Center for Instructional Technology Faculty Support Study

Executive Summary

Duke University's Center for Instructional Technology (CIT) conducted a systematic follow-up study in Spring 2007 of the long-term impacts of support given to Duke faculty for instructional technology projects from 1999-2004. The goals of this study were to
Identify long-term impacts of CIT support on faculty, courses, programs or departments;
Identify common characteristics of sustainable faculty project efforts

From a complete list of 88 supported projects from 1999-2004, a sample of 25 projects were targeted for follow-up based on the following criteria:

- The project had received a sizeable grant (>$10,000) or the same faculty member had received support for multiple smaller projects
- Project start date was three or more years ago
- Faculty project lead still at Duke

CIT then systematically reviewed internal documentation (proposals, support letters, consultant notes); published project information (web sites, reports, and presentations); and conducted structured interviews with 16 faculty participants (typically the Primary Investigator).

Detailed Findings

1. Over the 5 year period studied, CIT support was widely distributed across all discipline areas (Table 1).

The 25 projects surveyed cumulatively represented approximately $322,500 in direct CIT financial support, representing approximately 1/3 of all funding awards in this time period. Table 1 illustrates the distribution of the projects included in the study by year of initial project funding and by discipline area. (For detailed list of projects, see **Appendix A**).

TABLE 1—PROJECTS BY YEAR AND DISCIPLINE AREA					
	Health Sciences	**Humanities**	**Languages**	**Sciences**	**Social Sciences**
1999	0	1	1	0	1
2000	0	2	1	1	1
2001	3	2	0	2	1
2002	1	1	0	0	1
2003	1	0	0	1	1
2004	2	0	1	0	0

2. A majority of supported projects were either still active or had served as a model for current projects.

11 projects (44%) are still using the materials/equipment from the CIT-funded project, 6 described these projects as a precursor to current practices/uses (24%), and approximately one third of projects (8) were not continued or connected to current activities. Faculty interviewed identified at least 10 courses where CIT-supported materials or their derivatives were still in use in some fashion.

3. Most PIs identified specific course improvements with positive impacts on student learning outcomes.

Several projects assessed the direct impact of project activities on student learning outcomes. For example, one faculty member conducted a comparison group study of the effectiveness of video case studies that measured higher scores on assessments of recall of facts of law cases for those students who had watched videos of the case studies versus those students who did not watch the videos. Other improved student learning outcomes reported by faculty included:

- Fewer in-class hours lecturing and more class hours spent in discussion due to the integration of web-based readings and activities
- Increased student engagement in classroom discussions through the use of multimedia and video materials
- Increased reflection of real-world practices in professional disciplines in course activities (e.g. Engineering, Chemistry, Nursing)
- Improved soft-skills development in students such as life-long learning, leadership qualities and presentation skills through course-based technology use (e.g. use of PDAs and web conferencing tools in Nursing; multimedia educational modules in Engineering)
- Increasing integration of undergraduate research and community interaction through the development of public web sites (e.g. Latino voices, North Carolina globalization project)
- Improved accessibility of reference and procedural materials at the point of need for clinical practice students (e.g. web-based and PDA-based images and reference materials for nursing and anesthesia students)

4. Several PIs reported that CIT support was effective in spurring ongoing instructional technology innovation in their academic programs.

Some PIs reported that the availability of innovation funds from CIT enabled their departments to experiment with instructional technology in a way that would likely not have occurred if they had needed to secure regular departmental funds. Examples of this included trials of cooperative work technologies in nursing and pilot tests of educational software in Chemistry. Several PIs reported that CIT staff labor, as well as CIT assistance in recruiting and hiring project staff and student workers was a key factor in project success.

5. Additional unanticipated positive outcomes unrelated to instructional technology use were reported groups of faculty involved in collaborative projects.

Three PIs from projects involving multiple faculty participants reported that the project resulted in strengthened or enhanced collaboration or mentoring networks among faculty beyond the boundaries of the CIT-supported project.

6. Faculty employed a range of strategies to assess the success of their efforts. At least ten out of 25 projects have already disseminated their results in conference presentations or scholarly publications.

Many projects had implemented structured evaluation activities and disseminated these results in the form of presentations at the annual CIT Instructional Technology Showcase. An additional 10 scholarly publications resulted from these funded projects (see **Appendix B** for citations). One project which was continued with external grant funding had just completed its work and is in the process of publishing their results.

7. Faculty employed a variety of strategies to ensure sustainability of project activities.

PIs identified several factors contributing to the sustainability of their projects including:

- receiving regular departmental funding after CIT funding ended (e.g. to continue software licenses or continued funding for dedicated project technical support staff)
- receiving external funding from federal and foundation sources (including one NSF grant for over $347,000)
- receiving access to donor funding from a school dean; and/or cost recovery through the not-for-profit sale of project materials to other institutions.

In some cases PIs reported that projects still in use had not required additional monetary support or continued updates to remain useful (e.g. Latino voices web site).

8. Project activities were discontinued or no longer used for a variety of reasons.

Eight projects were identified as no longer in use or active. PIs reported a variety of reasons that projects were no longer continued:

- Inability to secure needed ongoing funds for support personnel (n=2)
- Curriculum redesign /course no longer taught (n=2)
- Lack of time for PI to keep up project activities (n=1)
- Key project participant left Duke (n=1)
- Faculty member is on leave; project activities might resume when she returns (n=1)
- Project costs too high to scale up for current course enrollment (n=1)

In the case of a curricular redesign, one PI reported that the materials were used for 5 years prior to being discontinued.

Summary

Approximately two-thirds (68%) of the projects studied were found to be actively using the materials/equipment from the project or were a precursor to current instructional technology use. Faculty reported that CIT support had in most cases effectively enabled them to experiment with, implement and sustain the use of instructional technology in their courses and programs. Projects supported by CIT also ultimately served as a vehicle for enhanced collaboration with colleagues within and across disciplines and provided opportunities for faculty to engage in disseminating their work via scholarly journals and conferences.

Appendix A: List of Projects Studied (25 of 88 total supported projects from 1999-2004)					
AWARD DATE	GRANT PROGRAM	TITLE	P.I.	DEPARTMENT/ SCHOOL	DIRECT COSTS
1999 Spring	Incentive Grant	Teaching Web Site Design in Global Business Classes	Gereffi, Gary	Sociology, Arts & Sciences	0
1999	Fast Start Grant	Development of Web-Based Modules and Digital Video	Lemons, Paula	Biology, Arts & Sciences	2,500
2000 Spring	Incentive Grant	Streaming Video for Moving Image Analysis	Gaines, Jane	Program in Film and Video, Arts & Sciences	0
2000 Spring	Fast Start Grant	Multimedia Modules for Elementary School Education	Gustafson, Michael	Electrical and Computer Engineering	2,188
2000 Spring	Incentive Grant	American Communities Internet Photography Site (Evaluating Online Text-Sharing and Commenting Software for Writing)	Harris, Alex	Center for Documentary Studies (CDS), Public Policy, Arts & Sciences	2,500
2000	Incentive Grant	The Contracts Experience	Weistart, John	School of Law	35,000
2001 Spring	Incentive Grant	Integration of Computer-Based Technology into the Undergraduate Chemistry	Anderson, Misti	Chemistry, Arts & Sciences	30,888
2001 Spring	Incentive Grant	WEAVE: Web-based Educational Framework for Analysis Visualization and Experimentation	Gavin, Henri	Civil and Environmental Engineering	23,500
2001 Spring	Incentive Grant	Anatomy of the lumbar & sacral plexuses: web-based tutorial for lower extremity nerve blocks	MacLeod, David	Anesthesiology, School of Medicine	2,500
2001 Spring	Fast Start Grant	Faculty Development: A Web-Based Educational Program on Curriculum Design	Kaprielian, Victoria	Community and Family Medicine, School of Medicine	2,500
2001 Spring	Incentive Grant	Developing course material (experiments and methods) for psycholinguistics methods course	Mazuka, Reiko	Psychological and Brain Sciences, Arts & Sciences	6,990
2001 Spring	Incentive Grant	Blackboard course website development in English	Quilligan, Maureen	English, Arts & Sciences	16,000
2001 Spring	none	Online Resources to Support Classroom Teaching: Using the Early English Books Online Database to Teach Renaissance Literature	Quilligan, Maureen	English, Arts & Sciences	0
2001 Fall	Incentive Grant	Movie Image Analysis	Gaines, Jane	Film & Video, Arts & Sciences	2,500
2001 Fall	Incentive Grant	Advanced Use of PDA Technology in Nursing Education	Goodwin, Linda	School of Nursing	24,360
2002 Spring	Incentive Grant	Improving online teamwork using computer-supported cooperative work technologies	Goodwin, Linda	School of Nursing	32,500
2002 Spring	Incentive Grant	Improving online teamwork using computer-supported cooperative work technologies	Goodwin, Linda	School of Nursing	32,500
2002 Fall	Faculty IT Fellows Program	Matlab in Engineering	Gavin, Henri	Electrical and Computer Engineering	17,500

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AWARD DATE	GRANT PROGRAM	TITLE	P.I.	DEPARTMENT/ SCHOOL	DIRECT COSTS
2002-2003	Individual Faculty Fellows	Development of Interactive Teaching Modules for Introductory Biology	Lemons, Paula	Biology, Arts & Sciences	2,500
2003 Spring	Incentive Grant	Distinctive Aspects of U.S. Law Video Project (Private law and public interest video casebook)	Metzloff, Tom	School of Law	38,000
2003-2004	Individual Faculty Fellows	Regional Anesthesia Blackboard Site to Help Standardize Curriculum	MacLeod, David	Anesthesiology, School of Medicine	2,500
2003-2004	Individual Faculty Fellows	Preparing Digital Resources for Psycholinguistics Courses	Mazuka, Reiko	Psychological and Brain Sciences, Arts & Sciences	2,500
2003-2004	Individual Faculty Fellows	French Phonetics in an Enhanced Multimedia Environment	Tufts, Clare	Romance Studies, Arts & Sciences	2,500
2004 Spring	Incentive Grant	Innovation grant project: latino voices	Clifford, Joan	Romance Languages, Arts & Sciences	15,850
2004 Spring	Incentive Grant	Online Education Program in Patient Safety and Quality Improvement	Kaprielian, Victoria	Community and Family Medicine, School of Medicine	39,721
Fall 2004	Fellows	Nursing Faculty Fellows: Assessing Quality in Online Education	Goodwin, Linda	School of Nursing	17,500

Appendix B: List of Scholarly Publications / External Conference Presentations [See http://cit.duke.edu/reports/faculty_pubs.html for the most up-to-date information]		
PRESENTER/AUTHOR	TITLE	CONFERENCE/PUBLICATION
Clifford, Joan and Vidal, Graciela	Voices from the Latino Community in North Carolina: A Digital Archive	Foreign Language Association of North Carolina (FLANC) Conference, September 28-30, 2006
Gereffi, Gary	Teaching Web Site Design in Business Classes	Hawaii Conference on Business, June 14-17, 2001
Goodwin, Linda, et. al	Infusing PDA Technology into Nursing Education	Nursing Education, 30 (4), pp. 150-154, July/August 2005
Goodwin, Linda	Health Care Informatics: A Bird's Eye View of the Tower of Babel	Arizona State University Distinguished Lecture Series, October 31, 2005
Gustafson, Michael; Ybarra, Gary; et. al.	Multimedia Teaching Modules In The Engineering K-Ph.D. Program At Duke University	IEEE Frontiers in Education Conference, October 10-13, 2001
Kaprielian, Victoria	Teaching Patient Safety	Society of Teachers of Family Medicine Annual Predoctoral Education Conference, January 25-28, 2007
Lemons, Paula	Using TAs to Teach Case Studies in Large-Enrollment Science Courses	Case Study Teaching in Science Conference, October 6-7, 2006
Macleod, David	Anatomy of Lumbar and Sacral Plexuses: Web-based Tutorial for Lower Extremity Nerve Blocks	First World Congress on Regional Anesthesia and Pain Therapy, May 29-June 1, 2002
Miller, Wayne and Shoemaker, Todd (PI: Metzloff, Tom)	Using Video to Explore Critical Cases: What Works, What's at Stake, and Technical Details	Conference for Law School Computing, June 16-19, 2004
Weistart, John	The Contracts Experience: One Thousand Years Later	American Association of Law Schools (AALS) Annual Meeting, January 3-7, 2006