DISTRIBUTED LEARNING AT U.Va.:
MOVING TOWARD 2020

A Report of the
University Committee on Information Technology

May 2002
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In fall 2001, Vice President and Provost Gene Block and Vice President and Chief Information Officer Bob Reynolds charged the University Committee on Information Technology (UCIT) to examine distributed learning at the University. For the purposes of this report, UCIT uses the following definition:

Distributed learning is education that employs technology which can remove dissemination constraints based on time or location. The technology currently involves computers, networks, the worldwide web, videostreaming, television, videoconferencing, and video and audio recordings.

It is important to note that the same technologies are rapidly advancing learning opportunities in the “traditional” classroom (e.g. via computer visualization or interactive discussion with students in other countries).

**FINDINGS**

UCIT’s principal finding is that the essential progenitor to most distributed learning opportunities and materials is faculty’s interest and ability to improve classroom learning through the introduction of advanced technologies. Establishing a teaching environment that facilitates pervasive faculty use of at least the most rudimentary current teaching technologies in the classroom should be an important University priority. Without such an environment, widespread engagement of the faculty with the possibilities of distributed learning is impossible, and our on-Grounds standard of teaching excellence will be diminished relative to our peers.

UCIT concludes that several immediate actions are needed:

- **Providing LCD projection capabilities for every classroom and a notebook computer for every instructional faculty member.** These resources, when reliably available for use in all classrooms, will enable and encourage faculty to use and develop distributed learning tools for classrooms and other learning spaces. The Classroom Improvement Program can be revised to accomplish some aspects of this recommendation. The English Department Laptop Pilot Program for Teaching with Technology (developed by the University Library and the Department of Information Technology and Communication (ITC), and described in detail in Appendix D) demonstrates that such resources matched with appropriate support can make a significant difference in the use of technology in the classroom.” This recommendation echoes similar recommendations in the recent UCIT Strategic Plan for Information Technology and the Faculty Information Technology Skills (FITS) Task Force report.

- **Expanding the multi-tiered matrix of expert support for instructional faculty members.** Such support should include:

* See Appendix E, “Budget Projection for Expanding the English Department Laptop Pilot Program for Teaching with Technology”.

* Distributed Learning at U.Va.: Moving Toward 2020*
• Ensuring that the faculty members of each academic department have close-range access to persons who combine technical expertise with a thorough understanding of both the academic substance and the culture of their discipline. The Teaching and Technology Support Partner (TTSP) program jointly sponsored by the Provost and ITC is one model of this type of support.

• Ensuring that non-discipline-specific local IT support is sufficient to allow faculty and instructional technology support staff to focus on academic work rather than diluting their efforts on more general IT issues for which they have limited interest or expertise. One approach would be to expand the Local Support Partner (LSP) program and assign more resources to these purposes through ITC and the Libraries, and to use students as “tech buddies” for faculty, perhaps for academic credit through the Undergraduate Internship Program. This recommendation echoes similar recommendations in the earlier UCIT and FITS reports.

• Establishing a “one-stop shopping” resource mart for instructional technology for faculty and for those who provide their technical support. Finding help for the various components of technology-assisted teaching and learning is confusing. A central instructional technology resource center could be modeled after the Digital Media Laboratory (DML) in Clemons Library, and administered by DML’s current partners, ITC and the University Libraries, plus other service partners as appropriate.

Beyond the immediate recommendations for action above, UCIT suggests that the following assumptions and recommendations be incorporated into the University’s academic and fiscal planning.

ASSUMPTIONS

1. Distributed learning is a necessary and desirable part of the University’s learning environment. Its importance will only increase in the future, and expansion of its use should be aggressively encouraged as a means to further the University’s educational and outreach missions.

2. The strategic development of distributed learning does not necessarily need to exploit new audiences to be relevant to the University’s most significant goals, nor should it be expected to directly generate new revenues to justify its significance as a central component of the learning environment of the future.

3. The University is already among the world’s leaders in using information technology for distributed learning in certain academic disciplines (see Appendix A for examples). Expansion of the distributed learning environment can be an exercise in transferring and building upon existing strengths.

4. The University can best develop distributed learning by encouraging and providing incentives for the creation of learning materials with flexible and extensible designs that allow them to be used for purposes beyond their original intent. The History Department’s Valley of the Shadow project, for example, began as research, but has shown great value in many other contexts to a wide array of audiences.
5. The single largest impediment to expansion of distributed learning at U.Va. is the amount of time and effort that faculty members must invest to create and use distributed learning materials — including the time and effort needed to identify and gain access to appropriate physical facilities and software resources. “One size fits all” solutions to these challenges are unwise; multi-level approaches that recognize the wide variations of faculty IT skills and of discipline-specific needs are more effective answers.

6. Any special structures and services created to help faculty build a more extensive distributed learning environment must be subject to periodic review for potential modification or retirement. As learning technologies mature, they will become part of the standard learning environment, and the need for special structures and services will change — and perhaps disappear — over time.

RECOMMENDATIONS FOR ACTION

1. The University should make the development of distributed learning a high-priority for reaching its broader strategic goals, notably those associated with the 2020 Commissions reports.

2. The University should aggressively pursue ways of reducing the faculty time and effort required to create and use distributed learning materials. This approach involves many facets of a simple concept — the establishment and maintenance of shared sources of easily accessible and flexible help, expertise, physical equipment, and software. These sources may take various forms:

   • Provision of LCD projection capacity for every classroom and a notebook computer for every faculty member. A reliably available, sharable, physical infrastructure for distributed learning is fundamental for growth.

   • Expansion of the multi-tiered matrix of expert support for instructional faculty members. In addition to the immediate steps previously noted, we further recommend that the “one-stop shopping” central resource mart should eventually grow to coordinate expertise and guidance for faculty on a wide range of questions and policy issues, including such matters as:
      o governance and accreditation
      o academic credit
      o quality assurance
      o faculty compensation
      o partnership arrangements with internal and external entities
      o intellectual property
      o “consumer” issues such as privacy and security
      o instructional design
      o web design and maintenance
      o hiring qualified and appropriate programming help
      o University “branding” of products made available externally (e.g., departmental websites that are increasingly crucial to attracting high-caliber graduate and undergraduate students, and to influencing peer rankings)

   • Easy-to-use (and, when necessary, discipline-specific) tools for developing distributed learning materials that allow for maximum tailoring by faculty with
minimum technical training. A model program is already under development in Arts and Sciences and follows a FITS recommendation.

• Expansion of proven programs to enhance faculty, graduate student, and support staff skills for creating distributed learning materials (e.g., expand the TTI and TTSP programs and the Department of English pilot program). This recommendation echoes similar recommendations in the UCIT and FITS reports.
• Readily available sources of programming help when a tool doesn’t exist — help that not only focuses on rapid development of an additional tool that solves the problem, but also has broader utility for other purposes whenever feasible. Possibilities include establishment of a new service by ITC, perhaps staffed by students managed by ITC. The concept echoes recommendations in the UCIT plan.

3. The University should expand and where necessary build new academic programs to ensure that it is creating sufficient numbers of computer-science and computer-modeling experts (both students and faculty) in all areas of study. Related recommendations for program expansions in computer and information science and engineering are found in the Virginia 2020 Science and Technology Commission report.

4. Although new audiences are not essential to prove the importance of developing distributed learning, the University should incorporate in its strategic planning regular evaluations of whether new audiences, perhaps reached by “distance” methods, should be given high priority in its academic offerings.
For the past several years, innovative U.Va. faculty have used emerging web and other digital technologies to create dynamic enhancements to the learning process for students enrolled in on-Grounds courses. Working on their own, as well as through centralized faculty development programs, instructors have made lasting improvements to pedagogy. Faculty in the McIntire School of Commerce, for example, use commercially available technologies such as WebCT and Blackboard to augment traditional lectures. The faculty there remain current with developing technologies and trends by teaching themselves through online short courses in specific technologies.

Much of the University’s instructional technology work has been conducted under the auspices of the Teaching + Technology Initiative, a faculty development program to help instructors incorporate technologies into their teaching. Sponsored jointly by the Provost’s Office and the Office of the Vice President and CIO, the program began in 1995 by providing faculty fellows with the hardware and software, technical assistance, and release time necessary to complete projects to enhance their teaching. Several dozen courses have been revamped through TTI, and below is a list of the 44 completed projects (representing 25 different departments). The list does not include the work of several fellows presently in the program.

Teaching + Technology Initiative Fellows & Projects

Anthropology — J. David Sapir, 1997
“Photographs on the Web” [http://catlin.clas.virginia.edu/photo/]
• digital museum without walls

Architecture — Kathy Poole, 1997
“A Three-Dimensional Animation of Ecological Dynamics for the Study of Landscape Design, Civil Engineering, and Environmental Science”
• synthesis of empirical ecosystem modeling and three-dimensional graphics

Architecture — Reuben Rainey, 1996
• vast photo archive, video clips, virtual tours, detail sets

Architecture — Earl Mark, 1996
“Computables of Architectural Design: The Quantitative Basis and Invisible Structure of Architectural Form” [http://urban.arch.virginia.edu/~arch548/]
• program for students to create architectural forms through description of mathematical order

Architecture — Kirk Martini, 1995
“Technologies for Teaching Design in Engineering and Architecture”
[http://urban.arch.virginia.edu/~km6e/arch324/]
• interactive visual material, images from lectures with hypertext documents

Art — Lawrence O. Goedde and Leslie A. Rahuba, 1999
“Baroque Art in Europe: A Project to Enhance Teaching Effectiveness & to Simplify the Presentation of Images for Study through Technology”
[http://nmc2.itc.virginia.edu/art/]
• digital images and text in web-based study documents

Art — John J. Dobbins, 1997
“Pompeii as Urban Laboratory” [http://jefferson.village.virginia.edu/pompeii/]
• image database, case studies of problems and methodologies, video

Art — James Hagan, 1997
“Developing Support Materials for Computing in the Visual Arts”
• lectures on technique and craft, links to artists, archive; on web and CD-ROM

Art — Marion Roberts, 1996
• visual archive of the architecture and decoration of Salisbury Cathedral and related sites

Chemistry — Charles Grisham, 1996
“An Interactive World Wide Web Course in Biological Chemistry”
[http://cti.itc.Virginia.EDU/~cng/]
• comprehensive library of three-dimensional molecular models, animations and interactive simulations of chemical interaction

Chemistry — Brooks Pate, 1996
“Removing the Computational Barrier from the Physical Chemistry Curriculum”
• use of software MathCAD on homework, in-class work, and tests to balance the teaching of mathematical tools and chemical principles

Chemistry — Francis A. Carey, 1995
“An Electronic Textbook for a New Four-Semester Introductory Chemistry Sequence”
[http://faraday.clas.virginia.edu/~fac6q/]
• multimedia slide shows of chemical objects and processes for in-class use, animations, interactive features

Classics — Mark Morford, 1996
“Ancient Paths through Text and Image” [http://cti.itc.Virginia.EDU/~mpm8b/]
• text, images, hypertext links for units in Greek and Roman civilizations for in-class use and individual study

Computer Science — Jörg Liebeherr, 1995
“A Grounds-Wide Tele-Tutoring System for the University of Virginia”
[http://www.cs.virginia.edu/~jorg/gwtts/]
• computer interface for groups of people to engage in real-time, interactive video conferences; for office hours, lectures, seminars, or study groups
Curry School of Education — Glen Bull, 1996
• website development tools for use within a web browser (not Unix-based)

Darden Business School — Elliott N. Weiss, 1997
“Virtual Factory Tour Illustrating the Product-Process Matrix”
• virtual tours of manufacturing plants with different processing types

Drama — Thomas A. Bloom, 2000
“Digital Deconstruction: Investigating the Postmodern Dialectic Between Word and Picture
• integration of digital video imaging and editing into drama course

Drama — R. Lee Kennedy, 1999
“Interfacing Instructional Web Media with Live Stage Lighting Control”
[http://cti.itc.virginia.edu/~rlk3p/]
• web-based instructional materials, visual HTML interface to a Windows-based lighting
  control system in the studio classroom

Drama — Kathryn Rohe, 1996
“The Costume Collection Electronic Archive”
[http://cti.itc.virginia.edu/~kmr3c/docs/frameset.html]
• web-based archive of Drama Department’s antique clothing collections

Engineering — Robert J. Ribando, 1995
“A Studio Model for Teaching Undergraduate Heat Transfer”
[http://www.people.virginia.edu/~rjr/modules/]
• computer-facilitated design and analysis of physical principles

Engineering — Larry G. Richards, 1995
“Multimedia Courseware for Teaching Engineering Concepts”
• multimedia tools to supplement lectures, computer-based testing, on-line tutorials, and
  graphical simulations

Engineering — Michael Gorman, 1996
“Ethics Invention and Discovery: A Multimedia Course Proposal”
[http://repo-nt.tcc.virginia.edu]
• virtual experiments with which students interact

English — John Unsworth, 1999
“Bestsellers Database Project”
[http://www.engl.virginia.edu/courses/bestsellers/]
• archive of biographical, historical, and critical information about bestsellers from century

English — Alan B. Howard, 1997
“AS@UVA (American Studies at UVa)” [http://xroads.virginia.edu/]
• integration of theory, practice, and teaching; digital publishing of research for master’s
  program in American Studies

English — Michael H. Levenson, 1995
“From Text to Archive: Remaking the English Department Survey Course”
• literary archive of digital images and video clips

Environmental Science — Wallace Reed, 1996  
“An Introductory Geographic Information Systems Course with Transfer of GIS Applications and Techniques into Other Disciplines”  [http://cti.itc.virginia.edu/~wer/]  
• user-friendly integration of digitization technologies and analysis with GIS software

Environmental Science — Jeffrey P. Raffensperger, 1995  
• electronic textbook with digital video, still images, simulations of hydrological processes, and demonstration problems

French — Roland H. Simon, 1999  
• multimedia exercises in French grammar, including text, images, and sound

“Links to the Past: French Culture Through the Lens of History”  [http://cti.itc.virginia.edu/~jrh9e/links/]  
• web-based hypertext sourcebook, interactive modules on CD-ROM, slide shows, audio and video segments with narration

History — Phyllis K. Leffler, 2000  
• interactive database of more than 230 interviews in the University Library’s Special Collections

History — Edward Ayers and William Thomas, III, 1997  
• extensive database of stories of Civil War soldiers

History — Brian Balogh, 1996  
“Viewing America from Your Web Site”  [http://cti.itc.virginia.edu/~bb9s/]  
• electronic sourcebook used in weekly discussion sections; includes text, still images, video clips, and audio clips

Italian — Christina Della Coletta, 2000  
“Italy on Screen - One Hundred Years of Digital Memory: 1860s - 1960s”  [http://nmc2.itc.virginia.edu/italiancinema]  
• electronic archive with clips of rare films, paintings, photographs, historical and fictional texts, interviews, and newspaper articles

Mathematics — Jeffery J. Holt, 2000  
“Cavalier Calculus”  
• on-line quizzes, homework, pre-class handouts, in-class worksheets; replaces most in-class lectures with student group work
Nursing — Sarah P. Farrell, 1997
“Teaching Psychiatric Nursing with Interactive Simulations: Connections Between Theory and Practice”
- CD-ROM of videotaped simulations of interactions in clinical psychiatric nursing; multiple responses demonstrated

Physics — Stephen T. Thornton, 1997
“Teaching Physical Science to Preservice K-8 Teachers”
- integration of computers and graphing calculators in analysis of experimental data; real-time student responses in class section

Psychology — Charlotte Patterson, 1996
“Multimedia Courseware for Introductory Child Psychology”
- electronic textbook for use inside and outside of classroom; digital video examples of child behavior

Psychology — Michael Kubovy, 1995
“An Interactive Wireless Classroom”
- wireless infrared keypads for student involvement during large lecture class

Religious Studies — Abdulaziz Sachedina, 1999
“Islamic Art and Architecture as an Expression of Spirituality in Islam”
- course website with analysis of visual and audio materials

Religious Studies — Benjamin C. Ray, 1995
“African Art and the 'Virtual' Museum”
[http://cti.itc.virginia.edu/~bcr/rela345.html]
- image, text, and audio database of African art

Slavic Languages and Literatures — Natalie O. Kononenko, 2000
“Multimedia Slavic Folklore Database”
- digital images of East Slavic villages, folk art, rituals, and performances; audio files and texts in original language and translation

Slavic Languages and Literatures — Karen Ryan-Hayes, 1997
“Modern Russian Culture: Multimedia Courseware Development”
- CD-ROM and website sourcebook that integrates text, visual images, music, video clips, and geography

Sociology — Jeffrey K. Hadden, 1995
“Enriching Instruction through Integration of Multimedia and Computer Technology Resources”
[http://cti.itc.virginia.edu/~jkh8x/]
- use of Microsoft PowerPoint to incorporate images and photographs into lectures

Sociology — Charles E. Denk and Douglas E. Loyd, 1995
“Cactus: Computer-Assisted Curriculum for Teaching Undergraduate Statistics”
[http://www.people.virginia.edu/~del6n/cactus.html]
- self-teaching electronic workbook
APPENDIX B:

DISTRIBUTED LEARNING ACTIVITIES
COORDINATED BY U.Va.’S
SCHOOL OF CONTINUING AND PROFESSIONAL STUDIES

The following courses, coordinated by the School of Continuing and Professional Studies, are provided online or via video conferencing. Some of the courses are offered for the professional development of working persons; others are for-credit courses offered through the University’s regular academic departments. The list is current as of August 2001, and it does not include courses being planned or under consideration.

Courses leading to a Certificate in Procurement and Contracts Management
- Procurement and Contracting
- Contract Administration
- Cost and Price Analysis
- Principles of Law for Contract Formation
- Negotiation of Contracts and Modifications
- Seminar in Procurement and Contracts Management
- Principles of Law for Contract Performance
- Contracting for Information Systems
- Advanced Major ADP Systems Acquisitions
- Federal Government Contracting: A Contractor’s Perspective
- Subcontract Management
- Services Contracting
- FAR Standards for Actions and Decisions
- Contracting by Negotiation
- Construction Contracting
- Electronic Commerce in Federal Acquisition

Courses leading to a Certificate in Web Content Development
- Introduction to Web Content Development
- Web Site Design and Development
- Advanced Web Technologies
- Writing for the Web
- Fundamentals of E-Business and Marketing

Courses Leading to a Certificate in Information Technology
- Introduction to Information Technology
- Fundamentals of Java Programming
- Information Technology Business Operations
- Basics of Web Design
- Systems Analysis and Design
- User Requirements and Quality Assurance
- Project Management
- Introduction to Programming Concepts
Courses Leading to a Certificate in E-Commerce
- Introduction to E-Commerce
- Managing and Maintaining an E-Commerce Web Site
- Web Marketing: Building Awareness on the Internet
- Regulatory Legislation
- Financial Management for Web-Based Business
- Strategic Management of E-Commerce Technology
- Emerging Business Models in E-Commerce

Courses Leading to a Certificate in Technology Leadership
- Leadership in the Technology Organization
- Financial Management
- Communications and Team Development
- Project Management in Technology Organizations
- Employee Recruitment, Development and Retention in the IT Industry
- Understanding Technology Operations

Accounting
- Introductory Accounting I
- Introductory Accounting II

Human Resources Management
- Management of Organizations
- Human Resources management
- Human Resources Information Systems
- Managing the Training Function

Computer Courses for Educators
- Introduction to Creating and Using Educational Web sites

TEMPO Reading Online Courses
- Word Study
- Content Reading

Digital Video Conferencing Courses
- Fluid Mechanics
- Advanced Switching Theory
- Dynamics of Multibody Systems
- Applied Electrochemistry
- Structure and Properties of Materials
- Transport Processes Mathematical Programming
- Computational Procedures in Structural Mechanics
- Analog Integrated Circuits
- Computational Fluid Dynamics *
- Creativity and New Product Development *
- Vibrations
- Structure and properties of Materials
- Mass Transfer
- Phase Transformations

* Second class sessions each week are by video streaming and other online activities.
APPENDIX C:

PEER INSTITUTION SURVEY FINDINGS

During January 2002, U.Va’s Office of Institutional Assessment and Studies conducted a survey of several of the University’s peer institutions for the purpose of understanding distance-learning activities underway elsewhere. The survey, which was conceived by the University Committee on Information Technology, was brief and was implemented via e-mail. Respondents were asked questions regarding the types of courses offered, program administration, the history of the institution’s involvement in distance education, and participation in consortia. Perhaps the most significant finding was the correlation between the existence of senior central academic officers responsible for distance learning and substantial programmatic activity level.

The Survey

At the top of each questionnaire, respondents were instructed to use the following common definition of “distance learning”: Distance learning is the delivery of educational programs to off-site students through the use of synchronous and asynchronous communication technologies such as television, the world wide web, video streaming, videotapes, audio tapes, and videoconferencing.

Staff members from some 13 peer institutions responded to the survey, including University of Iowa, University of North Carolina, University of Oregon, University of Michigan, Purdue University, University of Pittsburgh, University of Wisconsin, University of California – Berkeley, University of Washington, University of Arizona, University of Colorado, University of Missouri, and Rutgers University. Their answers are summarized below, following each of the survey questions.

Response Summary

1. Does your institution offer distance-learning courses or programs of study? If not, please answer “no” and stop here. If so, are they credit courses or non-credit (or both)?

Distance-learning courses are offered by all of the institutions responding to the survey, although the University of California – Berkeley offers distance education courses solely through its extension program. Most institutions offer a mix of credit and non-credit courses through distance education. The University of Pittsburgh, the University of Oregon, and Rutgers University primarily offer for-credit courses.

2. What is the extent of the distance-learning offerings? Are they limited to selected disciplines, or offered across the board?

The institutions surveyed typically offer selected for-credit courses through distance education, with non-credit courses concentrated in the professional schools. Large for-credit
course concentrations and entire online degree programs are found most commonly in such
disciplines as nursing, library science, education, and engineering.

Of the institutions surveyed, those with the most extensive offerings include the University of
Washington, the University of Colorado, and the University of Oregon.

3. How long has your institution been involved with offering distance-learning
courses/programs?

Nearly all of the respondents indicated that their universities offered correspondence courses
beginning in the early part of the 20th century. The progression through emerging
technologies also was common: television and videotape courses first were offered in the
1980s, and web and videoconferencing courses first were offered in the 1990s.

4. In creating and/or delivering distance-learning courses, does your institution have any
formal partnership agreements with other institutions? Please list the other universities,
commercial enterprises, and/or consortia involved in the agreements.

Most respondents cited decentralized academic structures, with decision-making for
collaborative arrangements generally resting at the school and department level. A few
respondents cited no partnerships, and several reported very limited activity. Collaborations
commonly were among in-state sister regent institutions. The exception was the University of
Washington, which is by far the most active with regard to distance-learning partnerships. Its
activities and leadership run the gamut of inter-institutional and commercial ventures.

5. Are your distance-learning courses/programs administered centrally? If not, how are they
administered? What position is the top management/policy officer for distance learning?

Most respondents replied that their distance-learning activities are generated at the
department or school level, with faculty taking the lead initiative. Further, most respondents’
institutions had no central academic officer responsible for distance-learning activities. In the
great majority of institutions, coordination and administration of distance-learning courses are
handled through divisions of continuing education. Some schools, such as the University of
California - Berkeley, maintain very separate extension programs, through which all distance-
learning programs operate. At the other end of the spectrum was the University of
Washington, which maintains the central administrative position of vice provost for
educational outreach.
APPENDIX D:

ITC/LIBRARY
ENGLISH DEPARTMENT LAPTOP PILOT PROGRAM
FOR TEACHING WITH TECHNOLOGY

SUMMER – FALL 2001

Submitted by:

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Terry Lockard (ITC)

Martha Blodgett (University Library)
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Overview

University programs such as the Teaching + Technology Initiative, ITC Technology Workshops and Instructional Technology Courses, and Library Short Courses have been in place for several years to help faculty develop technology skills. These programs have worked well for those faculty who are inclined to be early adopters of technology. However, according to the 2001 report of the Faculty Information Technology Skills (FITS) Task Force “the information technology skills of our faculty are, on the whole, less than adequate.” It appears that the early adopters have had little effect on spreading technology skills to their colleagues.

The purpose of the English Department Laptop Pilot Program was to
• test a basic assumption that faculty do want to be able to use technology in their classes, but are concerned about the investment of time needed
• test the effectiveness of a department/discipline-specific approach to customized technology training
• determine a staffing model for supporting integration of technology into instruction
• create a peer group of faculty who can serve as role models, coaches, and mentors for other faculty in using technology in their discipline

The program was designed to create a supportive environment in which it would be easy and non-threatening for faculty to improve their ability to use simple technologies. Based on early results, we see this model as both effective and scalable. We recommend using this discipline-specific model to develop technology skills for all teaching faculty.

Target Audience
English Department faculty who had previously used technology only minimally or not at all in their teaching

Incentives
Customized laptop computer for each participant, ongoing training, support, and consultation

Requirements
In order to participate, faculty were required to
• apply for the program by describing their level of technology skill and how they proposed to use technology in their teaching
• participate in a formal, customized training program
• commit to use some form of technology for classes in the next academic year

Profile of participants
Participants were: 14 faculty with 50% men and 50% women; 11 tenured and 3 untenured

Typical comments from applicants’ proposals:
“I’m still pretty much a novice (and a bit of a Luddite).”
“I’ve seen others use the computer in classes and never imagined I could become adept at such skills.”
“I’d love to use PowerPoint for my big lecture class; I need to figure out how to capture images from books, the Internet, slides, etc. and get them onto the screen at the front of the big classroom.”
“I am behind the curve on technology like [PowerPoint] and, partly as a result, my TAs are as well.”
“I am hoping to make my first connections to the Media Center at Clemons for the sake of my … seminar this fall.”
“I’ve always used slides… With an online archive I’d be able to show the images in class and talk about them, but the students would also be able to access the material themselves for study outside class.”
“I don’t know how to use PowerPoint or how to project web pages.”
“It is no longer possible… to deal adequately with electronic resources without having access to them in the classroom itself.”
“I know how to check my email and how to search literary/library databases, but that’s about it.”

Investment
- $67,500 for laptops, peripherals, and classroom projection equipment
- Reassigned 2 FTEs for 2 months to develop and manage program
- Used approximately 40 hours of volunteer time from 8 (faculty and staff) presenters

Classes Offered
- Introduction to Laptops, File and Account Management
- Scanning Text and Images
- Creating Basic Web Pages
- Instructional Toolkit and E-folio
- Effective Use of PowerPoint
- Introductions to the Digital Media Lab and the Robertson Media Center
- ITC and Library Resources
- Wrap-ups: Tips for Teaching with Technology, Dress Rehearsal with Projection Equipment

First semester evaluations
Student comments:
“The various multi-media presentations greatly expanded my knowledge of stage design/performance history/18th century culture in general”
“PowerPoint presentations were extremely helpful… Helpful to see material, visual representation of the space in which plays took place.”
“The presentations on theater design and varieties of entertainment were wonderful additions to the course.”

Faculty comments:
Faculty report that using technology prompted conversations with students that wouldn’t have happened otherwise.
The training encouraged faculty to “be educational innovators rather than merely to be consumers of existing tools.”
“I just reviewed my teaching evaluations from the fall and one student listed my ability to use technology as one of my teaching strengths. I thank you, Nancy, and Amanda for this, since without you I wouldn't know how to do it.”
“I read in Libra about your laptop initiative…. How would I go about getting this type of support (and a bit of an introduction to the equipment)?”
“I find myself astonished at the resourcefulness, confidence, and flexibility – along with appreciation for University services, technological resources, and various tools – that I've gained during this short time.”

Proposal

Extend this discipline-specific model to as many academic departments as funding will allow. In the coming year target departments in the College of Arts and Sciences, the School of Architecture, and the School of Engineering. These three schools currently have 960 faculty. It is feasible to offer this program to as many as 300 faculty each summer. Program specifics would be arranged in consultation with department chairs and Chief Technology Officers in each of the Schools.

<table>
<thead>
<tr>
<th>Projected Annual Costs for extending pilot program - possible scenarios</th>
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<tr>
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<tr>
<td>Laptop Costs</td>
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<tr>
<td>Total annual cost of Dell laptop 3-yr lease (DCI)</td>
</tr>
</tbody>
</table>

Note: Funding projection for laptops could be reduced if the program is tied to departmental desktop replacement:

| | 100 participants | 200 participants | 300 participants |
| Departmental cost for standard DCI desktop | $52,833 | $105,666 | $158,499 |
| DCI laptop lease cost - departmental cost of DCI desktops | $61,855 | $123,710 | $185,566 |

Projection Cart Costs

| | 100 participants | 200 participants | 300 participants |
| Cost for 10 projection carts | $45,000 | $45,000 | $45,000 |

Notes: Classroom improvement funds could be considered for funding source; Number of carts needed may change

Staff Resources

| | 100 participants | 200 participants | 300 participants |
| Library: 1 FTE | $60,000 | $60,000 | $60,000 |
| ITC: 1 FTE | $60,000 | $60,000 | $60,000 |
| Benefits | $36,000 | $36,000 | $36,000 |
| Staff Resource Costs | $156,000 | $156,000 | $156,000 |
Introduction
In his April 2001 State of the University address, President John Casteen articulated the University’s commitment “to create an environment in which technology becomes ubiquitous and fully integrated into teaching, research, and student life.” Because ITC and the University Library are committed to the transformation of classroom instruction and learning through innovative uses of technology and the creation and delivery of digital information, it was only natural for these two departments to assist in addressing the University’s stated priority by partnering in the development and implementation of a pilot program aimed at faculty who had not yet integrated technology into their instruction. The English Department was selected as the pilot department. The pilot provided new, well-equipped laptops, extensive training, and comprehensive support to select faculty in the department in exchange for their commitment to introduce technology into their teaching.

The Teaching with Technology Laptop Pilot Program began to take shape in May 2001, under the direction of Nancy Hopkins of ITC and Karen Marshall of the Library. The Chair of the English Department, Michael Levenson, was enthusiastic, encouraging, and fully supportive of the pilot, which was little more than a vision when presented to him. Soon thereafter, English Department faculty who had previously used technology only minimally in their classrooms were invited to submit informal proposals to the pilot program coordinators, indicating what they hoped to accomplish via the pilot program and expressing their commitment to introduce enriching, appropriate technology into their classrooms this fall. ITC and the Library were prepared to accept up to 15 faculty into the pilot. Of the 16 faculty who submitted proposals, two were deemed “over qualified” to participate. However, they were invited to attend the training sessions. The remaining 14, 11 of whom are teaching in the fall 2001 semester, were a perfect fit for the pilot and were eagerly accepted into the program.

Demographic summary of the participants:

- Men 50%
- Women 50%
- Full professors 36%
- Assistant & associate professors 64%
- Age Range 31 - 64
- Average years at U.Va. 12

In her proposal, one interested faculty wrote, “It’s embarrassing to be so well qualified… and it’s the first time this (or any) inadequacy of mine has been a useful tool of advocacy! I’ve seen others use the computer in classes and never imagined I could become adept at such skills.” After attending the training sessions, by the first day of fall semester, this same faculty member had scanned the original illustrations from *The Pickwick Papers* to show in her Dickens seminar, using her laptop and a portable projector.

Goal of Pilot Program
The goal of the pilot was twofold.
1. To insure that the 14 participants experienced early successes in their endeavors, and
2. To determine the resources required to successfully implement a similar program on a larger scale. 

To meet this goal, ITC and the Library pledged to provide the participants with the hardware, software, training, and support needed to insure immediate success.

**Resources Required**

Consultations with each participant during the design of the pilot resulted in a defined set of hardware, software, training, and support needs. It was not surprising that the faculty's needs and desires were very similar. They were not looking to make technology the centerpiece of their instruction. They simply wanted the tools and skills to enhance their lectures and discussions. Each participant was offered his or her choice of DCI laptops: a Dell Latitude or an Apple PowerBook, each equipped with CD-RW, DVD, and Zip drives; wireless networking; external speakers; the standard U.Va. software image; as well as specialized software utilities to facilitate the accomplishment of their goals. See the attached Appendix for hardware specifications. To insure faculty were not limited to teaching in classrooms already equipped with projectors and other multimedia equipment, portable projection equipment (two carts with projectors, VCR players, DVD players, and speakers) was provided to the participants so that classes of any size, meeting in any building, could benefit from their endeavors.

Extensive hands-on training, delivered by nearly 20 ITC and Library experts, took place over the summer. The curriculum included Introduction to Laptops, File Management, Account Management, Scanning Text and Images, Creating Basic Web Pages, the Faculty Instructional Toolkit, E-folio, Effective Use of PowerPoint, Introductions to the Digital Media Lab and the Robertson Media Center, ITC and Library Resources, Tips for Teaching with Technology, and a Dress Rehearsal with Projection Equipment. In addition, two English Department faculty members who regularly use technology in the classroom showcased their successful integration of technology and teaching. To accommodate participant schedules and to insure small class sizes, each training session was offered three times during the summer. According to one participant, the training encouraged the faculty to “be educational innovators rather than merely to be consumers of existing tools.”

Throughout the summer and the fall semester, the participants received a great deal of one-on-one technical support and encouragement on an as-needed basis from ITC and Library staff. Amanda French, the English Department’s TTSP (Teaching and Technology Support Partner), a graduate student in the department who acts as a technical consultant to all department faculty who want to incorporate technology into the classroom, also provided a great deal of one-on-one support. Because of her knowledge of the Department and her role with the faculty, it was imperative to the success of the pilot that she be involved in the design and delivery of the training curriculum. In order for her to provide effective support, she needed equipment identical to the participants’. An identical laptop was purchased for her by the English Department.

On-going support has taken many forms, including:

- helping participants create more advanced web pages
- researching software applications that can meet their growing technical needs
- resolving wireless networking issues
- resolving hardware issues
- advising them on appropriate uses of technology
providing technical and moral support when they use technology in the classroom for the very first time.

Without this on-going support and individual attention to their needs, some participants might have become frustrated and given up before achieving any success.

Outcomes and Evaluation

More formal evaluations of the effectiveness of the program will be conducted in January 2002 and at the end of the spring 2002 semester after the participants have had adequate time to hone and implement their new skills. The students in the pilot classes will be asked to evaluate the success of classroom technology in their learning experience. Early reports for this semester indicate impressive success. Hopkins and Marshall observed very encouraging results in the classroom from the beginning of the fall semester. In fact, several faculty who had never used technology to deliver class lectures before used their laptops and a projector successfully on the very first day of class. Others have used the Instructional Toolkit to distribute class materials and to develop class email lists for the first time; used PowerPoint presentations with embedded graphics as talking points for lectures; displayed scanned images side-by-side to compare and contrast drawings, pictures, and book jackets; played short QuickTime movies to illustrate a point, and integrated sound files to “set the mood” for the day’s lecture. Conversations with students also indicate success. They have lauded their instructors for testing the waters of technology and enhancing their lectures with multimedia.

The faculty are rapidly gaining new competencies and confidence. They are discovering new ways to appropriately apply technology to meet their students’ needs as well as their own. They are not integrating technology into the classroom for the sake of integrating technology. They are integrating the technology to enrich the teaching and learning environment, and they are triumphant. One participant summed up his experience when he said, “I find myself astonished at the resourcefulness, confidence, and flexibility – along with appreciation for University services, technological resources, and various tools – that I’ve gained during this short time.”

Contributing Factors

Many factors contributed equally to the success of the Teaching with Technology Laptop Pilot Program, including

- the enthusiastic, dedicated faculty participants;
- the full support of the Chair of the English Department;
- the technical savvy and close involvement of the department’s TTSP;
- the relative homogeneity of the participants’ starting skill levels;
- the hands-on, intensive, customized training provided by experts;
- the individual, on-going support provided to the participants;
- the goal-oriented, collaborative efforts between ITC and the Library;
- the dedication of the coordinators who made this project their top priority;
- the flexibility of all involved; and
- the monetary and staff resources provided by ITC and the Library.

Conclusion

ITC and the University Library designed the Teaching with Technology Laptop Pilot Program as a feasibility study to determine the resources needed to meet the University’s goal of creating an environment whereby technology is fully integrated into teaching, research, and learning. The English Department became the test bed. The 14 participating faculty members
received the hardware, software, training, and support they needed to begin the process of integrating technology and teaching. Not only did they see the possibilities, but they also took their new tools and turned their visions into realities. Early comments by the faculty and their students point to success. Feedback has highlighted the increasing demand for digital content and the need to accelerate the creation and acquisition of digital content for use in teaching. More achievements by participants are expected throughout the semester. More in-depth evaluations will be completed in January 2002 and at the end of the spring 2002 semester.

Next Steps
ITC and University Library involvement with the English department participants will continue into the spring 2002 semester. At this point, we are meeting with participating faculty to determine what on-going training is needed, how frequently they are using technology in the classroom, how they are applying the technology to their teaching, how instruction and learning have been transformed as a direct result of the use of technology, and what resources they are relying on to be successful. Having experimented with technology in the classroom this semester, the faculty are beginning to fully realize the potential applications of its use. Faculty indicate it may take a couple of semesters to integrate technology to the degree they desire. As a result, the success of the pilot must be measured over time.

The data being collected now will be incorporated into a more in-depth evaluation of the pilot in January 2002. It will provide a thorough look at the resources, the achievements, the contributing factors, the challenges, and recommendations for the future of the program. In addition, at the end of the spring 2002 semester, a follow-up evaluation will be conducted. By this time, the faculty will have sharpened their skills and had more time to develop technology-rich seminars and lectures. With this additional time, the impact of the pilot will be better understood. In the interim, participating faculty will continue to receive on-going training, and students of the participating faculty will be surveyed for their perspective on the effectiveness of the integration of technology.

Nancy Hopkins, ITC
Karen Marshall, University Library
I might be interested in doing some internet or computer-assisted teaching for my 120-student Intro to Media Studies course (anything to jazz up the lecture format!) but don't quite know at this point what that might entail. In the past I've illustrated lecture material by showing students websites (I teach in an internet-ready classroom here at the University of Alberta). I also had assistance in putting some lecture notes onto a web site/chat room when I had to be out of town during classes. I'm still pretty much a novice (and a bit of a Luddite) though. (An incoming faculty for Fall 2001)

I've seen others use the computer in classes and never imagined I could become adept at such skills. But I teach Victorian literature and culture, and there is no doubt that an introduction to the period would be inestimably enhanced by way of images of all sorts. I've tried Xeroxed copies, slides, passing books around, but these are bulky and ineffective compared to computer capacities. In the fall I am teaching two Dickens seminars, and the following fall I'll be teaching two survey courses on the Victorian period (grad/undergrad). I would love to know how to use the computer to bring into lectures and discussion extensive reference to primary source materials (textual illustrations, parish records, census figures, maps, parliamentary reports, artistic reproductions, etc.). Last fall, in an Austen/Bronte seminar I taught, my husband (Michael Levenson) scanned illustrations onto the 'materials' section of a class toolkit account, but we couldn't use the images IN THE CLASSROOM. I'm hoping that this sort of program would be able to help me make better use of the materials we have in the library, and engage my students with sources they might otherwise never see.

I'm developing a course now on utopias and dystopias, and think I might be able to use computer technology for it--perhaps a web site for the course; maybe a way to access films on the subject; a way to get students talking together on the issues. I'm also going to ask them to create one utopia and one dystopia of their own. Maybe these could be computer projects, making use of images, link-ups, etc., as well as written text.

I would like to introduce digital media into my lectures. Specifically, I often discuss a painter in depth in my Aestheticism class at both the undergraduate and graduate levels, and it would be wonderful if I could do so in a digital way. I am developing over the summer a new course on Wallace Stevens, and, once again, I intend to bring the visual arts into the course. In the future I'll be developing a courses on the Pre-Raphaelites and on the Arts & Crafts Movement and Literature in the U.S. – both of which will be heavily visual in nature.

I'd love to learn to use PowerPoint for my big lecture class; I need to figure out how to capture images from books, the Internet, slides, etc. and get them onto the screen at the front of the big classroom. This may be just what I need to get myself really ready for ENGL 381 in the fall (it's the first literary history survey in our sequence required for English majors - we have over 300 students in it). I want to do a lot of stuff on the history of the book for lectures, but so far only have my old somewhat illegible slides as a starting place.

First, as (among other things) coordinator of the public speaking program in English, I train and oversee our TAs (about twelve) each year, and I have long wanted to learn how to use PowerPoint to teach them, and so that they can use it themselves as well as teach their students (approximately 140 per semester). I am behind the curve on technology
like this and, partly as a result, my TAs are as well. Second, in my undergraduate and classes I very often use xeroxed "handouts" of my notes, of poems we're working on, of scholarly essays, of paintings and photographs (regarding the latter I must bring in books and pass those around), and again I would love to use PowerPoint and Internet access instead. I need to have to have a full homepage that I can load essays on and have links to other rhetoric sites, as well as ways of showing art. (For example, my seminar "American Modernisms" makes ample use of people like Steiglitz and O'Keefe, and other courses use film.) I can't tell you how long I've wanted to get up to speed in this area and haven't had time to learn how to scan in all sorts of materials from books and websites for class use, undergraduate and graduate, and to be able to access these in class.

ENTC 381, "Modern Irish Literature," which I taught to 50 students last fall and will teach again next spring, relied each day on overhead projections that would have been better served by PowerPoint, etc.; the students read each others' papers (as their reading for the last weeks of the semester) on EFolio, but I could do considerably better in getting those papers attached to online resources for the study of contemporary Irish literature. And I am hoping to make my first connections to the Media Center at Clemons for the sake of my Modern Studies seminar this fall: I've chatted with Scott Saul briefly about using the same resources (for recorded music, etc.) he used for his MS seminar.

In preparation for my spring Chaucer class, I'd like to work through the fall digitizing manuscript-illuminations and frescoes as well as photos of medieval maps, manuscript pages, and architectural monuments. I've always used slides for the purpose of introducing students to the medieval cultural contexts for literary texts. With an online archive I'd be able to show the images in class and talk about them, but students would also be able to access the material themselves for study outside class. I'd also eventually like to know how to do video streaming, since there are now a number of helpful videos, for example on grotesque and obscene marginal illustrations in manuscripts containing texts as revered and solemn as, e.g., The Quest of the Grail. I already have a large collection of slides, many of them connected with my current scholarly project on medieval bawdy stories and their manuscript contexts, but many too representing the best religious art of the 13th and 14th centuries. This seems to me a great opportunity to flip over to digital media with all of this and thereby to enhance my teaching in any number of ways. If in the future I teach our core M.A. in Medieval Studies course, "Mapping the Middle Ages", the materials would be equally helpful.

One of my goals for teaching for next year was to take the next step in using PowerPoint and web material in courses, so the timing is perfect. I've used the Instructional Toolkit to post class notes, assignments, worksheets, and to host discussion groups, and so forth. This year, I wanted to use digital media and web pages in the classroom itself to enhance lectures and discussions. I've been thinking of this as a tool that will pay off in a big way in the spring, when I'll be teaching a survey in eighteenth-century British literature to a class of 50 or so, and also a graduate class in eighteenth-century print culture, which I would like to expand conceptually to consider how digital publication is enacting something of the same kind of sea-change as was experienced at the moment of the print revolution in the early eighteenth century. In the fall, I'm teaching smaller classes where I'll want to promote discussion. But I'll be using lots of visual material on the theater in my class on eighteenth century British drama, as well as material from the period the French Revolution in my class on English and American texts of the Revolutionary period.
In the fall I’m teaching two seminars on contemporary poetry. I’m interested in learning how to have text scanned for this course, creating an electronic poetry anthology for class use. I don’t know how to use power point or how to project web pages, and these might well be useful when I go back to teaching lecture courses in the near future. Having the use of a laptop loaded with all the needed bells and whistles sounds attractive. There are probably other ways of technologically jazzing up what happens in my classes, and I hope these will become more apparent to me over the course of the summer.

I am anxious to get started adapting my seminar, Radio Made America, to make better use of available technology. In a sense Radio Made America is made for technological innovation. Library sources to support the course are scattered and few but sites like: http://www.ipass.net/~whitetho/index.html, http://www.lib.umd.edu/UMCP/LAB/, http://www.people.memphis.edu/~mbensman/ and http://www.old-time.com/ provide opportunities to fill that gap. On my own over the past several years I have acquired old radio programs in various formats, a number of radio guide and fan magazines, premiums, program related sheet music, station histories, and novels in which radio plays a central role. Showing and lending materials to students takes a toll on the material. It needs to be organized and better adapted to the classroom. The benefits of such a project should extend beyond the seminar. For example, research for it has already allowed me to acquire several programs based on *Uncle Tom's Cabin*. Hopefully we will be able to include them on Railton’s *Uncle Tom's* site this summer. I have now built a small file of articles related to the relationship of radio to literature, theatre and music. The pieces all treat the impact of one technology on another and certainly could be useful elsewhere in the media studies program. Hopefully I can construct a duel purpose site to both support the seminar and to serve larger interests. I would like to be able to use what I have done to serve as a starting point for enriching the site by including class projects designed to expand its range.

I wish to participate in conjunction with my two courses during the Fall semester of 2001. The most immediate and obvious application will be in ENCR 801 (Introduction to Literary Research), which is required of all new English graduate students (about 55 this coming year). The opportunity to take part in the program comes exactly at the time when I am faced with reconceiving the course in light of the profusion of electronic tools becoming available; it is no longer possible (if indeed it ever was) to deal adequately with electronic resources without having access to them in the classroom itself. Electronic reference tools, like their print counterparts, present two challenges in teaching this class. The first is simply to overcome the widespread ignorance of even very bright students about scholarly resources of any kind. But besides apprising students of the existence of these works, it's also necessary to help them ponder how to use them. Technical competence is fundamental: they have to know how to look things up. But even more important are conceptual matters—knowing how to ask creative questions of the sources, and then how to assess the (sometimes conflicting) results.

In the past, the library has conducted two introductory sessions for the class—one for print materials, and the other for electronic ones. Both have worked very well, but particularly the electronic one has been rushed, a problem only intensifying as the range of relevant materials expands. By looking at these databases in the classroom instead, we not only could reduce our imposition on the generosity of the librarians but could contemplate the relevant materials more digestibly over a number of days (rather than in one intensive session) and conduct our subsequent classroom discussions about using these tools in the presence of the tools themselves. I also envision using technology in my other Fall course, ENCR 565 (Books as Physical Objects). Because this class focuses
on the materiality of objects, the role of electronics would be somewhat different. Though I will continue to have actual books available for the lessons of the day (to facilitate the use of items from Special Collections, the library has kindly arranged meeting space in Alderman), it will be useful to have digital images of the same items accessible, in order that the entire class can have a general sense of the point being exemplified before looking at the book at hand one person at a time. Efficiency can also increase in another way: because at certain points in the course a fair amount of time is taken up with writing descriptions of books on the board, I would be able to use Power Point to prepare such materials in advance. I am also interested in testing the appropriateness of having a single, portable computer for use at my main venues of scholarly activity: classrooms, office, libraries, and home.

Although I am a brand new assistant professor and of the generation that should embrace technology, I confess that I am really behind the times. I know how to check my email and how to search literary/library databases, but that's about it. I know, however, that computer technology in the classroom has limitless potential for teaching. I've been to several conferences in my field, American and African American Literature, and been impressed by and envious of my peers who're able to summon websites and other images for their work. I would like to be able to do the same someday. Specifically, for my classes next semester, I would be able to bring in images and other digital data relevant to my research and teaching.
# Appendix 2

## Profile of Class Participation

<table>
<thead>
<tr>
<th>Participant</th>
<th>Introduction</th>
<th>Scanning</th>
<th>Web Pages</th>
<th>Toolkit</th>
<th>PowerPoint</th>
<th>Media</th>
<th>Resources</th>
<th>Wrap Up</th>
<th># Classes attended</th>
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**Summary: # in class**  
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## APPENDIX 3
### Profile of Training Program

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<th>Session taught</th>
<th>Trainer(s)</th>
<th>Length of class (hrs.)</th>
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<td>morning, 8/8</td>
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<td>morning, 8/27</td>
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<td>afternoon, 8/8</td>
<td>Nancy Hopkins (ITC)</td>
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<td>afternoon, 8/27</td>
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<td>Scanning Text and Images; 7/27</td>
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<td>8/9</td>
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<td>Creating Basic Web Pages; 8/9</td>
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<td>2</td>
<td>3</td>
</tr>
<tr>
<td>ITC and Library Resources; 7/25</td>
<td>John Unsworth and others (English dept.)</td>
<td>2</td>
<td>7</td>
</tr>
<tr>
<td>9/7</td>
<td>Steve Railton and others (English dept.)</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Wrap-Up: Tips for Teaching with Technology, a Dress Rehearsal with Projection Equipment; 8/2</td>
<td>Nancy Hopkins, John Alexander (ITC)</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>8/16</td>
<td>Nancy Hopkins, John Alexander (ITC)</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>9/12</td>
<td>Nancy Hopkins, John Alexander (ITC)</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>
## APPENDIX 4
### Equipment Costs

#### Laptop Hardware
(Source of funds: VP&CIO and University Librarian funds)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Yr. 1 Cost</th>
<th>Yr. 2 Cost</th>
<th>Yr. 3 Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 Dell DCI Latitude C600 laptops</td>
<td>$15,807</td>
<td>$15,807</td>
<td>$15,807</td>
</tr>
<tr>
<td>3 Apple DCI Titanium PowerBook G4 laptops</td>
<td>$3,030</td>
<td>$3,030</td>
<td>$3,030</td>
</tr>
<tr>
<td>3 Mac carrying cases</td>
<td>$253</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Extra RAM for Macs</td>
<td>$136</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 External 250MB Zip Drives for Macs</td>
<td>$507</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 CD-RW drives for Macs</td>
<td>$610</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 pk 250 MB Zip disks for Macs</td>
<td>$55</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 Ethernet cables</td>
<td>$244</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 Wireless cards</td>
<td>$175</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total annual cost of laptops</strong></td>
<td><strong>$20,817</strong></td>
<td><strong>$18,837</strong></td>
<td><strong>$18,837</strong></td>
</tr>
</tbody>
</table>

Total 3-year cost of laptops **$58,492**

Average annual cost of laptop per participant **$1,147**

#### Projection Carts for Bryan Hall
(Source of funds: Provost Office/ITC classroom funds)

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Toshiba digital projectors</td>
<td>$7,914</td>
</tr>
<tr>
<td>2 DVD/VCRs</td>
<td>$700</td>
</tr>
<tr>
<td>2 Carts</td>
<td>$240</td>
</tr>
<tr>
<td>2 Speaker sets</td>
<td>$80</td>
</tr>
<tr>
<td>2 Sets surge protectors &amp; extension cords</td>
<td>$49</td>
</tr>
<tr>
<td>Misc cables, adapters</td>
<td>$5</td>
</tr>
<tr>
<td><strong>Total cost of projection carts</strong></td>
<td><strong>$8,988</strong></td>
</tr>
</tbody>
</table>

Cost per each projection cart **$4,494**

#### Summary of Equipment Cost

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total 3 year cost of laptops</td>
<td><strong>$58,492</strong></td>
</tr>
<tr>
<td>Total cost of projection carts</td>
<td><strong>$8,988</strong></td>
</tr>
<tr>
<td><strong>Grand total project equipment cost</strong></td>
<td><strong>$67,480</strong></td>
</tr>
</tbody>
</table>

_Distributed Learning at U.Va.: Moving Toward 2020_
### APPENDIX 5

#### Software Configurations

<table>
<thead>
<tr>
<th>Software Product</th>
<th>On Mac</th>
<th>On PC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 98</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Internet Explorer</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Netscape</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Mulberry</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Eudora</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Simeon</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Corporate Time</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>MS Office 2000</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Norton Anti-Virus</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Host Explorer</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>WS-FTP</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>SecureCRT</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>SecureFX</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Home Directory Login Service</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>NoteTab Light</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Acrobat Reader</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>WinZip</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Acrobat eBook Reader</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Apple QuickTime Player</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Cortona VRML</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>IomegaTools</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>IomegaWare</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>MS eReader</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>RealPlayer</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Shockwave</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>WinDVD</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Mac OS 9.1</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Mac OS X</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>MS Office 2001</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Fetch</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>NiftyTelnet</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>tn3270</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>DirectCD</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>EasyCD Creator</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Outlook Express</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Toast</td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>
Dear English Department Faculty,

Would you like to introduce digital media into your lectures? Do you want to be able to have slides and text scanned for use in your teaching? Would you like to learn how to use presentation software such as power point? Would you like to be able to project web pages on a portable screen in the seminar room where you teach?

The Library and ITC are seeking volunteers for an experimental program in the English Department to make it easy for faculty to acquire the skills needed to use technology in the classroom. Are you willing to participate? This is how it will work:

Each participant will receive:
- Free customized laptop computer for up to 15 participants.
- Ongoing training, support, and consultation

Time frame:
- We want to start training and consulting this summer for Fall semester classes.
- We will provide support for up to one year.
- Laptops can be kept beyond year one.

What we need from you:
- Commitment of your time for some training this summer and as needed during the school year. Training can be arranged at mutually convenient times and will be geared toward your individual needs and skill levels.
- Commitment that you will use some form of technology for your classes in the coming year.
- A very brief email outlining why you would like to participate and what you would like to accomplish as a participant.

We would like to start this process as soon as possible so can you please let us know of your interest by May 31? We can do the program with as few as 6 participants or as many as 15. If you would like to be considered for Spring semester, that can be arranged as well, but we definitely want to have a group go through the process this Fall.

I will be coordinating this program along with Nancy Hopkins of ITC and either one of us will be happy to answer questions that may come up as you consider participating.

Hope to hear from you soon. –Karen
APPENDIX E:

BUDGET PROJECTION FOR EXPANDING THE ENGLISH DEPARTMENT LAPTOP PILOT PROGRAM FOR TEACHING WITH TECHNOLOGY (SEE APPENDIX D) TO 100 FACULTY

<table>
<thead>
<tr>
<th>Projected Costs</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>100 laptops for Faculty (purchased using DCI program)*</td>
<td>$217,500</td>
</tr>
<tr>
<td>10 projection carts</td>
<td>$45,000</td>
</tr>
<tr>
<td>Staff Resources:</td>
<td></td>
</tr>
<tr>
<td>Library: 1 FTE (salary)</td>
<td>$60,000</td>
</tr>
<tr>
<td>ITC: 1 FTE (salary)</td>
<td>$60,000</td>
</tr>
<tr>
<td>Benefits for both</td>
<td>$36,000</td>
</tr>
<tr>
<td>Assume 5 Departmental TTSPs -- each TTSP salary around $20,000</td>
<td>$100,000</td>
</tr>
<tr>
<td>Total:</td>
<td>$518,500</td>
</tr>
</tbody>
</table>

Note:
*Projection based on May 2002 base configuration cost for Dell High Performance Notebook

Other funding options that could be explored:

(1) Funding projection for laptops could be reduced if tied to departmental desktop replacements.

(2) Leasing the laptops could spread the cost over 3 years.

(3) Classroom improvement funds could be considered as a funding source for the projection carts.
APPENDIX F:

UCIT FACULTY SURVEY ON DISTRIBUTED LEARNING

The University Committee on Information Technology (UCIT) has been charged this year by the Provost to assess the University’s future involvement in distributed learning*. As the principal faculty advisory committee on information technology at the University, UCIT would like to solicit the views of the faculty on this important matter as part of this assessment process.

The results of this survey will provide substantive guidance for the Committee as it prepares recommendations to the Provost. The results of the survey will be made available on the UCIT web site (http://www.itc.virginia.edu/oit/org/committees/ucit/).

The survey (10 questions) should take no more than 10-15 minutes to complete, and we hope that you will be willing to help us by providing the information requested below. You may be assured that your responses will be confidential and that individual responses will not be made public.

*For the purposes of this survey, “distributed learning” is education that employs technology that can remove the dissemination constraints based on time or location. The technology currently involves computers, networks, the worldwide web, videostreaming, television, videoconferencing, and video and audio recordings.

______________________________________________________________________________

Are you instructional faculty?

yes/no

The questions on this screen and the next two screens refer to the courses you teach:

1a, 2a, 3a. Fill in the course mnemonic (e.g. ENWR101) for a course that you teach ________________

1b, 2b, 3b. Typical enrollment for this course is (select one):

_____ under 10
_____ 10-25
_____ 25-100
_____ over 100
1c, 2c, 3c. Level of this course is (select one):
   _____ undergraduate
   _____ graduate
   _____ both undergraduate and graduate
   _____ other (please specify):

1d, 2d, 3d. Do you currently use any of the following distributed learning* resources for these courses? Please select all that apply.
   _____ Toolkit webpage
   _____ Your own webpage
   _____ Publisher’s CD-Rom
   _____ Standalone software
   _____ Computer assisted visualization
   _____ Online video material
   _____ Video-conferencing
   _____ Other (please specify)

4. Have you taken any steps to develop additional software or computer-based resources for your course(s)? For example,
   _____ have you been a Teaching + Technology Initiative (TTI) fellow?
   _____ applied to the TTI program?
   _____ have you taken an Information Technology and Communication (ITC) or Library course?
   _____ studied or sought information about distributed learning on your own?
   _____ other? (please specify):

5. Do you think the University should increase support (funding, faculty release time, hardware acquisition, partnerships with content providers, etc.) for development of distributed learning resources targeted for U.Va.:

<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>residential students?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>alumni(ae)?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>non-residential students?</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(the distance-education audience)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

6a. Are you interested in developing distributed learning resources (related to your course(s)) for any of the student groups or alumni(ae) listed in question 5?

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>residential students?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>alumni(ae)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>non-residential students?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(the distance-education audience)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6b. If yes, please give a realistic assessment of the time that you could devote to development activities:
    _____1-5 hours per week (average)
    _____ 5-10 hours per week (average)
    _____over 10 hours per week (average)
    _____other (please specify):______________

7. If you are interested in developing distributed learning resources (for any of the above audiences), please check up to 3 key factors that motivate you:
    _____To reach a broader audience
    _____To better serve your residential students
    _____To keep in touch with alumni(ae)
    _____To teach more effectively
    _____To archive your course material
    _____Other (please specify):______________

8. What do you think are the barriers that might prevent or inhibit you from developing distributed learning resources? Please check up to 3 factors:
    _____lack of time
    _____insufficient local technical support
    _____lack of how-to knowledge/expertise/experience
    _____lack vision of what might be possible to do
    _____difficulty finding existing University help resources
    _____lack of equipment or facilities where I teach
    _____lack of departmental encouragement
    _____other (please specify):

9. Select the school in which you teach (i.e. from a list of: Architecture, Arts & Sciences, Darden School, McIntire School of Commerce, Continuing Education, Curry School of Education, Engineering, Law, Medicine, Nursing)

10. Please add any comments you would like to make on these issues: