For example, we did a class project where our teachers posted a thread that was just pictures and for each picture each student commented with words that the picture made them think of. Then we took those words and made a poem using a wiki. This would have been difficult without VoiceThread and it was a very simple way to get everyone to collaborate."

"I think it's a wonderful way to integrate speaking into homework for language classes."

from instructors…

"It would be a great help to allow faculty members a second access mode that would look exactly like a student's."

"I like it very much. If I could have my ideal, I would like also to have some functions that lend themselves to portfolio work, such as being able to call up all of one student's comments by typing that student's name."

5. An exploratory program with microprojectors successfully tested and compared five models of this new technology, although faculty interest in experimenting with these devices was low.

The goal of the microprojector program was to evaluate the leading models on the market and determine whether any of these offer functionality or benefits for teaching that standard portable projectors do not. Five microprojectors ranging in price from $187 to $560 from five different vendors were purchased for evaluation and testing. A total of five requests were received from faculty to test these new devices. Feedback from these faculty was combined with a review by staff from CIT and OIT to assess the quality, ease of use and flexibility of the devices under a range of conditions. Exploration of these devices will continue during the spring.

6. Several faculty explored ways of integrating Twitter and mobile devices into course activities; these areas generated limited models of academic use and interest among faculty.

The Twitter exploratory program had three goals:

- Disseminate information to faculty and build their knowledge about Twitter and its potential as an instructional technology.
- Support at least 3 courses in use of Twitter in undergraduate teaching.
- Document and share faculty ideas or experiences about using Twitter.

Three hour-long brown bag lunch discussion meetings were offered and three faculty in different departments (Romance Studies, Biostatistics, and Literature) initially volunteered to participate in these discussions about applications of Twitter to academic work. Ultimately the faculty member in Literature was unable to attend events due to scheduling conflicts, although additional faculty and staff from Brain Sciences, Physical Therapy, and Nursing also attended these discussions.

A similar exploratory program with mobile devices aimed to:

- Identify and document a few easy, good uses for common mobile devices (i.e., low end phones, iPod Touch) in education that can be implemented right now for low or no cost.
- Pilot some uses in small classes (including at least one related to media capture and use), capture and document lessons learned.
- Gather data about what devices students have now for communication with faculty.
- Identify future uses as full-featured mobile devices become more widespread; begin brainstorming with faculty.

Outcomes for the program included regular meetings which were attended by a small number of faculty as well as outreach efforts to document and disseminate ideas from these faculty on the use of cell phones in teaching (*right*).

More about Twitter & Mobile Devices…

"Talking about Tweeting: DDI Twitter Lunch"
http://cit.duke.edu/blog/2009/09/23/talking-about-tweeting-ddi-twitter-lunch/

"Education Calling: Teaching with cell phones"
http://cit.duke.edu/blog/2009/08/24/education-calling-teaching-with-cell-phones/

"Explore cell phones in teaching"
http://cit.duke.edu/blog/2009/09/28/explore-cell-phones-in-teaching/

"Take out those cell phones in class"
http://cit.duke.edu/blog/2009/11/05/take-out-those-cell-phones-in-class/