

Duke Digital Initiative 2008-2009 Summary Report

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, Arts & Sciences, 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. In 2008-09, DDI focused primarily on exploring ways that technology could help students and faculty collaborate, capture experiences, and use content in new ways. In particular, this year's programs aimed to expand the use of live and pre-recorded video and to enhance support for the use of video in teaching and learning. Support from DDI included grants of equipment and software, equipment loans, access to online tools, consulting and training.

DDI Goals

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

2008-09 Themes	Technologies
Developing an enhanced loaner pool for digital video production	Flip cameras, hard drive video cameras, high definition video cameras
Enabling individual video editing and content creation	Grants of flip cameras, web cameras, and basic video creation & editing software (QuickTime Pro, Snapz Pro, Camtasia)
Providing tools and support for video-enhanced web collaboration	Web cameras, Adobe Connect, VoiceThread
Exploring high-definition video	High definition video editing kits, including laptops capable of processing HD video

Quick facts

- DDI supported over 1000 students and instructors in capturing and collaborating with video for coursework, research, co-curricular projects and student life activities, including 90 DukeEngage students.
- At least 200 courses in approximately 70 different subject areas were supported with DDI equipment.
- A central pool of equipment at the Link Service Desk provided over 1400 loans (typically for four week periods) using the library's circulation system. Equipment loaned included different models and types of video cameras, webcams, headsets and tripods to approximately 400 instructors, students and staff. At least 60 users borrowed multiple types of equipment.
- Student demand for Flip grants was high; faculty demand was lower. Flip cameras represented over half of all loans of video equipment.
- Grants of Flip cameras (61 instructor, 161 student); webcams (24 instructor, 38 student), and software (16 instructors) supported academic video creation and editing.
- Approximately 300 students and faculty in 18 sections of 13 different courses (mostly in languages) participated in a pilot of VoiceThread, a tool to promote collaboration using rich media tools (video, audio, annotation and text).



Findings

Detailed findings begin on page 3

1. DDI equipment supported faculty and student needs across all discipline areas. Students in language courses remained the largest user group for loan and grants; however, interest among science and engineering courses increased as compared to previous years.
2. Access to easy and portable video capture from Flip grant and loan programs has brought a noticeable increase in the number of academic and co-curricular video projects on campus. Flip cameras were highly popular, providing an easy to use, portable video camera that met a wide range of faculty and student needs.
3. Standard-definition video camera kits remained well-used, with the hard drive cameras (as opposed to miniDV cameras) in highest demand. Many students and faculty planning to edit video after shooting expressed great interest in capturing video without using physical media required by the miniDV format.
4. The VoiceThread pilot demonstrated potential for supporting collaborative learning activities using video and text. The primary course use was in languages, but faculty from a wide range of disciplines tested the tool.
5. Although demand for grants and loans of webcams was less than anticipated, innovative uses were reported by faculty and students.
6. Use of high definition video kits and iPod touch devices was limited by a lack of ideas for academic projects that could be undertaken with this equipment.
7. The use of Ning to manage content for the DDI web site was a success; however, efforts to establish an online community of faculty, staff and students around the use of digital media yielded limited interest.
8. Support for 5th generation iPods, tablet PCs and Wimba voice tools initially provided by DDI was successfully transitioned to the regular IT budget request process.

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Detailed Findings

1. DDI equipment supported faculty and student needs across all discipline areas. Students in language courses remained the largest user group for loan and grants; however, interest among science and engineering courses increased as compared to previous years.

Support from DDI for faculty and student needs was offered through a variety of grant, loan and experimental programs. The two largest components of DDI were a grant program to distribute Flip video cameras to faculty and students for academic use and a central loaner pool of equipment at the Link Service Desk. In addition, some grants of multimedia software (including Camtasia, Snapz Pro and QuickTime Pro) were offered to faculty to enable course-related video production work. Grants of equipment and software were made for academic use only. Loans were available to faculty, undergraduates, academic support staff, and some graduate students in targeted programs regardless of intended use.

Cumulatively, DDI provided over 1500 loans of different models and types of video cameras, webcams, headsets and tripods to over 360 different instructor, student and staff users. Loans were provided from the Link Service Desk. Most loans were for four week periods; devices were cataloged and tracked using the library's existing circulation system. About 20% of users borrowed multiple types of equipment, such as a tripod in combination with another piece of equipment, or different types of video equipment for different needs. Flip cameras represented the largest number of loans [Table 1].

Science and Engineering Examples

Students used Flip cameras and faculty used QuickTime Pro in Biomedical Engineering and Environmental Studies courses to create and edit video projects.

Students and faculty in Engineering used Flip video cameras to create video demonstrations and capture lab sessions.

A Biology student recorded interviews with scientists discussing scientific writing to share with classmates.

Faculty planning Neuroscience undergraduate courses were granted DDI equipment to explore how video could enhance this new curriculum.

Table 1—Equipment Loan by User Type¹

Equipment type (# available)	UGRD	FAC	GRAD	STAFF/ OTHER	Total (% of all loans)	Avg. circ. per device
Flip video cameras (~222) ²	470	54	116	16	656 (47%)	3
Hard drive video kits (10)	41	10	21	8	80 (6%)	8
High-definition video kits (5)	2	4	3	1	10 (1%)	2
Mini dv digital video kits (~100)	236	22	30	12	300 (21%)	3
Tripods (99)	241	41	40	13	335 (24%)	3
Webcams (95)	14	4	2	1	21 (1%)	2

A large majority of DDI equipment loans (~70%) were made to undergraduates. A significant number of faculty and instructors benefitted from loaner equipment, as did some graduate students, some of whom were also instructors and others who were enrolled in English language communication skills courses (to prepare these graduate students for TA or instructor roles in undergraduate courses).

Users were asked to describe the planned use and target course (if applicable) for equipment loans. In addition to course uses, DDI equipment supported field work, independent study, service learning projects, and student life projects. Roughly 40% of all course-related use (888 loans) was in support

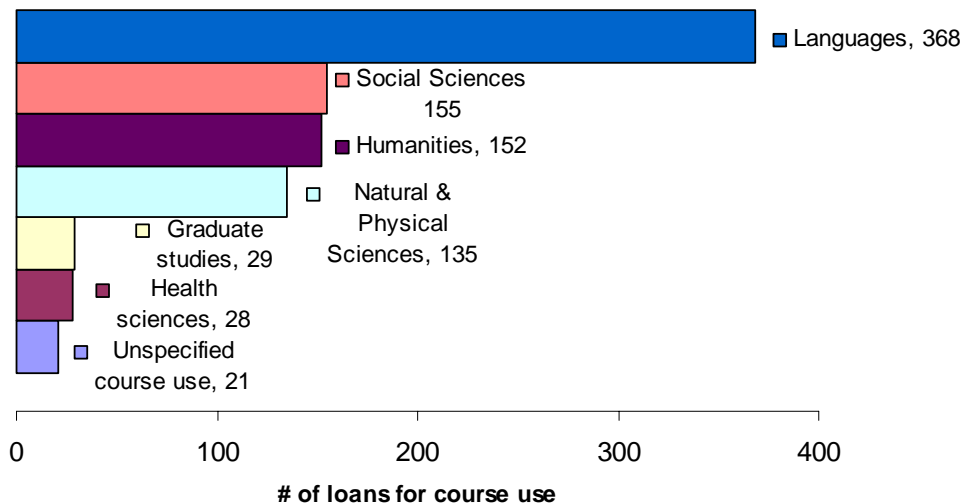
¹ Headsets and 5th Generation iPods were also circulated from the OIT Service Desk but not tracked via the library's circulation system.

² This number represents the addition of 96 High definition ("HD") Flips to an initial loaner pool of 100 standard definition ("SD") devices. Flips allocated but not used for faculty grants were added to the loaner pool in Fall 2008 and also in Spring 2009.



of a language course activity or project (368 loans); usage in other humanities courses, social science courses, and courses in the natural and physical sciences represented roughly equal proportions (~20% each) of loaner equipment usage [Figure 1].

Figure 1 – Course use by discipline group



2. Access to easy and portable video capture from Flip grant and loan programs has brought a noticeable increase in the number of academic and co-curricular video projects on campus.

Flip cameras were highly popular among both faculty and students due to their portability and ease of use. This video option met a wide range of faculty and student needs for both standard and (by spring 2009) high definition recording. Over the past several years the Flip camera has evolved rapidly and now meets a broad range of needs for simple point-and-shoot video. The device is relatively inexpensive, versatile and easy to use. Standard definition Flips were initially distributed in Fall 2008; by Spring 2009, a high definition model had been released, so DDI began to distribute these high definition (HD) flips for grants and added HD flips to the loaner pool as well.

Flip grants to students were extremely popular; the allocated number of devices was quickly exhausted. Conversely, the pool of Flip cameras allocated for faculty grants exceeded demand; less than half of the Flips allocated for faculty grants were needed to fill faculty requests. Circulation records indicate that the loaner pool was adequate to meet needs this year and will likely be adequate to meet ongoing demand with additions to the pool from remaining cameras not distributed via faculty grants. Video-based assignments such as capturing interviews for short video documentaries or recording student video "journals" have become

Common uses of Flip cameras

- Capturing video for class assignments
- Recording lectures and lab sessions
- Recording interviews for documentaries and journalism projects
- Creating "digital diaries"
- Capturing campus events



Examples of Flip projects

- Documenting biodiversity in India for a DukeEngage project (thejungleblog-duke.blogspot.com)
- Recording the "Me Too Monologues" (metoomonologues.wordpress.com)
- Undergraduate Writing Tutors (UWTs) self-recording sessions to be viewed by Writing Studio staff to improve tutoring services
- Faculty member filming a tour of the Old City of Jerusalem as a resource for campus teaching activities



practical in a much wider range of courses. The portability of the Flip cameras makes them well suited to projects requiring students to document field work.

Flip grant recipients surveyed at the end of the Spring 2009 semester (45% response rate) reported that virtually all (93%) were able to use the Flip camera successfully. Most found these cameras easy to use and reliable, producing video of sufficient quality to meet a wide range of needs. A few students and faculty using the device for extended field work did complain about short battery life. Most common Flip uses included recording events (60%), class assignments (59%), and interviews (45%).

Approximately 300 Flip cameras are now available via the Link Service Desk for faculty and students to check out for up to four weeks at a time. Given budget constraints and this established loaner pool, Flip camera grants to faculty and students will be discontinued for 2009-2010.

Three DukeEngage students documented their eight-week independent-study project at the SAI Sanctuary nature preserve in southern India on their "Jungle Blog." ([Duke Today](#), August 2009)



Comments from students and faculty who received Flip grants

I've used my Flip to work on multimedia projects on a wide spectrum of subjects. This summer it has traveled the world with me... It is a reliable, small and very high quality device that I constantly rely on for a wide array of needs. I have been extremely satisfied with the device!

I've begun using it for quick recordings of events that were taking place on Duke's campus. I then bundle them together into a quick viral video of a particular week at Duke for Duke University Union's Marketing Committee.

I have begun to construct a movie of the footage I have taken [with my Flip] using Microsoft Movie Maker. This is a test case for...a class I will be teaching next Spring.

I've tested the camera in a variety of ways. It is extremely versatile, working well in low light. At a conference, I used it to document a group interview via Skype with the interview subject on a large movie screen in a full auditorium

3. Standard-definition video kits were well used and supported a wide range of video production projects. Ten new hard drive camera kits added to the loaner pool this year were very popular; many students and faculty planning to edit video expressed interest in capturing video using this new equipment.

The original core of the DDI video loaner equipment pool consisted of standard definition digital tape-based video kits containing a camera, wireless microphone, external hard drive, and cables for connecting the camera to a Mac or PC. These kits continue to constitute a large portion of the video loaner pool and meet a wide range of faculty and student needs. Typically, these kits were used for projects that involved the recording of larger amounts of footage, required several days of editing, or produced content intended for more professional quality production or a longer period of use. Standard-definition hard drive video kits were added to the loaner pool this year to allow students and faculty to explore the best ways to support digital video projects as camera

Common uses of standard definition video kits

- Recording footage for class projects, documentary films, particularly where large amounts of footage is needed
- Recording content intended for reuse in future semesters or other conditions where a more professional quality result is needed
- Recording in conditions where a wireless microphone or optical zoom is desirable



technology shifts to devices that record a digital video files onto built-in hard drives. These cameras were very popular and were the most heavily circulated type of equipment in the loaner pool. Additional hard drive video kits will be added to increase the size of the loaner pool to 20 in order to meet this growing demand; mini-dv video camera loans will continue to be available as well.

Examples of standard def video kit projects

- Creating promotional videos for the Writing Studio and several clubs
- Filming student projects in French, Russian , Japanese and other language courses
- News projects for Public Policy TV journalism course
- Group projects in Cultural Anthropology
- Capturing video for student projects and laser safety videos in Engineering

4. The VoiceThread pilot demonstrated this tool’s potential for supporting collaborative learning activities with rich media. The primary course use was in languages, but faculty from a wide range of disciplines successfully tested the tool.

Using VoiceThread, faculty and students can share comments and build discussions around images and video. Approximately 300 faculty and students explored the potential of this video collaboration tool in support academic work. In the sample screen shot (right), photo thumbnails of users who have added video commentary for other collaborators to play back are displayed around a central video clip.



Course-related use of VoiceThread was connected to language courses in French, Spanish, Italian, and Hindi. Courses in ISIS and Music also experimented with the tool, as did individual faculty and instructors in Education, Cultural Anthropology, Computer Science, English for International Students, Law, Biology, Physics and Engineering.

VoiceThread Uses

- Capturing video comments and annotations in connection with images or videos
- Creating a class discussion forum around a piece of video, audio or text

VoiceThread in action

In third semester French, video journal projects enhanced students’ language skills and understanding of aspects of French culture. Students studied short French language video clips on topics related to the course (education, transportation, and cinema) and then used VoiceThread and DDI webcams to record their reactions to this material and view contributions from their classmates.

Julie Reynolds (Biology) explored the use of VoiceThread and Jing as a way for reviewers to use video to capture and convey the nuances of their comments when responding to student writing.



5. Although demand for grants and loans of webcams was less than anticipated, innovative uses were reported by faculty and students.

A program to provide grants and loans webcams was offered to support faculty and students in connecting and collaborate remotely using web conferencing tools; capture screen demonstrations using software such as Camtasia and Snapz Pro; and to support the use of other video collaboration tools such as VoiceThread. Initially 150 webcams were allocated to a pool for faculty grants; only small fraction of these cameras were requested by faculty. Webcams for loan through the Link Service Desk also circulated less than other types of equipment. Most Macs and many new PC computers have built-in webcams that work well for individual use, and the intended purpose of the grant and loan program of freestanding web cams for group or class use did not generate much interest. Since the existing loaner pool is more than adequate to meet existing demand, remaining web cameras from the grant program will be distributed in blocks to Duke programs with innovative ideas or demonstration projects for the use of webcams in academic contexts.

Webcam uses by faculty and students

- Recording interviews for a documentary project
- Making short movies for class assignment
- Capturing and sharing images of student experiments
- Capturing video to accompany narrated PowerPoint presentations or screen demos
- Web conferencing and remote collaboration between students and faculty

Examples of webcam projects

- Collaborating with colleagues in Southeast Asia on a tobacco control project
- Planning travel and research logistics; facilitating discussions with principals and teachers in connection with an independent study in Kenya
- Student collaboration with a faculty advisor on data visualizations for an undergraduate honors thesis

6. Use of high definition video kits and iPod touch devices was low, primarily limited by a lack of ideas for academic projects that could be undertaken with this equipment.

Five high definition video kits were purchased for experimentation in 2008-09. These kits included high definition cameras as well as laptops for production work with high definition video. Although a small number of proposals were received for projects using these high-definition video kits, these requests came primarily from students who were working on independent study activities and projects related to student life or extracurricular activities, such as competitions. No course-related projects were supported using this experimental equipment. Given the Spring 2009 addition to the loaner pool of high definition Flip cameras, video capture in a high definition format is now more broadly available than before; also, more consumer model PCs are capable of processing this type of video. Given low demand for these complete high definition video kits , the cameras, laptops and other equipment will be redeployed separately for other uses.

In the iPod Touch pilot, a few faculty and courses did explore the potential of these handheld wireless devices for course use, but these devices were not heavily circulated. Instructors and students from Computer Science, Sociology, the Nicholas School of the Environment, and Hindi explored the potential for academic use of these devices. The iPod Touch loaner pool also supported staff exploration and testing of the Duke Mobile app. Further experimentation may determine whether they might yet have benefit for particular course uses.



7. The use of Ning to manage content for the DDI web site was a success; however, efforts to establish an online community of faculty, staff and students around the use of digital media yielded limited interest.

A new web site for the Duke Digital Initiative was developed in 2008-09 using Ning (*screen shot below*). This site was intended to not only manage content related to DDI programs (such as program descriptions, links to application forms, user training materials, and profiles of DDI equipment use) but was also intended to support the development of an online community for sharing ideas and building user communities around DDI technologies. The use of Ning for maintaining the web site was a success and did simplify the process of maintaining DDI web site content.



The 2008-09 DDI web site tested social networking features in conjunction with a new way of sharing information about DDI programs.

Approximately 100 users joined the DDI Ning site over the course of the academic year; however, very little user-generated content was submitted and the online forums did not attract much interest, so the 2009-2010 DDI Ning web site has been refocused on publishing information about DDI programs and the user community elements have been discontinued.

8. Support for 5th generation iPods, tablet PCs and Wimba voice tools initially provided by DDI was successfully transitioned to the regular IT budget request process.

Several technologies supported in the past by DDI during exploratory use have now been transitioned away from DDI support to regular operational channels. A substantial pool of 5th generation iPods remains available for semester loan via the Link Service Desk. iPod grants to faculty funded through DDI have been phased out; departments whose faculty need iPods for teaching can submit requests for this equipment along with their routine departmental IT budget requests or utilize existing loaner resources for . Tablet PCs purchased for DDI exploratory programs have been distributed for use in departments and classrooms where faculty use tablet PCs to enhance classroom presentations. Finally, funding for Wimba Voice Tools in Blackboard is now included in the CIT operational budget along with other Blackboard-related expenses.