

TEACHnology Ten-Year Review

The TEACHnology Fellowship Program of the Center for Teaching at the University of Massachusetts was created in 1997 to provide senior faculty members with a unique professional development opportunity to renew and reinvigorate their teaching methods with emerging technologies. With generous support from the Provost's and Deans' Offices, the program has reached a total of **100** faculty members in **37** disciplines across all nine schools and colleges .

As TEACHnology marked its tenth anniversary in the fall of 2007, we consulted with the Deans and Associate Deans and decided to take stock of the TEACHnology program through a careful evaluation of its design, goals, and methods. In fall, 2007 we conducted focus group interviews with former fellows and surveyed all 100 former fellows through an online questionnaire. The following is a summary of our findings, including the fellows' assessment of how the TEACHnology program impacted their adoption of instructional technologies, their teaching, research, professional development, and their ability to "seed" educational technology throughout their departments and colleges. In addition, the fellows made suggestions for the planning of future TEACHnology programs and ways to support educational technology for teaching and learning on this campus.

I. TEACHnology Fellows Information

All 100 fellows were contacted through email in November, 2007, asking them to fill out an online survey on the SurveyMonkey web site. Fifty-one former TEACHnology fellows completed the survey for a return rate of fifty-two percent (52%). Of these respondents, twenty-seven were female (53%), twenty-four male (47%). The respondents included thirty-two (including five retired professors) full professors (63%), eighteen associate professors (35%), and one research assistant professor (2%) from 27 academic departments.

II. TEACHnology IMPACT – *TECHNOLOGY and ADOPTION*

Faculty reported a dramatic increase in individual use of teaching technologies from before the TEACHnology year to after the TEACHnology experience. The technologies faculty most reported using were PowerPoint or other presentation tools (60%), WebCT/SPARK (30%), multimedia (14%), Course Web site (12%), and Personal Response System (12%). Tools such as PowerPoint and web-based course management systems appear to be useful for a range of disciplines and instructional goals while other tools support more specific content areas and instructional goals. (See Appendix A) The main reason some instructors discontinued using teaching technologies was because they were no longer teaching the course or teaching less (17%). Other fellows indicated technologies were cumbersome/difficult to use (13%), they didn't know how much it actually helps students (10%); some discontinued using the technology because they perceived it hinders class discussion/interaction (10%). (See Appendix B)

In terms of departmental/college adoption and dissemination, fifty-one percent (51%) of respondents participated in (or led) faculty discussions on teaching with technology in their departments / colleges (e.g. roundtable, brown bag, faculty meeting, etc.). The topics varied from informal discussion (25%), WebCT/SPARK (25%), teaching online (21%), PowerPoint (18%), PRS (11%), and Tablet PC (11%). Seventy-eight percent (78%) of fellows who responded the survey also reported they participated in at least one or more campus-wide faculty workshop hosted by Academic Computing and/or the Center for Teaching since their participation in the TEACHnology Fellowship program. (See Appendix C)

III. TEACHnology IMPACT: *PEDAGOGY and LEARNING*

Perhaps one of the most significant findings of the study was that nearly all of the fellows reported that they were more sensitive to how students learned, with or without technology. Fellows also perceived that they were more organized in their teaching and that they were more efficient in managing their courses and teaching (See Appendix D). That the TEACHnology program actually enhanced the sensitivity of instructors to their students' learning processes and increased their teaching productivity was a gratifying and notable outcome.

In terms of course development and redesign, instructors made numerous adjustments following their involvement with the TEACHnology Fellowship Program. Changes were made to all aspects of the courses, reflecting an increased and more competent use of technology in the classroom.

Changes included how instructors assessed their students; for example, having students take quizzes and exams online so there is more in-class instructional time, or requiring more graded participation. Instructors also incorporated more active learning in their courses with interactive pre-lecture activities and online discussions, and encouraged their students to utilize technology in their assignments and class presentations. Lectures were modified to include PowerPoint and online platforms, and feedback on assignments was returned more promptly. (see table below)

Instructor changes in syllabi

	Major Change	Minor Change	No Change
Learning Goals	18.8%	60.4%	20.8%
Assignments	45.8%	41.7%	12.5%
Assessments	21.3%	53.2%	25.5%
Grading Scale	4.9%	34.1%	61.0%

Instructors stated that being able to use technology more efficiently in the classroom has allowed them to give their students multiple options for learning by increasing class discussion, making lectures more interactive and comprehensible, and providing more opportunities for problem solving. One instructor also noted that using online resources put more of the learning responsibility on the students.

In addition to directly impacting a specific course, one instructor appreciated that the non-threatening forum of TEACHnology was a good place to try different technologies that could then be used in future classrooms, whether face-to-face or online. (See Appendix D)

While some instructors did not observe a lot of change in their students' learning, many did see greater student interest in their classes, and noted that students were more reflective and asked better questions. (See Appendix E)

IV. TEACHnology IMPACT: *PROFESSIONAL DEVELOPMENT*

The impact of the TEACHnology grant on professional development was measured in terms of an impressive number of grants, national honors and awards, publications and presentations.

Several fellows reported that they have received technology-related teaching grants from various sources. Fellows have received seven national grants, including a Dreyfus grant, a CITI grant, two Davis Educational Foundation grants, a Research Leadership Action Grant, and two grants from the National Science Foundation (NSF). Fellows also reported receipt of four grants from the University of Massachusetts, including grants from the UMass President's Office and IT Committee, and a Professional Development Grant to sponsor the "Online Instruction Fellows Program." Ten fellows have received grants from the University of Massachusetts Amherst campus, including Faculty Grants for Teaching, Periodic Multi-Year Review (PMYR) grants, a MEET grant from the School of Education, multiple grants from the College of Natural Resources and Environment for technology resources such as a scanner and digital projector, and a grant from the School of Nursing, the Isenberg School of Management, and the School of Public Health Sciences for a proposal to offer professional degrees with online access.

Graduates of the TEACHnology Fellowship Program have been awarded national honors including a Sigma Theta Tau International Information Technology for Knowledge Advancement Award, an Outstanding Continuing Education Faculty Award, a College Composition and Communication Conference (CCCC) "Technology Innovator" award, an Award for Innovative Excellence in Teaching, Learning and Technology given at the 18th International Conference on College Teaching and Learning, and a Distinguished Service Award from Phi Kappa Phi. TEACHnology fellows have also received numerous awards from the University of Massachusetts Amherst, including teaching awards from the College of Social and Behavioral Sciences, the School of Public Health and Health Sciences, the College of Natural Resources and the Environment, as well as awards from Continuing Education for online teaching.

One fellow was nominated for the Distinguished Teaching Award, and another was selected as the first Faculty Advisor to the Provost for Undergraduate Education. Former TEACHnology fellows have also served as Online Fellows for the College of Social and Behavioral Sciences, Faculty Associates to the Center for Teaching and as Mentors to the Lilly Teaching Fellows program.

About a third of the survey respondents (15) have given presentations or published articles on innovative teaching technologies since their involvement. Former fellows have given presentations for the Council on Hotel, Restaurant and Institutional Education, the International Conference on College Teaching and Learning, the Association of American Colleges and Universities Learning and Technology Conference, and the MSMESB Conference. Fellows have also presented at universities including the University of Wollongong in Australia, Tufts University, and Fairfield University, as well as numerous presentations at University of Massachusetts Amherst, including for the National Taiwan University Delegation's Visit, the Faculty Forum, the University of Massachusetts Information Technology Council Instructional Technology Conference, and for various colleges and school. One fellow also presented a program for the Chicopee High School Teachers Five-College STEMTEC program.

Former TEACHnology fellows have published articles on innovative teaching technologies in various peer-reviewed journals including *The Journal of Continuing Education in Nursing*, *Computers and Composition*, *College English*, *English Journal*, *National Writing Project Quarterly*, *Journal of Teaching in Travel and Tourism*, and *Journal of Research on Technology in Education*. Articles also have appeared in books such as *Teaching Writing with Computers*, *Literacy Theory in the Age of the Internet*, *From Page to Screen: Taking Literacy into the Electronic Era*, *Writing to Learn: Strategies for Assigning and Responding to Writing Across the Disciplines*, *Public Works: Student Writing as Public Text*, *A Guide to Composition Pedagogies*, and *Passions, Pedagogies, and 21st Century Technologies*.

Almost half of the survey respondents (22) have assumed an administrative position since their participation in the program. One was appointed the Associate Dean for the Isenberg School of Management and another Faculty Advisor to the Provost for Undergraduate Education. One was named the Director of the Joint Program in Planning and Law (with Western New England College of Law), and another co-director of the University of Massachusetts Nanotech Research Center. Seven (7) were appointed Department Head or Department Chair, and six (6) took on the role of Graduate Program Director for their department. One former Fellow served as the Coordinator of Online Fellows for the College of Social and Behavioral Sciences, and another as Program Director for the RN BS Online Program.

V. TEACHnology REVIEW and FUTURE

When asked what they missed most since the end of the TEACHnology Fellowship year, fellows noted several aspects of the fellowship program.

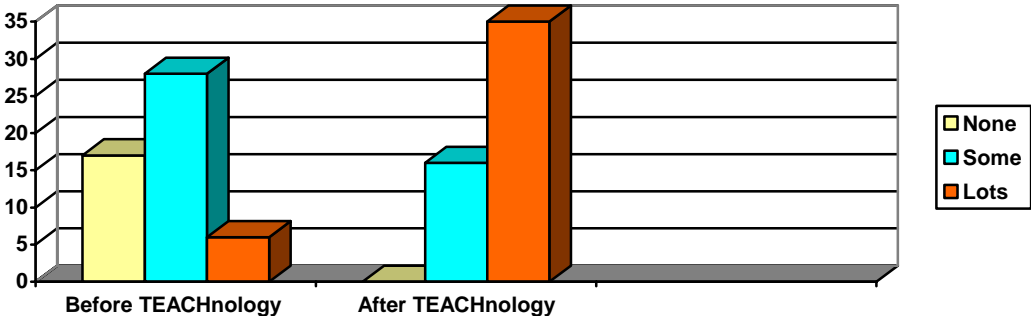
Fellows most appreciated working with colleagues who were passionate about their teaching, sharing ideas and learning how other instructors were using technology in their classrooms. They reported that the associate director of the CFT and coordinator of the TEACHnology program, Mei-Yau Shih, was tremendously helpful and available, and they appreciated knowing where technology help was available on campus. Some fellows reported that they had continued to stay involved with new technologies through the CFT, the Office of Information Technologies (OIT), and the OIT Emerging Technology Series. (See Appendix F)

TEACHnology fellows made several suggestions for the future of the TEACHnology Program. The majority of respondents (18) pointed to the interaction with other faculty as a key to the program's success. They offered suggestions for expanding this intellectual and collegial community by creating mechanisms for continuing to connect to and work with former fellows, including retired fellows (8), expanding the program to include pretenure faculty (5), and supporting and sustaining faculty cohorts that developed during the TEACHnology programs within and across departments (5). Seven (7) respondents suggested that academic leaders such as chairs, deans or the provost, might enhance the commitment to teaching, learning and technology by allowing fellows a course release during their fellowship year to provide time and effort for learning technologies, and by updating hardware and software (2). Seven (7) respondents suggested that the TEACHnology seminars might spend more time focusing on the specific interests of the fellows, particularly issues of pedagogy (2), hands-on implementation (2) and writing PRS questions (1). Two (2) respondents made organizational suggestions to be sure that all fellows are committed to the Program (1) and to make the links between Academic Computing, CFT, and the Library resources stronger (1). (See Appendix G)

Taken as a whole, the findings of this study of ten years of the TEACHnology program are both positive and optimistic in terms of the future of teaching, learning and technology on the University of Massachusetts Amherst campus. They suggest that the use of technology can change teaching methods and approaches to learning as well as attitudes and interest in teaching and learning. These changes can in turn have an impact on the effectiveness of teaching and learning at the individual, departmental, and institutional levels. The study also offers a range of concrete suggestions from faculty participants for designing the next decade of faculty development programs focused on instructional technology.

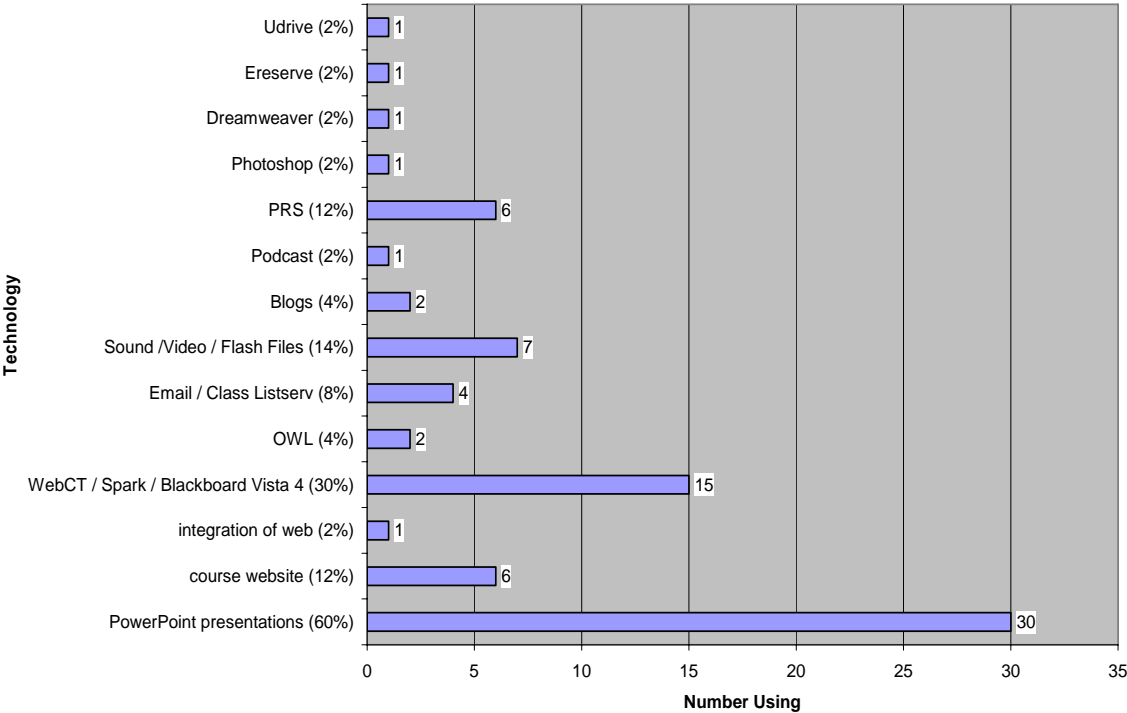
Appendix A

How extensively have you used teaching technologies in your teaching, before and after TEACHnology?



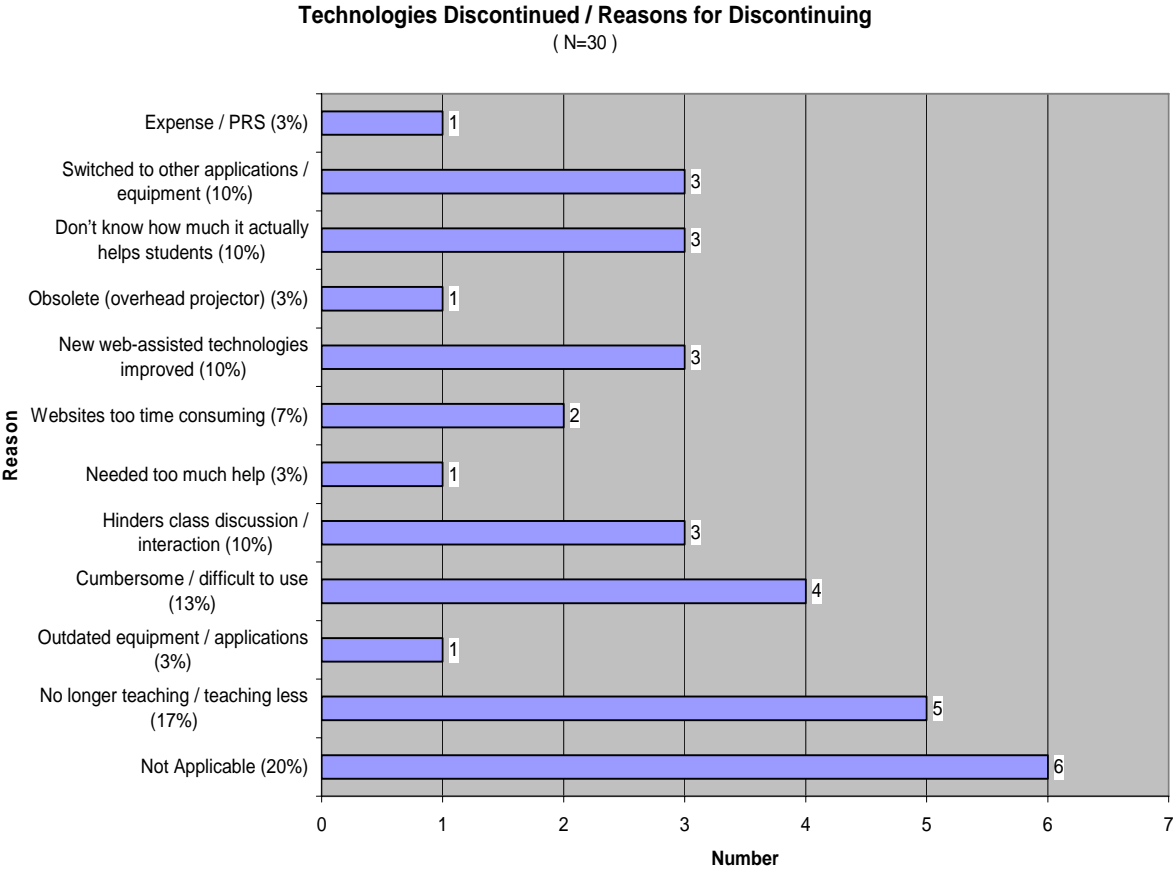
The Technologies I Use Most

Technologies I Use Most
(N=50)



Appendix B

I have discontinued using or plan not to use some of the technologies I adopted because...

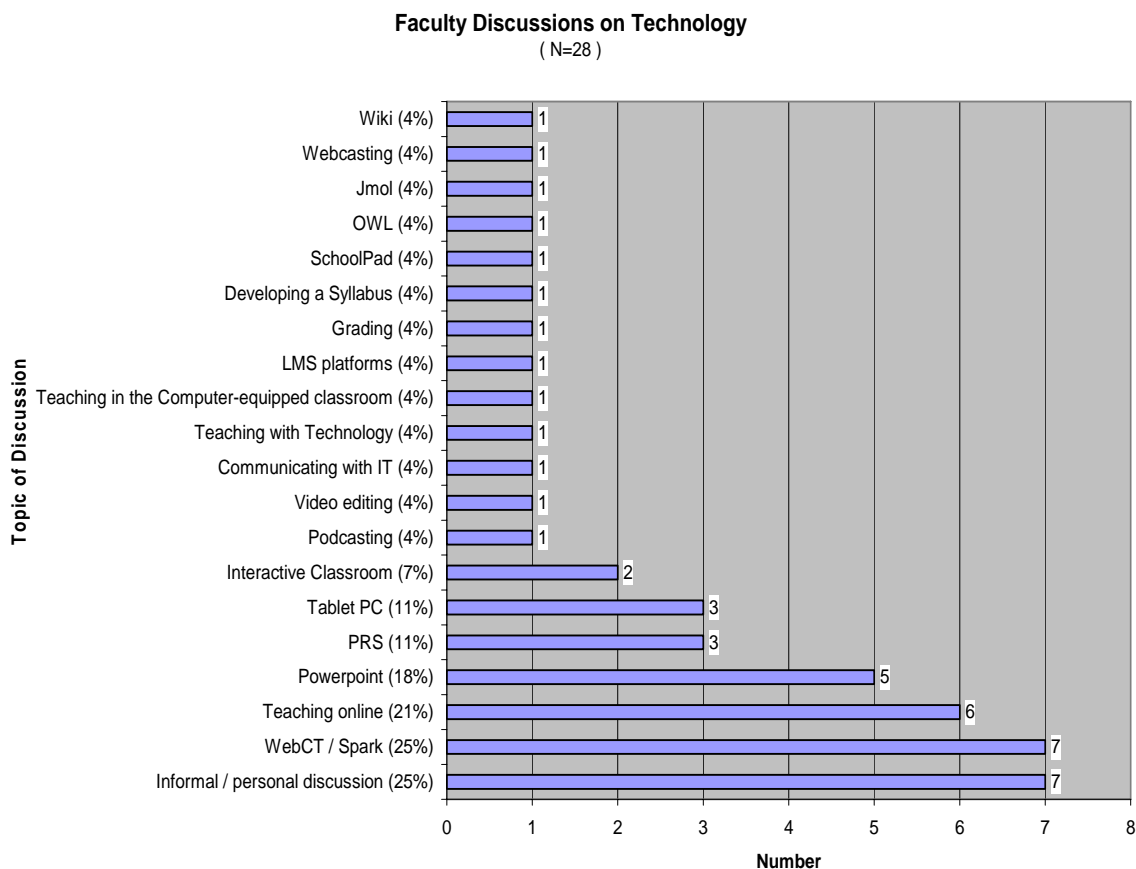


Appendix C

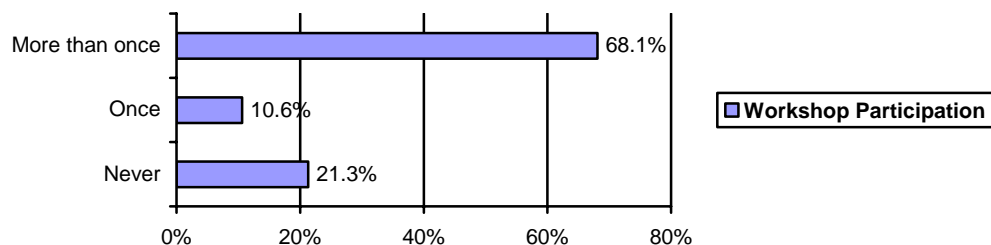
I have participated in (or led) faculty discussions on teaching with technology in my department / college (e.g. roundtable, brown bag, faculty meeting, etc.):

Yes = 51%

No = 49%

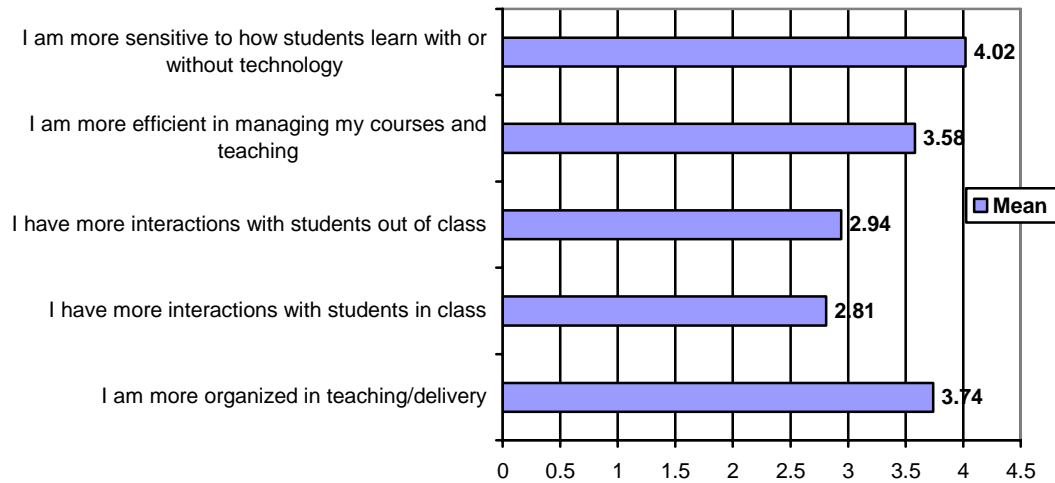


I have participated in campus-wide faculty workshops hosted by Academic Computing and/or the Center for Teaching since my participation in the TEACHnology Fellowship Program



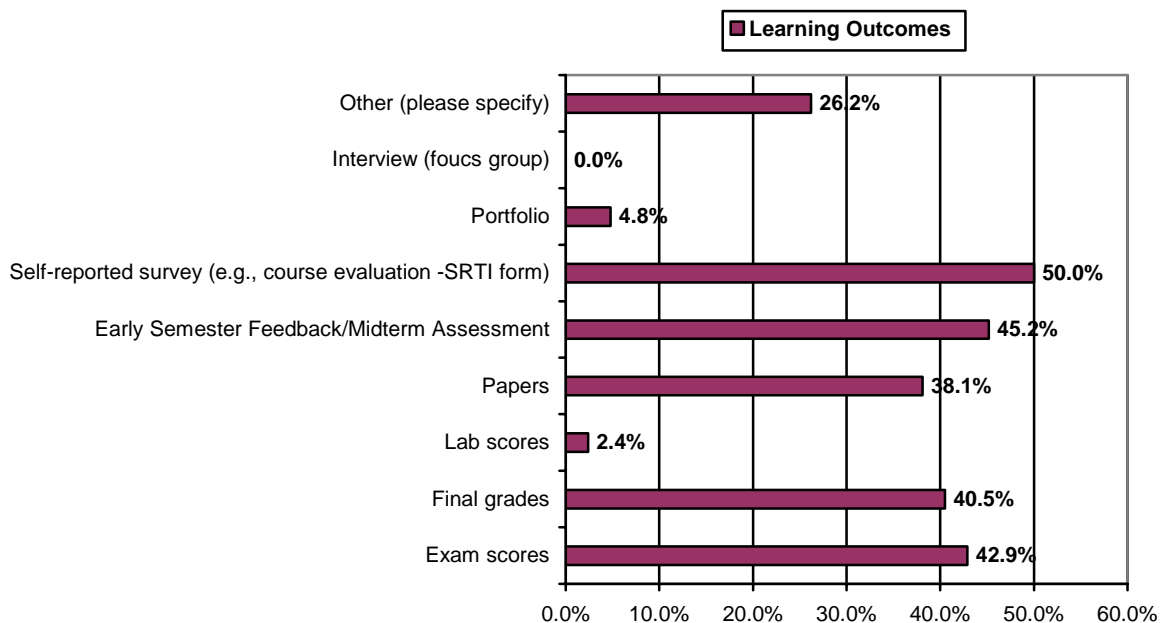
Appendix D

Since my participation in the TEACHnology Program I have seen its impact on my teaching in the following items (1 as least impact and 5 as most impact):



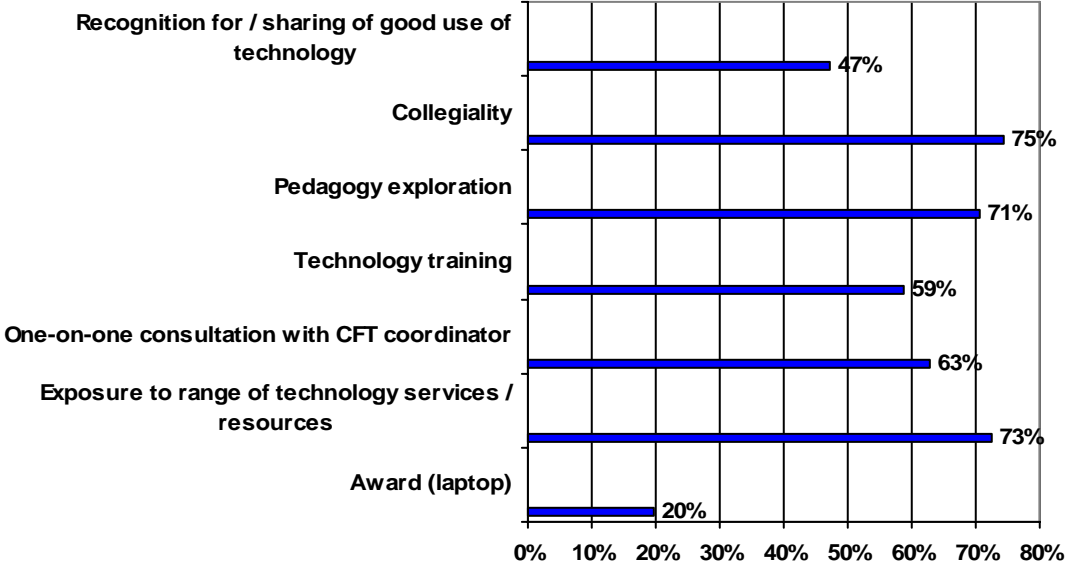
Appendix E

As a result of my incorporation of technology I have seen evidence of my students' increased learning in: (Check all that apply)



Appendix F

What do you miss most since the end of the TEACHnology Fellowship year?



Appendix G

Future Development of the TEACHnology Program

1. Faculty Interaction is a Key to Program Success and should be expanded
 - Continue to work with senior faculty and former Fellows on new technologies and pedagogical issues (7 respondents)
 - Make the program larger to include more senior and junior faculty. (5 respondents)
 - Help to create and sustain communities of innovative faculty cohorts within and across departments (5 respondents)
 - Continue to work with retired faculty (1 respondent)

2. Make implementation and continuing to use technology easier
 - Secure deeper administrative commitment, both to updating hardware and software and to issues of pedagogy. (2 respondents)
 - Make implementation easier by giving Fellows course release and / or by offering more hands-on training. (5 respondents)

3. Attend to the specific interests of Fellows
 - Tailor the TEACHnology seminars for specific needs (2 respondents)
 - Spend more time on pedagogical issues (2 respondents)
 - Hands-on implementation (2 respondents)
 - Writing PRS questions (1 respondent)

4. Reconsider the organization of IT at UMass Amherst
 - Reorganize IT services on campus to make the links between Academic Computer, CFT and the Library resources stronger. (1 respondent)
 - Be sure that Fellows demonstrate a commitment to technology (1 respondent)