

Technology Vision Plan

2001-2002

**College of Education
The University of Texas at Austin**

Submitted by

**The College of Education
The University of Texas at Austin**

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UT Austin College of Education

Technology Vision Plan

2001-2002

Executive Summary

As we approach the end of the first year of the new millenium, the College of Education (CoE) continues to realize steady progress toward the goal of integrating computing and telecommunication technologies into all phases of academic, research, and service functions. The College envisions that all components of its undergraduate and graduate student preparation programs, including field experience, academic courses, and research, will utilize the latest computing and telecommunications technologies to enable collaboration between faculty and students, thereby maximizing educational benefits, professional preparation, and research quality.

The 2001-2002 edition of the College of Education Technology Vision Plan builds on progress achieved in prior-year plans, and sets forth new goals. Proposed 2001-2002 projects include support staff for faculty who are working to integrate technology into curriculum, support staff for web-based student services, laptop computer leasing for all CoE teacher education students, portable videoconferencing equipment for use in student teaching activities at Austin ISD Professional Development Schools, support for the preservice teacher component of a large telementoring project, establishment of a mobile computer laboratory, digital video equipment for student use, and expansion of wireless networking services in the Sanchez Building (SZB).

Previous CoE Technology Vision Plans have charted the course that the College follows in pursuing its mission by proposing innovative uses of technology to create an enriched student learning environment. Some elements of each Vision Plan are recurrent; maintenance and upgrades, for example, are integral to the continued usefulness of all information technology systems. Equally important are the development of new projects that address needs which were not evident in previous years. The College must balance the upkeep of established facilities with the creation of new ones that address perceived needs, provide competent staffing for all facilities, and improve the technical competence and awareness of the faculty, thus enabling them to integrate modern instructional technology into a diverse curriculum.

The following report updates the continual, substantial progress the College has achieved during FY 1999-2000, and outlines future directions and necessary resources, projects, and staffing. The budget requested for 2000-2001 is **\$573,125**.

For additional information about all projects described in this report, please contact Dr. Paul Resta, Director, Learning Technology Center, College of Education (*resta@mail.utexas.edu*).

Vision, Goals, and Objectives

The technology vision of the College of Education is to provide a technology-rich academic and research environment that maximizes the collaborative potential among students, faculty, and staff, and among schools and other education-related organizations, thus enabling them to attain the highest levels of excellence.

The College has identified the following technology goals to be addressed on an ongoing basis:

- Continue systematic College-wide strategic planning of information resources and technologies that include all students, faculty, administrators, and staff.
- Develop high levels of technological competence in the College's students, faculty, and staff.
- Increase access to high performance digital services in support of teaching, research, and service, as well as connections to major national and international facilities.
- Provide access to information technologies for all members of the College community and provide the support and experience needed in a range of technology applications and environments likely to be encountered in the education profession.
- Infuse technology into all phases of teaching, research, and service and develop new models, tools, and strategies of instruction based on the latest technologies.
- Provide students, faculty, staff, and other community partners with online collaborative environments and network access, both on and off campus, to promote the sharing of the information they need for study, teaching, research and administration.

Specific objectives that represent the College's pursuit of the above goals during 2001-2002 are:

- Facilitate the adoption of technology methods by faculty throughout the College; establish well-defined standards for modeling the use of technology in the classroom; provide ongoing support to faculty for infusing technology into instruction.
- Enhance and expand facilities for technology-infused instruction in the CoE.
- Promote the development of a web presence by every CoE faculty member; encourage compliance and commonality with the UT Direct student services portal in all faculty web sites.
- Continue to expand the use of technology methods in the Cohort Program; in addition to promoting growth in the elementary education cohorts, promote the formation of technology cohorts in secondary education, science and mathematics education, special education, physical education and foreign language instruction; establish curriculum standards for the use of technology in each area.

- Develop a technology-based support system for the purposes of mentoring UT-CoE graduates during their first year of teaching.

Facilities and Staffing

The College of Education (CoE) occupies portions of 6 buildings on the UT Austin Campus:

- **George I. Sanchez (SZB) Building;** academic departments: Curriculum and Instruction, Educational Administration, Educational Psychology, and Special Education; service/support: Learning Technology Center, Educational Career Services and Field Placement; research: Texas Center for Reading and Language Arts, Cognitive Learning Strategies, Community College Leadership, Counseling Psychology Training, Curriculum Studies, Instructional Technology, Early Childhood, Education Productivity Council, Language and Literacy Cluster, Mathematics/Science Cluster, Multilingual Studies Cluster, Rehabilitation Counseling, School Psychology Training, Texas Assistive Technology Program, and University Affiliated Program
- **Bellmont Hall (BEL);** academic departments: Kinesiology and Health Education; research: Biomechanics, Sports Management, Human Anatomy, Nutrition, Sports Physiology, Exercise Physiology, Motor Control, Gerontology and Aging, Cardiac Metabolism, Sports Psychology, Clinical Exercise Physiology
- **Anna Hiss Gymnasium (AHG);** academic departments: Kinesiology and Health Education; research: Pedagogy, Sports History, Physical Culture History
- **Gregory Gymnasium (GRE);** academic departments: Kinesiology and Health Education; research: Nutrition, Fitness, Team Sports, Trainer Development
- **Texas Swim Center (TSC);** academic departments: Kinesiology and Health Education; research: Texas Aquatics
- **Texas Tennis Center (TTC);** academic departments: Kinesiology and Health Education

Academic departments in the College are Curriculum and Instruction, Education Administration, Educational Psychology, Special Education, and Kinesiology and Health Education. The College employs 262 full and part-time faculty in the departments, and 139 full and part-time staff in departments, service/support organizations, and research units.

The Learning Technology Center (LTC) is a central service organization within the College providing technical expertise, consulting services, faculty development assistance, computing classroom/laboratory facilities, distance learning classroom facilities, equipment checkout, and media production services to CoE departments and research units. The LTC supports eight computer labs/classrooms that are available for use by CoE students:

- **Advanced Applications Laboratory;** SZB 324

- **Multimedia Research and Development Laboratory;** SZB 536AA
- **Central Macintosh Laboratory;** SZB 438D
- **PC/Statistics Laboratory;** SZB 518C
- **Collaborative Learning Laboratory;** SZB 438F
- **Special Education Assistive Technology Laboratory;** SZB 518E
- **Open Access Laboratory;** SZB 536
- **Kinematics Laboratory;** BEL 844

Academic/Instructional Projects Proposed for 2001-2002 (IT Funded)

Department: College of Education

Project Title: Faculty Technology Integration/Web-based Course Support

Description:

The College hopes to expedite the progress of the use of technology in curriculum by CoE faculty by providing dedicated staff support, focusing on mentoring for faculty in the use of technology-based instructional methods, especially web-based courses, the use of multimedia, and the use of collaborative software in the classroom.

Two part-time staff positions are proposed, each providing expertise with web development tools and web-based curriculum resources to faculty members.

Existing departmental clerical staff, with appropriate skills training, will be asked to support routine tasks that contribute to the larger task of technology integration by faculty. Funding for staff training is also proposed below.

Space: Offices for new positions will be allocated in existing space.

Budget Detail:

Graduate Research Assistant (2)	\$36,000
Skills training for staff in 5 CoE departments (\$1,000 each)	\$5,000
Budget Total	<u>\$41,000</u>

Department: Learning Technology Center

Project Title: Web-based Student Services

Description:

Startup funding is proposed for a staff position that will provide support for web-based student services specific to the College of Education. The College wishes to offer selected student services online as an extension of the UT Direct Student Services Portal, including advising functions, degree checks and audits, test scheduling, CoE enrollment, graduation application, professional development associations, and calendaring. A portal extension comparable to that provided by the College of Liberal Arts is envisioned. Additional duties would include working with the CoE Dean's Office and Learning Technology Center web technical staff to create and support web resources appropriate for the online needs of CoE students.

Audience: All CoE students.

Space: Existing LTC office space will be used.

Budget Detail:

Microcomputer Applications Specialist	\$26,544
Benefits	\$9,750
Budget Total	\$36,294

Department: College of Education

Project Title: Enhancing Teacher Education with Laptop Computing

Description:

The College proposes to equip approximately 800 CoE students in their final year of teacher education/certification training with laptop computers through an innovative leasing program offered by Apple Computer, Inc. **Apple Connection for Higher Education** is a comprehensive leasing program featuring preconfigured Macintosh iBooks, system and application software, technical support, service, and theft/damage insurance. Because it would be a recurrent program, leasing costs would be covered in future years by a non-IT funded source; initial startup costs only are proposed below.

This proposal is an expansion of the current CoE Technology Cohort Program that involved 75 preservice students in 2000 during the professional development, field experience, and certification phase of their training in the College. This successful program, entering its fifth year in 2001, has shown that participating students become technically proficient and experienced with computing in ways that significantly enhance their effectiveness as professional educators.

Audience: CoE students during field experience/certification training.

Space: No additional space is needed.

Staff Support: Support will be provided under terms of lease and by CoE staff.

Budget Detail:

Leasing through Apple Connection for Higher Education	\$250,000
Budget Total	\$250,000

Department: College of Education

Project Title: Videoconferencing from Professional Development Sites

Description:

The CoE Distance Learning Classroom (DLC) is a state of the art distance education facility, located in SZB 323, which can transmit and receive high-quality audio/video to and from remote distance education sites that are similarly equipped. The College envisions the use of distance education facilities and methods as effective tools in remote classroom observation for CoE students at cooperating (i.e. professional development) schools, delivering remote instruction to CoE student teachers in the field, facilitating collaboration via two-way broadcasts, and induction year support.

The College proposes to extend the distance education domain into the professional development schools where CoE students are placed for field experience and certification training. Since many cooperating schools are not equipped for distance education, the acquisition of a portable videoconferencing system that could be transported to these schools is proposed as described below.

Audience: CoE faculty and students during field experience/certification training

Space: No additional space is needed.

Budget Detail:

Polycom H.323 Videoconferencing unit	\$6,310
Polycom MP Codec unit	\$9,500
Budget Total	\$15,810

Department: College of Education

Project Title: WINGS Online

Description:

WINGS Online (Welcoming Interns & Novices with Guidance & Support Online) is a collaborative effort among three UT Austin Colleges. It is designed to address the recent state requirement to comply with a 1991 unfunded legislative mandate to provide support services to preservice (intern) teachers and first and second-year novice teachers who attend/graduate from the University. WINGS Online provides a server-based telementoring system that allows experienced, practicing teachers in Texas to work online with interns and novices to advise and guide them during their initial teaching experiences. It also provides information on demand and professional communities online for intern and novice educators. Complete information about WINGS Online is provided in Appendix C of this document.

WINGS Online began operations during the fall of 2000 with major funding provided by a LARIAT grant, and additional funding provided by the Office of the Provost; this phase of the project is described in the current-project Non-IT Funded portion of this report.

The College proposes to fund a portion of the WINGS Online budget for year two of operation during 2001-2002. The portion of the project to be funded applies to student interns only, estimated to be approximately 50% of the participants receiving mentoring. As the only institution on campus involved in the preparation of *all* certified teachers graduating from UT-Austin, the College of Education has accepted responsibility for the development, testing, and management of WINGS Online. This is why the request for project support for teacher interns comes from the College of Education alone. WINGS Online is co-directed by representatives from the colleges of Education, Liberal Arts, and Natural Sciences.

Space: No additional space is required.

Budget Detail:

Mentor Stipends (\$600/year, 90 participants)	\$54,000
Grad. Student staff (3 20-hour GRAs, 2 semesters + summer)	\$48,000
Systems Analyst and benefits (partial funding)	\$42,000
Faculty 1/6 buyout	\$10,000
Advisory Board (stipends and travel)	\$10,500
Supplies	\$2,500

Budget Total

\$167,000

Department: Learning Technology Center

Project Title: Mobile Computer Laboratory

Description:

The demand for computer laboratories by instructors and students in the CoE often cannot be met by existing facilities in the College. As more faculty members utilize technology to enhance curriculum and the learning process, this demand is expected to escalate. Due to space and budget constraints, the College cannot expect to build and equip enough new facilities to meet anticipated future needs.

The Learning Technology Center (LTC) proposes to purchase a storage enclosure for laptop computers that may be transported on wheels to any CoE classroom. The enclosure will contain 24 laptop computers equipped with wireless networking hardware and software, and a wireless network base station, deployable at any active ethernet jack. When not in use, the mobile enclosure provides battery recharge capability for each laptop computer.

Pending evaluation of usefulness, additional mobile laptop enclosures may be proposed in future budget years.

Space: No additional space is required.

Budget Detail:

Datamation Systems, Inc Mobile laptop enclosure	\$1,195
Wireless networking base station (2)	\$399
Macintosh iBook computers (24)	\$36,000
Airport™ Option for iBook (24)	\$2,400
Classroom Software	\$5,000
Budget Total	\$44,994

Department: Learning Technology Center

Project Title: Student Electronic Field Production Units Utilizing Digital Video

Description:

An increasing number of CoE faculty are making assignments in which undergraduate and graduate students are required to shoot video footage using the digital video format. Examples include Dr. Ricardo Ainslie (EDP 369 K), Dr. Liu Min (EDC 385G), and Dr. Susan Williams (EDC 670E). Frequently, the assigned tasks involve shooting video in selected school districts and other off-campus locations. Acquisition of two small portable digital video electronic field production (EFP) units is proposed, enabling these students to shoot video with proper lighting and sound in all class project assignments.

Space: Existing Learning Technology Center space will be used.

Staff Support: Provided by existing LTC staff.

Budget Detail:

Digital Video Cameras (2)	\$5,500
Fluid-head Tripods (2)	\$700
Camera Bags (2)	\$300
Headphones (2)	\$60
Lighting Kit (2 light stands)	\$675
Chroma Key Screen and Stand	\$400
Budget Total	\$7,635

Department: Learning Technology Center

Project Title: Expanded Wireless Networking in SZB

Description:

The Learning Technology Center proposes to expand existing wireless network services offered in the Sanchez Building (SZB). Wireless networking is currently available only in a small area of the SZB 5th floor, limiting access by potential users – principally, students with laptop computers equipped for wireless networking. Wireless coverage for CoE classrooms located in the north and south ends of the Sanchez Building (SZB) is proposed.

Audience: CoE students and faculty.

Space: No additional space is needed.

Budget Detail:

Cisco Aironet™ 340 access point AIR-AP342E2RUS (8)	\$10,392
Budget Total	<u>\$10,392</u>

Administrative/Research Projects (Non-IT Funded)

The following IT-related projects represent major ongoing research and development efforts in the College of Education. Because these projects do not directly involve students in the College and are thus not eligible for IT fee funding, each project is supported by grant funding. For brevity, only efforts of particular significance are listed, although other, similar projects that are not IT fee fundable exist within the College.

Project: Texas Regional Collaboratives for Excellence in Science Teaching

A major grant from the National Science Foundation (approximately \$7,000,000) to the University of Texas at Austin, with additional funding from the Texas Education Agency, is helping to strengthen the teaching of science and technology in schools across Texas. The funds support the Texas Regional Collaboratives for Excellence in Science Teaching, headquartered in the College of Education. A major goal of the Collaboratives is to create ongoing partnerships of educators and business leaders who are committed to science education reform. An additional goal of the Collaboratives is to empower the teachers of Texas, through continued teacher training, to lead systemic reform, excellence, and equity in science education.

Project: The Texas Center for Reading and Language Arts

The Texas Center for Reading and Language Arts was established in the College of Education in the Fall of 1996 as a key component of Governor George W. Bush's Initiative on Reading. The Center's mission is to assist K-12 educators statewide in advancing the reading skills of Texas children. The Center has developed a series of products, many of which are technology-based, aimed at communicating state reading standards and best instructional practices to educators across the state, and furthering ongoing efforts to enhance the knowledge and skills that teachers use to promote literacy for all children, with specific attention to second language learners. The funding level for the Center is approximately \$5,000,000 annually.

Project: Migrant Education Grant

Researchers in the Department of Educational Administration, College of Education received a three-year grant from the Texas Education Agency to study the education of migrant children in America. The project is part of a multi-state

study involving Texas, Michigan, Minnesota, and Washington, the four states with the largest migrant populations in the U.S. The goal of the research is to generate information that will assist policy makers in making decisions with respect to migrant education. By assessing current programs for migrant students with respect to cost, coordination, effectiveness, and outcomes for students, the researchers expect to identify ways to improve the educational system for children who move from state to state.

Project: Four Directions

During the past five years the Four Directions Project has developed collaborative partnerships with three major universities, and one tribal university across the nation to provide professional resource support in areas of curriculum development, technological expertise, and connectivity support. Four Directions serves 19 rural nationwide Native American schools funded by the Bureau of Indian Affairs to transform curriculum through building on local cultures and values. Guiding principles of the Four Directions project unite efforts to celebrate and preserve Native American culture, while empowering Native American people of all ages to utilize technology. The University of Texas at Austin provides expertise in the areas of on-line coursework and mentoring, virtual museum support, and FirstClass™ Bulletin System support (TeachNet). The Four Directions Project has been extended for an additional year.

Project: Educational Productivity Council

Researchers in the Department of Educational Administration's Educational Productivity Council continue their longitudinal studies of student achievement in Texas schools, looking for ways to close the gap between low achieving students and their peers. Working with teams of principals, teachers and other public school personnel, the researchers help to establish systems for improving the quality of decisions made at student, classroom, program, and campus levels, assessing the effects that time, curricula, and other instructional variables have on student achievement. The project networks with 400 campuses, three regional service centers, the Texas Education Agency, and private sector organizations, and has developed a database of longitudinal performance information for approximately one million students. Results of this research are used by school administrators and teachers to assess the effects of specific policies on student performance, and to set goals for achieving higher levels of effectiveness.

Project: Systemic Research in Mathematics and Science Education

Across the country, states and rural and urban schools are undertaking major reform initiatives in science and mathematics education. Funding from the

National Science Foundation has been provided to the College of Education for establishing a Systemic Research Project in Math and Science Education. The goal of the project is to serve as a catalyst for more effective systemic reform by strengthening the research base and building national capacity to conduct effective systemic reform research. Underlying principles of the project include re-envisioning excellence in science and mathematics education, supported by technology, in light of disciplinary and technological changes, building adaptive learning organizations, fostering the multi-directional flow of research-practice results, and anticipating new models of collaborative research. Research data obtained by the project is expected to provide significant contributions to the knowledge base on systemic reform and effective school practices in science and mathematics.

Project: Faculty Technology Integration Awards

As an incentive for faculty technology integration, the College of Education annually awards a financial stipend to faculty members who have demonstrated exemplary and innovative efforts to incorporate technology-based resources and methods into their curriculum plans. Two categories of award are presented; an \$8,000 stipend funded by the CoE Dean's Office is given to faculty members based on nomination by faculty peers and final selection by department chair, and a \$9,675 stipend funded by the Meadows Foundation is presented to six faculty members who demonstrate innovation in the use of technology in field-based teacher education.

Meadows Foundation award recipients for 2000-2001 are Dr. Angela Calabrese Barton, Dr. Colleen Fairbanks/Dr. Jo Worthy, Dr. George Blanco, and Dr. Tony Petrosino (all of the Dept. of Curriculum and Instruction), Dr. Dolly Lambdin/Teresita Ramirez (Dept. of Kinesiology and Health Education), and Dr. Diane Bryant (Dept. of Special Education). Dean's Office award recipients for 2000-2001 are Dr. James Duncan (Dept. of Educational Administration), Dr. Ricardo Ainslie (Dept. of Educational Psychology), and Dr. Edward Coyle (Dept. of Kinesiology and Health Education).

Project: Effects of Computerized Mentoring on the Achievement of Girls and Minorities

Nearly every indicator of academic achievement points to a disturbing crisis in the educational welfare of black and Latino Americans. From grade school through high school and beyond, these students, compared to white and Asian Americans, receive lower grades, have higher dropout rates and obtain lower scores on statewide standardized tests. Indicators of mathematics, science, and computer skills, paint a similarly troubling picture for girls and young women.

The observed underperformance of girls in mathematics and minorities in all areas of achievement is referred to as 'stereotype threat'. A consequence of stereotype threat is that situations that remind people of well-known stereotypes that impugn intellectual ability (e.g. "girls can't do math," "black people are unintelligent") can arouse enough anxiety in a testing situation to seriously interfere with performance on such tests as the SAT and the GRE. Recent studies, however, have shown how the pernicious effects of stereotype threat can be minimized with mentoring in technology skills and increased access to computers, greatly boosting the test and school performance of girls and disadvantaged minorities. The proposed research examines the potential for computer mentoring to address the problems faced by the most at-risk students in a cost-effective and sustainable way.

Project: Development of Web-Based Course on Instructional Planning

Through a grant from the UT System Telecampus (\$39,000) Dr. Paul Resta has developed a Web-based course on Instructional Planning and Management. The course emphasizes an authentic context and activities for the students and uses of state-of-the-art Web-based tools for planning and management. The course involves the online collaboration of both on-campus and off-campus students working as technology planning teams. The course incorporates instructions, mini-lectures, and supplemental information from planning experts through video streaming over the Web. The purpose of the project is to apply current research-based learning strategies into a Web-based learning environment. The course is offered once each academic year both on-campus and through the UT Telecampus.

Project: Technology Leadership Academy

This project, funded by the U.S. Department of Education's *Preparing Tomorrow's Teachers to Use Technology* (PT3) Catalyst grant program, supports the College of Education's leadership role in establishing the Technology Leadership Academy to address the needs of teacher preparation institutions in the states of Texas, Oklahoma, and New Mexico. The Academy provides Web-based resources, a Fall Institute, and serves as a clearinghouse for resources and expertise to assist colleges of education in infusing technology into their teacher preparation programs. Special services are also provided to the colleges of education who have received capacity-building or implementation grants from the Department of Education. The catalyst grant is one of the few awarded nationally and the partners include the Texas Education Agency, State Board for Educator Certification, the Higher Education Coordinating Board and the University of North Texas. The other components of the project include the development of technology integration modules in the content areas (University of North Texas) and the development of teacher technology standards and assessments (TEA and SBEC).

Project: Participatory Simulations

The Participatory Simulation Project is a 1.8 million-dollar project funded by the National Science Foundation (Uri Wilensky, PI; Walter Stroup, Co-PI) that has as its goal the introduction of systems thinking as a kind of literacy for all students. Students engaged in participatory simulations will use a very new networked technology to act out the roles of individual system elements and then see how the behavior of the system as whole can emerge from the interaction of these individual behaviors. Participatory simulations of everything

from controlling traffic flow (each student controls a stop-light in a simulated city's traffic grid) to simulations of an ideal gas (each student straps on a motion detector and moves about the classroom as data about their motion is recorded) have been implemented or are being developed.

Project: WINGS Online (Welcoming Interns & Novices with Guidance & Support Online)

WINGS Online is a unified collaboration between the College of Education, the College of Natural Sciences, and the College of Liberal Arts. In accordance with an unfunded legislative mandate to provide support for teachers in their induction years, WINGS Online will provide long-term mentoring online ("telementoring") by experienced, practicing teachers to UT Austin seniors doing fieldwork, with continued support during the induction years. Concurrently, it will provide curriculum content and instructional practice resources on demand, facilitated forums for professional reflection and exchange, and options for content related telementoring from recognized subject matter experts. The long-range goal is to serve all UT Austin student teachers and novice professionals by Fall 2006. The project is currently funded through 2001 by a LARIAT grant (\$175,000), with additional funding provided by the Office of the Provost E-outreach Initiative (\$12,000); during this time overall system development will proceed, and training modules and collaborative procedures for telementors will be developed and tested.

Project: The Electronic Emissary

More than 377 million people worldwide have access to online information and computer-assisted communication. Many of these millions are subject matter specialists whose knowledge encompasses a wide spectrum of expertise in many K-12 curriculum areas. Telementoring efforts, such as the Electronic Emissary Project, bring volunteers from this group virtually into classrooms to communicate directly, longitudinally, and electronically with students and teachers who are studying about the experts' specialties.

The Electronic Emissary has been online since February 1993, and is funded at present by the Office of the Provost E-outreach Initiative and by a federally-supported regional educational technology consortium managed by the Southwest Educational Development Lab. The funding level for the 2000-2001 academic year is \$40,000. It serves students and teachers globally, primarily in North America. The Emissary is a "matching service" that helps K-12 teachers and students locate experts in different disciplines, for purposes of setting up curriculum-based telementoring projects. The Emissary is also a research project,

which explores what and how students, teachers, and mentors learn while communicating together online.

To date, the Emissary has supported more than 500 electronic teams of students, teachers, facilitators, and subject matter experts. The members of these teams were engaged in in-depth, dynamic exchange using Internet-based tools such as electronic mail, text-based chats, and World Wide Web pages. Project evaluation results provided by team members have emphasized the importance of the relationships that have developed among participants. Subject matter "came alive" for students who could interact with someone for whom curriculum content is part of everyday life. Many of the teachers developed close, apprentice-like relationships with the experts, requesting and receiving assistance with content-related concepts, resources, and activity design. Subject matter experts often reported delighting in opportunities to revisit and delve deeper into their disciplinary specializations by interacting with interested, but less knowledgeable others. Online facilitators expressed fascination with the often challenging, personal, and in-depth communication that people who know each other only as arrangements of pixels on a screen can co-create.

Project: National Semiconductor Skills Training Workshops

In an effort to address the need for modeling of and support for the integration of instructional technology into all phases of curriculum, National Semiconductor Inc., the Austin Independent School District, and the College of Education have jointly sponsored workshops for all those who work with preservice teachers in the College (faculty, graduate student supervisors, and cooperating classroom teachers). The full scope of "*Global Connections: Using the Internet in Classroom Instruction*" comprises multiple training sessions offered at convenient times to maximize the opportunity for attendance. Participants receive direct instruction and practice in developing skills and experience that will enable them to model the use of technology in the classroom and also be effective in instructing students in the use of technology methods. Continuing Professional Education credit is offered upon successful completion of the training.

Information Technology Funding Overview

Information Technology (IT) funding has historically been awarded to the College of Education in two component sums: a) an annual recurrent component, based on CoE enrollment, and b) a project component, based on proposed technology projects. Recurrent funding has typically been applied to maintenance and updating needs for student-use facilities and infrastructure, while project funding is normally designated and set aside for design and implementation of projects proposed in *College of Education Technology Vision Plans*.

In the CoE, IT funding is used to address technology needs in the following categories:

1. **Instruction:** Funding is used to provide equipment, software and services which enhance the quality and impact of instruction for CoE students. Examples include mobile computer/projection presentation carts, computer lab systems, and server-based software for labs.
2. **Research:** Funding is used to provide and equip facilities in which students may participate directly in research projects, allowing them to benefit from field and laboratory experiences in which classroom concepts are demonstrated. Examples include high-end Macintosh workstations, sophisticated multimedia production software, and the compact disk production system provided in the Learning Technology Center Multimedia Research and Development Laboratory.
3. **Administration:** Funding is used to create and maintain network infrastructure in order to access external instructional resources, and to enable efficient staff support of facilities which are used in instruction and research. Examples include high-speed ethernet switches and remote-manageable ethernet hubs in CoE buildings, software which implements remote system management functions once possible only with hardware, and cross-platform lab computer management software which implements security checking.

Maintenance and upgrades are an essential aspect of each category above. It is the College's policy to systematically update the computer systems and software that are provided in student labs on an incremental basis; e.g. replace one-third of the systems each budget year. The availability of IT funding permits the CoE to make the most recent hardware/software technologies available to CoE

students, thereby expanding and enriching the professional development experience for those students.

Appendix A

College of Education The University of Texas at Austin

1999-2000 Total IT Summary Expenditures

	Information Technology Fee	Learning Technology Center Usage Fee •
Staff	\$0	\$534,329
Equipment	\$212,630	\$46,157
Facilities	\$200,000	\$2,000
Network	\$33,239	\$13,652
Other (services)	\$3,528	\$5,000
Total	\$449,397	\$601,138

Notes:

- The Learning Technology Center Usage Fee is a Learning Resource Center fee, assessed to defray the cost of providing learning resource centers. The Learning Technology Center Usage Fee is assessed and administered by the College of Education's Learning Technology Center and is used to fund LTC salaries, services, maintenance and non-computer equipment. Expenditures from this fee are summarized here because the staffing, equipment and facility infrastructure it funds are essential to the operation of the College's computer facilities.

Appendix B

College of Education The University of Texas at Austin

Networking Infrastructure Summary

Network Access in CoE Buildings

The College of Education has office, classroom, and research laboratory space in six buildings on the UT Austin campus, as listed below. Network infrastructure has been installed and updated in each building as dictated by demand, and continues to evolve.

Campus Building	Usable Rooms	Rooms wired	% Wired
George I. Sanchez (SZB)	491	350	71
Anna Hiss Gym (AHG)	23	23	100
Bellmont Hall (BEL)	128	101	79
Gregory Gym (GRE)	13	13	100
Texas Swim Center (TSC)	3	3	100
Texas Tennis Center (TTC)	1	0	0
Total	659	490	75

CoE Technology Classrooms

The following special-use classrooms are operated by the College of Education in the George I. Sanchez Building and in Belmont Hall. These rooms contain technology enhancements and connectivity for improved presentation quality, resource access, and student-instructor interaction:

1. **SZB 323:** Distance Learning Classroom
2. **SZB 324:** Advanced Applications Laboratory, 40 stations, Macintosh
3. **SZB 438D:** Central Macintosh Laboratory, 29 stations, Macintosh
4. **SZB 438E:** Software Preview Center, 14 stations, Macintosh and PC
5. **SZB 438F:** Collaborative Learning Laboratory, 19 stations, Macintosh
6. **SZB 518C:** PC/Statistics Laboratory, 20 stations, PC

7. **SZB 518E:** Assistive Technology Laboratory, 7 stations, Macintosh and PC
8. **SZB 536AA:** Multimedia Research Laboratory, 11 stations, Macintosh and PC
9. **SZB 536:** Open-use Student Laboratory, 20 stations, Macintosh and PC
10. **BEL 844:** Kinematics Laboratory, 13 stations, Macintosh and PC

Appendix C

College of Education The University of Texas at Austin

WINGS Online:

Welcoming Interns & Novices with Guidance & Support Online

DESCRIPTION

UT Austin graduates approximately 500 new K-12 teachers each year. By 2004, and in accordance with an unfunded legislative mandate, the Colleges of Education, Liberal Arts, and Natural Sciences will be expected to support nearly 750 teaching interns and 750 first-year teachers *each year*. The reasoning behind the mandate is incontrovertible. Recent research shows that more than 30% of Texas' teachers leave the profession during their first two years of service. More than 10,000 teaching positions are presently vacant in our state. National predictions estimate that 2.2 million new teachers will be needed by 2008. To address these urgent needs, a scalable, sustainable, "high-touch" support system for preservice and early-career K-12 teachers must be developed and implemented expeditiously. We propose offering personalized mentoring, needs-based information resources, and actively facilitated participation in professional communities to UT Austin teaching interns and novice teachers via customized, networked tools and resources through "WINGS Online," a unified three-college collaboration. We propose to offer support to all of our teachers. Particularly, we want to support and mentor interns and first year teachers who typically work in low income schools, which are often characterized by large numbers of struggling students and social issues that contribute to teacher stress and burnout. Through the interactive WINGS online program, we propose to offer the level and intensity of support that young professionals require to cope with challenges that may only be addressed in on-the-job experiences.

WINGS Online will address the e-University initiative in e-academics and e-outreach. It will provide long-term mentoring online ("telementoring") by experienced, practicing teachers to UT Austin seniors doing fieldwork, with continuing support during the induction years. Concurrently, it will provide curriculum content and instructional practice resources on demand, facilitated forums for professional reflection and exchange, and options for content-related telementoring from recognized subject matter experts. This online interpersonal and informational exchange system must serve all UT Austin student teachers and novice professionals—between 1000-2000 per year—as soon as possible, and in the best ways possible. To ensure success, we will spend the 2000-2001 year building, testing, evaluating, and revising both the online facilities that will

support this large-scale teacher-support effort and the plans for scaling up participation.

CHALLENGES

Research shows that new teacher support programs substantially increase retention. Because most programs depend on same-time, same-place interaction, they are not feasible for UT Austin. We propose instead to provide the state-required guidance and support using a combination of individualized and community-based, interpersonal and informational, easily navigated, needs-determined online support options. In this way, our new teachers will have high-quality materials, ideas, and personal mentoring available “24/7.”

The design of the WINGS system will be based on eight years of research on telementoring and online professional development for teachers by one of the project’s directors (Harris), with formative evaluation by an advisory group expert in teacher development and computer-mediated communication. Our research results mirror findings from similar efforts to provide teachers with networked professional support, emphasizing the critical importance of personalized attention, active facilitation, and “just-in-time” provision of specialized information resources. Without such affordances, online services for educators suffer failure rates of 70% or more. The scope, size, and complexity of planning and testing a successful online support system that interns and novices will actively and regularly use warrants a year of development work.

IMPACT

WINGS Online will extend and complement efforts to support novice teachers currently under development. Twenty winners of the Texas Excellence Awards for Outstanding Teachers, sponsored by the University’s Ex-Students’ Association, participated in a pilot online mentoring effort for novice teachers during Spring 2000, with encouraging results. Annual TIES (Teacher Induction Education & Support) New Teacher Conferences will be offered in Austin starting Fall 2000. Distance education options tailored to the needs of early career teachers are being considered. Even so, the challenge has only begun to be addressed.

WINGS Online will offer UT Austin teaching interns and novices e-University portal-accessible:

- Telementoring by teachers experienced in students’ areas of instructional specialization.
- Multiple professional reflection/resource-sharing communities online, like those emphasizing Chemistry, English, and Math in the Advanced Placement Teacher Network funded and based here.

- On-demand resources online, located, annotated, organized, and linked by educational technology specialists responding directly to requests for aids such as classroom-tested learning activities, current research results, or student-friendly multimedia content presentations. Sample indexes have been offered by graduate students enrolled in instructional technology courses (e.g., <http://www.tapr.org/~ird/>).
- Optional telementoring in curriculum content by subject matter experts already serving K-12 students and teachers through UT Austin's Electronic Emissary Project (<http://emissary.ots.utexas.edu/emissary/>)

We plan to test WINGS Online with a diverse and distributed sample of approximately 80 elementary, middle-level, and secondary intern and novice volunteers during Spring 2001. Online training modules and collaborative procedures for telementors will be developed and tested. An outside evaluator expert in online professional development will be integral to planning and testing, and an advisory group of nationally recognized researchers on teacher development, telementoring, and professional online communities will offer periodic review and advice. Individual and focus group feedback from the 80 initial participants will round out our participant-centered, research-based system development during the first year.

Although the considerable human support requirements necessitate restricting the telementoring services described above to U.T.-Austin students and graduates, the pedagogic communities developed and other resources will be available to all Texas teachers. Once fully scaled up in Fall 2006, WINGS Online will not only directly impact approximately 750 U.T. undergraduates and 1500 U.T. graduates each year, its resources can serve teachers in the more than 7000 Texas schools seeking professional development online.

Offering personalized guidance and support on this large scale, involving and serving experienced teachers in the ways that we propose, has never been tried. Our plan, therefore, satisfies the LARIAT funding criteria of innovation and change in academics and outreach, significant involvement of U.T. students, and potential for systemic impact. The tangible outcome of the first year of development and evaluation of WINGS Online will be a sustainable, scalable model and supporting online resource system of considerable complexity, piloted in 2000-2001. The system and model will be ready for broad-range testing and refinement in 2001-2002, then will be scaled up and fully implemented for all interns and novices by 2006.